Environmental Site Assessment

CN Mile Point 197.4, Rivers Subdivision

Southeast of St. Lazare, Manitoba

2020-06-30

Project Number: 10161797

Executive Summary

This Environmental Site Assessment (ESA) has been completed for the CN Mile 197.4 on the Rivers Subdivision Derailment Site near St. Lazare, Manitoba (the Site). The ESA is required by Manitoba Sustainable Development (MSD), as outlined in their Letter of Designation (LoD) issued to CN on February 21, 2019. The LoD deals with the potential effects of the derailment event only, and not any pre-existing conditions at the Site.

DERAILMENT AND PERTINENT SITE DETAILS

- On February 16, 2019, 34 cars carrying Cold Lake Dilbit Blend (CLB) derailed, with 13 cars rupturing and releasing approximately 820,000 liters of CLB.
- Surrounding lands are primarily improved pasture. An oxbow lake is located adjacent to the south of the CN Right-of-Way (ROW) and beyond that the Assiniboine River.
- A wooden trestle located at the Site was backfilled at some point in the 1980s. The trestle bridge was backfilled in place with native clays and still remains beneath the rail bed.
- During the initial response, three temporary berms were constructed on the oxbow lake to contain the migration of the CLB. Two of the three berms remained in place after the initial response, defining the limits of the Oxbow Monitoring Area (OMA).
- A Remedial Action Plan (RAP) was submitted to MSD on March 29, 2019[1]. MSD accepted the RAP on June 3, 2019. The purpose of the RAP was to guide Site remediation to the extent that the Site is no longer contaminated at a level that may pose a threat to human health, safety or the environment.
- The chemicals of concern at the Site are benzene, toluene, ethylbenzene and xylenes (BTEX) and petroleum hydrocarbon (PHC) Fractions F1 to F4 and Polycyclic Aromatic Hydrocarbons (PAHs).
- The Contaminated Sites Remediation Regulation administered by MSD specifies standards to be applied to contaminated sites in Manitoba. As such, the Canadian Council of Ministers of the Environment (CCME), Canadian Environmental Quality Guidelines, apply to the Site.
- Human Health and Ecological Risk Assessments were completed to evaluate potential risks to human health and the environment related to PAH impacts that were completed will be submitted as appendices to the ESA.

SITE ACTIVITIES COMPLETED UP TO APRIL 2020

The following activities have been conducted at the Site up to April 2020:

Activity	Date
Initial spill response, recovery of the CLB, constructing temporary berms, bulk removal of impacted soils, soil sampling, backfilling and re-contouring	February and March 2019
Location and elevation surveys	February 2019 to February 2020
Surface water monitoring and sampling conducted until frozen conditions	February to November 2019

[1] HDR, 2019a, Remedial Action Plan, CN Mile Point 197.4 Rivers Subdivision, Southeast of St. Lazare, Manitoba, March 29, 2019.

Activity	Date
Site Inspections: Weekly, bi-weekly and monthly Site inspections have been conducted at the Site to the end of December 2019	March to December 2019
Spring intrusive investigation	May 2019
Groundwater monitoring and sampling	June to December 2019
Source removal: four remedial excavations completed source removal of product remaining within the sub ballast material of the CN main line rail bed. Confirmatory soil samples were collected along the walls and base of each excavation	June 2019
Pathway evaluation and risk assessment	June 2019 to February 2020
East culvert cleaning and contaminant assessment	June to August 2019
Summer fish salvage in the OMA	July 2019
In-situ water quality monitoring and documenting observations of fish	July to December 2019
Response to RESPEC (Third Party) concern on observed sheen	October 2019
Additional PAH soil sampling	October 2019
Fall fish salvage in the OMA	October 2019
Fall intrusive investigation	December 2019
Removal of woody debris from the oxbow island	December 2019
Placing subsoil, re-contouring and stockpiling subsoil and topsoil on the oxbow island	February 2020
Removal of the temporary berms	February 2020
Additional sediment removal	February 2020

Monitoring at the Site ceased due to seasonal decreasing temperatures in December 2019. Surface and groundwater sampling was planned to resume at the Site in April 2020, but due to health and safety concerns associated with COVID-19 field work was been delayed.

ESA REPORT CONCLUSIONS

The following conclusions summarize the results of the ESA:

Product Status

- Initial bulk removal of CLB along with impacted soils, snow and ice during the emergency response reduced hazards and risks at the Site by removing all visible product and the initial confirmatory sampling of soils and surface water for BTEX and PHC Fractions F1 to F4.
- During the initial response, the CLB migrated along native coarse-grained lenses and seams as preferential pathways but did not penetrate into clay-based soils.
- On the south side of the rail line where CLB was present, all native coarse-grained lenses and seams where CLB was present were excavated, removing preferential pathways.
- On the north side of the rail line, residual impacts were observed in the rail bed embankment that could not be removed, given the need to preserve track stability.
- Intrusive investigation in May 2019 confirmed residual impacts existed only in coarse-grained soils (rail bed ballast and sub-ballast). The underlying silty clay to clay acted as a barrier to contaminant migration.

- The May 2019 intrusive investigations also indicated that the buried trestle on-Site is not acting as a preferential pathway, but rather the clay used to backfill the trestle is acting as a barrier to contaminant migration.
- The buried trestle and rail line act as a barrier to potential contaminant migration from north to south, because of the local, dominant clay stratigraphy.
- There has been no migration of the groundwater impacts observed north of the rail line to the south side of the rail line towards the oxbow area.
- Remaining trace CLB materials that have not been physically removed from the Site have been naturally attenuating in the environment. The demonstration of mass reduction is based on the data indicating contaminants are no longer detected in the environment at the large majority of sample locations. Only marginal exceedances remain for PHCs and PAHs at a few locations.

Analytical Results

- There were no PHC or PAH exceedances of the applicable guidelines for surface water at the Site.
- Groundwater exceedances (benzene, and select PAH compounds) were noted in one well on the north side of the rail line. Concentrations could be caused by the presence of small globules of CLB and is not necessarily indicative of widespread dissolved CLB in the groundwater.
- Analytical results from sediment and soil locations resampled in October 2019 had naturally attenuated via weathering and biodegradation; PAHs are susceptible to attenuation by a number of naturally occurring processes (biodegradation, dispersion/dilution, sorption, volatilization or chemical reactions).
- Analytical results were compared against regulatory criteria and natural attenuation was assessed by comparing PAH data between sampling events and comparing to regulatory criteria. Most results that exceeded regulatory criteria, when resampled in October 2019, had reduced PAHs concentrations below detection levels.

Oxbow Monitoring Area (OMA) Observations

- There has been no migration of the groundwater impacts observed north of the rail line to the south side of the rail line and the oxbow area (downslope and cross gradient of north side groundwater impacts).
- There was no inflow into the oxbow (OMA) from the Assiniboine River in 2019 as the temporary berms provided physical barriers on either end of the OMA. As such, the OMA was filled in 2019 as a result of surface water runoff and groundwater recharge illustrating that the derailment did not affect aquatic life within the OMA.
- Aquatic life thrived between the 2019 spring freshet and December 2019 when low temperatures and windchill ceased minnow trapping due to the potential for fish mortalities if extracted from under the ice was to continue. Monitoring of aquatic life has not resumed post-freshet in 2020 due to COVID-19.
- Between July and November 2019, a total of 25,291 fish were salvaged from the OMA, and appeared to be in good condition based on visual observations. All salvaged fish we safely relocated to the Assiniboine River.

Risk Assessment Results – Human Health

- Exposure to PAH levels in soils outside of the ROW, sediments and surface water were found not to pose a potential health issue.
- Results indicated there could be a potential risk if PAHs leached into groundwater; however, groundwater at the Site was, and is not used as a potable supply, eliminating this human health risk assessment pathway.

Risk Assessment Results – Ecological Health

- Analytical results were compared against pertinent regulatory criteria and natural attenuation was assessed, as PAHs are susceptible to attenuation by a number of naturally occurring processes (biodegradation, dispersion/dilution, sorption, volatilization or chemical reactions).
- The natural attenuation of PAHs at the Site were assessed by comparing PAH data between sampling events and by comparing to regulatory criteria. Most PAH results that exceeded regulatory criteria, when resampled, had reduced PAHs concentrations below detection levels.
- Any residual PAHs within the CN ROW will continue to naturally degrade.

The outcome of site monitoring and assessment indicates the Site is not contaminated at a level that would pose a threat to human health or safety or to the environment as per the LoD.

RECOMMENDATIONS

The following recommendations are provided for additional sampling:

- Conduct additional sampling at sediment locations that exceeded regulatory guidelines for PAHs (summer 2020).
- Conduct additional groundwater monitoring and sampling for PHC and PAH concentrations until the summer of 2021.
- Complete site reclamation on adjacent agricultural lands beyond the CN ROW to equivalent land capability and the disturbed area on the island will be restored to woodlands, consistent with pre-spill conditions.

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1 Introduction

The following Environmental Site Assessment (ESA) has been prepared for the Canadian National Railway Company (CN), for the Mile 197.4, Rivers Subdivision derailment site (the Site) near St. Lazare, Manitoba. This ESA is submitted to Manitoba Sustainable Development (MSD) in response to the Letter of Designation (LoD) issued by MSD on February 21, 2019 for the Site, which is described as "SW 13-16-28 W1M, Rural Municipality (RM) of Ellice-Archie, Manitoba" (Figure 1).

This ESA is consistent with the June 2016 MSD guidelines for conducting ESA (Environmental Site Assessments in Manitoba). The MSD guidelines provide direction regarding the assessment of sites where soil, sediment, surface water, and/or groundwater may be affected by contaminants. The guideline establishes a process wherein a responsible party may work in collaboration with MSD to address impacted environmental media and ensure the protection of human health, safety, and the environment, in an economically feasible and sustainable manner; meeting the purpose of the ESA, and in this case, the requirements of the LoD issued for the Site. The following sections describe the work completed at the Site.

2 Event and Site Description

At approximately 02:45 on February 16, 2019, a CN freight train derailed at Mile 197.4 of the Rivers Subdivision, located immediately east of an oxbow of the Assiniboine River. A total of 34 cars derailed on-Site, all of which were carrying Cold Lake Dilbit Blend (CLB). Of the 34 cars, 13 cars were ruptured and released approximately 820,000 liters of CLB. Daily drone images from the initial response are provided in Appendix A.

The initial response at the Site occurred between February 17 and March 18, 2019, and is further described in Sections 8 and 9. The focus of the initial response was the control and containment of released CLB, along with the timely bulk removal of impacted snow, ice and soils based on visual, olfactory and chemical analyses.

A Remedial Action Plan (RAP) was submitted to MSD on March 29, 2019. MSD accepted the RAP on June 3, 2019. The purpose of the RAP was to guide Site remediation, to ensure the Site conditions were not posing a potential threat to human health, safety or the environment. Details of the work completed during the initial response, as well as the rationale behind that work, are included in the RAP. The work conducted on-Site following the initial response, as detailed in this ESA, has been completed to meet the requirements of the LoD.

3 Site Setting

The Site is located approximately 11 km to the south/southeast of St. Lazare, Manitoba. The CN rail line in this area runs north/northwest to south/southeast through agricultural lands including improved pasture. The Assiniboine River mirrors this alignment, approximately 850 m to the west of the rail line.

The lands surrounding the Site, beyond the CN Right-of-Way (ROW), are primarily improved pasture under one landowner. There is an oxbow on the west side of the rail line. The landowner's residence is approximately 1.7 km southeast of the Site. An overview of the Site Plan is presented in Figure 2.

The Site is located at the east end of an oxbow lake, approximately 850 m east of the Assiniboine River. The sinuous C-shaped oxbow lake is approximately 1700 m in length and the channel width of the oxbow varies from 45 m to 70 m wide (see Figure 1). During spring freshet, it is approximately 1.5 to 2.1 m deep from substrate to upper bank. Depths measured in August 2019 ranged from 0.15 m to 0.9 m. It is reported that during spring freshet, the Assiniboine River carries water into the north arm of the oxbow lake and exits at the south outlet; however, there was no inflow into the oxbow from the Assiniboine River in 2019. The adjacent upland consists of willow shrub, riparian woodland including aspen, ash, maple and oak trees, native pasture grassland and cropland.

From this point forward, directions referenced are in relation to standard railroad practice, which is consistent with nomenclature that has been in place at the Site during the response to date. Site directions herein are based on the convention that the rail line runs east-west and Site north corresponds approximately to true east. Site directions and true directions are both presented on the attached figures for reference.

The rail line runs along the Assiniboine River valley wall, with the base of the valley to the south of the Site, and the land sloping upward toward the north of the Site. The rail line itself is constructed on a raised bed part way up the valley wall, as further discussed in Section 5. Ruptured tanks from the derailment were located on both the north and south sides of the rail line, and CLB was flowing downslope. Initial flow paths of the CLB are shown on Figures 5A, 5B and 5C. The flow of CLB was primarily overland with the exception of flow through the inside of the East Culvert (discussed in Sections 8 and 12). Images of the derailment and early response efforts are provided in Appendix A.

North of the Site is a graveled, municipal road and beyond that improved pasture. South of the Site is an oxbow lake and beyond that the Assiniboine River. East and west of the Site is improved pasture. There is a tunnel facilitating cattle crossing below the rail line that enters into the east end of the Site and runs north to south. Although there are several shallow groundwater wells present in the area, there are no domestic wells within 1 km of the Site. The landowner has indicated that his domestic water supply at his residence is from a local spring that occurs naturally at the base of the Assiniboine River valley wall.

Photographs were provided by the landowner along with an oral history stating that a wooden trestle located at the Site was backfilled at some point in the 1980s, during the construction of the existing railway embankment. The trestle bridge was backfilled in place with native clays and still remains beneath the rail bed (further discussed in Section 5). The trestle remains were found during the spring intrusive investigation, discussed in subsequent sections. Note the LoD deals only with the derailment event. Therefore, the trestle was not assessed as an Area of Potential Environmental Concern (APEC) associated with the Site in this ESA.

4 Regional and Local Hydrogeology

The Site is located within the Birdtail-Assiniboine watershed in a transition zone where the aquifer is either lenses of sand and gravel or major buried sand and gravel unit. An aquifer in this area can be

located in the till or surficial deposits anywhere from a few meters to more than 100 m. The average total depth of local wells completed into sand and gravel aquifers is approximately 42 m and the average depth to the top of the aquifer of 27 m.[2]

The Site is located in the Assiniboine River valley with the rail line constructed as a raised bed part way up the valley wall. Surface flow, based on the topography of the Site and the surrounding area, is typically from the north to the south. Culverts beneath the rail line facilitate flow from the upper (west) side of the rail line to the lower (east) side of the rail line. The oxbow lake is downslope from the south side of the rail line, and receives surface water flowing down the river valley wall, including water flowing through the West and East West culverts. The Site is approximately 850 m from the Assiniboine River.

The following information is available in regard to surface and groundwater in the vicinity of the Site:

- Shallow groundwater is expected to range from ground surface nearest to the Assiniboine River to as shallow as 1 meter below ground surface at the Site.
- The nearest available published groundwater data is from a station near Rossburn, approximately 43 km northeast of St. Lazare, and shows a yearly fluctuation of about 1 m in the shallow groundwater.
- The Town of St. Lazare sources water from a dugout and has been on a boil-water advisory since 2005, although shallow groundwater is also sourced for domestic use.
- The majority of surface runoff occurs during freshet from March through May. Mean annual precipitation for this area is 510 mm.[3]

A search of the MSD Water Well Information Database did not identify any water wells within a 1.0 km radius of the center of the Site. A summary of the Water Well Information Database search results is included in Appendix B.

5 Regional and Local Geology

The following summary of the Site's topographic, geologic, and hydrogeologic setting is based on HDR's observations during the Site investigation and a review of the following maps:

- Matile, G.L.D. and Keller, G.R. 2004: Surficial geology of the Riding Mountain map sheet (NTS 62K), Manitoba; Manitoba Industry, Economic Development and Mines, Manitoba Geological Survey, Surficial Geology Compilation Map Series, SG-62K, scale 1:250 000. (Accessible on-line at: https://www.gov.mb.ca/iem/info/libmin/SG-62K.pdf).
- 1979 Precambrian geological compilation by McRitchie, W.D., Norris, W., Scoates, R.F.J. and Weber, W. Precambrian geology is a digital copy of: Manitoba Geological Services, 1979,

[2] Manitoba Well Information Reports provided by MSD on March 6, 2019.

[3] The climate in the municipality can be related to the closest weather station at Birtle approximately 14 km to the northeast of the Site, Station ID BIR, which is on the Manitoba Agriculture, Food and Rural Initiatives network.

Geological Map of Manitoba, Map 79-2. (Accessible on-line at: https://www.gov.mb.ca/iem/explore/files/geology_of_manitoba_map.pdf).

Based on a review of published information, the surficial geology in the vicinity of the Site is expected to consist predominantly of:

- alluvial sediments, which includes sand and gravels, sand, silt clay, organic detritus; 1 to 20 m thick; channel overbank sediments; reworked by existing rivers and deposited primarily as bars; and
- colluvium, which includes landslide debris, eroded slopes, sheet flood deposits associated with steep slopes.

Soils considered impacted by CLB, based on visual, olfactory, or chemical observations, were removed from the Site for off-Site disposal as part of the initial response in February and March of 2019. A progression of this activity can be seen in the photographs provided in Appendix A.

Within the general area where the derailment occurred, studies have identified a thin, unconfined sand and gravel aquifer that may be susceptible to contamination, whether the Province of Manitoba has suggested that focused source water protection programs be implemented. During the initial response and the bulk removal of impacted soils, it was observed the CLB did migrate along the native coarse-grained lens and seams as preferential pathways and did not penetrate into clay-based soils. On the south side of the rail line where CLB was present, all native coarse-grained lens and seams where CLB was present were excavated and removed for off-Site disposal. The result of the initial response was excavation to a native clay base, in all areas on the south side of the rail line, with the entire south side of the Site recontoured from the native clay to create a new grade.

Intrusive investigations conducted at the Site confirmed that the rail bed is constructed of ballast followed by sub-ballast consisting of gravels and coarse sands to fine gravels, to depths ranging from approximately 1 to 3 meters below ground surface (mbgs), underlain by silty clay to clay to the maximum drilling depth of 7.6 mbgs. Borehole logs are provided in Appendix C and geological cross-sections for the Site are presented on Figures 7A and 7B.

Bedrock in the vicinity of the Site is expected to consist of Pierre Formation Millwood Member (soft greenish bentonitic shale). Bedrock was not encountered during the Site investigations.

On the north side of the rail line, residual impacts (Section 2) were observed in the rail embankment, but could not be removed, given the need to preserve track stability. The cross-sections presented with this report were developed with information gathered from the initial response and intrusive investigations, and are indicative of the soil stratigraphy following the re-contouring of the Site. Discussions of soil from this point forward are considering current Site conditions rather than historical stratigraphy across the Site.

The historical trestle and associated backfill were evaluated as potential, preferential pathways during Site investigation. The intrusive investigation conducted in May 2019, along with the source removal conducted in June 2019 indicated the trestle is not acting as a preferential pathway, but rather the clay used to backfill the trestle is acting as a barrier to contaminant migration. The trestle along with the rail line is acting as a barrier to potential contaminant migration from north to south, as a result of the clay dominant stratigraphy (see borehole log BH19-3 in Appendix C).

6 Contaminants of Concern

CLB is a naturally occurring hydrocarbon mixture containing paraffins, naphthalenes, aromatic hydrocarbons and small amounts of sulfur and nitrogen compounds. CLB is bitumen blended with condensate (diluent) to facilitate shipping. The safety data sheet for CLB released at the Site is presented in Appendix D. Characteristics of CLB in the environment that were observed at the Site included the CLB becoming more viscous as it cooled. Volatilization was also notable through olfactory observations. Observed characteristics of CLB in the field as well as the observed pathways that the CLB travelled following its release into the environment were used in the development of the initial response actions and the follow-up remediation efforts (outlined in the RAP and in this ESA). Further details about the CLB release and initial response efforts can be found in Section 8 and under separate cover in the RAP.

The immediate emergency response focused on containing the released CLB visible on the ice and snow through constructing three temporary berms: two berms on either side of the visible limits of the CLB on the oxbow lake and a third berm on the east side of the East Culvert. One of the three berms was removed during Site remediation, leaving the South and East Berms in place to define the Oxbow Monitoring Area (OMA). All sediments were removed to a native clay base with the exception of the area adjacent to the south berm that could not be fully excavated due to groundwater infiltration. Adjacent to both the south and north rail embankments, complete removal of CLB was not possible given the need to maintain track stability. Some product had migrated through the East Culvert, initiating a targeted clean-up in that area as discussed in Sections 8 and 12.5.

Initial confirmatory analysis focused on the analysis of benzene, toluene, ethylbenzene and xylenes (BTEX) and petroleum hydrocarbon (PHC) Fractions F1 through F4. This approach was taken in order to minimize laboratory turnaround times (and associated data review and analysis) and allow the emergency response team to expedite the removal of impacted media. Hydrocarbon impacted sediments within the OMA were removed, with the exception of four locations with marginal exceedances near the South Berm. These areas could not be addressed safely due to groundwater infiltration and saturated ground conditions.

Based on the composition of CLB, the following chemicals of concern have been identified at the Site:

- BTEX and PHC Fractions F1 to F4; and
- Polycyclic Aromatic Hydrocarbons (PAHs).

BTEX and PHC Fractions F1 to F4 were assessed throughout site remediation. Following the initial response, PAHs were included in the assessment to ensure that the OMA and flood zone had been remediated, and that no unacceptable risk to human health, safety or the environment remained.

7 Environmental Quality Guidelines

The Contaminated Sites Remediation Regulation administered by MSD specifies standards to be applied to contaminated sites in Manitoba as follows:

1.1(2) For the purpose of clause 3.1(a) of the Act, the following standards are adopted, as amended from time to time:

Primary standards

Canadian Council of Ministers of the Environment, Canadian Environmental Quality Guidelines, 1999

Canadian Council of Ministers of the Environment, Canada-Wide Standards for Petroleum Hydrocarbons (PHC) in Soil, 2008

Health Canada, Guidelines for Canadian Drinking Water Quality — Summary Table, 2012

Secondary standard

Ontario Ministry of the Environment, Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, 2011

Tertiary standard

Government of Alberta, Alberta Tier 1 Soil and Groundwater Remediation Guidelines 2010

1.1(3) The following rules are to be applied to determine which standard set out in subsection (2) is to be used:

Rule 1: If a standard for a contaminant in relation to the applicable site conditions is provided in a primary standard, that is the standard to be used.

Rule 2: If a contaminant is not listed in a primary standard or if none of the primary standards address the applicable site conditions, the secondary standard is to be used if the secondary standard addresses the specific contaminant and the applicable site conditions.

Rule 3: If a contaminant is not listed in the primary or secondary standards or if the primary and secondary standards do not address the applicable site conditions, the tertiary standard is to be used if the tertiary standard addresses the specific contaminant and the applicable site conditions.

As such, the following Canadian Council of Ministers of the Environment (CCME), Canadian Environmental Quality Guidelines, apply to the Site:

a. Soils on CN-Owned Lands - Canadian Council of Ministers of the Environment (CCME), Soil Quality Guidelines for the Protection of Environmental and Human Health, values for industrial land use and coarse-grained soils.
b. Soils on Adjacent Lands - Canadian Council of Ministers of the Environment (CCME), Soil Quality Guidelines for the Protection of Environmental and Human Health, values for agricultural land use and coarse-grained soils.
c. All Sediments - Canadian Council of Ministers of the Environment (CCME), Sediment Quality Guidelines for the Protection of Aquatic Life.
d. All Surface Water - Canadian Council of Ministers of the Environment (CCME), Water Quality Guidelines for the most stringent of Protection of Aquatic Life or Agriculture values.

Alberta Environment and Parks (AEP), Alberta Tier 1 Salt Remediation Guidelines, January 2019 guidelines have been used to asses soil salinity.

8 Activities Completed up to April 2020

The following table summarizes the activities have been conducted at the Site between March 2019 and April 2020:

Activity	Date
Initial spill response, recovery of the CLB, constructing temporary berms, bulk removal of impacted soils, soil sampling, backfilling and re-contouring	February and March 2019
Location and elevation surveys	February 2019 to March 2020
Surface water monitoring and sampling conducted until frozen conditions	February to November 2019
Site Inspections: weekly, bi-weekly and monthly Site inspections have been conducted at the Site to the end of December 2019	March to December 2019
May intrusive investigation	May 2019
Groundwater monitoring and sampling	June to December 2019
Source removal: four remedial excavations completed source removal of product remaining within the sub ballast material of the CN main line rail bed. Confirmatory soil samples were collected along the walls and base of each excavation	June 2019
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Summer fish salvage in the OMA	July 2019
In-situ water quality monitoring and documenting observations of fish	July to December 2019
Response to RESPEC (Third Party) concern on observed sheen	October 2019
Additional PAH soil sampling	October 2019
Fall fish salvage in the OMA	October 2019
December intrusive investigation	December 2019
Removal of woody debris from the oxbow island	December 2019
Placing subsoil, re-contouring and stockpiling subsoil and topsoil on the oxbow island	February 2020
Removal of the temporary berms	February 2020
Additional sediment removal	March 2020

A roadmap that visualized the chronological sequence of the activities conducted at the Site and the associated timelines are depicted in the following graphic. This roadmap also references the applicable figures and tables associated with each activity. The progression of Site activities is shown in the Appendix A photos.

CN MP 197.4

Rivers ESA Roadmap

2019 | 2020

JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC | JAN | FEB | MAR | APR

REMEDIAL ACTIVITIES

01 | INITIAL SPILL RESPONSE
Recovery of the CLB, constructing temporary berms, bulk removal of impacted soils, soil sampling, backfilling and re-contouring
FIGURE: 1, 2, 3, 4, 5A, 5B, 5C, 6A, 10A, 10B, 10C, 11A, 11B, 11C
TABLE: 1, 2, 3

07 | SOURCE REMOVAL
Four remedial excavations completed source removal of product remaining within the sub ballast material of the CN main line rail bed
Confirmatory soil samples collected along the walls and base of each excavation
FIGURE: 7B, 10A, 10B, 10C, 11A, 11B, 11C
TABLE: 19, 20, 21, 22, 23

16 | DEBRIS REMOVAL
Removal of woody debris from Oxbow Island

19 | ADDITIONAL SEDIMENT REMOVAL
FIGURE: 10D, 11D
TABLE: 24, 25

SURVEY AND SITE ACTIVITIES

02 | LOCATION & ELEVATION SURVEYS
TABLE: 9

04 | SITE INSPECTIONS
Weekly, bi-weekly and monthly site inspections been conducted through the end of December 2019

WATER MONITORING ACTIVITIES

03 | SURFACE WATER MONITORING & SAMPLING
Conducted until frozen conditions
FIGURE: 6B, 12, 13
TABLE: 4, 5, 6, 7, 8

06 | GROUNDWATER MONITORING & SAMPLING
FIGURE: 9, 14, 15
TABLE: 13, 14, 15, 16, 17, 18

INTRUSIVE INVESTIGATIONS

05 | MAY INTRUSIVE INVESTIGATION
FIGURE: 7A, 8, 10A, 10B, 10C, 10C, 11A, 11B, 11C
TABLE: 9, 10, 11, 12

15 | DECEMBER INTRUSIVE INVESTIGATION
FIGURE: 7B, 8, 10A, 10B, 10C, 10C, 11A, 11B, 11C
TABLE: 9, 10, 11, 12

ASSESSMENTS

08 | PATHWAY EVALUATION & RISK ASSESSMENT

09 | EAST CULVERT CLEANING & CONTAMINANT ASSESSMENT
FIGURE: 10B, 10C, 11B, 11C, 12, 13
TABLE: 5, 6, 24, 25

FISH ACTVITIES

10 | SUMMER FISH SALVAGE

14 | FALL FISH SALVAGE

11 | IN-SITU WATER QUALITY MONITORING & DOCUMENT OBSERVATIONS OF FISH
TABLE: 4

18 | BERM REMOVAL
Removal of the temporary berms
FIGURE: 10D, 11D
TABLE: 21, 22, 24, 25

REPORTED SHEEN

12 | RESPONSE TO CONCERN ON OBSERVED SHEEN
FIGURE: 6B, 12, 13
TABLE: 5, 6

SOIL ACTIVITIES

13 | ADDITIONAL PAH SOIL SAMPLING
FIGURE: 11A, 11B, 11C
TABLE: 3, 22, 25

17 | SOIL & TOPSOIL ON OXBOW ISLAND
Placing subsoil, re-contouring and stockpiling subsoil and topsoil on the oxbow island
FIGURE: 10D, 11D
TABLE: 21, 22, 24, 25

9 Investigation Details and Field Methods

Details of on-Site investigations and field methods are provided in Appendix E. A brief summary of the on-Site activities is provided below:

- Initial response soil sampling; the initial response was from February 16, 2019 to March 18, 2019. Due to the increase in seasonal temperatures and road restrictions within the RM, demobilization from the Site was required on March 18, 2019. Bulk removal of impacted soils was based on visual staining, followed by confirmatory soil sampling submitted for analysis of BTEX, PHC Fractions F1 to F4.
- Location and elevations surveys; documented through Real Time Kinematic (RTK) survey or a hand held global positioning system (GPS). RTK survey for high accuracy with sub-centimetre accuracy was used for: all initial response sampling, borehole and monitoring well locations and elevations, and sediment samples collected during the OMA excavations.
- For portability, a handheld Trimble GPS unit, with sub-meter accuracy was used during the time constrained source removal. Handheld GPS unit with accuracies of +/- 5 to 10 meters were used during sediment sampling and to record Third Party sampling locations.
- Surface water monitoring and sampling; conducted from February until to the end of November 2019.
- Site inspections; weekly, bi-weekly and monthly Site inspections have been conducted at the Site to the end of December 2019.
- May 2019 intrusive investigation; a total of 24 boreholes were drilled from May 1 to May 7, 2019 for the purpose of delineating the extent of the CLB contamination below the rail bed. Six of the boreholes were completed with monitoring wells.
- Ground Penetrating Radar (GPR); on May 4, 2019 from the top of the rail bed along the entire stretch of the derailment Site to help assess the sub-surface conditions.
- Landowner property source removal; on June 2, 2019, previous surficial soil exceedances identified by laboratory results on the landowner's property located north of the rig mat access road along the south side of the CN ROW adjacent to the fence line were excavated.
- Source removal below the CN rail bed; between June 4 and 6, 2019, four excavations were conducted in order to complete source removal within the CN track bed.
- Confirmatory sampling conducted at the extents of excavations and in areas where contamination may have been expected, such as the tank laydown area (visible in the images presented in Appendix A).
- Additional PAH soil sampling; soil sampling was conducted on June 9, August 13 and 14, and on October 16, 2019 to further assess PAH concentrations at the Site.
- Groundwater monitoring and sampling conducted to the end of December 2019. Approximately two weeks following installation, the monitoring wells were developed and where water yields were sufficient, were sampled for analysis of BTEX, PHC Fractions F1 and F2 and PAHs, dissolved metals and/or total metals and routine water quality parameters. A total of 11 groundwater monitoring and sampling events occurred between June and December 2019.

- Pathway evaluation and risk assessment; an initial evaluation of the potential risk to human health and the environment related to PAHs in selected areas at the Site was completed.
- Summer fish salvage; on July 24, 2019, approximately 925 fish were relocated. No mortalities occurred between capture and release, and no federal Species at Risk Act (SARA) listed fish species were encountered.
- In-situ water quality monitoring and documenting observations of fish; weekly monitoring of Dissolved Oxygen (DO) levels within the OMA between the two in-stream berms was conducted from July 24 and December 6, 2019.
- Response to Third Party concern on observed sheen; on October 18, 2019, it was reported to CN that there was a potential oil sheen observed within the OMA. A crew immediately mobilized to the Site to assess the area of concern. Surface water samples were collected on October 18 and 21, 2019 and were submitted for analysis of BTEX and PHC Fractions F1 to F4 along with PAHs.
- Fall fish salvage; due to seasonally declining temperatures, and reflective of the *Fisheries Act* (Section 34.4), the team conducted fish salvage within the OMA in October 2019, ahead of winter freeze-up. CN took action in a collaborative effort with MSD to conduct fish salvage during the week of October 21, 2019.
- Fish salvage continued between October 23 and December 6, 2019, prior to winter freeze-up through 12 subsequent minnow trapping events.
- December 2019 intrusive investigation; a total of 16 boreholes were drilled on December 4 and 5, 2019, 12 of the boreholes were completed with monitoring wells to assess groundwater quality downgradient of MW19-3 and MW19-6. Soil samples were submitted for laboratory analysis of grain size, BTEX, PHC Fraction F1 to F4 and PAHs. Approximately two weeks following installation, the newly installed monitoring wells were developed and where water yields were sufficient, monitoring wells were sampled for analysis of BTEX, PHC Fractions F1 and F2 and PAHs, dissolved metals and/or total metals and routine water quality parameters.
- Oxbow island; in February 2020, subsoil and topsoil were imported to the island inside of the oxbow. Approximately 75% of the subsoil was used to re-contour the oxbow island and the remainder was stockpiled and covered with anchored coco matting. All imported topsoil was stockpiled and covered with anchored coco matting for re-contouring in the summer of 2020.
- Removal of the South and East Berms; on February 18 and 20, 2020, the South and East Berms were removed, respectively, by removal of cobbles and rip rap followed by ripping (loosening) the frost, excavating the berms and removing off-Site.
- Additional sediment removal from within OMA; on February 24 and 25, 2020, four regulatory soil exceedances identified by laboratory results within the OMA were excavated. Additional sediments were excavated at the landowner's request to reach pre-spill conditions as defined by the landowner.

10 Quality Assurance and Quality Control

A Quality Assurance/Quality Control (QA/QC) program was conducted to assess the integrity of the environmental media samples collected and analytical testing results in a manner consistent with the

data quality objectives for the project. The QA/QC procedures for the field samples and laboratory quality control samples are provided in Appendix F.

11 Petroleum Hydrocarbons Results

Due to the volumes of sampling results, the Site has been divided into three sections as shown on Figure 10 and petroleum analytical results are presented on Figures 10A, 10B, 10C and 10D.

11.1 Initial Response Headspace Screening

Initial response soil field screening results are provided in Figures 5A, 5B, 5C and Table 1.

Once bulk removal of CLB, based on visual and olfactory observations in the derailment area, was completed to the extent possible, soil conditions were assessed through field screening using a photoionization detector (PID) and analytical sampling. Samples were collected in a maximum 5 m by 5 m grid (in some areas such as trenches, 2 m by 2 m grids were used). The field screening was conducted at the base of excavated areas, as well as along the boundaries of areas where visually impacted material had been removed. Confirmatory samples were discrete and sampling locations were determined based on field conditions including topography, soil stratigraphy, location relative to previously excavated impacted material, and headspace readings.

Based on the results of the field screening, select soil samples, considered to represent worst-case residual conditions, were submitted for laboratory analysis. Initial soil samples were analyzed for BTEX and PHCs Fractions F1 through F4. All screening and soil sampling locations were surveyed prior to backfilling.

Due to track stability concerns on the railway embankment, some areas required immediate backfilling and compaction. In all other areas, excavations remained open until laboratory results were received. In instances where laboratory analytical results indicated regulatory exceedances, soils were excavated to the next sample location that met the applicable guidelines based on the analytical results as well as elevated soil screening results in proximity to the exceedance location and then resampled for analysis. The same sample identification and an additional suffix “-B” or “-C” was used to identify these samples (for example, sample C-1002W-B is an excavated and resampled location where the initial sample C-1002W was collected and showed an exceedance). In each case where soil was excavated, the confirmatory samples showed that the exceedance was removed.

11.2 Initial Response Soil Sampling Results

Initial response soil sampling results are provided in Figures 10A, 10B, 10C and Table 2.

A total of 488 soil samples, including 41 duplicates were collected between February and March 2019, and were submitted for BTEX and PHC Fractions F1 to F4 analyses. These samples are presented in Table 2 under six categories:

- confirmatory samples collected within the CN ROW;
- clay backfill sourced for stability of rail line embankment following the initial response within CN Right-of-Way;

- declined backfill;
- confirmatory samples collected outside the CN ROW;
- samples from locations that were subsequently excavated or resampled from within the CN ROW; and,
- samples from locations that were subsequently excavated or resampled from outside the CN ROW.

A total of 60 samples collected during the initial response in February and March 2019, including nine duplicates, exceeded the CCME Guidelines. Of these samples, 52 are listed in Table 2 under the Excavated / Resampled Locations. Soil from these locations were excavated during the source removal activities, and confirmatory samples were collected at each location following the source removal. The confirmatory samples are shown under the "Confirmatory Locations" portion of Table 2 with the same sample ID and the suffix "-B" or "-C" (for example, sample C-1002W-B is a confirmatory sample from the location where the initial sample C-1002W was collected and showed an exceedance). In each case where soil was excavated, the confirmatory samples showed that the exceeding material was removed.

A total of 16 samples with PHC exceedances were left in place, given the need to preserve track stability. All but one of these locations occurred on industrial lands, either within the CN ROW or within the RM road allowance. Location WA-SOIL-202, on the adjacent agricultural land, was collected below an isolated area of residual CLB that was removed by sample collection. Permission to remove additional material during Site reclamation has not been granted from the landowner.

Backfill

Backfill soil analytical results for PHC parameters from the source removal program are presented in Table 2.

No backfill was imported for use on adjacent properties or within the oxbow from off-Site locations during the initial response. Fill material required to construct the berms within the oxbow was sourced at the direction of the landowner from the hillside to the west of the West Culvert, and adjacent to the oxbow lake, immediately south of the CN Staging Area outside the boundary of any impacted areas.

Following initial response remediation, clay backfill for the CN rail line was required for track stability. Before placing soil as backfill, a total of six (BG-1 to BG-6) soil samples were submitted for BTEX and PHC Fractions F1 to F4 analysis to confirm that the backfill met applicable guidelines. The soil was placed within the CN ROW along the rail line embankments. The reported concentrations were all below the CCME Guidelines for all samples.

11.3 Intrusive Investigations

May 2019 Overview

The area of investigation showing the borehole/monitoring well locations along with a cross-section are present in the attached Cross-Section Figure 7A.

Following 2019 freshet, an intrusive investigation was conducted to determine the extent of residual impacts from the derailment. The spring intrusive investigation was conducted in May 2019 to

characterize and delineate remaining impacted soils, to identify potential effects on groundwater, and to assess potential impacts within the CN ROW including the East Culvert.

The following scope of work was conducted during the May 2019 intrusive investigation:

- Directional boreholes were advanced, including nine locations on the south embankment and two locations on the north embankment, to investigate the track bed. Locations for initial directional boreholes were chosen based on hot spots identified through previous test pitting on the south embankment.
- Directional boreholes were advanced at approximately every 20 meters along the south side of the Site where the primary flow of CLB during the derailment was observed and where the potential for impacted soils remained within the CN track bed.
- A GPR survey was conducted to assist in determining the depth of the sub ballast material beneath the track bed within the derailment area.
- The directional boreholes were completed at angles ranging from 19 to 49^{o} from horizontal, to investigate soil quality beneath the track bed and to evaluate the underlining clay stratigraphy's potential to act as a confining layer.
- Three vertical boreholes were completed from the top of the track bed to delineate observed impacts in directional borehole BH19-1. Vertical boreholes were completed from the top of the track bed and were advanced to an estimated depth of 3 m below the base of the rail line to a clay base.
- The East culvert was investigated with the advancement of seven boreholes.
- Six monitoring wells were also installed at depths ranging from 6.6 to 8.8 m below the base of the rail line to assess groundwater quality.

May 2019 Observations

The following observations were made during the May 2019 intrusive investigation:

- Based on the drilling investigation and the GPR survey, the buried trestle spans the length of the derailment Site.
- The trestle was contacted during the drilling program at four locations, confirmed by timbers recovered within the core barrel samplers. Lack of visible product at the timbers indicates that the trestle does not appear to act as a preferential pathway for CLB.
- The clay layer beneath sub ballast material that formerly contained CLB acted as a very effective confining layer, with no downward migration of CLB observed within the clay layer.
- Potential soil impacts associated with the derailment in February 2019 were only observed within the coarse-grained materials associated with the sub ballast materials beneath the track bed in one directional borehole BH19-1, and two vertical boreholes completed from the top of the track bed to delineate BH19-1.
- Boreholes were advanced adjacent to both the east and west sides of the East Culvert and at both the culvert inlet (north) and outlet (south) locations as well as on top of the culvert at the south end. No soil impacts were observed.

- A total of six monitoring wells were installed to assess groundwater quality at the Site in relation to the track bed and East Culvert. However, when drilling the boreholes for the monitoring wells, it was observed that most of the natural soil stratigraphy on the south side of the Site was excavated during CLB removal, and was then backfilled to return to an equivalent grade. In doing so, the natural pathways for groundwater recharge have been removed at this location.
- The water level within the OMA versus the west end of the oxbow beyond the south berm, which is no longer connected to the Assiniboine River, was lower indicating no groundwater recharge at the time of investigation.

Based on the May 2019 intrusive investigation, an area of residual CLB was identified in the vicinity of BH19-1 that was confined to the sub ballast material within the track bed by the clay layer below. The excavation area identified for source removal within the track bed based on the combined review of Site imagery collected from the day after the derailment (February 17), the data from the GPR survey and the findings of the intrusive investigation. No CLB or potential soil impacts were identified in the vicinity of the East Culvert.

December 2019 Observations

In December 2019, an intrusive investigation was conducted with the purpose of further assessing groundwater quality downgradient of MW19-3 and MW19-6.

The following scope of work was conducted during the December 2019 intrusive investigation:

- A total of 16 vertical boreholes were advanced, between 4.6 to 7.6 mbgs; and
- Of the boreholes advanced, 12 were completed with monitoring well installations, and the remaining boreholes were backfilled with bentonite chips.

The area of investigation showing the borehole/monitoring well locations along with a cross-section are present in the attached Figures 7B and 8.

The following observations were made during the completion of the December 2019 intrusive investigation:

- Potential soil impacts associated with the derailment in February 2019 were observed within the coarse-grained materials associated with the sub ballast materials in the track bed. This was observed in four boreholes advanced adjacent to the north of the CN ROW; residual CLB was located in areas that could not be excavated given the need to preserve track stability.
- Hydrocarbon impacts in soil potentially associated with the derailment were also observed within MW19-13 to a depth of approximately 2.1 mbgs.

Based on the December 2019 intrusive investigation, an area of residual CLB was identified in the vicinity of MW19-15 and MW19-16. This was confined to the sub ballast material and/or coarse-grained stratigraphy present, with the clay layer below acting as a confining layer. MW19-13 was located in an area where further excavation could not be completed due to track stability concerns, and residual contaminants had to remain within the CN ROW.

A total of 92 soil samples, including ten duplicates, were submitted for BTEX and PHC Fractions F1 to F4 analysis. Seven of the soil samples collected were mirroring samples collected by the third party consultant.

PHC CCME soil exceedances from the 2019 intrusive investigations are summarized below:

Table 11-1. Summary of 2019 Intrusive Investigations PHC CCME Soil Exceedances

Borehole	Exceedance	Excavated or Resampled	Comments
BH19-1	Benzene	Excavated	Within Source Removal Excavation.
BH19-3	Benzene, ethylbenzene, PHC Fraction F2, PHC Fraction F3 and PHC Fraction F4	Excavated	Within Source Removal Excavation.
BH19-7	Benzene	No	Marginal exceedance located within the CN railbed below the main line. Vertically delineated.
BH19-15	Benzene, ethylbenzene and PHC Fraction F2	No	Marginal exceedance located within the CN railbed below the main line.
BH19-16	Benzene, toluene and ethylbenzene	No	Surface sample exceedance within the CN ROW; not representative of the borehole itself.
BH19-17	Benzene, toluene, ethylbenzene, xylenes, PHC Fraction F1, PHC Fraction F2, PHC Fraction F3 and PHC Fraction F4	Excavated	Within Source Removal Excavation.
BH19-18	Benzene, toluene, ethylbenzene, xylenes, PHC Fraction F1, PHC Fraction F2 and PHC Fraction F3	Excavated	Within Source Removal Excavation.
BH19-120	Benzene	No	Marginal exceedances located within the RM road allowance. Vertically delineated.
BH19-130	Benzene	No	Marginal exceedances located within the RM road allowance. Vertically delineated.
MW19-13	Benzene and ethylbenzene	No	Marginal exceedance located within the CN ROW. Vertically delineated.
MW19-15	Benzene and PHC Fraction F2	No	Marginal exceedances located within the RM road allowance. Vertically delineated.
MW19-16	Benzene, toluene, and ethylbenzene	No	Marginal exceedances located within the RM road allowance.

Borehole	Exceedance	Excavated or Resampled	Comments
A* (collected along south of rail)	Benzene, ethylbenzene, PHC Fraction F2, PHC Fraction F3 and PHC Fraction F4	Excavated	Within Source Removal Excavation.
B* (collected along south of rail)	Benzene, toluene, ethylbenzene, PHC Fraction F2, PHC Fraction F3 and PHC Fraction F4	Excavated	Within Source Removal Excavation.
C* (collected along north of rail)	Benzene, toluene, ethylbenzene, xylenes, PHC Fraction F1, PHC Fraction F2, PHC Fraction F3 and PHC Fraction F4	No	Surface sample exceedance within the CN ROW; not representative of the borehole itself.
D* (collected at BH19-15)	PHC Fraction F2	No	Surface sample exceedance within the RM road allowance; not representative of the borehole itself.
E* (collected at BH19-16)	Benzene, toluene and ethylbenzene	No	Surface sample exceedance within the RM road allowance; not representative of the borehole itself.

Note: * - indicates mirrored samples collected from the third party consultant.

The soil analytical results for PHC parameters from the intrusive investigation are presented on Figures 10B and 10C and in Table 11 under three categories – confirmatory samples collected within the CN ROW, confirmatory samples collected outside the ROW, samples from locations that were subsequently excavated or resampled from within the CN ROW and samples from locations that were subsequently excavated or resampled from outside of the CN ROW.

11.4 Source Removal

The completed excavation areas are presented in Figure 7B and the soil analytical results for PHC parameters from the source removal program are presented in Figures 10A, 10B and 10C, and Table 21 and are discussed below in greater detail.

In June 2019, four excavations to complete source removal of product remaining within the sub ballast material of the CN main line rail bed were conducted. Soils containing residual CLB, based on visual observations, were removed for off-Site disposal and discrete confirmatory soil samples were collected along the walls and base of each excavation. A total of 71 soil samples, including seven duplicates, were submitted for BTEX and PHC Fractions F1 to F4 analysis. Three of the soil samples collected mirrored samples collected from the third party consultant.

The following observations were made:

- Excavation of exceeding materials on the landowner's property on the south side of the track, adjacent to the fence line, was completed with no visual impacts observed.
- Residual CLB was observed within the granular sub-ballast material; all observed product was removed.

- Within EX1, water infiltration into the excavation was observed along the northwest wall of the excavation that facilitated the movement of CLB. Additional excavation was completed to remove all visible product.
- Within EX2, water infiltration into the excavation was observed at the southeast quadrant of the excavation. No inflow of product was observed.
- Timbers of the buried trestle were exposed during the excavation; no product was observed in direct contact with the timbers.
- Slot excavation was completed immediately west of the EX1 along the north side of the rail line to assess if any residual impacts remained at the northwest corner of EX1.
- No soil impacts were identified within the slot excavations.
- No groundwater seepage within the slot trenches were observed.

A total volume of approximately 1,507 m^3 of soil was removed from the excavation areas on the south side of the rail line, EX1, EX2, Slot1 and Slot2 for off-Site disposal as non-hazardous waste at the Virden Landfill. The excavations were immediately backfilled.

Excavation 1

A total of 21 soil samples, including two duplicates were submitted for BTEX and PHC Fractions F1 to F4 analysis and the exceedances are summarized below.

Table 11-2. Summary of Excavation 1 PHC CCME Soil Exceedances

Sample ID	Exceedance	Excavated or Resampled	Comments
EX1-3	Benzene	No	The excavation intent was removal of residual CLB within the rail bed. Remaining exceedances are located within the CN ROW, below the main line.
EX1-4	Benzene, toluene, ethylbenzene and PHC Fraction F2	No	
EX1-8	Benzene and toluene	No	
EX1-12	Benzene	No	
EXW1-2	PHC Fraction F2	No	
EXW1-3	Benzene and toluene	No	
EXW1-4	Benzene	No	
WA-EX-1-2*	Benzene	No	
WA-EX1-3*	Benzene and toluene	No	

Note: * - indicates mirrored composite samples collected from the third party consultant.

Excavation 2

A total 18 soil samples, including two duplicates were submitted for BTEX and PHC Fractions F1 to F4 analysis and the exceedances are summarized below.

Table 11-3. Summary of Excavation 2 PHC CCME Soil Exceedances

Sample ID	Exceedance	Excavated or Resampled	Comments
EX2-1	Benzene	No	The excavation intent was removal of residual CLB within the rail bed. Remaining exceedances are located within the CN ROW, below the main line.
EX2-2	Benzene, toluene, ethylbenzene and PHC Fraction F2	No	
EX2-3	Benzene	No	
EX2-4	Benzene, toluene and PHC Fraction F2	No	
EX2-6	Benzene	No	
EX2-8	Benzene and toluene	No	
EXW2-1	Benzene	No	

Slot Trenches

A total of six soil samples, including one duplicate were submitted for BTEX and PHC Fractions F1 to F4 analysis. The reported concentrations were all below the CCME Guidelines with the exception of benzene at DUP9 (duplicate sample of SLOT2-1).

Containment Cells

During the source removal activities, temporary containment cells were constructed to store soil that had been excavated and awaiting transfer to an off-Site disposal facility. Following source removal activities, these cells were scraped and samples were collected to ensure that no residual contamination remained.

A total of seven soil samples, including one duplicate were submitted for BTEX and PHC Fractions F1 to F4 analysis. The reported concentrations were all below the CCME Guidelines, with the exception of benzene at CELL1-1. This will be addressed during Site restoration in the summer of 2020.

Backfill

Backfill to meet CN Engineering standards was sourced locally from Russell Redi-Mix Concrete located approximately 45 km north of the Site. Before placing backfill, a total of six soil samples (BACKFILL 1 to BACKFILL 6) were submitted for BTEX and PHC Fractions F1 to F4 analysis to confirm that the backfill met applicable guidelines. The reported concentrations were all below the CCME Guidelines for all samples.

11.5 Additional Sediment Sampling

Sediment samples were collected from four locations in the area adjacent to the south berm in March 2019; each of the four samples had a guideline exceedance of either benzene or PHC F3. Resampling of these locations was conducted in August and each location was below the applicable guidelines; however, there was a variance in location between the parent sample (C-6042) and the re-sample (C-6042B) when comparing the reference data.

Conditions at the Site changed at sampling locations between March and August. Numerous sample locations that had been initially soil samples due to the removal of sediments in March were now in areas where water had collected by August, reclassifying locations as sediment sample locations.

The analytical results for PHC parameters from the sediment sample locations are presented in Figure 10C and Table 24 under five categories:

- confirmatory samples collected within the CN ROW;
- confirmatory samples collected outside the CN ROW;
- confirmatory samples collected from the South Berm removal outside the CN ROW;
- confirmatory samples collected from the East Berm removal outside the CN ROW; and,
- samples from locations that were subsequently excavated, or resampled from outside the CN ROW.

11.6 Surface Water

Surface water analytical results for PHC parameters are presented on Figure 12 and in Table 5.

Surface water sampling began during the initial response on February 19, 2019 and was conducted almost daily from February 19 to March 6, 2019. Post emergency monitoring, following demobilization (March 18, 2019) and extending through post-freshet conditions, has included three site visits each week to complete the tasks shown below:

PROJECT TASK(S)	RESPONSIBLE PARTY	SCHEDULE
Monitoring for aquatic life, in-situ water quality and imagery/drone flyovers	HDR/Matrix	Weekly Mondays
Analytical surface water sampling and imagery/drone flyovers	KGS	Weekly Wednesdays
Maintenance of Erosion Controls and/or Booms	Tervita	Weekly Fridays

Surface water quality parameters for in-situ monitoring included dissolved oxygen (DO) temperature, pH, conductivity along with laboratory analysis for BTEX and PHC Fractions F1 through F4. The same monitoring and sampling methodology was used by all parties to ensure consistency and comparable data.

Site monitoring transitioning to one inspection per week on April 19, 2019, and in-situ water quality monitoring and analytical surface water sampling completed on alternating weeks by HDR/Matrix and KGS, respectively. A transition to monthly monitoring and surface water sampling was completed following the source removal below the CN rail bed and surface water and groundwater sample collection on June 26, 2019.

Analytical surface water quality data was collected from upstream and downstream of the Site, and within the OMA from March 20, 2019 to November 13, 2019. No samples were collected during the November monitoring event as the surface water was frozen. Results of the monitoring and analytical sampling are summarized below.

A total of 304 surface water samples, including six duplicates were collected between February 19, 2019 and October 22, 2019 and submitted for BTEX and PHC Fractions F1 to F4 analysis and are summarized below.

Table 11-4. Summary of Surface Water PHC CCME Exceedances

Sample ID	Date	Exceedance	Comments
TH-18	March 13, 14 15 and 16, 2019	Toluene	Subsequent samples taken from March 2019 to October 2019 were below criteria or non-detect.
TH-19	March 13, 2019	Toluene	No subsequent samples were collected as declining water levels required adjustment to a deeper surface water location.

11.7 Groundwater

Groundwater data for PHC parameters are presented on Figure 14, and analytical results are provided in Table 14.

A total of 18 monitoring wells were installed across the Site to assess groundwater quality. In May 2019, six monitoring wells were installed and a total of 11 groundwater monitoring and sampling events were completed to assess groundwater quality in the vicinity of these wells. An additional 12 monitoring well installations were completed in December 2019. During the final groundwater monitoring event on December 18, 2019, 10 of the 12 monitoring wells installed in December were dry or had insufficient water to allow for sample collection along with one frozen well and one well with insufficient water to sample from the May 2019 well installations.

A total of 73 groundwater samples, including 11 duplicates were collected from nine locations over time and submitted for BTEX and PHC Fractions F1 to F4 analysis. The reported concentrations were typically below detection limits and summarized below.

Table 111-5. Summary of Groundwater PHC CCME Exceedances

Monitoring Well	Date	Exceedance	Comments
MW19-3	July 24, 2019	Toluene	Subsequent sampling events did not indicate any exceedances.
MW19-6	June 26, 2019	Benzene, toluene and ethylbenzene	These results could be caused by even a trace amount of undissolved CLB. Although further investigation was completed in December 2019 to determine the extents of the impacts, MW19-1 located between MW19-6 and the OMA has shown no detectable hydrocarbon concentrations.
	July 24, 2019	Benzene, toluene and ethylbenzene	
	August 14, 2019	Benzene	
	October 16, 2019	Benzene	
	October 30, 2019	Benzene	
	November 13, 2019	Benzene	
	November 27, 2019	Benzene	
	December 11, 2019	Benzene	
EX2	June 5, 2019	Toluene and ethylbenzene	No subsequent sampling was conducted at this location because the excavation was backfilled

- Benzene, toluene and ethylbenzene exceeded the guidelines at MW19-6 on June 26 and July 24, 2019, and benzene exceeded the guideline on August 14, 2019.
    - As these results could be caused by even a trace amount of undissolved CLB, this well was purged with a vacuum truck on August 7 and 15, 2019.
    - Following this purge, concentrations of detected PHCs at MW19-6 decreased through July, August, September and October with the exception of benzene, which increased in October and November.
    - Benzene exceeded the guideline in MW19-6 on October 16, October 30, November 13, November 27 and December 11, 2019.
- Although further investigation was planned for this area to determine the extents of the impacts, MW19-1 that was positioned between MW19-6 and the OMA has shown no detectable hydrocarbon concentrations.

11.8 Oxbow Island Backfill

Soil analytical results for the backfill and temporary gravel used for safe equipment access are presented in Table 21.

During the week of February 10, 2020, approximately 1223 m^3 of subsoil and 1086 m^3 of topsoil were transported to the disturbed areas of the oxbow island. The subsoil and topsoil was sourced locally from Russell Redi-Mix Concrete. Approximately 75% of the subsoil was used to re-contour the oxbow island. The remainder of the subsoil, along with all of the topsoil was stockpiled and covered with anchored coco matting. Under direction of the landowner, the stockpiled subsoil and topsoil will be spread during the summer of 2020.
In addition to the re-contouring and backfilling activities in February 2020, additional work was conducted to create a path for equipment to access the Site safely. Three samples were also collected: two from the topsoil and subsoil used to backfill the disturbed areas of the oxbow island (WA-SOIL-216 and WA-SOIL-217), and one from the temporary gravel used for safe equipment access (WA-SOIL-218).

Additional backfill samples were collected on September 10, 2019 from the same sourced topsoil and backfill used for the disturbed areas of the oxbow island (TOPSOIL 1 to TOPSOIL 7 and SUBSOIL 1 to SUBSOIL 3). The reported concentrations were all below the CCME Guidelines.

11.9 South and East Berms Removal

The analytical results for PHC parameters from the South and East Berm removal locations are presented on Figures 10C and 10D and in Table 24.

Confirmatory sediment samples were collected from six locations within the oxbow subsequent to the removal of the South Berm and three locations within the oxbow subsequent to the removal of the East Berm in February 2020. There were submitted for analysis of BTEX and PHC Fractions F1 to F4 analysis. The reported concentrations were all below the CCME Guidelines for all samples.

11.10 OMA Excavations

The analytical results for PHC parameters from the OMA excavations confirmatory sediment sample locations are presented on Figures 10B and 10D and in Table 24.

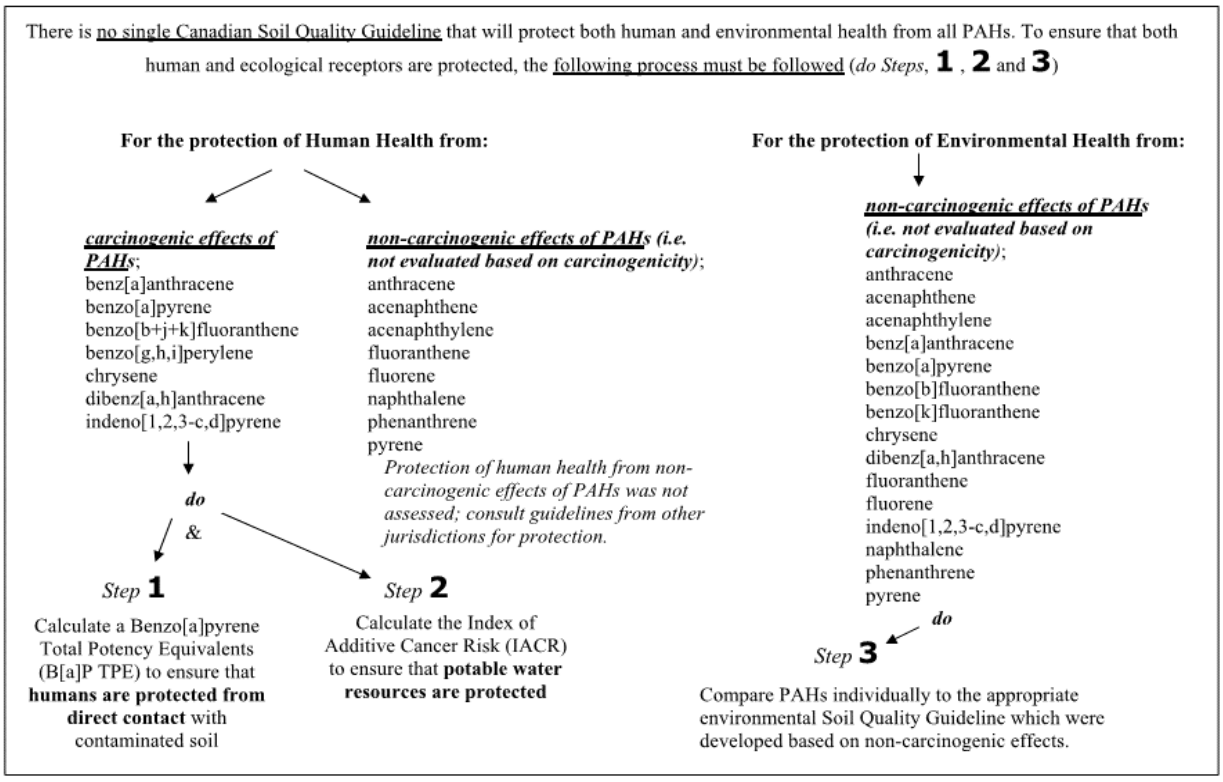
In February 2020, the previous soil exceedances identified on the landowner's property in the OMA were excavated. A total volume of approximately 831 m^3 of sediment was removed and 24 discrete confirmatory soil samples (including two duplicates) were collected from the base of each excavations.

Confirmatory sediment samples from the OMA, collected subsequent to excavation activities on February 24 and 25, 2020 were submitted for analysis of BTEX and PHC Fractions F1 to F4. The reported concentrations were all below the CCME Guidelines for all samples, with the exception of benzene at sample location WA-SED-114.

12 Polycyclic Aromatic Hydrocarbons Results

Due to the large number of sampling results, the Site has been divided into three sections (Area A, Area B and Area C) as shown on Figure 10. PAH analytical results specifically are presented on Figures 11A, 11B, 11C and 11D.

Figure A[4] below illustrates how the Canadian Soil Quality Guidelines for PAHs are to be applied at impacted sites, for PAHs that are considered carcinogenic and non-carcinogenic.



[4] Canadian Council of Ministers of the Environment. 2010. Canadian soil quality guidelines for the protection of environmental and human health: Carcinogenic and Other PAHs. In: Canadian environmental quality guidelines, 1999, Canadian Council of Ministers of the Environment, Winnipeg.

12.1 Initial Response Soil Results

Initial response soil analytical results including PAH exceedances removed/resampled and left in place are provided on Figures 11A, 11B and 11C and in Table 3.

Reanalysis of soil/sediment samples collected during the initial response was completed for samples within the OMA and flood zone. Reanalysis of samples for PAHs was based on laboratory retention, sample submission date, proximity to the oxbow and Site coverage within the OMA and flood zone. Samples were reanalyzed to provide results that would guide additional sampling efforts.

A total of 108 soil samples, including six duplicates collected between February and March 2019 were reanalyzed for PAH concentrations. These samples are presented in Table 3 under four categories and summarized below:

- confirmatory samples collected within the CN ROW;
- confirmatory samples collected outside the CN ROW;
- samples from locations that were subsequently excavated or resampled from within the CN ROW; and,
- samples from locations that were subsequently excavated or resampled from outside the CN ROW.

Table 12-1. Summary of Initial Response PAH CCME Soil Exceedances

Sample ID	Land use	Exceedance	Excavated or Resampled	Comments
N-001	Industrial	Phenanthrene	No	Exceedances noted are located within the CN rail bed. Further excavation could not be completed due to track stability concerns and concerns for the safe operation of the rail line.
N-007	Industrial	Phenanthrene	No	
N-013	Industrial	Naphthalene and phenanthrene	No	
N-031	Industrial	Index of Additive Cancer Risk (IACR), naphthalene and phenanthrene	No	
N-006	Commercial – RM Road Allowance	Naphthalene, phenanthrene and pyrene	No	
N-009	Commercial – RM Road Allowance	Naphthalene and phenanthrene	No	
N-1000 (duplicate of N-009)	Commercial – RM Road Allowance	IACR, benzo(a)anthracene, benzo(k)fluoranthene, indeno(1,2,3-cd)pyrene, naphthalene, phenanthrene and pyrene	No	
N-016	Commercial – RM Road Allowance	Phenanthrene and pyrene	No	
N-021	Commercial – RM Road Allowance	Phenanthrene	No	
N-036	Commercial – RM Road Allowance	IACR	No	

Backfill

Background soil analytical results for PAH parameters from the source removal program are presented in Table 3.

No backfill was imported for use on adjacent properties or within the oxbow from off-Site locations during the initial response. Fill material required to construct the berms within the oxbow was sourced at the direction of the landowner from the hillside west of the West Culvert and adjacent to the oxbow, immediately south of the CN Staging Area outside the boundary of any impacted areas.

Following initial response remediation, clay backfill for the CN rail line was required for track stability. Before placing soil as backfill, six soil samples (BG-1 to BG-6) were collected for PAH analysis to confirm the backfill met applicable guidelines. All the soil that was sourced was placed within the CN ROW along the rail line embankments. The reported concentrations were all below the CCME Guidelines for all samples.

12.2 Intrusive Investigations

The soil analytical results for PAH parameters from the intrusive investigations are presented on Figures 11B, 11C and in Table 12 under three categories:

- confirmatory samples collected within the CN ROW;
- confirmatory samples collected outside the CN ROW; and,
- samples from locations that were subsequently excavated or resampled from within the CN ROW.

A total of 64 soil samples, including seven duplicates were submitted for PAH analysis and a total of two samples were submitted for cresol analysis. Seven of the soil samples mirrored the samples collected by the third party consultant.

May 2019

A total of nine samples were submitted for PAH analysis, and two samples submitted for cresol analysis as part of the May 2019 intrusive investigation. PAH CCME soil exceedances from the May 2019 intrusive investigations are summarized below:

While drilling borehole BH19-3-6, the split-spoon sampler was pushed through a trestle timber. Suspect creosote was observed on pieces of timber within the split-spoon. Soil sample BH19-3-6 POLE was collected surrounding the timbers within the split-spoon sampler as a worst-case sample and analyzed for PAHs along with cresols and phenol. A soil sample from below the contacted trestle member was also analyzed, with no carcinogenic PAHs detected. One non-carcinogenic exceedance for naphthalene was observed in the sample interval immediately below the contacted trestle member (BH19-3-7). Soil from this location was later excavated as part of the source removal program (see Section 12.4).

An additional seven soil samples were collected from within the CN ROW during the spring intrusive investigation as split-samples chosen by the landowner's Third Party Consultant. All samples were selected based on the presence of suspected impacts associated with CLB and all samples exceeded

at least one applicable PAH guideline. The exceedances were for acenaphthylene, fluorene, naphthalene, and/or phenanthrene, with six samples exceeding the IACR by up to 60 times. Soil from four of these additional sample locations was later excavated as part of the source removal program (see Section 12.4).

December 2019

During the December 2019 intrusive investigation, a total of 55 samples including seven duplicates were submitted for PAH analysis.

PAH CCME soil exceedances from the 2019 intrusive investigations are summarized below:

Table 12-2. Summary of 2019 Intrusive Investigations PAH CCME Soil Exceedances

Borehole	Exceedance	Excavated or Resampled	Comments
A* (collected adjacent to the south of rail)	IACR, B[a]P TPE Total Potency Equivalents, acenaphthene, fluorene, naphthalene and phenanthrene	Excavated	Within Source Removal Excavation.
B* (collected adjacent to the south of the rail)	IACR, B[a]P TPE Total Potency Equivalents, acenaphthene, fluorene, naphthalene and phenanthrene	Excavated	Within Source Removal Excavation.
C* (collected adjacent to the north of the rail)	IACR, acenaphthene, fluorene, naphthalene and phenanthrene	No	Surface sample exceedance within the CN ROW; not representative of the borehole itself.
D* (collected at BH19-15)	IACR, acenaphthene, fluorene, naphthalene and phenanthrene	No	Surface sample exceedance within the RM road allowance; not representative of the borehole itself.
E* (collected at BH19-16)	Phenanthrene	No	Surface sample exceedance within the RM road allowance; not representative of the borehole itself.
F* (collected at BH19-17)	IACR, acenaphthene, fluorene, naphthalene and phenanthrene	Excavated	Within Source Removal Excavation.
G* (collected at BH19-18)	IACR, acenaphthene, fluorene, naphthalene and phenanthrene	Excavated	Within Source Removal Excavation.
BH19-3-6 POLE	Benzo(a)anthracene, benzo(a)pyrene, benzo(k)fluoranthene, dibenz(a,h)anthracene, indeno(1,2,3-cd)pyrene, IACR, B[a]P TPE Total Potency Equivalents, acenaphthene, anthracene, fluoranthene, fluorene, naphthalene and phenanthrene	Excavated	Within Source Removal Excavation.
BH19-3-7	Naphthalene	Excavated	Within Source Removal Excavation.
BH19-110	Naphthalene	No	Marginal exceedance located within the RM road allowance. Vertically delineated.
BH19-120	IACR, naphthalene and phenanthrene	No	Marginal exceedance located within the RM road allowance. Vertically delineated.
BH19-130	Acenaphthene, fluorene and naphthalene	No	Marginal exceedance located within the RM road allowance. Vertically delineated.

Borehole	Exceedance	Excavated or Resampled	Comments
MW19-9	IACR, acenaphthene, fluorene, naphthalene and phenanthrene	No	Marginal exceedance located within the CN ROW.
MW19-10	IACR	No	Marginal exceedance located within the CN ROW.
MW19-11	Naphthalene and phenanthrene	No	Marginal exceedance located within the CN ROW.
MW19-13	Naphthalene and phenanthrene	No	Marginal exceedance located within the CN ROW. Vertically delineated.
MW19-15	IACR, naphthalene and phenanthrene	No	Marginal exceedances located within the RM road allowance. Vertically delineated.
MW19-16	IACR, naphthalene and phenanthrene	No	Marginal exceedances located within the RM road allowance.

Note: * - indicates mirrored samples collected from the third party consultant.

12.3 Source Removal

The soil analytical results for PAH parameters from the source removal program are presented on Figures 11B, 11C and in Table 22, and are discussed below in greater detail.

In June 2019, four excavations were conducted to complete source removal within the CN track bed. Soils that were impacted based on visual or olfactory observations were excavated for disposal and discrete confirmatory soil samples were collected along the walls and base of each excavation. A total of 71 soil samples, including seven duplicates, were submitted for PAH analysis. Three of the soil samples collected mirrored samples collected from the third party consultant.

Excavated soils were transported off-Site and disposed of at an off-Site facility. The excavations were immediately backfilled.

Excavation 1

A total of 21 soil samples, including two duplicates were submitted for PAH analysis and summarized below. Three of the soil samples collected were duplicate samples collected from the third party consultant.

Table 12-3. Summary of Excavation 1 PAH CCME Soil Exceedances

Sample ID	Exceedance	Excavated or Resampled	Comments
EX1-4	Naphthalene and phenanthrene	No	The excavation intent was removal of residual CLB within the rail bed. Remaining exceedances are located within the CN ROW, below the main line.
EX1-8	Naphthalene and phenanthrene	No	
EXW1-2	Naphthalene and phenanthrene	No	
EXW1-3	Naphthalene and phenanthrene	No	
EXW1-4	Naphthalene and phenanthrene	No	

Excavation 2

A total of 18 soil samples, including two duplicates were submitted for PAH analysis and are summarized below.

Table 12-4. Summary of Excavation 2 PAH CCME Soil Exceedances

Sample ID	Exceedance	Excavated or Resampled	Comments
EX2-2	Naphthalene and phenanthrene	No	The excavation intent was removal of residual CLB within the rail bed. Remaining exceedances are located within the CN ROW, below the main line.
EX2-3	IACR, naphthalene and phenanthrene	No	
EX2-4	IACR, acenaphthene, fluorene, Naphthalene and phenanthrene	No	
EX2-6	Naphthalene and phenanthrene	No	
EX2-8	IACR and phenanthrene	No	
EXW2-1	Naphthalene and phenanthrene	No	
EXW2-3	Phenanthrene	No	

Slot Trenches

A total of six soil samples, including one duplicate were submitted for PAH analysis. The reported concentrations were all below the CCME Guidelines with the exception of naphthalene at SLOT1-2.

Containment Cells

A total of seven soil samples, including one duplicate were submitted for PAH analysis and are summarized below.

Table 12-5. Summary of Containment Cells PAH CCME Soil Exceedances

Sample ID	Exceedance	Excavated or Resampled	Comments
CELL1-1	Naphthalene	No	The soils at these locations will be resampled in the summer of 2020. Any exceedances that remain will be removed during Site restoration.
CELL1-2	Naphthalene	No	
CELL2-2	Naphthalene	No	
CELL3-1	Naphthalene	No	
CELL3-2	Benzo(a)anthracene, IACR, naphthalene, phenanthrene and pyrene	No	

Backfill

Backfill meeting CN Engineering standards was sourced locally from Russell Redi-Mix Concrete. Before placing the backfill, a total of six soil samples were submitted for PAH analysis to confirm the backfill met applicable guidelines. The reported concentrations were all below the CCME Guidelines for all samples.

12.4 Background Sampling – June 2019

The results of this analysis are presented in Table 22.

Background PAH soil sampling was also conducted on June 9, 2019 to determine the chemical characteristics of the native soils in the vicinity of the Site. Ten background locations (19-BG1 through 19-BG10) were selected from areas beyond where Site activities occurred. At each sampling location, one discrete soil sample was collected from surface to 0.15 mbgs using a shovel or hand auger and were submitted for analysis of PAHs. A total of 12 soil samples, including two duplicates were submitted for PAH analysis. The reported concentrations were all below the CCME Guidelines for all samples.

12.5 Additional Soil and Sediment Sampling

The soil analytical results for PAH parameters from the additional PAH samples are presented in Tables 3, and 22 and Figures 11A, 11B and 11C. PAH values in sediment samples are presented in Table 25 and on Figures 11A, 11B and 11C.

During the initial response, confirmatory analyses were completed on soil samples, rather than sediments, as all sediments were removed, excluding the area adjacent to the south berm that could not be fully excavated due to groundwater infiltration. The requested laboratory analysis focused on benzene, toluene, ethylbenzene and xylenes (BTEX) and petroleum hydrocarbon (PHC) Fractions F1 through F4. Laboratories are able to generate results for these parameters quickly, helping the team to expedite the removal of impacted media. Following the initial response, PAHs were assessed to ensure that the OMA and flood zone was remediated such that no unacceptable level of risk to human health, safety or to environment remained, as per the LoD.

Following 2019 freshet, sample locations that were originally treated as soils, were sampled as sediments due to an increase in water level. Results from these locations were compared against both sediment and soil quality guidelines to be conservative.

Soil Sampling – June 2019

An additional PAH soil sampling program was conducted on June 9, 2019, during which samples were collected from the CN ROW south of the rail line and the OMA. A total of 22 discrete soil samples, including two duplicates were submitted for PAH analysis.

Samples were collected in a grid pattern of approximately 5 m by 10 m to cover all exceedance locations identified during the initial response. At each sampling location, two discrete soil samples were collected; one from the surface and one from surface to 0.15 mbgs using a shovel or hand auger with the exception of four samples collected from surface sediment adjacent to the OMA surface water. Samples were submitted for analysis of PAHs and exceedances are summarized below.

Table 12-6. Summary of Additional June 2019 Soil Sampling PAH CCME Exceedances

Sample ID	Exceedance	Excavated or Resampled	Rational
WA-SOIL-211-2	Naphthalene	No	To be resampled in the summer of 2020.

Sample ID	Exceedance	Excavated or Resampled	Rational
NSERIESDIL-2	IACR, benzo(a)anthracene, benzo(k)fluoranthene, indeno(1,2,3-cd)pyrene and pyrene	No	To be resampled in the summer of 2020.
19-H1-002	Naphthalene	Resampled	Assess natural attenuation.
19-H2-002	Naphthalene and phenanthrene	Resampled	Assess natural attenuation.
19-H1-002B	Phenanthrene	No	To be resampled in the summer of 2020.
19-H4-001	IACR and phenanthrene	Resampled	Assess natural attenuation.
19-H5-001	Phenanthrene	Resampled	Assess natural attenuation.
DUP10 (duplicate of 19-H6-001)	Phenanthrene	Resampled	Assess natural attenuation.
19-H6-002	Phenanthrene	Resampled	Assess natural attenuation.

Sediment Sampling – August 2019

Sediment sampling was conducted on August 13 and 14, 2019 within the OMA following the re-establishment of sediments following freshet and seasonal overland flow. A total of 29 sediment samples, including two duplicates were submitted for PAH analysis, these were taken from the surface of the sediment layer to approximately 0.1 mbgs. PAH exceedances are summarized below.

Table 12-7. Summary of August 2019 Sediment PAH CCME Exceedances

Sample ID	Exceedance	Excavated or Resampled	Rational
WA-SED-105	Pyrene	Resampled	Soil at the locations of these exceedances were excavated or resampled in February 2020 (section 12.11).
WA-SED-106	Acenaphthene and 2- methylnaphthalene	Resampled	
WA-SED-107	Benzo(a)anthracene, benzo(a)pyrene, chrysene, dibenz(a,h)anthracene, IACR, acenaphthene, anthracene, fluoranthene, fluorene, phenanthrene and pyrene	Resampled	
WA-SED-108	Benzo(a)anthracene, dibenz(a,h)anthracene,	Resampled	
WA-SED-111	Dibenz(a,h)anthracene	Resampled	
WA-SED-112	Acenaphthene	Resampled	

Any residual concentrations of total PAHs, below the regulatory guidelines that have been met on-Site within soils or sediments, will attenuate over time in the environment, thereby reducing further.

Soil and Sediment Sampling – October 2019

Sediment and soil resampling was completed during the week October 14, 2019 to further evaluate potential risks at the Site and determine if natural attenuation would be a viable management strategy to propose to MSD for residual PAHs at the Site. A total of 36 locations, 18 sediment locations within the OMA, 14 soil locations within the CN ROW and/or the flood zone, and four soil locations on the north side of the rail line between the CN ROW and the public road allowance, were located by a KGS surveyor and resampled. PAH exceedances of the resampled locations are summarized below.

Table 12-8. Summary of October 2019 Soil and Sediment PAH CCME Exceedances

Sample ID	Exceedance	Excavated or Resampled	Comments
WA-SED-105B	Benzo(a)anthracene, benzo(a)pyrene, chrysene, IACR, acenaphthene, fluoranthene, phenanthrene and pyrene	Excavated	Removed in March 2020.
WA-SED-110B	Benzo(a)anthracene, benzo(a)pyrene, chrysene, dibenz(a,h)anthracene, IACR, acenaphthylene, fluoranthene and pyrene	Excavated	
C-2136B	Naphthalene and phenanthrene	Excavated	
C-2600	Phenanthrene and pyrene	Excavated	

Laboratory analytical results identified that PAH concentrations had naturally attenuated and that of the 36 resampled locations, only four (WA-SED-105B, WA-SED-110B, C-2136B and C-2600), still exceeded the applicable PAH guidelines. While these exceedances were considered to represent negligible risk and would likely be acceptable for regulatory closure, due to Third Party concerns an excavation at these locations was scheduled during the in-stream berm removal activities.

Soil and sediment samples were collected at the same locations based on RTK survey for high accuracies (centimetre-level positioning). Due to the nature of the contaminant, the use of composited samples or other techniques to gather a more statistically significant data set are inappropriate; therefore, discrete sampling was completed in the field using field observations, previous data, and best professional judgment.

PAHs are susceptible to attenuation by a number of naturally occurring processes, including biodegradation, dispersion/dilution, sorption, volatilization and/or chemical reactions. Where PAHs in soil or sediment exceeded the applicable guidelines, additional sampling was conducted following the passage of time, which would allow for attenuation to occur. Data were collected to help understand the distribution of residual PAHs across the Site and determine the extent of any remaining guideline exceedances.

12.6 Initial Pathway Evaluation and Risk Assessment

An initial pathway evaluation and risk assessment for potential risk to human health and the environment related to the presence of PAHs for the OMA and flood zone was completed in August 2019. The final, detailed assessment is included as part of this ESA. Based on the initial risk assessment, 14 locations within the vicinity of the OMA were identified for further sampling and assessment.

12.7 Surface Water

Surface water analytical results for PAH parameters are presented on Figure 13 and in Table 6.

A total of 109 surface water samples, including six duplicates were collected between May 2, 2019 and October 22, 2019 and were submitted for PAH analysis and are summarized below.

Table 12-9. Summary of Surface Water PAH CCME Exceedances

Sample ID	Culvert	Date	Exceedance	Rational
AFTER CULVERT	East Culvert	August 28, 2019	Naphthalene	Resampled in October 2019.
MID CULVERT	East Culvert	August 28, 2019	Pyrene	Culvert cleaned with surface water and sediment removed.
MID CULVERT 2	East Culvert	August 28, 2019	Anthracene, fluoranthene and pyrene	Culvert cleaned with surface water and sediment removed.

The East Culvert was blocked to alleviate surficial runoff concerns during freshet, and as the East Culvert was to remain in place, it was unblocked on August 28, 2019. Unblocking of the East Culvert was completed in stages. Absorbent booms were placed at the south, downgradient end of the East Culvert. Pooled surface water on the north side of the East Culvert at the RM road was removed using a vacuum truck followed by the plywood and the clay plug. Confined space specialists then entered the East Culvert to monitor the atmosphere to ensure safe entry for HDR personnel. HDR entered the north end of the East Culvert to collect sediment samples, surface water samples and video from inside the culvert. Subsequent to sampling and inspection activities, a vacuum truck was used to remove surface water and sediment within the culvert for off-Site disposal. HDR then re-entered the East Culvert to inspect, collect additional sediment and surface water samples and video. The inside of the culvert was then cleaned with a degreasing agent to remove any observed oil. Prior to unblocking the south, downgradient end of the East Culvert, HDR collected a sediment and surface water sample from the discharge point of the East Culvert to ensure that PAHs in soils were delineated in this area. The plug at the south end of the East Culvert was then removed followed by the absorbent booms that were initially placed.

12.8 Groundwater

Groundwater analytical results for PAH parameters are presented in on Figure 15 from that last date that each well could be sampled with analytical results provided in Table 15.

A total of 18 monitoring wells were installed across the Site to assess groundwater quality. In May 2019, six monitoring wells were installed, and a total of 11 groundwater monitoring and sampling events were completed to assess groundwater quality in the vicinity of these wells. An additional 12 monitoring well installations were completed in December 2019. During the final groundwater monitoring event on December 18, 2019, 10 of the 12 monitoring wells installed in December were dry or had insufficient water to allow for sample collection, along with one frozen well and one well with insufficient water to sample from the May 2019 well installations. A total of 71 groundwater samples, including 11 duplicates were collected from nine locations and submitted for PAH analysis.

Samples collected from MW19-4 and MW19-5 between June and December 2019, as well as a groundwater sample collected from Excavation 2 (EX2) on June 5, 2019 did not indicate exceedances of PAH guidelines. Other wells had intermittent exceedances of the CCME Guidelines for PAHs as described below:

Table 12-10. Summary of Groundwater PAH CCME Exceedances

Monitoring Well	Date	Exceedance	Comments
MW19-1	June, 26, 2019	Fluoranthene and pyrene	There have been no PAH exceedances reported from the most recent sampling events (5 events between October and December 2019).
	August 21, 2019	Pyrene	
	September 18, 2019	Pyrene	
MW19-2	June 5, 2019	Fluoranthene	There have been no PAH exceedances reported from the most recent sampling events (6 events September through December 2019).
	June 26, 2019	Fluoranthene and pyrene	
	July 24, 2019	Fluoranthene and pyrene	
	August 14, 2019	Fluoranthene and pyrene	
	August 21, 2019	Pyrene	
MW19-3	June 26, 2019	Anthracene and naphthalene	Exceedances of anthracene, fluoranthene, naphthalene, phenanthrene and/or pyrene have been reported between June 26 and November 13, 2019. Concentrations of these parameters have fluctuated between June and November 2019.
	August 14, 2019	Anthracene and naphthalene	
	August 21, 2019	Anthracene, fluoranthene, naphthalene, phenanthrene and pyrene	
	September 18, 2019	Naphthalene	
	October 16, 2019	Naphthalene	
	October 30, 2019	Naphthalene	
	November 13, 2019	Fluoranthene, naphthalene, phenanthrene and pyrene	
MW19-6	July 24, 2019	Anthracene, fluoranthene and pyrene	Exceedances of anthracene, fluoranthene and/or pyrene were reported in July and August 2019. The exceedances were not always mirrored in the duplicate samples (specifically, the July 24 samples for fluoranthene, and the August samples for anthracene). This suggests that concentrations could be caused by the presence of small globules of CLB and is not necessarily indicative of widespread dissolved CLB in the groundwater. There were no PAH exceedances in the most recent sampling events (September through December 2019) with the exception of a single benzo(a)anthracene result from a November 13, 2019 sample.
	August 14, 2019	Anthracene	
	August 21, 2019	Anthracene	
	November 13, 2019	Benzo(a)anthracene	

12.9 Oxbow Island Backfill

During the week of February 10, 2020, approximately 1223 m^3 of subsoil and 1086 m^3 of topsoil were transported to the disturbed areas of the oxbow island. The subsoil and topsoil were supplied by

Russell Redi-Mix Concrete. Approximately 75% of the subsoil was used to re-contour the oxbow island and the remainder was stockpiled and covered with anchored coco matting. All the topsoil was stockpiled and covered with anchored coco matting. Under direction of the landowner, the stockpiled subsoil and topsoil will be spread during the summer of 2020.

In addition to the re-contouring and backfilling activities in February 2020, additional work was conducted at this time to create a path for equipment to access the Site safely. Three samples were collected: two samples were collected from the topsoil and subsoil used to backfill the disturbed areas of the oxbow island (WA-SOIL-216 and WA-SOIL-217), and one sample was collected from the temporary gravel used for safe equipment access (WA-SOIL-218), which was sourced from the reminder of backfill that was stockpiled along the CN ROW from the source removal program.

Additional backfill samples were collected on September 10, 2019 from the same sourced topsoil and backfill used for the disturbed areas of the oxbow island (TOPSOIL 1 to TOPSOIL 7 and SUBSOIL 1 to SUBSOIL 3). The reported concentrations were all below the CCME Guidelines for PAHs.

Soil analytical results for the backfill and temporary gravel used for safe equipment access are presented in Tables 22.

12.10 South and East Berms Removal

Confirmatory sediment samples were collected from six locations within the oxbow subsequent to the removal of the South Berm. Three locations within the oxbow were also sampled after the removal of the East Berm on February 18 and 20, 2020. These samples were submitted for analysis of PAHs.

The reported concentrations were below the CCME Guidelines for all samples with the exception of pyrene at WA-SED-214 collected from the base of the former East Berm.

The analytical results for PAH parameters from the South and East Berm removal sediment sample locations are presented on Figures 11C and 11D and in Table 25.

12.11 OMA Excavations

The analytical results for PAH parameters from the OMA excavations confirmatory sediment sample locations are presented on Figures 11B and 11D and in Table 25.

In February 2020, previous soil exceedances identified by laboratory results on the landowner's property located in the bed of the OMA were excavated. A total volume of approximately 831 m^3 of sediment was removed from the excavation areas and 24 discrete confirmatory soil samples (including two duplicates) were collected from the base of the excavations.

Confirmatory sediment samples collected from within the OMA subsequent to excavation activities on February 24 and 25, 2020 were submitted for analysis of PAHs and exceedances are summarized below.

Table 12-11. Summary of February 2020 OMA PAH CCME Sediment Exceedances

Sample ID	Exceedance	Excavated or Resampled	Rational
WA-SED-105C	Acenaphthene, 2-Methylnaphthalene, naphthalene and phenanthrene	No	Resampling to be conducted in the summer of 2020.
WA-SED-114B	Phenanthrene	No	
WA-SED-115B	Acenaphthene	No	
WA-SED-220	Benzo(a)anthracene, benzo(a)pyrene, acenaphthene, acenaphthylene, fluoranthene, phenanthrene and pyrene	No	

13 Other Parameter Results

13.1 Grain Size Analysis

Grain size analytical results are presented in Table 10.

A total of 16 soil samples collected from the Site were submitted for grain size analysis. Two of the samples were classified as coarse-grain size and 14 samples as fine-grained.

The analytical results indicated the imported topsoil and subsoil samples collected on September 10, 2019 were classified as fine-grained soil and topsoil textured as primarily loam and the subsoil textured as clay loam.

13.2 Landfill Leachability

The analytical results for landfill leachability parameters are summarized in Table 20.

In order to support disposal of the impacted soils at an offsite facility, a total of 25 soil samples were submitted for analysis of landfill leachability parameters. All results were below the available guidelines under the MSD Dangerous Goods Handling and Transportation Act.

13.3 Salinity

13.3.1 Backfill for Initial Response

The soil analytical results for salinity parameters from the backfill used for the initial response are presented in Table 23.

A total of three soil samples, were submitted for laboratory analysis of salinity parameters. The reported concentrations were all below the AEP Alberta Tier 1 Salt Remediation Guidelines for all samples with the exception of Sodium Adsorption Ratio (SAR) collected from the declined backfill samples (G100 and 4000-FILL).

13.3.2 Landowner Property Source Removal

The soil analytical results for salinity parameters from the source removal program are presented in Table 23.

A total of seven soil samples, including one duplicate were submitted for analysis of salinity parameters on June 2, 2019. The reported concentrations were below the AEP Alberta Tier 1 Salt Remediation Guidelines Alberta Tier 1 Soil and Groundwater Remediation Guidelines, with the exception of soluble conductivity in three samples, soluble pH in three samples and SAR in five samples.

13.3.3 Backfill for Source Removal

The soil analytical results for salinity parameters from the backfill used for the source removal are presented in Table 23.

A total of six soil samples, were submitted for laboratory analysis of salinity parameters. The reported concentrations were all below the AEP Alberta Tier 1 Salt Remediation Guidelines for all samples.

13.3.4 Oxbow Island Backfill and Temporary Gravels

The soil analytical results for salinity parameters from the backfill and temporary gravel samples are presented in Table 23.

A total of 13 soil samples were submitted for analysis of salinity parameters. The reported concentrations were below the AEP Alberta Tier 1 Salt Remediation Guidelines for all samples, with the exception of soluble conductivity collected from WA-SOIL-217, which was collected from the subsoil used for the oxbow island.

13.4 Surface Water

13.4.1 Field Parameters

Field parameters are presented in Table 4.

Field parameters including temperature, pH, EC and DO were measured at five locations within and beyond the monitoring area as well as individual sampling locations using a YSI multimeter. The pH values ranged from 7.27 to 11.32. The field measured EC values ranged from 0.27 to 7.88 mS/cm and the DO values ranged from 4.82 to 20.0 mg/L.

13.4.2 Routine and Nutrients

Surface water analytical results for routine and nutrients are presented in Table 7.
A total of eight surface water samples were submitted for routine parameters and nutrient analysis between April and May 2019. All reported concentrations were below the CCME Guidelines in all samples.

13.4.3 Total Metals

Surface water analytical results for total metals are presented in Table 8.

A total of eight surface water samples were submitted for total metals analysis between April and May 2019.

All reported concentrations were below the CCME Guidelines in all samples, with the exception of arsenic (n=2), copper (n=2), iron (n=7), selenium (n=2), and zinc (n=2). The exceedances were not specific to a single location, and are not parameters that are associated with the contaminants of concern associated with the derailment. It is likely that the metals are naturally occurring in the surface water in this region.

13.5 Groundwater

13.5.1 Field Parameters

Field parameters including temperature, pH, EC, and DO were measured during purging and prior to sample collection at each well. These measurements are presented in Table 13.

Between June and December 2019 groundwater temperatures ranged from 1.4 to 26.2 °C, pH ranged from 5.66 to 8.48, electrical conductivity ranged from 2.34 to 26.2 mS/cm, and dissolved oxygen concentrations ranged from 0.66 to 10.19 mg/L.

13.5.2 Routine and Nutrients

Surface water analytical results for routine and nutrients are presented in Table 18.

A total of 54 groundwater samples were submitted for routine parameters and nutrient analysis between June and December 2019. There were exceedances of Total Dissolved Solids (TDS), dissolved chloride, dissolved sulphate, dissolved nitrate, and dissolved nitrite in these samples.

TDS is a measure of the dissolved substances in water, such as chloride, sulphate, nitrate, nitrite, and other parameters listed in Table 18. Therefore, the concentrations will typically have a direct correlation, as seen in particular in the respective concentrations of dissolved chloride and dissolved sulphate with respect to TDS for the Site.

- TDS exceeded the CCME Water Quality Guidelines for the most stringent of Protection of Aquatic Life or Agriculture (3,000 mg/L) in all wells except MW19-3. The TDS values were measured as high as 27,000 mg/L (in monitoring well MW19-5 in November 2019).
- Dissolved nitrate was above the guideline (13 mg/L) in MW19-1 (during five sampling events) and MW19-5 (in November 2019). Nitrate concentrations ranged between non-detect to 23 mg/L, measured in MW19-1 in November 2019.
- Dissolved chloride was above the guideline (120 mg/L) in every monitoring well, with concentrations ranging from 110 mg/L to 2,200 mg/L. The highest concentrations were encountered in MW19-5 and MW19-14.
- Dissolved sulphate was above the guideline (1,000 mg/L) in every monitoring well, with concentrations ranging from 590 mg/L to 16,000 mg/L. The highest concentrations were encountered in MW19-5 and MW19-14.
- Dissolved nitrite was above the guideline (0.06 mg/L) in MW19-1 (earlier sampling events, but not in November or December 2019), MW19-4 (one sampling event only), and MW19-5 (only

sampled in July and November). Concentrations of nitrite ranged from below detection limits to 0.99 mg/L.

The guidelines for TDS (3,000 mg/L) and sulphate (1,000 mg/L are related to the protection of livestock. Groundwater is not sourced from the Site to provide drinking water to livestock, and groundwater that infiltrates the oxbow is not significantly affecting the TDS or sulphate levels of the surface water at this location as demonstrated by surface water sampling.

The guidelines for chloride (120 mg/L), nitrate (13 mg/L), and nitrite (0.06 mg/L) are governed by the protection of freshwater aquatic life over long term. Elevated chloride levels can affect the health of food sources (aquatic plants) and can adversely affect other aquatic life[5]. Elevated concentrations of nitrate and nitrite can cause direct stress to aquatic life such as fish by affecting their physiology[6]. The guideline for short-term exposure to nitrate (for freshwater aquatic organisms) is 550 mg/L. The highest measured concentration of nitrate in groundwater on the Site was 23 mg/L. Given the nearest surface waterbody supporting aquatic life (the oxbow) showed concentrations of chloride, nitrate, and nitrite that meet the guidelines, these elevated concentrations in groundwater are not considered to be negatively impacting surface water quality.

13.5.3 Dissolved Metals

Groundwater analytical results for dissolved metals are presented in Table 16.

A total of 50 groundwater samples were submitted between June and December 2019 from six monitoring well locations for dissolved metals. Water from monitoring well MW19-5 was only analyzed for dissolved metals once because of insufficient water volume in the well; the priority was given to analysis of PHC and PAHs. There were CCME Guideline exceedances are summarized below.

Table 13-1. Summary of Groundwater Dissolved Metals CCME Exceedances

Monitoring Well	Date	Dissolved cadmium	Dissolved copper	Dissolved iron	Dissolved selenium	Dissolved uranium	Dissolved zinc
MW19-1	26-Jun-19	X	X	X	X	X	X
	24-Jul-19	X	X	X	X	X	X
	14-Aug-19	X	X	X	X	X	X
	21-Aug-19	-	-	X	-	-	-
	18-Sep-19	✓	X	X	X	X	X
	16-Oct-19	X	X	X	X	X	X
	30-Oct-19	X	X	X	X	X	X
	13-Nov-19	X	X	X	X	X	X
	27-Nov-19	✓	X	✓	X	X	X
	11-Dec-19	✓	X	X	X	X	✓

[5] United States Environmental Protection Agency, Ambient Water Quality Criteria for Chloride, 1988. EPA 440/5-88-001.

[6] Julio A. Camargo, Alvaro Alonso, Annabella Salamanca. Nitrate toxicity to aquatic animals: a review with new data for freshwater invertebrates. Published in Chemosphere 58 (2005) 1255-1267.

Monitoring Well	Date	Dissolved cadmium	Dissolved copper	Dissolved iron	Dissolved selenium	Dissolved uranium	Dissolved zinc
MW19-2	26-Jun-19	X	X	X	X	X	X
	24-Jul-19	X	✓	X	✓	X	X
	14-Aug-19	X	X	X	✓	X	X
	21-Aug-19	X	X	X	✓	X	X
	18-Sep-19	X	✓	X	✓	X	X
	16-Oct-19	✓	✓	X	✓	X	X
	30-Oct-19	✓	✓	X	✓	X	X
	13-Nov-19	✓	✓	X	✓	X	X
	27-Nov-19	X	✓	✓	✓	X	X
	11-Dec-19	X	✓	X	✓	X	✓
MW19-3	26-Jun-19	✓	✓	✓	✓	✓	✓
	24-Jul-19	✓	✓	✓	✓	✓	✓
	14-Aug-19	✓	✓	✓	✓	✓	✓
	21-Aug-19	✓	✓	✓	✓	✓	✓
	18-Sep-19	✓	✓	X	✓	✓	✓
	16-Oct-19	✓	✓	✓	✓	✓	✓
	30-Oct-19	✓	✓	X	✓	✓	✓
	13-Nov-19	✓	✓	X	✓	✓	X
	27-Nov-19	✓	✓	X	✓	✓	✓
	11-Dec-19	✓	✓	X	✓	✓	✓
MW19-4	26-Jun-19	X	X	X	X	X	X
	24-Jul-19	X	X	X	X	X	✓
	14-Aug-19	X	X	X	X	X	✓
	21-Aug-19	X	X	X	X	X	✓
	18-Sep-19	X	X	X	X	X	✓
	16-Oct-19	X	X	X	X	X	X
MW19-5	26-Jun-19	X	X	X	X	X	X
MW19-6	26-Jun-19	X	X	X	X	X	X
	24-Jul-19	X	X	✓	X	X	✓
	14-Aug-19	X	X	✓	X	X	✓
	21-Aug-19	X	X	✓	✓	X	✓
	18-Sep-19	✓	✓	X	✓	X	✓
	16-Oct-19	X	✓	X	✓	X	✓
	30-Oct-19	X	✓	X	✓	X	X
	13-Nov-19	X	✓	X	✓	X	X

Monitoring Well	Date	Dissolved cadmium	Dissolved copper	Dissolved iron	Dissolved selenium	Dissolved uranium	Dissolved zinc
	27-Nov-19	X	✓	✓	X	X	✓
	11-Dec-19	X	✓	X	✓	X	X

Note: X = exceeds applicable guideline, ✓ = below applicable guideline, "-" = not analyzed.

It is important to note that naturally fluctuating concentrations of dissolved cadmium, copper, iron, selenium, uranium and zinc, as well as exceedances of these parameters relative to guideline values are common in Manitoba's groundwater, and are not necessarily indicative of metals impacts associated with the derailment.

13.5.4 Total Metals

Groundwater analytical results for dissolved metals are presented in Table 17.

A total of three groundwater samples were submitted in June for total metals analysis to duplicate the analysis of the Third Party Consultant. There were exceedances of aluminum, arsenic, cadmium, copper, iron, lead, selenium, uranium and zinc. Subsequent groundwater samples were submitted for dissolved metals analysis for comparison to the applicable guidelines.

With respect to metals potentially associated with CLB, trace elements of concern are primarily nickel and vanadium, neither of which was found to exceed guidelines at the Site. Although bitumen may contain several metals that are of potential concern, studies in the vicinity of the oil sands mining sites in Alberta that have documented increased metal concentrations have largely been associated with air emissions that would not be applicable to the Site.[7]

Cadmium, copper, iron, magnesium, selenium, uranium and zinc groundwater exceedances have been reported at the Site. Groundwater in the vicinity of the Site has been documented as poor quality and variable[3]. Elevated concentrations of magnesium, iron and uranium exceeding guidelines are common in Manitoba[8].

Cadmium accumulation in excess of guidelines has been associated with phosphate and zinc fertilizer management practices with the Site being surrounded by agricultural lands. In Manitoba, copper samples from 2009–2015 were analyzed, and the detection limit was reported as 0.001 mg/L. For raw water, the median copper level was 0.003 mg/L with a maximum of 0.94 mg/L[9]. Based on the results from the Site, the median copper level is 0.0049 mg/L with a maximum of 0.025 mg/L, falling well below the published maximum level associated with agriculture in Manitoba despite being elevated with respect to the regulatory guideline of 0.004 mg/L.

[7] United States Environmental Protection Agency. Characterization and Behavior of Cold Lake Blend and Western Canadian Select Diluted Bitumen Products. July 2017. EPA/600/R-17/273.

[8] R. Betcher. Rural groundwater quality surveys: southern and central Manitoba

[9] R. Betcher, G. Grove, and C. Pupp. Groundwater in Manitoba: Hydrogeology, Quality Concerns, Management. NHRI Contribution No. CS-93017 March, 1995

Little information has been reported for selenium concentrations in Western Canada; however, selenium has not been documented as a metal of potential concern associated with research on CLB[10].

13.5.5 Routine Parameters and Nutrients

Groundwater analytical results for routine parameters and nutrients are presented in Table 18.

A total of 54 groundwater samples were submitted over time from eight monitoring well locations for routine parameters. The earliest four groundwater samples (collected on June 3 and 5, 2019) were submitted for nutrient analysis only, due to insufficient water volumes.

13.6 Quality Assurance/Quality Control

13.6.1 Soil

All soil samples were received at the laboratory at a sample storage temperature of equal to or less than 10°C with the exception of samples collected on August 14 and 15, 2019. Samples stored for prolonged periods at temperatures >10°C could potentially lead to increased biodegradation of organic compounds and volatilization of volatile organic compounds. It should be noted that samples within 1 of 3 coolers were delayed by a Third Party courier, resulting in samples being received at temperatures >10°C and holding times were exceeded. However, these locations were resampled at a later date and all confirmatory samples relied on were received at the laboratory meeting both temperature and hold time requirements.

PAH reanalysis samples from the initial response were ran outside of hold times to provide guidance for additional sampling locations only and were not intended to be representative of final Site conditions.

Sample WM0018 [TOPSOIL 1] from (report #R2781947) was identified as out of compliance with CCME sampling requirements. This was due to the vials being lost in transit. However, due to the nature and intended use of the topsoil characterization analysis, and numerous other results from the topsoil, this error does not affect other analytical results or findings of this investigation.

Soil Duplicate Analyses

A total of 65 sets of soil samples were submitted as duplicates. HDR's data quality results for the soil duplicate pairs are presented in Table 26. RPDs were not calculated for many compounds as concentrations measured were less than 5 times the RDL. The RPD objectives for duplicate soil sample analysis were met for all compounds, with the exception of the following:

Table 13-2. Summary of Soil Duplicate Exceedances of Alert Limits

Field Duplicates	Collection Date	Exceedance of Alert Limit
C-9158B and DUP	June 2, 2019	ion balance (46%) calculated sulphate (42%).

[10] Copper in Drinking Water. Guideline Technical Document for Public Consultation. Prepared by the Federal-Provincial-Territorial Committee on Drinking Water

Field Duplicates	Collection Date	Exceedance of Alert Limit
EX1-8 and DUP 5	June 4, 2019	benzene (156%), PHC Fraction F2 (70%), fluoranthene (54%), 2-methylnaphthalene (62%), naphthalene (53%), phenanthrene (75%) and pyrene (65%)
EX1-4 and DUP 6	June 4, 2019	benzene (114%), chrysene (123%), fluorene (160%), 2-methylnaphthalene (141%), phenanthrene (129%), pyrene (153%) and quinolone (132%)
EX2-8 and DUP 8	June 5, 2019	acenaphthene (97%), benzo(g,h,i)perylene, chrysene (51%), fluoranthene (76%) and phenanthrene (63%)
19-H6-001 and DUP 10	June 9, 2019	fluoranthene (96%)
N-009 and N-1000	February 26, 2019	anthracene (151%), benzo(b&j)fluoranthene (158%), benzo(g,h,i)perylene (95%), benzo(a)pyrene (166%), benzo[e]pyrene (145%), chrysene (151%) and fluoranthene (108%)
C-8007 and DUPE-3023	March 12, 2019	PHC Fraction F2 (59%)
MW19-16-4 and DUP103	December 5, 2019	benzene (146%), toluene (59%), xylenes (139%), m & p-xylene (141%), acenaphthene (140%), anthracene (126%), benzo(a)anthracene (87%), benzo(b&j)fluoranthene (98%), benzo(k)fluoranthene (101%), benzo(g,h,i)perylene (101%), benzo(a)pyrene (90%), Benzo(e)pyrene (91%), chrysene (107%), fluoranthene (144%), fluorine (136%), indeno(1,2,3-cd)pyrene (106%), phenanthrene (145%) and pyrene (138%)
BH19-120-3 and DUP105	December 5, 2019	acenaphthene (107%), fluoranthene (183%), fluorine (113%), naphthalene (64%), phenanthrene (140%) and pyrene (185%)

Concentrations in both sample and field duplicates indicated above were either both below or above the regulatory guideline, or there is no applicable guideline, indicating that there will not be a material effect on the interpretation of the results of these parameters. Therefore, the data reported can be considered reliable for the above duplicate soil sample analysis. However, in three instances the data reported should be considered suspect:

- Field duplicate samples N-009 and N-1000 exceeded the alert limits for indeno(1,2,3-cd)pyrene (123%) and pyrene (128%). The indeno(1,2,3-cd)pyrene and pyrene concentrations observed in the sample met the regulatory guideline, while the field duplicate result exceeded the guideline. Thus, this indeno(1,2,3-cd)pyrene and pyrene data for this sample pair should be considered suspect. For these duplicate samples, a conservative approach was applied where the higher concentration of the two samples was used (i.e., the duplicate sample N-1000).
- Field duplicate samples MW19-16-4 and DUP 103 exceeded the alert limits for ethylbenzene (139%). The ethylbenzene concentrations observed in the sample met the regulatory guideline, while the field duplicate result exceeded the guideline. Thus, this ethylbenzene data for this sample pair should be considered suspect. For these duplicate samples, a conservative approach was applied where the higher concentration of the two samples was used (i.e., the duplicate sample DUP 103).
- Sample S-031 collected on February 27, 2019, PHC Fraction F1 RDL is above the applicable CCME guideline. PHC Fraction F1 result for this sample should be viewed with caution.

13.6.2 Surface Water and Groundwater

All surface water and groundwater samples were received at the laboratory at a sample storage temperature of equal to or less than 10°C with the exception of samples collected on August 14, 2019. Samples stored for prolonged periods at temperatures >10°C could potentially lead to increased biodegradation of organic compounds and volatilization of volatile organic compounds. It should be noted some of the samples were stored for prolonged periods at temperatures >10°C; however, all samples that were relied on for this assessment were received at the laboratory at a sample storage temperature of ≤10°C.

Surface Water and Groundwater Duplicate Analyses

17 sets of surface water and groundwater samples were submitted as duplicates. HDRs data quality review results for the surface water and groundwater duplicate pairs are presented in Table 27. RPDs were not calculated for many compounds as concentrations measured were less than 5 times the RDL. The RPD objectives for duplicate surface water and groundwater sample analysis were met for all compounds, with the exception of the following:

Table 13-3. Summary of Surface and Groundwater Duplicate Exceedances of Alert Limits

Field Duplicates	Collection Date	Exceedance of Alert Limit
MW19-6 and DUP5	August 21, 2019	benzene (35%).
MW19-6 and DUP6	September 18, 2019	o-xylene (31%).

13.6.3 Laboratory Quality Control

Each BV sample analysis batch included at least one method matrix spike, spiked blank, method blank and one laboratory duplicate. Laboratory quality data including matrix spikes, method blanks, and surrogate recoveries were reviewed as part of HDR's data quality review process. Review of the laboratory quality data analyses suggests the laboratory data is accurate, reproducible and can be relied upon for environmental site investigation purposes.

14 Fish Salvage and In situ Monitoring

During the July 4, 2019 site visit, CN and HDR representatives observed small-bodied fish in the OMA. The following activities were completed as part of fish salvaging efforts:

- Fish were moved into deeper waters via seine netting to help prevent possible fish mortalities associated with warm summer temperatures and anticipated declines in DO levels.
- A mesh barrier was installed to avoid fish re-entering the shallower areas of fish capture by confining fish to deep pools on-Site.
- The open water portions of the OMA were fished using seine nets to capture, extract, identify, and estimate fish numbers.
- Salvaged fish were placed in an insulated bucket and the water was oxygenated with a battery operated aeration bubbler.
- All fish were released to the deep water near the South Berm.

- No mortalities occurred between capture and release, and no federal Species at Risk Act (SARA) listed fish species were encountered, approximately 925 fish were relocated.

Weekly monitoring of DO levels within the OMA between the South and East Berms were conducted from July 24, 2019 to October 16, 2019, results are provided in Table 4.

Additional fish salvage was completed between October 23 and December 6, 2019, prior to winter freeze-up. CN took action in a collaborative effort with MSD to conduct fish salvage during the week of October 21, 2019, with 12 subsequent trapping events into early December 2019.

- The majority of the fish species were identified as Fathead Minnows (*Pimephales promelas),* with some Emerald Shiner (*Notropis atherinoides)*, Spottail shiner (*Notropis hudsonius)*, and White sucker (*Catostomus commersonii*).
- Fish were removed from the OMA and relocated to the Assiniboine River mainstream.
- An additional fish salvage was conducted prior to the South and East Berms removal in February 2020.

Fish salvage results between October 23, 2019 and February 21, 2020 are presented below. All salvaged fish appeared in good condition, based on visual observation.

Table 14-1. Summary of Fish Salvaged from the OMA

Activity	# fish salvaged from the OMA
July 24 - minnow traps	925
October 23 – electrofishing	600
October 24/25 – minnow traps	2,100
October 29/30 – minnow traps	1,157
October 30/31 – minnow traps	1,172
October 31/November 1 – minnow traps	1,067
November 12/13 – minnow traps	2,940
November 13/14 – minnow traps	2,595
November 19/20 – minnow traps	3,271
November 20/21 – minnow traps	2,365
November 21/22 – minnow traps	2,063
November 27/28 – minnow traps	1,846
November 28/29 – minnow traps	1,703
December 5/6 – minnow traps	1,484
February 20/21 – minnow traps	3
Total	**25,291**

15 Material Recovery and Removal

Four impacted soil and ice containment cells were constructed on Site for the temporary storage of materials awaiting transfer off-Site. The cells were lined to prevent impact to the ground surface.

Disposal of product or impacted materials from the Site was completed as follows:

- CLB transferred from within the tank cars to semi-trucks was removed off-Site to the Plains Midstream Canada Red Jacket truck terminal in Moosomin, Saskatchewan;
- CLB recovered from the ground surface using vacuum trucks; this material was transported to a Plains Midstream Canada facility in Melville, Saskatchewan;
- Oily water removed from the ground surface and the Oxbow was removed off-Site to the Plains Midstream Canada facility in Melville, Saskatchewan;
- Impacted ice excavated at the Site was removed and transport to the Fleet Energy facility in Stoughton, Saskatchewan; and
- Impacted soil was excavated for off-Site disposal at the Municipal and Industrial Waste Facility located in Virden, Manitoba, operated by Secure Energy Services. Stabilizing products (wood chips) were added to excavated soils to facilitate product removal from the ground surface and off-Site landfill disposal.

Derailed cars were removed from the Site, with select cars transferred to the CN Transcona Yard for Transportation Safety Board (TSB) inspections. The remaining cars were transported to Interlake Salvage and Recycling in Stonewall, Manitoba for disposal.

Of the total number of cars that derailed (34), it was confirmed that 13 rail cars ruptured and released approximately 820,000 liters (820 m^3) of CLB. A volume of approximately 1,400 m^3 of impacted ice, 548 m^3 of impacted water and 13,090 m^3 of impacted soil was removed from the Site for off-Site disposal.

To reduce the spread of the CLB release and the potential penetration of CLB into the subsurface at the Site, initial response efforts focused on the expedited removal of CLB from the Site. The focus of the response was to ensure containment and control of CLB following by regulatory compliance with applicable guidelines. As such, a mass balance was not calculated for the removal of CLB from the Site – concentrations of CLB in the recovered media would be highly assumptive and negate the purpose of calculating a mass balance.

16 Site Restoration

Site stabilization and placement of erosion control measures were completed to minimize disturbance to the bank slopes and the Site footprint of in-water works during lower winter oxbow water levels prior to the spring freshet 2019.

Disturbed areas at the Site were re-graded and re-contoured to conform to surrounding topography. Re-contouring was completed to promote downslope drainage, bank stability and to account for cattle access. Disturbed areas at and adjacent to the oxbow were graded, contoured and stabilized with anchored coco matting and keyed in silt fence. The two temporary berms defining the OMA, local ditching and culvert outfall locations were surfaced with cobbles and / or riprap.

On December 10 and 11, 2019 woody debris that was stockpiled during the initial response was removed from the oxbow island as requested by the landowner.

During the week of February 10, 2020, approximately 1223 m^3 of subsoil and 1086 m^3 of topsoil was transported to the disturbed areas of the oxbow island. Approximately 75% of the subsoil was used to re-contour the oxbow island and the remainder, along with all of the topsoil, was stockpiled and covered with anchored coco matting. The stockpiled subsoil and topsoil will be spread during the summer of 2020 as requested by the landowner.

17 Contaminants and Site-Specific Fate and Transport

CLB Overview

The safety data sheet for CLB released at the Site, as supplied by the Shipper, states that CLB is stable under normal, ambient conditions with negligible solubility. Most bitumens have a very low solubility in water; however, Dilbits contain several soluble fractions (Fed. Gov., 2013). These soluble fractions are typically not sufficient, however, to cause toxicity to fish, for example, except in confined waters.[11]

The specific gravity of the CLB is 0.91 to 0.94 at a temperature of 38°C. Weathering of dilbits and specifically CLB is well documented in research literature as well as documented incident responses prior to this derailment. As CLB weathers, and as its specific gravity nears that of water within a matter of days, any contact with sand, clay or any other suspended sediment can trigger submersion, so the density of the oil itself does not need to exceed that of water for residual product to sink.[12] Once CLB is released into the environment and the conditions around it such as temperature change, its characteristics begin to alter. Weathering processes and the rates at which they occur often depend on the type of oil and environmental conditions.

Conditions were favorable for recovery of the spilled CLB on the snow-covered ground and frozen oxbow lake. Temperatures during the initial response were very low (–12°C to –40°C) during the first two weeks of removal. Daily temperatures did not raise above freezing until March 12, 2019, when most of the remedial actions had been completed. Although temperatures were low during the initial response, the CLB released as a result of the derailment would have been at temperature differential compared to the outside environment resulting in rapid and extensive volatilization. Volatilization of the diluents was notable by olfactory observations along with visual observations of CLB weathering such as increased viscosity. The image below illustrates weathered Dilbit showing the viscosity increase after about four days of weathering. The viscosity of the product after spilling slowly returns to the properties of the starting bitumen.[13]

[11] Fingas, Merv. 2015. Review of the Properties and Behaviour of Diluted Bitumens. Spill Science, Edmonton, AB.

[12] National Academies of Sciences, Engineering, and Medicine. 2016. Spills of Diluted Bitumen from Pipelines: A Comparative Study of Environmental Fate, Effects, and Response. Washington, DC: The National Academies Press.

[13] Fingas, Merv. Bitumens and Diluted Bitumens from Western Canadian Oil Sands. Spill Science, Edmonton, AB.

In the environment, PAHs released to soil will adsorb to the organic fraction of soils and sediments. Higher molecular weight PAHs are more likely to adsorb to soil and sediment as compared to lower molecular weight PAHs. In aquatic environments, PAHs will adsorb to the sediment and persist, but typically have limited bioavailability to terrestrial and aquatic organisms. (CCME 2010a, 2010b)

Response to the derailment completed the removal of impacted soils, water, ice and free product, focusing on areas between the CN track and the oxbow lake and the oxbow lake itself. Impacted sediments were also removed from the base of the oxbow between the two containment berms. The initial response removed the potential pathways for surficial contact that could have effected vegetation, aquatic life and wildlife including natural revegetation, fish, birds, and mammals.

PAHs will biologically degrade through the action of microorganisms in the aerobic soil zone. Factors such as the PAH molecular weight, temperature, soil type, oxygen levels in the soil zone, and type of microorganisms affect the biodegradation process. (CCME 2010a, 2010b).

18 Risk Assessment

Appendices G and H provide key information related to the evaluation of potential risk to human health and the environment related to PAH impacts.

Human Health and Ecological Risk Assessments evaluate potential risks based on the presence and concentrations of incident-related chemicals of concern (COCs), COC toxicity, the receptors that may be exposed and the exposure scenarios under which receptors may come into contact with COCs. Risk assessments are typically conservative in that they incorporate assumptions that likely overestimate the potential for human health and ecological exposure and risks. For this assessment, we have chosen conservative assumptions, whenever indicated by applicable guidelines.

Based on land use and ownership, the area within the CN ROW was evaluated as Industrial, outside the ROW as Agricultural, with the associated receptors (Adult only vs. Adult and Child, respectively). The spill associated with the derailment is the source of potential COCs, which include PAHs associated with the crude oil that was released.

18.1 Human Health Assessment

The Detailed Quantitative Risk Assessment (DQRA), provided in Appendix G, identifies the current and potential future land use exposure pathways by which human populations may be exposed to contaminants identified in environmental media.

18.2 Ecological Assessment

The Screening Assessment, provided in Appendix H, provides a summary of the nature and extent of associated contamination and potential impacts to the ecosystem, what resources are potentially at risk, information regarding COPCs, the receptors of concern (ROCs) that could be affected by contamination, exposure pathways and a conceptual site model (CSM) representing the interaction of contaminant sources, exposure pathways, and receptors.

18.3 Overall Risk Process

The *Canadian Soil Quality Guidelines for Carcinogenic and Other PAHs* guidance (CCME 2010a) provides instruction on how to apply the soil guidelines for PAHs at a contaminated site and includes a three-step process for calculating threshold and non-threshold effects to human and environmental health. This process was followed in the human health and ecological risk assessments:

- Step 1 – Human Health Direct Contact – Calculate cancer risks and threshold hazards using benzo(a)pyrene (BaP) toxic potency equivalents (TPEs) to ensure humans are protected from direct contact with soil;
- Step 2 – Human Health Impact to Groundwater – Calculate Index of Additive Cancer Risk (IACR) values for each soil sample to evaluate protection of groundwater (and human health via potable groundwater exposure pathways); and
- Step 3 – Ecological Direct Contact – Compare individual PAH detected concentrations to the appropriate guideline based on threshold effects and calculate a ratio (HQ).

For human health exposures, the area within the CN ROW was evaluated as Industrial land use and the area outside of the CN ROW as Agricultural, with the associated receptors (Adult only for Industrial; Infant, Toddler, Child, Teen and Adult for Agricultural) as per the guidelines. For ecological exposures, the area within the CN ROW and outside of the CN ROW are evaluated separately based on land use and ownership with the area within the CN ROW was evaluated as Industrial, outside the ROW as Agricultural, with the associated receptors (Adult only vs. Adult and Child, respectively).The area within the culvert is also evaluated separately.

Supplemental Guidance on Human Health Risk Assessment of Contaminated Sediments: Direct Contact Pathway (Health Canada 2017b) and *Canadian Environmental Quality Guidelines* (CCME 2014) were used to evaluate sediment.

Canadian Environmental Quality Guidelines (CCME 2014), *Guidance for Evaluating Human Health Impacts in Environmental Assessment: Drinking and Recreational Water Quality* (Health Canada 2017a), *Guidelines for Canadian Recreational Water Quality* (Health Canada 2012b) and *Health Canada Part I and V* (Health Canada 2010a, b) were used to evaluate surface water.

18.4 Hazard Identification

The spill associated with the February 2019 derailment is confirmed as the source of COPC contamination (i.e., PAHs derived from crude oil). In accordance with the LoD, the characterization and risk assessments are limited to the derailment and the associated release that occurred on February 16, 2019. The Site characterization data set, consisting of samples from environmental media collected after the initial spill response; is considered sufficient to develop the risk assessments, based on a comparison of the data set with the guidelines provided in the *Guidance Manual for Environmental Site Characterization in Support of Environmental and Human Health Risk Assessment, Volumes 1-4* (CCME 2016). A list of sampling events is presented in Table 17-1 below. The COPC Screening, which is a comparison of CCME guidelines vs. maximum detected concentrations, was performed separately for human health and ecological exposures and by environmental medium (e.g., soil, surface water, groundwater, sediment).

Table 18-1. Sampling Events

Sampling Event	Sampled Media
February and March 2019	Soil, Surface Water
April 2019	Surface Water
May and June 2019	Soil, Surface Water, Sediment, Groundwater
July 2019	Surface Water, Groundwater
August 2019	Soil, Surface Water, Sediment, Groundwater
September 2019	Surface Water, Groundwater
October 2019	Soil, Surface Water, Sediment, Groundwater
November 2019	Soil, Groundwater
December 2019	Soil, Groundwater
February 2020	Soil, Sediment, Surface Water

Note: The October 2019 sampling event consisted of a re-collection of soil and sediment samples in previous sampling locations to determine changes in PAH concentrations due to natural attenuation.

18.5 Exposure Assessment

18.5.1 Human Health Industrial

The area located within the CN ROW is to be considered Industrial, per applicable guidance. Only an Adult receptor is included in the Industrial use scenario. These receptors could potentially come into contact with COPCs originating from the Site during their workday via pathways of exposure that include:

- Inhalation of airborne particulates from surface soil (0 to 1.5 mbgs);
- Dermal contact with surface soil; and
- Incidental ingestion of surface soil.

The surface soil (0 to 1.5 mbgs) pathways were retained in the DQRA, as COPCs were identified during data screening and these are potentially complete pathways of exposure, based on a review of site conditions.

The incidental ingestion of and dermal contact with surface water and sediment were also considered for inclusion in the DQRA Industrial use within the CN ROW; however, it was determined that contact with surface water and sediment is unlikely based on Site conditions and anticipated work activity. Therefore, ingestion and dermal contact of surface water and sediment are considered to be incomplete exposure pathways for industrial workers.

18.5.2 Human Health Agricultural

The area outside of the CN ROW is considered as Agricultural. Infant, Toddler, Child, Teen and Adult receptors are included in evaluating this scenario. These receptors could potentially come into contact with COPCs originating from the derailment via the following pathways of exposure:

- Inhalation of airborne particulates from surface soil (0 to 1.5 mbgs);
- Dermal contact with surface soil, surface water and sediment; and
- Incidental ingestion of surface soil, surface water and sediment.

The surface soil (0 to 1.5 mbgs), surface water and sediment pathways were retained for consideration in the DQRA for the Agricultural scenario, as COPCs were identified during data screening and these are potentially complete pathways of exposure, based on a review of Site conditions.

18.5.3 Ecological

Terrestrial and aquatic receptors could come into contact with COPCs in areas within and outside of the CN ROW (i.e., in proximity to the spill). The potentially complete ecological pathways of exposure include:

- Dermal contact with surface soil (0 to 1.5 mbgs), surface water and sediment;
- Incidental ingestion of surface soil and sediment; and
- Ingestion of surface water.

18.6 Risk Assessment Results

18.6.1 Step 1 (Human Health - Direct Contact)

Soil

The DQRA (see Appendix G) documents the calculation of non-threshold ICLRs and threshold hazards to evaluate direct contact with surface soil via the ingestion, dermal contact and inhalation pathways. The DQRA indicates that the industrial receptor's exposure to surface soil (0-1.5 mbgs) within the CN ROW is not a potential health issue. The same is true for the agricultural receptors (infant, toddler, child, teen and adult), exposed to surface soil (0-1.5 mbgs) within and outside of the CN ROW.

Sediment

As noted in Section 17.5.1 above, the Industrial receptor scenario within the CN ROW does not include contact with sediment; this pathway was not evaluated. An elevated ILCR of 6.9E-05 was estimated for agricultural receptors, which is driven by the dermal pathway, with an ILCR of 6.8E-05. This results from using a conservative sediment adherence factor (Health Canada 2017b) for children in dermal contact with mud. When the exposure was re-evaluated using a more realistic adherence factor, that reflects local soil types (loam/sandy soils), the ILCR for the dermal pathway decreases to 8.7E-06 and the resulting overall ILCR for an agricultural receptor is 1.0E-05. This meets the 1E-05 regulatory limit for non-threshold effects. The threshold hazards are well below the regulatory limit of 0.2. The potential non-threshold risks and threshold hazards from sediment within the culvert were also calculated, based on the one sample collected outside of the CN ROW in the culvert. This result is within acceptable limits.

Surface Water

As with sediment, the Industrial receptor scenario to be considered within the CN ROW does not include contact with surface water, so this pathway was also not evaluated. Non-threshold risks or threshold hazards were not calculated for an Agricultural receptor's exposure to COPCs in surface water outside of the CN ROW, as there are a limited number of detected concentrations. Of the 73 samples analyzed, there are 20 detected concentrations of one or more PAHs out of a total of 1,872 results. The primary detected PAHs are fluoranthene and phenanthrene. Flouranthene was detected at three locations, TH-21, 22 and 23 ranging from 0.01 to 0.012 ug/L. Phenanthrene was detected at TH-10, 20, 22, 23, 29 and 30 at concentrations ranging from 0.051 to 0.066 ug/L.

There are no CCME or Health Canada human health guidelines available for surface water agricultural exposure to PAHs or other chemicals (CCME 2014, Health Canada 2017b). USEPA's National Recommended Water Quality Criteria for Human Health consumption of water and organisms (2015a) provides a value of 20 ug/L for fluoranthene.

The CCME guidelines for the protection of aquatic life (CCME 2014), which are typically more conservative than human health guidelines, are 0.04 ug/L for fluoranthene and 0.4 ug/L for phenanthrene. The detected surface water concentrations are below these guidelines. Due to the limited extent and frequency of sample data exceeding the detection limit, it is not likely that exposure to detected concentrations in this medium pose an unacceptable risk to receptors.

18.6.2 Step 2 (Human Health - Impact to Groundwater)

The IACR evaluation method uses soil quality guidelines for the protection of potable water derived for individual carcinogenic PAHs. These are not stand-alone guidelines; rather they are incorporated into the IACR equation (CCME 2010b), to reflect the potential combined effects of individual PAHs in a mixture in the environment. An IACR value >1.0 indicates the ILCR may exceed the accepted level of risk based on the drinking water guideline.

IACR results indicate there may be potential for impacts to human health, based on the evaluation of soil leaching to groundwater, if used for potable water supply, as summarized below:

- There are six locations within the CN ROW that minimally exceed the IACR threshold, when data are limited to surface soil (0-1.5 mbgs). IACR values within the CN ROW range from 1.6 to 8.1.
- Subsurface soil (>1.5 m), is included in a separate IACR analysis. Five additional locations minimally exceed the IACR, with values ranging from 1.2 to 5.9.

These results represent potential effects, in the event soils leach to groundwater used as a potable supply. They do not represent actual groundwater quality, or use of groundwater at the Site.

As discussed in Section 12.6, groundwater monitoring results to date (see Table 15), indicate some wells had intermittent exceedances of the CCME Guidelines for PAHs in 2019. Figure 15 indicates the last sampling data for each well had no exceedances of the CCME Guidelines for PAHs. A search of the MSD Water Well Information Database did not identify any water wells within a 1.0 km radius of the center of the Site.

18.6.3 Step 3 (Ecological Direct Contact)

The Screening Assessment evaluated individual PAH detected concentrations against their respective environmental guidelines, which are based on non-carcinogenic effects to terrestrial and aquatic plants, invertebrates and mammals. The maximum detected concentration datasets were used to identify ecological COPCs, and those datasets were statistically evaluated to calculate 95% Upper Confidence Limits (UCLs) of the mean using ProUCL software (USEPA 2015b; 2015c). The lower of the maximum and UCL was designated as the Exposure Point Concentration (EPC). The EPCs were then compared to the guidelines to calculate HQ values. An HQ of >1; which is an exceedance of the ecological target hazard, indicates there is a potential for hazard to ecological receptors.

The HQ evaluation indicated potential effects for ecological receptors exposed to PAHs in surface soil within the CN ROW (HQs of 1 and 2 for naphthalene and phenanthrene, respectively) and sediment outside of the CN ROW (HQs of 1 and 2 for acenaphthene and acenaphthylene, respectively). Exceedances of environmental guidelines do not indicate unacceptable exposure and hazard levels. Rather, exceedances indicate the potential need for further assessment.

19 Current Status of the Site

Monitoring at the Site ceased due to seasonal decreasing temperatures in December 2019. The two temporary berms defining the OMA were removed in February 2020. Surface and groundwater sampling was planned to resume at the Site in April 2020, but due to health and safety concerns associated with COVID-19 this has been delayed. Plans for Site reclamation have been developed and are pending, along with monitoring at the Site, until restrictions on non-essential travel into the Province of Manitoba are removed. The results of Site reclamation will be provided in a letter report as an addendum to this ESA.

20 Conclusions

The Site has been under assessment between February 2019 and March 2020, and the following conclusions have been drawn:

Product Status

- Initial bulk removal of CLB along with impacted soils, snow and ice during the emergency response reduced hazards and risks at the Site by removing all visible product and the initial confirmatory sampling of soils and surface water for BTEX and PHC Fractions F1 to F4.
- During the initial response, the CLB migrated along native coarse-grained lenses and seams as preferential pathways but did not penetrate into clay-based soils.
- On the south side of the rail line where CLB was present, all native coarse-grained lenses and seams where CLB was present were excavated, removing preferential pathways.
- On the north side of the rail line, residual impacts were observed in the rail bed embankment that could not be removed, given the need to preserve track stability.
- Intrusive investigation in May 2019 confirmed residual impacts existed only in coarse-grained soils (rail bed ballast and sub-ballast). The underlying silty clay to clay acted as a barrier to contaminant migration.
- The May 2019 intrusive investigations also indicated that the buried trestle on-Site is not acting as a preferential pathway, but rather the clay used to backfill the trestle is acting as a barrier to contaminant migration.
- The buried trestle and rail line act as a barrier to potential contaminant migration from north to south, because of the local, dominant clay stratigraphy.
- There has been no migration of the groundwater impacts observed north of the rail line to the south side of the rail line towards the oxbow area.
- Remaining trace CLB materials that have not been physically removed from the Site have been naturally attenuating in the environment. The demonstration of mass reduction is based on the data indicating contaminants are no longer detected in the environment at the large majority of sample locations. Only marginal exceedances remain for PHCs and PAHs at a few locations.

Analytical Results

- There were no PHC or PAH exceedances of the applicable guidelines for surface water at the Site.
- Groundwater exceedances (benzene, and select PAH compounds) were noted in one well on the north side of the rail line. Concentrations could be caused by the presence of small globules of CLB and is not necessarily indicative of widespread dissolved CLB in the groundwater.
- Analytical results from sediment and soil locations resampled in October 2019 had naturally attenuated via weathering and biodegradation; PAHs are susceptible to attenuation by a number of naturally occurring processes (biodegradation, dispersion/dilution, sorption, volatilization or chemical reactions).

- Analytical results were compared against regulatory criteria and natural attenuation was assessed by comparing PAH data between sampling events and comparing to regulatory criteria. Most results that exceeded regulatory criteria, when resampled in October 2019, had reduced PAHs concentrations below detection levels.

Oxbow Monitoring Area (OMA) Observations

- There has been no migration of the groundwater impacts observed north of the rail line to the south side of the rail line and the oxbow area (downslope and cross gradient of north side groundwater impacts).
- There was no inflow into the oxbow (OMA) from the Assiniboine River in 2019 as the temporary berms provided physical barriers on either end of the OMA. As such, the OMA was filled in 2019 as a result of surface water runoff and groundwater recharge illustrating that the derailment did not affect aquatic life within the OMA.
- Aquatic life thrived between the 2019 spring freshet and December 2019 when low temperatures and windchill ceased minnow trapping due to the potential for fish mortalities if extracted from under the ice was to continue. Monitoring of aquatic life has not resumed post-freshet in 2020 due to COVID-19.
- Between July and November 2019, a total of 25,291 fish were salvaged from the OMA, and appeared to be in good condition based on visual observations. All salvaged fish we safely relocated to the Assiniboine River.

Risk Assessment Results – Human Health

- Exposure to PAH levels in soils outside of the ROW, sediments and surface water were found not to pose a potential health issue.
- Results indicated there could be a potential risk if PAHs leached into groundwater; however, groundwater at the Site was, and is not used as a potable supply, eliminating this human health risk assessment pathway.

Risk Assessment Results – Ecological Health

- Analytical results were compared against pertinent regulatory criteria and natural attenuation was assessed, as PAHs are susceptible to attenuation by a number of naturally occurring processes (biodegradation, dispersion/dilution, sorption, volatilization or chemical reactions).
- The natural attenuation of PAHs at the Site were assessed by comparing PAH data between sampling events and by comparing to regulatory criteria. Most PAH results that exceeded regulatory criteria, when resampled, had reduced PAHs concentrations below detection levels.
- Any residual PAHs within the CN ROW will continue to naturally degrade.

The outcome of site monitoring and assessment indicates the Site is not contaminated at a level that would pose a threat to human health or safety or to the environment as per the LoD.

21 Recommendations

The following recommendations are provided for additional sampling:

- Conduct additional sampling at sediment locations that exceeded regulatory guidelines for PAHs (summer 2020).
- Conduct additional groundwater monitoring and sampling for PHC and PAH concentrations until the summer of 2021.
- Complete site reclamation on adjacent agricultural lands beyond the CN ROW to equivalent land capability and the disturbed area on the island will be restored to woodlands, consistent with pre-spill conditions.

22 Limitations and Use of Report

This report was prepared for the exclusive use of CN. The report, which specifically includes all tables, is based on data and information collected during the Site investigation activities conducted by HDR Corporation and is based solely on the conditions of the property at the time of the field investigation, supplemented by historical information and data obtained by HDR Corporation as described in this report.

The assessment of environmental conditions and possible hazards at this Site has been made using the results of chemical analysis of soil samples collected from a limited number of locations. The Site conditions between sampling locations have been inferred based on conditions observed. Subsurface conditions may vary from these sample locations. Additional study, including further subsurface investigation, can reduce the inherent uncertainties associated with this type of study. However, it is never possible, even with exhaustive sampling and testing, to dismiss the possibility that part of a Site may be contaminated and remain undetected.

The services performed as described in this report were conducted in a manner consistent with that level of care and skill normally exercised by other members of the engineering and science professions currently practicing under similar conditions, subject to the time limits and financial and physical constraints applicable to the services.

Any use which a third party other than CN makes of this report, or any reliance on, or decisions made based on it, are the responsibilities of such third parties. HDR Corporation accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

The content of this report is based on information collected during the sampling dates mentioned in the report, our present understanding of the Site conditions, and our professional judgment in light of such information at the time of this report. This report provides a professional opinion and, therefore, no warranty is either expressed, implied, or made as to the conclusions, advice and recommendations offered in this report. This report does not provide a legal opinion regarding compliance with applicable laws. With respect to regulatory compliance issues, it should be noted that regulatory statutes and the interpretation of regulatory statues are subject to change.

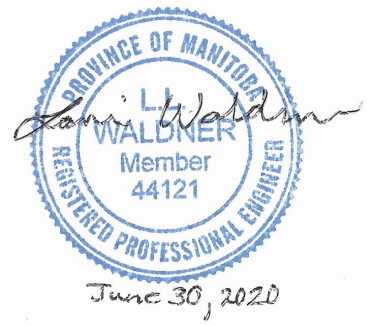
The findings and conclusions of this report are valid only as of the date of this report. If new information is discovered in future work, including excavations, borings, or other studies, HDR Corporation should be requested to re-evaluate the conclusions of this report, and to provide amendments as required.

23 Closure

We trust that this report meets your requirements. Should you have any questions, or require further information, please contact the undersigned.

Prepared and Approved By:

HDR Corporation



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TABLES

Table 1
Soil Field Screening from February to March 2019
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample ID	Sample Date (dd-mmm-yy)	Depth (mbgs)	Field Vapour Reading (ppm)
Excavation Towards East Culvert			
C1000W	3-Mar-19	0.6	5.0
C1001W	3-Mar-19	0.6	8.8
C1002W	3-Mar-19	0.6	7.2
C1002W-B	6-Mar-19	0.75	13.2
C1003W	3-Mar-19	0.6	2.8
C1004W	3-Mar-19	0.6	2.3
C1005W	3-Mar-19	0.6	1.1
C1006W	3-Mar-19	0.6	2.3
C1007	3-Mar-19	0-0.1	4.2
C1008	3-Mar-19	0-0.1	7.6
C1009	3-Mar-19	0-0.1	3.2
C1010	3-Mar-19	0-0.1	1.9
C1011W	3-Mar-19	0.6	2.3
C1012	3-Mar-19	0-0.1	2.5
C1013F	3-Mar-19	1.0	16.0
C1014	3-Mar-19	0-0.1	16.2
C1015	3-Mar-19	0-0.1	2.7
C1016F	3-Mar-19	1.0	8.0
C1017	3-Mar-19	0-0.1	2.9
C1018F	3-Mar-19	1.0	2.8
C1020	3-Mar-19	0-0.1	0.0
South Side of Tracks, Upper Slope			
C2001F	3-Mar-19	1.0	0.3
C2003	3-Mar-19	0-0.1	2.9
C2004F	3-Mar-19	1.0	1.9
C2005	4-Mar-19	0-0.1	9.6
C2006	4-Mar-19	0-0.1	23.0
C2007	4-Mar-19	0-0.1	17.9
C2008	4-Mar-19	0-0.1	15.9
C2009	5-Mar-19	0-0.1	19.5
C2010	5-Mar-19	0-0.1	17.5
C2011	5-Mar-19	0-0.1	16.8
C2012	5-Mar-19	0-0.1	55.6
C2013	5-Mar-19	0-0.1	6.0
C2014	5-Mar-19	0-0.1	7.1
C2015	5-Mar-19	0-0.1	8.5
C2016	5-Mar-19	0-0.1	21.8
C2017	5-Mar-19	0-0.1	31.7
C2018	5-Mar-19	0-0.1	22.5
C2019	5-Mar-19	0-0.1	20.9
C2020	5-Mar-19	0-0.1	39.2
C2021	5-Mar-19	0-0.1	14.2
C2022	5-Mar-19	0-0.1	6.8
C2023	5-Mar-19	0-0.1	8.3
C2024	5-Mar-19	0-0.1	10.1
C2025A	5-Mar-19	0-0.1	16.5
C2025-B	5-Mar-19	0.75	19.7
C2026	5-Mar-19	0-0.1	12.2
C2027	5-Mar-19	0-0.1	66.0
C2028	5-Mar-19	0-0.1	106.5
C2029	5-Mar-19	0-0.1	11.8
C2030	5-Mar-19	0-0.1	10.6
C2031	5-Mar-19	0-0.1	20.7
C2032	5-Mar-19	0-0.1	14.4
C2033	5-Mar-19	0-0.1	131.0
C2034	5-Mar-19	0-0.1	10.1
C2035	5-Mar-19	0-0.1	32.3
C2036	5-Mar-19	0-0.1	36.9
C2037	5-Mar-19	0-0.1	16.7
C2038	5-Mar-19	0-0.1	12.7
C2039	5-Mar-19	0-0.1	15.7
C2040	5-Mar-19	0-0.1	59.0
C2041	5-Mar-19	0-0.1	28.7
C2042	5-Mar-19	0-0.1	22.8
C2043	5-Mar-19	0-0.1	399.0
C2044	5-Mar-19	0-0.1	30.9
C2045	5-Mar-19	0-0.1	77.3
C2046	5-Mar-19	0-0.1	21.1
C2047	5-Mar-19	0-0.1	20.5
C2048	5-Mar-19	0-0.1	16.8
C2049	5-Mar-19	0-0.1	16.2
C2050	5-Mar-19	0-0.1	27.1
C2051	5-Mar-19	0-0.1	25.8

Notes:
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Table 1
Soil Field Screening from February to March 2019
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample ID	Sample Date (dd-mmm-yy)	Depth (mbgs)	Field Vapour Reading (ppm)
C2052	5-Mar-19	0-0.1	17.2
C2053	5-Mar-19	0-0.1	111.9
C2054	5-Mar-19	0-0.1	9.2
C2055	5-Mar-19	0-0.1	40.1
C2056	5-Mar-19	0-0.1	17.4
C2057	5-Mar-19	0-0.1	53.9
C2058	5-Mar-19	0-0.1	41.5
C2058-B	9-Mar-19	0-0.1	1.6
C2059	5-Mar-19	0-0.1	21.2
C2060	5-Mar-19	0-0.1	10.1
C2061	5-Mar-19	1.0	279.5
C2061-B	6-Mar-19	0.75	22.3
C2062	5-Mar-19	1.0	53.2
C2062-B	6-Mar-19	0-0.1	18.4
C2063	5-Mar-19	0-0.1	11.9
C2064	5-Mar-19	0-0.1	15.9
C2065	5-Mar-19	0-0.1	40.3
C2066	5-Mar-19	0-0.1	13.7
C2067	5-Mar-19	0-0.1	81.8
C2067-B	6-Mar-19	0.75	15.9
C2068	5-Mar-19	0-0.1	12.8
C2069	5-Mar-19	1.0	80.5
C2069-B	6-Mar-19	0.75	21.2
C2070	5-Mar-19	0-0.1	13.5
C2071	5-Mar-19	0-0.1	15.5
C2072	5-Mar-19	0-0.1	13.4
C2073	5-Mar-19	0-0.1	200.4
C2073-B	6-Mar-19	0.75	13.7
C2074	5-Mar-19	0-0.1	17.5
C2075	5-Mar-19	0-0.1	39.8
C2075-B	6-Mar-19	0.75	24.7
C2076	5-Mar-19	0-0.1	58.4
C2076-B	6-Mar-19	0-0.1	25.6
C2077	5-Mar-19	0-0.1	410.2
C2077-B	6-Mar-19	0.75	19.9
C2078	5-Mar-19	0-0.1	22.3
C2079	5-Mar-19	0-0.1	20.2
C2080	5-Mar-19	0-0.1	20.5
C2081	5-Mar-19	0-0.1	27.3
C2082	5-Mar-19	0-0.1	13.8
C2083	5-Mar-19	0-0.1	22.2
C2084	5-Mar-19	0-0.1	109.2
C2084-B	6-Mar-19	0.75	6.3
C2085	5-Mar-19	1.0	98.2
C2085-B	6-Mar-19	1.75	15.8
C2086	5-Mar-19	1.0	202.8
C2086-B	6-Mar-19	1.75	17.8
C2087	5-Mar-19	1.0	256.4
C2087-B	6-Mar-19	1.75	18.7
C2088	5-Mar-19	0-0.1	23.9
C2089	5-Mar-19	0-0.1	27.0
C2090	5-Mar-19	0-0.1	3.7
C2091	5-Mar-19	0-0.1	3.6
C2092	5-Mar-19	0-0.1	7.0
C2093	5-Mar-19	0-0.1	5.7
C2094	5-Mar-19	0-0.1	14.7
C2095	5-Mar-19	0-0.1	63.9
C2095-B	6-Mar-19	0.75	5.7
C2096	5-Mar-19	0-0.1	12.9
C2097	5-Mar-19	0-0.1	18.6
C2098	5-Mar-19	0-0.1	5.8
C2099	5-Mar-19	0-0.1	6.0
South Side Embankment, Between East and West Culverts			
C2100	5-Mar-19	0-0.1	9.5
C2101	5-Mar-19	0-0.1	24.5
C2102	5-Mar-19	0-0.1	12.3
C2103	5-Mar-19	0-0.1	14.5
C2104	5-Mar-19	0-0.1	13.6
C2105	5-Mar-19	0-0.1	11.0
C2106	5-Mar-19	0-0.1	16.8
C2107	5-Mar-19	0-0.1	88.6
C2107-B	6-Mar-19	0.75	65.6
C2107-C	6-Mar-19	1.25	2.7
C2108	5-Mar-19	0-0.1	13.9

Notes:
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Table 1
Soil Field Screening from February to March 2019
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample ID	Sample Date (dd-mmm-yy)	Depth (mbgs)	Field Vapour Reading (ppm)
C2109	5-Mar-19	0-0.1	9.6
C2110	5-Mar-19	0-0.1	15.6
C2111	5-Mar-19	0-0.1	11.5
C2112	5-Mar-19	0-0.1	24.7
C2113	6-Mar-19	0-0.1	10.0
C2114	6-Mar-19	0-0.1	155.2
C2114-B	6-Mar-19	0.75	1.6
C2115	6-Mar-19	0-0.1	34.0
C2115-B	6-Mar-19	0-0.1	1.6
C2116	6-Mar-19	0-0.1	110.5
C2116-B	6-Mar-19	0.75	1.7
C2117	6-Mar-19	0-0.1	55.6
C2117-B	6-Mar-19	0.75	1.6
C2118	6-Mar-19	0-0.1	240.6
C2118-B	6-Mar-19	0-0.1	2.5
C2119	6-Mar-19	0-0.1	44.9
C2119-B	6-Mar-19	0-0.1	4.1
C2120	6-Mar-19	0-0.1	3.1
C2120-B	6-Mar-19	0-0.1	2.7
C2121	6-Mar-19	0-0.1	44.8
C2121-B	6-Mar-19	0.75	50.1
C2121-C	6-Mar-19	1.25	3.3
C2122	6-Mar-19	0-0.1	99.0
C2122-B	6-Mar-19	0.75	21.7
C2123	6-Mar-19	0-0.1	70.5
C2123-B	6-Mar-19	0.75	7.8
C2124	6-Mar-19	0-0.1	2.3
C2125	6-Mar-19	0-0.1	3.8
C2126	6-Mar-19	0-0.1	20.0
C2126-B	6-Mar-19	0.75	3.6
C2127	6-Mar-19	0-0.1	13.1
C2128	6-Mar-19	0-0.1	91.7
C2129	6-Mar-19	0-0.1	214.6
C2129-B	6-Mar-19	0-0.1	1.9
C2130	6-Mar-19	0-0.1	16.9
C2131	6-Mar-19	0-0.1	4.9
C2132	6-Mar-19	0-0.1	4.9
C2133	6-Mar-19	0-0.1	13.5
C2134	6-Mar-19	0-0.1	31.5
C2134-B	6-Mar-19	0.75	1.7
C2135	6-Mar-19	0-0.1	8.2
C2136	6-Mar-19	0-0.1	14.2
C2137	6-Mar-19	0-0.1	11.8
C2138	6-Mar-19	0-0.1	22.6
C2139	6-Mar-19	0-0.1	40.8
C2140	6-Mar-19	0-0.1	5.5
C2141	6-Mar-19	0-0.1	8.0
C2142	6-Mar-19	0-0.1	23.0
C2143	6-Mar-19	0-0.1	65.5
C2143-B	6-Mar-19	0.75	2.7
C2144	6-Mar-19	0-0.1	84.4
C2144-B	6-Mar-19	0.75	4.4
C2145	6-Mar-19	0-0.1	26.3
C2146	6-Mar-19	0-0.1	4.3
C2147	6-Mar-19	0-0.1	4.7
C2148	6-Mar-19	0-0.1	49.2
C2148-B	6-Mar-19	0.75	20.1
C2149	6-Mar-19	0-0.1	6.1
C2150	6-Mar-19	0-0.1	76.5
C2150-B	6-Mar-19	0.75	31.5
C2151	6-Mar-19	0-0.1	16.9
C2152	6-Mar-19	0-0.1	5.5
C2153	6-Mar-19	0-0.1	6.8
C2154	6-Mar-19	0-0.1	3.9
C2155	6-Mar-19	0-0.1	83.6
C2155-B	6-Mar-19	0.75	5.8
C2156	6-Mar-19	0-0.1	6.5
C2157	6-Mar-19	0-0.1	6.4
C2158	6-Mar-19	0-0.1	5.4
C2159	6-Mar-19	0-0.1	7.8
C2160	6-Mar-19	0-0.1	9.3
C2161	6-Mar-19	0-0.1	9.7
C2162	6-Mar-19	0-0.1	13.2
C2163	6-Mar-19	0-0.1	9.8

Notes:
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Table 1
Soil Field Screening from February to March 2019
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample ID	Sample Date (dd-mmm-yy)	Depth (mbgs)	Field Vapour Reading (ppm)
C2164	6-Mar-19	0-0.1	9.3
C2165	6-Mar-19	0-0.1	7.5
C2166	6-Mar-19	0-0.1	18.5
C2167	6-Mar-19	0-0.1	8.9
C2168	6-Mar-19	0-0.1	8.2
C2169	6-Mar-19	0-0.1	11.8
C2170	6-Mar-19	0-0.1	23.8
C2171	6-Mar-19	0-0.1	24.4
C2172	6-Mar-19	0-0.1	9.4
C2173	6-Mar-19	0-0.1	10.0
C2174	6-Mar-19	0-0.1	11.3
C2175	6-Mar-19	0-0.1	16.7
C2176	6-Mar-19	0-0.1	12.9
C2177	6-Mar-19	0-0.1	8.8
C2178	6-Mar-19	0-0.1	9.0
C2179	6-Mar-19	0-0.1	8.8
C2180	6-Mar-19	0-0.1	18.8
C2181	6-Mar-19	0-0.1	11.1
C2182	6-Mar-19	0-0.1	13.2
C2183	6-Mar-19	0-0.1	38.0
C2184	6-Mar-19	0-0.1	15.0
C2185	6-Mar-19	0-0.1	4.5
C2186	6-Mar-19	0-0.1	15.0
C2187	6-Mar-19	0-0.1	15.3
C2188	6-Mar-19	0-0.1	29.8
C2189	6-Mar-19	0-0.1	18.4
C2190	6-Mar-19	0-0.1	14.6
C2191	6-Mar-19	0-0.1	20.6
C2192	6-Mar-19	0-0.1	117.0
C2193	6-Mar-19	0-0.1	37.2
C2194	6-Mar-19	0-0.1	4.2
C2195	6-Mar-19	0-0.1	36.1
C2196	6-Mar-19	0-0.1	4.6
C2197	6-Mar-19	0-0.1	5.4
C2198	6-Mar-19	0-0.1	4.6
C2199	6-Mar-19	0-0.1	-
C2200	6-Mar-19	0-0.1	2.2
C2201	6-Mar-19	0-0.1	2.1
C2202	6-Mar-19	0-0.1	3.9
C2203	6-Mar-19	0-0.1	2.2
C2204	6-Mar-19	0-0.1	2.4
C2205	6-Mar-19	0-0.1	1.9
C2206	6-Mar-19	0-0.1	6.1
West Culvert Area			
C2207	6-Mar-19	0-0.1	390.0
C2208	6-Mar-19	0-0.1	14.7
C2209	6-Mar-19	0-0.1	4.5
C2210	6-Mar-19	0-0.1	-
C2211	6-Mar-19	0-0.1	6.5
C2212	6-Mar-19	0-0.1	14.8
C2213	6-Mar-19	0-0.1	155.9
C2214	6-Mar-19	0-0.1	196.3
C2215	6-Mar-19	0-0.1	9.4
C2216	6-Mar-19	0-0.1	20.2
C2217	6-Mar-19	0-0.1	8.4
C2218	6-Mar-19	0-0.1	17.4
C2219	6-Mar-19	0-0.1	7.4
C2220	6-Mar-19	0-0.1	18.8
C2221	6-Mar-19	0-0.1	4.8
C2222	6-Mar-19	0-0.1	14.7
C2223	6-Mar-19	0-0.1	132.6
C2223-B	6-Mar-19	0.75	1.0
C2224	6-Mar-19	0-0.1	62.3
C2224-B	6-Mar-19	0.75	14.0
C2225	6-Mar-19	0-0.1	8.0
C2226	6-Mar-19	0-0.1	194.1
C2226-B	8-Mar-19	0.75	4.1
C2227W	10-Mar-19	0.6	8.4
C2228W	10-Mar-19	0.6	25.3
South Side Access Road Closest to Tracks			
C2300	7-Mar-19	0-0.1	2.6
C2301	7-Mar-19	0-0.1	3.0
C2302	7-Mar-19	0-0.1	2.2
C2303	7-Mar-19	0-0.1	18.5

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Table 1
Soil Field Screening from February to March 2019
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample ID	Sample Date (dd-mmm-yy)	Depth (mbgs)	Field Vapour Reading (ppm)
C2304	7-Mar-19	0-0.1	7.8
C2305	7-Mar-19	0-0.1	3.8
C2306	7-Mar-19	0-0.1	2.9
C2307	7-Mar-19	0-0.1	1.7
C2308	7-Mar-19	0-0.1	5.0
C2309	7-Mar-19	0-0.1	4.8
C2310	7-Mar-19	0-0.1	1.8
C2311	7-Mar-19	0-0.1	3.3
C2312	7-Mar-19	0-0.1	1.5
C2313	7-Mar-19	0-0.1	2.5
C2314	7-Mar-19	0-0.1	45.1
C2315	7-Mar-19	0-0.1	53.6
C2316	7-Mar-19	0-0.1	5.2
C2317	7-Mar-19	0-0.1	5.2
C2318	7-Mar-19	0-0.1	5.7
C2319	7-Mar-19	0-0.1	20.8
C2320	7-Mar-19	0-0.1	4.4
C2321	7-Mar-19	0-0.1	4.4
C2322	7-Mar-19	0-0.1	2.1
C2323	7-Mar-19	0-0.1	2.3
C2324	7-Mar-19	0-0.1	4.5
C2325	7-Mar-19	0-0.1	4.3
C2326	7-Mar-19	0-0.1	4.5
C2327	7-Mar-19	0-0.1	6.1
Stockpile Area and South Side Access Road Closest to Tracks			
C2400	8-Mar-19	0-0.1	1.3
C2401	8-Mar-19	0-0.1	3.6
C2402	8-Mar-19	0-0.1	1.1
C2403	8-Mar-19	0-0.1	4.1
C2404	8-Mar-19	0-0.1	4.2
C2405	8-Mar-19	0-0.1	1.9
C2406	8-Mar-19	0-0.1	12.4
C2406-B	10-Mar-19	0.75	4.0
C2407	8-Mar-19	0-0.1	7.6
C2408	8-Mar-19	0-0.1	8.8
C2409	8-Mar-19	0-0.1	2.7
C2410	8-Mar-19	0-0.1	3.7
C2411	8-Mar-19	0-0.1	2.3
C2412	8-Mar-19	0-0.1	3.4
C2413	8-Mar-19	0-0.1	2.3
C2414	8-Mar-19	0-0.1	2.0
C2415	8-Mar-19	0-0.1	2.9
C2416	8-Mar-19	0-0.1	2.2
C2417	8-Mar-19	0-0.1	1.3
C2418	8-Mar-19	0-0.1	2.6
C2419	8-Mar-19	0-0.1	2.7
C2420	8-Mar-19	0-0.1	2.7
C2421	8-Mar-19	0-0.1	2.1
C2422	8-Mar-19	0-0.1	2.1
C2423	8-Mar-19	0-0.1	2.7
C2424	8-Mar-19	0-0.1	4.6
East Culvert			
C2500	8-Mar-19	0-0.1	10.0
C2501	8-Mar-19	0-0.1	4.2
C2502W	8-Mar-19	0.6	6.7
C2503W	8-Mar-19	0.6	3.7
C2504	8-Mar-19	0-0.1	12.6
C2505	8-Mar-19	0-0.1	13.3
C2506W	8-Mar-19	0.6	5.2
C2507W	8-Mar-19	0.6	8.6
C2508	8-Mar-19	0-0.1	42.2
C2508-B	8-Mar-19	0.75	6.9
C2509	8-Mar-19	0-0.1	7.0
C2510W	8-Mar-19	0.6	17.0
C2511	8-Mar-19	0-0.1	16.4
C2512W	8-Mar-19	0.6	5.9
C2513	8-Mar-19	0-0.1	5.8
C2514	8-Mar-19	0-0.1	10.6
C2515	8-Mar-19	0-0.1	7.1
C2516W	8-Mar-19	0.6	7.3
C2517	8-Mar-19	0-0.1	11.0
C2518	8-Mar-19	0-0.1	20.3
C2519W	8-Mar-19	0.6	52.2

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Table 1
Soil Field Screening from February to March 2019
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample ID	Sample Date (dd-mmm-yy)	Depth (mbgs)	Field Vapour Reading (ppm)
C2519W-B	8-Mar-19	0.75	1.9
Respec Engineering Sample Locations			
C-2600	10-Mar-19	0-0.1	3.9
C2600-B	10-Mar-19	0.75	14.0
C-2601	10-Mar-19	0-0.1	5.5
Slot Trenches on South Side of Tracks, East From West Culvert			
C3000	3-Mar-19	2.0	980.0
C3001	3-Mar-19	2.0	1088.0
C3002	3-Mar-19	2.0	880.0
West Culvert Excavation			
C4000	6-Mar-19	0.6	50.4
C4001	6-Mar-19	1.0	1.3
C4002	6-Mar-19	0.6	50.1
C4003	6-Mar-19	0.6	404.0
C4004	6-Mar-19	1.0	304.7
C4005	6-Mar-19	0.6	155.5
C4006	6-Mar-19	1.0	120.8
C4007	6-Mar-19	0.6	280.5
C4008	6-Mar-19	1.0	330.0
C4009	6-Mar-19	0.6	62.7
C4010	6-Mar-19	1.0	45.7
C4011	6-Mar-19	0.6	330.0
C4012	6-Mar-19	0.6	1.3
North Side Culvert Area			
C-5000	9-Mar-19	0-0.1	2.8
C-5001	9-Mar-19	0-0.1	18.5
C-5002	9-Mar-19	0-0.1	14.1
C-5003W	9-Mar-19	0.6	5.0
C-5008	9-Mar-19	0-0.1	21.0
C-5009W	9-Mar-19	0.6	7.1
C-5010	9-Mar-19	-	12.0
C-5011W	9-Mar-19	-	12.8
C-5012W	9-Mar-19	-	8.0
C-5013W	9-Mar-19	-	400.0
C-5014W	9-Mar-19	-	5.1
C-5015	9-Mar-19	-	6.2
C-5016W	9-Mar-19	-	18.0
C-5017	9-Mar-19	1.4	5.5
C-5018	9-Mar-19	1.5	1.3
C-5019	9-Mar-19	1.3	3.1
C-5020W	9-Mar-19	1.0	0.3
C-5021	9-Mar-19	1.4	6.6
C-5022W	9-Mar-19	1.2	0.3
C-5023W	9-Mar-19	1.0	3.1
C-5024	9-Mar-19	1.1	11.5
C-5026	9-Mar-19	1.6	6.1
C-5027W	9-Mar-19	1.2	7.1
C-5029W	9-Mar-19	1.2	0.9
C-5030	9-Mar-19	2.0	2.6
C-5031	11-Mar-19	-	1.4
C-5032W	11-Mar-19	-	0.4
C-5033W	11-Mar-19	-	26.5
C-5034W	11-Mar-19	-	11.0
C-5035	11-Mar-19	-	0.8
C-5036W	11-Mar-19	-	1.0
C-5037W	11-Mar-19	-	1.0
C-5038W	11-Mar-19	-	0.7
C-5039	11-Mar-19	-	1.1
C-5040W	11-Mar-19	-	1.0
C-5041W	11-Mar-19	-	21.1
C-5042W	11-Mar-19	-	1.1
C-5043W	11-Mar-19	-	3.0
C-5044	11-Mar-19	-	0.7
C-5045W	11-Mar-19	-	0.8
C-5046W	11-Mar-19	-	1.2
C-5047W	11-Mar-19	-	0.4
C-5048	11-Mar-19	-	2.5
C-5049W	11-Mar-19	-	3.3
C-5050W	11-Mar-19	-	4.4
C-5051W	11-Mar-19	-	3.0
C-5052	11-Mar-19	-	2.1
C-5053W	11-Mar-19	-	2.1
C-5054W	11-Mar-19	-	4.9
C-5055W	11-Mar-19	-	2.6

Notes:
"-" - not analyzed.
mbgs - meters below ground surface.
ppm - parts per million.
Table to be read in conjunction with accompanying report.

Table 1
Soil Field Screening from February to March 2019
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample ID	Sample Date (dd-mmm-yy)	Depth (mbgs)	Field Vapour Reading (ppm)
C-5056	11-Mar-19	-	1.1
C-5057W	11-Mar-19	-	1.2
C-5058W	11-Mar-19	-	1.3
C-5059W	11-Mar-19	-	0.7
C-5060	11-Mar-19	-	0.9
C-5061W	11-Mar-19	-	2.0
C-5062W	11-Mar-19	-	1.0
C-5063W	11-Mar-19	-	0.7
C-5064	11-Mar-19	-	1.0
C-5065W	11-Mar-19	-	1.2
C-5066W	11-Mar-19	-	1.1
C-5067W	11-Mar-19	-	0.8
C-5068	11-Mar-19	-	0.7
C-5069W	11-Mar-19	-	0.8
C-5070W	11-Mar-19	-	1.2
C-5071W	11-Mar-19	-	0.9
C-5072	11-Mar-19	-	0.9
C-5073W	11-Mar-19	-	1.0
C-5074W	11-Mar-19	-	0.9
C-5075W	11-Mar-19	-	0.8
C-5076	11-Mar-19	-	0.7
C-5077W	11-Mar-19	-	0.8
C-5078W	11-Mar-19	-	0.7
C-5079W	11-Mar-19	-	0.6
Within Oxbow			
C6000	6-Mar-19	0-0.1	4.8
C6001	6-Mar-19	0-0.1	23.8
C6002	6-Mar-19	0-0.1	22.1
C6003	6-Mar-19	0-0.1	18.5
C6004	6-Mar-19	0-0.1	18.8
C6005	6-Mar-19	0-0.1	28.4
C6005-B	8-Mar-19	0.75	11.1
C6006	6-Mar-19	0-0.1	18.3
C6007	6-Mar-19	0-0.1	19.3
C6008	6-Mar-19	0-0.1	27.6
C6009	6-Mar-19	0-0.1	17.6
C6010	6-Mar-19	0-0.1	25.1
C6011	6-Mar-19	0-0.1	15.8
C6012	6-Mar-19	0-0.1	21.3
C6013	6-Mar-19	0-0.1	29.3
C6014	6-Mar-19	0-0.1	19.1
C6015	6-Mar-19	0-0.1	25.5
C6016	6-Mar-19	0-0.1	18.0
C6017	6-Mar-19	0-0.1	15.1
C6018	6-Mar-19	0-0.1	14.0
C6019	6-Mar-19	0-0.1	17.9
C6020	6-Mar-19	0-0.1	27.4
C6021	6-Mar-19	0-0.1	19.1
C6022	6-Mar-19	0-0.1	15.0
C6023	6-Mar-19	0-0.1	22.3
C6024	6-Mar-19	0-0.1	22.3
C6025	6-Mar-19	0-0.1	25.4
C6026	6-Mar-19	0-0.1	29.0
C6027	6-Mar-19	0-0.1	30.0
C6028	6-Mar-19	0-0.1	14.4
C6029	6-Mar-19	0-0.1	25.8
C6030	6-Mar-19	0-0.1	23.0
C6031	6-Mar-19	0-0.1	23.9
C6032	6-Mar-19	0-0.1	18.5
C6033	6-Mar-19	0-0.1	17.0
C6034	6-Mar-19	0-0.1	16.5
C6035	6-Mar-19	0-0.1	25.8
C6036	6-Mar-19	0-0.1	25.6
C6037	6-Mar-19	0-0.1	27.0
C6038	6-Mar-19	0-0.1	>500
C6039	6-Mar-19	0-0.1	44.2
C6040	6-Mar-19	0-0.1	21.3
C6041	6-Mar-19	0-0.1	12.1
C6042	6-Mar-19	0-0.1	28.8
C6043	6-Mar-19	0-0.1	22.8
C6044	6-Mar-19	0-0.1	366.0
C6044-B	8-Mar-19	0.75	28.2
C6045	6-Mar-19	0-0.1	20.8
C6046	6-Mar-19	0-0.1	16.9

Notes:
"-" - not analyzed.
mbgs - meters below ground surface.
ppm - parts per million.
Table to be read in conjunction with accompanying report.

Table 1
Soil Field Screening from February to March 2019
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample ID	Sample Date (dd-mmm-yy)	Depth (mbgs)	Field Vapour Reading (ppm)
C6047	6-Mar-19	0-0.1	134.0
C6048	6-Mar-19	0-0.1	2.8
C6049	6-Mar-19	0-0.1	12.0
C6050	6-Mar-19	0-0.1	17.2
C6051	6-Mar-19	0-0.1	53.9
C6052	6-Mar-19	0-0.1	>500
C6053	6-Mar-19	0-0.1	208.2
C6054	6-Mar-19	0-0.1	42.6
C6055	6-Mar-19	0-0.1	22.1
C6056	6-Mar-19	0-0.1	18.2
C6057	6-Mar-19	0-0.1	11.2
C6058	6-Mar-19	0-0.1	24.2
C6059	6-Mar-19	0-0.1	9.7
C6060	6-Mar-19	0-0.1	15.8
C6061	6-Mar-19	0-0.1	22.8
C6062	6-Mar-19	0-0.1	22.5
C6063	6-Mar-19	0-0.1	17.5
C6064	6-Mar-19	0-0.1	13.2
C6065	6-Mar-19	0-0.1	12.6
C6066	6-Mar-19	0-0.1	12.5
C6067	6-Mar-19	0-0.1	11.3
C6068	6-Mar-19	0-0.1	14.5
C6069	6-Mar-19	0-0.1	12.2
C6070	6-Mar-19	0-0.1	17.9
C6071	6-Mar-19	0-0.1	14.6
C6072	6-Mar-19	0-0.1	18.1
C6073	6-Mar-19	0-0.1	15.0
C6074	6-Mar-19	0-0.1	16.4
C6075	6-Mar-19	0-0.1	14.7
C6076	6-Mar-19	0-0.1	19.3
C6077	6-Mar-19	0-0.1	6.1
C6078	6-Mar-19	0-0.1	17.6
C6079	6-Mar-19	0-0.1	12.3
C6080	6-Mar-19	0-0.1	12.4
C6081	6-Mar-19	0-0.1	13.9
C6082	6-Mar-19	0-0.1	12.0
C6083	6-Mar-19	0-0.1	6.4
C6084	6-Mar-19	0-0.1	7.6
C6085	6-Mar-19	0-0.1	8.5
C6086	6-Mar-19	0-0.1	10.7
C6087	6-Mar-19	0-0.1	1.9
C6088	6-Mar-19	0-0.1	8.0
C6089	6-Mar-19	0-0.1	10.2
C6090	6-Mar-19	0-0.1	13.6
C6091	6-Mar-19	0-0.1	11.6
C6092	6-Mar-19	0-0.1	21.4
C6093	6-Mar-19	0-0.1	17.0
C6094	6-Mar-19	0-0.1	16.5
C6095	6-Mar-19	0-0.1	7.0
C6096	6-Mar-19	0-0.1	69.8
C6097	6-Mar-19	0-0.1	12.7
C6098	6-Mar-19	0-0.1	8.5
C6099	6-Mar-19	0-0.1	9.6
C6100	7-Mar-19	0-0.1	6.9
C6101	7-Mar-19	0-0.1	8.9
C6102	7-Mar-19	0-0.1	11.9
C6103	7-Mar-19	0-0.1	16.1
C6104	7-Mar-19	0-0.1	18.2
C6105	7-Mar-19	0-0.1	18.9
C6106	7-Mar-19	0-0.1	12.7
C6107	7-Mar-19	0-0.1	14.0
C6108	7-Mar-19	0-0.1	15.2
South Wall of Oxbow			
C6200	7-Mar-19	0-0.1	6.3
C6201	7-Mar-19	0-0.1	1.6
C6202	7-Mar-19	0-0.1	6.5
C6203	7-Mar-19	0-0.1	4.7
C6204	7-Mar-19	0-0.1	1.9
C6205	7-Mar-19	0-0.1	3.9
C6206	7-Mar-19	0-0.1	3.9
C6207	7-Mar-19	0-0.1	14.0
C6207-B	7-Mar-19	0.75	25.0
C6208	7-Mar-19	0-0.1	5.3
C6209	7-Mar-19	0-0.1	4.6

Notes:
"-" - not analyzed.
mbgs - meters below ground surface.
ppm - parts per million.
Table to be read in conjunction with accompanying report.

Table 1
Soil Field Screening from February to March 2019
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample ID	Sample Date (dd-mmm-yy)	Depth (mbgs)	Field Vapour Reading (ppm)
C6210	7-Mar-19	0-0.1	4.6
C6211	7-Mar-19	0-0.1	3.9
C6212	7-Mar-19	0-0.1	3.8
C6213	7-Mar-19	0-0.1	1.4
C6214	7-Mar-19	0-0.1	3.7
C6215	7-Mar-19	0-0.1	7.9
C6216	7-Mar-19	0-0.1	11.9
C6217	7-Mar-19	0-0.1	10.7
C6218	7-Mar-19	0-0.1	7.5
C6219	7-Mar-19	0-0.1	28.6
C6220	7-Mar-19	0-0.1	27.5
North Side of Tracks, Embankment			
C7000	8-Mar-19	0-0.1	2.0
C7001	8-Mar-19	0-0.1	2.8
C7002	8-Mar-19	0-0.1	1.9
C7003	8-Mar-19	0-0.1	3.0
C7004	8-Mar-19	0-0.1	2.8
C7005	8-Mar-19	0-0.1	4.0
C7006	8-Mar-19	0-0.1	53.5
C7007	8-Mar-19	0-0.1	50.7
C7008	8-Mar-19	0-0.1	373.5
C7009	8-Mar-19	0-0.1	72.5
C7010	8-Mar-19	0-0.1	65.9
C7011	8-Mar-19	0-0.1	11.7
C7012	8-Mar-19	0-0.1	31.1
C7013	8-Mar-19	0-0.1	14.9
C7014	8-Mar-19	0-0.1	48.3
C7015	8-Mar-19	0-0.1	33.5
C7016	8-Mar-19	0-0.1	7.5
C7017	8-Mar-19	0-0.1	19.2
C7018	8-Mar-19	0-0.1	5.2
C7019	8-Mar-19	0-0.1	2.2
C7020	8-Mar-19	0-0.1	7.3
C7021	8-Mar-19	0-0.1	3.3
C7022	8-Mar-19	0-0.1	2.6
C7023	8-Mar-19	0-0.1	2.6
C7024	8-Mar-19	0-0.1	2.8
C7025	8-Mar-19	0-0.1	3.1
C7026	8-Mar-19	0-0.1	5.4
C7027	8-Mar-19	0-0.1	2.7
North Side of Tracks Below C7027			
C7100	8-Mar-19	0-0.1	4.5
C7101	8-Mar-19	0-0.1	6.8
C7102	8-Mar-19	0-0.1	6.7
C7103	8-Mar-19	0-0.1	6.3
C7104	8-Mar-19	0-0.1	6.6
C7105	8-Mar-19	0-0.1	8.4
C7106	8-Mar-19	0-0.1	8.3
C7107	8-Mar-19	0-0.1	10.5
C7108	8-Mar-19	0-0.1	11.6
C7109	8-Mar-19	0-0.1	8.4
C7110	8-Mar-19	0-0.1	8.0
C7111	8-Mar-19	0-0.1	15.3
C7112	8-Mar-19	0-0.1	400.0
C7113	8-Mar-19	0-0.1	8.4
C7114	8-Mar-19	0-0.1	12.2
C7115	8-Mar-19	0-0.1	14.8
C7116	8-Mar-19	0-0.1	447.1
C7117	8-Mar-19	0-0.1	123.4
C7118	8-Mar-19	0-0.1	92.1
C7119	8-Mar-19	0-0.1	178.5
C7120	8-Mar-19	0-0.1	183.0
C7121	8-Mar-19	0-0.1	46.4
C7122	8-Mar-19	0-0.1	8.1
C7123	8-Mar-19	0-0.1	6.0
C7124	8-Mar-19	0-0.1	16.6
C7125	8-Mar-19	0-0.1	3.0
C7126	8-Mar-19	0-0.1	6.6
C7127	8-Mar-19	0-0.1	6.5
C7128	8-Mar-19	0-0.1	8.4
C7129	8-Mar-19	0-0.1	8.9
C7130	8-Mar-19	0-0.1	9.1
C7131	8-Mar-19	0-0.1	8.3
C7132	8-Mar-19	0-0.1	6.6

Notes:
"-" - not analyzed.
mbgs - meters below ground surface.
ppm - parts per million.
Table to be read in conjunction with accompanying report.

Table 1
Soil Field Screening from February to March 2019
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample ID	Sample Date (dd-mmm-yy)	Depth (mbgs)	Field Vapour Reading (ppm)
C7133	8-Mar-19	0-0.1	7.2
C7134	8-Mar-19	0-0.1	20.1
C7135	8-Mar-19	0-0.1	131.5
C7136	8-Mar-19	0-0.1	21.5
C7137	8-Mar-19	0-0.1	12.8
C7138	8-Mar-19	0-0.1	11.5
C7139	8-Mar-19	0-0.1	375.1
C7140	8-Mar-19	0-0.1	70.4
C7141	8-Mar-19	0-0.1	13.8
C7142	8-Mar-19	0-0.1	12.1
C7143	8-Mar-19	0-0.1	7.4
C7144	8-Mar-19	0-0.1	6.5
C7145	8-Mar-19	0-0.1	5.1
C-7200	11-Mar-19	-	5.8
C-7201	11-Mar-19	-	22.0
C-7202	11-Mar-19	-	24.1
C-7203	11-Mar-19	-	4.9
C-7204	11-Mar-19	-	3.9
C-7205	11-Mar-19	-	3.5
C-7206	11-Mar-19	-	7.8
C-7207	11-Mar-19	-	6.8
C-7208	11-Mar-19	-	5.6
C-7209	11-Mar-19	-	1.7
C-7210	11-Mar-19	-	1.4
C-7211	11-Mar-19	-	16.5
C-7212	11-Mar-19	-	7.0
C-7213	11-Mar-19	-	2.5
C-7214	11-Mar-19	-	2.9
C-7215	11-Mar-19	-	1.7
C-7216	11-Mar-19	-	2.0
C-7217	11-Mar-19	-	2.3
C-7218	11-Mar-19	-	1.8
C-7219	11-Mar-19	-	5.4
C-7220	11-Mar-19	-	11.8
C-7221	11-Mar-19	-	1.5
C-7222	11-Mar-19	-	1.9
C-7223	11-Mar-19	-	1.7
C-7224	11-Mar-19	-	1.6
C-7225	11-Mar-19	-	2.7
C-7226	11-Mar-19	-	3.6
C-7227	11-Mar-19	-	1.6
North of Track Shearing Area			
C-8001	12-Mar-19	-	102.5
C-8002	12-Mar-19	-	61.6
C-8003	12-Mar-19	-	46.2
C-8004	12-Mar-19	-	44.8
C-8005	12-Mar-19	-	34.3
C-8006	12-Mar-19	-	162.0
C-8007	12-Mar-19	-	26.7
C-8007-B	16-Mar-19	-	3.0
C-8008	12-Mar-19	-	9.7
C-8009	12-Mar-19	-	9.4
C-8010	12-Mar-19	-	7.1
C-8011	12-Mar-19	-	47.3
C-8012	12-Mar-19	-	10.2
C-8013	12-Mar-19	-	45.0
C-8014	12-Mar-19	-	14.2
C-8015	12-Mar-19	-	19.2
C-8016	12-Mar-19	-	395.2
C-8017	12-Mar-19	-	56.0
C-8018	12-Mar-19	-	18.0
C-8018-B	16-Mar-19	-	2.5
C-8019	12-Mar-19	-	7.9
C-8020	12-Mar-19	-	8.9
C-8021	12-Mar-19	-	8.9
C-8022	12-Mar-19	-	7.5
C-8023	12-Mar-19	-	8.8
C-8024	12-Mar-19	-	16.2
C-8025	12-Mar-19	-	8.4
C-8026	12-Mar-19	-	16.2
C-8027	12-Mar-19	-	8.4
C-8028	12-Mar-19	-	6.1
C-8029	12-Mar-19	-	9.4
C-8030	12-Mar-19	-	19.4

Notes:
"-" - not analyzed.
mbgs - meters below ground surface.
ppm - parts per million.
Table to be read in conjunction with accompanying report.

Table 1
Soil Field Screening from February to March 2019
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample ID	Sample Date (dd-mmm-yy)	Depth (mbgs)	Field Vapour Reading (ppm)
C-8031	12-Mar-19	-	31.2
C-8032	12-Mar-19	-	8.2
C-8033	12-Mar-19	-	5.7
C-8034	12-Mar-19	-	4.7
C-8035	12-Mar-19	-	5.5
C-8036	12-Mar-19	-	8.2
C-8037	12-Mar-19	-	8.1
C-8038	12-Mar-19	-	3.7
C-8039	12-Mar-19	-	7.3
C-8040	12-Mar-19	-	20.5
C-8040-B	16-Mar-19	-	3.2
C-8041	12-Mar-19	-	13.9
C-8042	12-Mar-19	-	26.2
C-8043	12-Mar-19	-	9.4
C-8044	12-Mar-19	-	7.0
C-8045	12-Mar-19	-	8.1
C-8046	12-Mar-19	-	8.7
C-8047	12-Mar-19	-	7.6
C-8048	12-Mar-19	-	8.8
C-8049	13-Mar-19	-	1.4
C-8050	13-Mar-19	-	3.7
C-8051	13-Mar-19	-	20.5
C-8052	13-Mar-19	-	36.3
C-8053	13-Mar-19	-	43.0
C-8054	13-Mar-19	-	51.2
C-8055	13-Mar-19	-	3.4
C-8056	13-Mar-19	-	3.6
C-8057	13-Mar-19	-	3.6
C-8058	13-Mar-19	-	5.7
C-8059	14-Mar-19	-	2.4
C-8060	14-Mar-19	-	4.6
C-8061	14-Mar-19	-	5.0
North side snow pile			
C-8062	15-Mar-19	-	5.9
C-8063	15-Mar-19	-	5.2
C-8064	15-Mar-19	-	8.7
C-8065	15-Mar-19	-	8.1
C-8066	15-Mar-19	-	7.3
C-8067	15-Mar-19	-	7.1
C-8068	15-Mar-19	-	6.5
C-8069	15-Mar-19	-	7.9
C-8070	15-Mar-19	-	12.0
C-8071	15-Mar-19	-	7.5
C-8072	15-Mar-19	-	2.7
C-8073	15-Mar-19	-	3.0
C-8074	15-Mar-19	-	13.8
C-8075	15-Mar-19	-	2.5
C-8076	15-Mar-19	-	2.1
C-8077	15-Mar-19	-	4.2
C-8078	16-Mar-19	-	7.7
C-8079	16-Mar-19	-	7.6
C-8080	16-Mar-19	-	10.4
C-8081	16-Mar-19	-	3.7
C-8082	16-Mar-19	-	5.3
C-8083	16-Mar-19	-	3.0
C-8084	16-Mar-19	-	4.3
C-8085	16-Mar-19	-	5.7
C-8086	16-Mar-19	-	2.4
C-8087	16-Mar-19	-	5.1
C-8088	16-Mar-19	-	3.2
C-8089	16-Mar-19	-	3.1
C-8090	16-Mar-19	-	4.6
C-8091	16-Mar-19	-	4.6
C-8092	16-Mar-19	-	2.3
C-8093	16-Mar-19	-	3.4
C-8094	16-Mar-19	-	1.9
C-8095	16-Mar-19	-	2.0
C-8096	16-Mar-19	-	1.8
C-8097	16-Mar-19	-	1.8
C-8098	16-Mar-19	-	1.5
C-8099	16-Mar-19	-	1.6
North side snow pile near culvert			
C-8100	16-Mar-19	-	1.3
C-8101	16-Mar-19	-	0.8

Notes:
"-" - not analyzed.
mbgs - meters below ground surface.
ppm - parts per million.
Table to be read in conjunction with accompanying report.

Table 1
Soil Field Screening from February to March 2019
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample ID	Sample Date (dd-mmm-yy)	Depth (mbgs)	Field Vapour Reading (ppm)
C-8102	16-Mar-19	-	1.5
C-8103	16-Mar-19	-	1.4
C-8104	16-Mar-19	-	1.6
C-8105	16-Mar-19	-	1.2
C-8106	16-Mar-19	-	1.4
C-8107	16-Mar-19	-	1.1
C-8108	16-Mar-19	-	1.0
C-8109	16-Mar-19	-	1.2
C-8110	16-Mar-19	-	1.2
C-8111	16-Mar-19	-	1.0
South of Track Shearing Area			
C-9000	12-Mar-19	-	5.8
C-9001	12-Mar-19	-	7.3
C-9002	12-Mar-19	-	7.1
C-9003	12-Mar-19	-	8.8
C-9004	12-Mar-19	-	31.3
C-9005	12-Mar-19	-	15.4
C-9006	12-Mar-19	-	32.0
C-9007	12-Mar-19	-	112.4
C-9008	12-Mar-19	-	121.0
C-9009	12-Mar-19	-	54.9
C-9010	12-Mar-19	-	70.5
C-9011	12-Mar-19	-	24.2
C-9012	12-Mar-19	-	96.1
C-9013	12-Mar-19	-	199.6
C-9014	12-Mar-19	-	61.0
C-9015	12-Mar-19	-	99.5
C-9016	12-Mar-19	-	40.6
C-9017	12-Mar-19	-	43.1
C-9018	12-Mar-19	-	16.5
C-9019	12-Mar-19	-	10.1
C-9020	12-Mar-19	-	17.7
C-9021	12-Mar-19	-	19.7
C-9022	12-Mar-19	-	11.5
C-9023	12-Mar-19	-	11.6
C-9024	12-Mar-19	-	9.5
C-9025	12-Mar-19	-	55.5
C-9026	12-Mar-19	-	56.1
C-9027	12-Mar-19	-	14.8
C-9028	12-Mar-19	-	13.7
C-9029	12-Mar-19	-	18.1
C-9030	12-Mar-19	-	21.0
C-9031	12-Mar-19	-	13.0
C-9032	12-Mar-19	-	12.6
C-9033	12-Mar-19	-	16.9
C-9034	12-Mar-19	-	15.9
C-9035	12-Mar-19	-	11.3
C-9036	12-Mar-19	-	86.4
C-9037	12-Mar-19	-	21.5
C-9038	12-Mar-19	-	19.2
C-9039	12-Mar-19	-	17.8
C-9040	12-Mar-19	-	13.4
C-9041	12-Mar-19	-	14.1
C-9042	12-Mar-19	-	13.2
C-9043	12-Mar-19	-	18.0
C-9044	12-Mar-19	-	21.7
C-9045	12-Mar-19	-	29.1
C-9046	12-Mar-19	-	178.0
C-9046B	2-Jun-19	0-0.15	0.0
C-9047	12-Mar-19	-	363.2
C-9048	12-Mar-19	-	60.1
C-9049	12-Mar-19	-	21.1
C-9049B	2-Jun-19	0-0.15	0.0
C-9050	12-Mar-19	-	19.8
C-9051	12-Mar-19	-	14.5
C-9052	12-Mar-19	-	14.4
C-9053	12-Mar-19	-	20.3
C-9054	12-Mar-19	-	33.1
C-9055	12-Mar-19	-	15.5
C-9056	12-Mar-19	-	27.7
C-9056B	2-Jun-19	0-0.15	0.0
C-9057	12-Mar-19	-	7.1
C-9058	12-Mar-19	-	5.6
C-9059	12-Mar-19	-	13.6

Notes:
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ppm - parts per million.
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Table 1
Soil Field Screening from February to March 2019
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample ID	Sample Date (dd-mmm-yy)	Depth (mbgs)	Field Vapour Reading (ppm)
C-9060	12-Mar-19	-	3.9
C-9061	12-Mar-19	-	18.1
C-9062	12-Mar-19	-	14.8
C-9063	12-Mar-19	-	16.9
C-9064	12-Mar-19	-	16.0
C-9065	12-Mar-19	-	0.9
C-9066	12-Mar-19	-	3.0
C-9067	12-Mar-19	-	4.2
C-9068	12-Mar-19	-	6.2
C-9069	12-Mar-19	-	14.8
C-9070	12-Mar-19	-	3.5
C-9071	12-Mar-19	-	7.5
C-9072	12-Mar-19	-	10.5
C-9073	12-Mar-19	-	11.1
C-9074	12-Mar-19	-	6.9
C-9075	12-Mar-19	-	14.4
C-9076	12-Mar-19	-	3.6
C-9077	12-Mar-19	-	7.7
C-9078	12-Mar-19	-	9.9
C-9079	12-Mar-19	-	1.1
C-9080	12-Mar-19	-	1.4
C-9081	12-Mar-19	-	20.3
C-9081B	2-Jun-19	0-0.15	0.0
C-9082	12-Mar-19	-	1.1
C-9083	12-Mar-19	-	7.1
C-9084	12-Mar-19	-	29.9
C-9084B	24-Jul-19	0-0.15	0.0
C-9085	12-Mar-19	-	14.7
C-9086	12-Mar-19	-	24.2
C-9087	12-Mar-19	-	3.1
C-9088	12-Mar-19	-	1.0
C-9089	12-Mar-19	-	14.6
C-9089B	2-Jun-19	0-0.15	0.0
C-9090	12-Mar-19	-	4.6
C-9091	12-Mar-19	-	2.5
C-9092	12-Mar-19	-	0.8
C-9093	12-Mar-19	-	3.1
C-9093B	24-Jul-19	0-0.15	0.0
C-9094	12-Mar-19	-	13.1
C-9094B	24-Jul-19	0-0.15	0.0
C-9095	12-Mar-19	-	3.4
C-9096	12-Mar-19	-	4.1
C-9097	12-Mar-19	-	8.7
C-9098	12-Mar-19	-	7.0
C-9099	12-Mar-19	-	7.6
C-9100	12-Mar-19	-	1.6
C-9101	12-Mar-19	-	3.8
C-9102	12-Mar-19	-	1.3
C-9103	12-Mar-19	-	4.8
C-9104	13-Mar-19	-	6.1
C-9105	13-Mar-19	-	7.5
C-9106	13-Mar-19	-	13.3
C-9106B	2-Jun-19	0-0.15	0.0
C-9107	13-Mar-19	-	15.6
C-9107B	2-Jun-19	0-0.15	0.0
C-9108	13-Mar-19	-	10.6
C-9109	13-Mar-19	-	7.6
C-9110	13-Mar-19	-	32.3
C-9111	13-Mar-19	-	6.8
C-9112	13-Mar-19	-	5.9
C-9113	13-Mar-19	-	15.2
C-9113B	2-Jun-19	0-0.15	0.0
C-9114	13-Mar-19	-	7.1
C-9115	13-Mar-19	-	6.2
C-9116	13-Mar-19	-	-
C-9117	13-Mar-19	-	7.6
C-9118	13-Mar-19	-	5.0
C-9119	13-Mar-19	-	7.1
C-9120	13-Mar-19	-	327.6
C-9121	13-Mar-19	-	49.2
C-9122	13-Mar-19	-	7.2
C-9123	13-Mar-19	-	6.5
C-9124	13-Mar-19	-	4.8
C-9125	13-Mar-19	-	6.4

Notes:
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ppm - parts per million.
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Table 1
Soil Field Screening from February to March 2019
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample ID	Sample Date (dd-mmm-yy)	Depth (mbgs)	Field Vapour Reading (ppm)
C-9126	13-Mar-19	-	5.9
C-9127	13-Mar-19	-	3.9
C-9128	13-Mar-19	-	4.0
C-9129	13-Mar-19	-	4.4
C-9130	13-Mar-19	-	6.2
C-9131	13-Mar-19	-	5.1
C-9132	13-Mar-19	-	5.4
C-9133	13-Mar-19	-	5.7
C-9134	13-Mar-19	-	5.2
C-9135	13-Mar-19	-	4.8
C-9136	13-Mar-19	-	5.1
C-9137	13-Mar-19	-	5.4
C-9138	13-Mar-19	-	6.1
C-9139	13-Mar-19	-	5.5
C-9140	13-Mar-19	-	5.1
C-9141	13-Mar-19	-	34.2
C-9142	13-Mar-19	-	7.0
C-9143	13-Mar-19	-	91.2
C-9144	13-Mar-19	-	6.5
C-9145	13-Mar-19	-	6.6
C-9146	13-Mar-19	-	10.8
C-9147	13-Mar-19	-	9.1
C-9148	13-Mar-19	-	6.6
C-9149	13-Mar-19	-	7.9
C-9150	13-Mar-19	-	7.5
C-9151	13-Mar-19	-	7.1
C-9152	13-Mar-19	-	5.6
C-9153	13-Mar-19	-	6.2
C-9154	13-Mar-19	-	5.8
C-9155	13-Mar-19	-	5.7
C-9156	13-Mar-19	-	4.4
C-9157	13-Mar-19	-	7.7
C-9158	13-Mar-19	-	21.8
C-9158B	2-Jun-19	0-0.15	0.0
C-9159	13-Mar-19	-	3.7
C-9160	13-Mar-19	-	5.9
C-9161	13-Mar-19	-	15.4
C-9162	13-Mar-19	-	5.7
C-9163	13-Mar-19	-	9.3
C-9164	13-Mar-19	-	11.7
C-9165	13-Mar-19	-	7.2
C-9166	13-Mar-19	-	7.7
C-9167	13-Mar-19	-	7.3
C-9168	13-Mar-19	-	9.0
C-9169	13-Mar-19	-	5.2
C-9170	13-Mar-19	-	9.3
C-9171	14-Mar-19	-	0.7
C-9172	14-Mar-19	-	75.3
C-9172-B	17-Mar-19	-	14.5
C-9172-C	18-Mar-18	-	3.1
C-9173	14-Mar-19	-	22.1
C-9174	14-Mar-19	-	2.4
C-9175	14-Mar-19	-	3.4
C-9176	14-Mar-19	-	0.4
C-9177	14-Mar-19	-	6.1
C-9178	14-Mar-19	-	17.9
C-9179	14-Mar-19	-	6.3
C-9180	14-Mar-19	-	4.7
C-9181	14-Mar-19	-	1.2
C-9182	14-Mar-19	-	3.6
C-9183	14-Mar-19	-	3.9
C-9184	14-Mar-19	-	3.6
C-9185	14-Mar-19	-	3.2
C-9186	14-Mar-19	-	45.2
C-9186-B	17-Mar-19	-	173.1
C-9186-T	18-Mar-18	-	23.0
C-9186-U	18-Mar-18	-	22.8
C-9186-V	18-Mar-18	-	106.1
C-9186-W	18-Mar-18	-	33.3
C-9186-X	18-Mar-18	-	35.1
C-9186-Y	18-Mar-18	-	24.8
C-9186-Z	18-Mar-18	-	18.6
C-9186-C	18-Mar-18	-	16.5
C-9187	14-Mar-19	-	14.9

Notes:
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ppm - parts per million.
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Table 1
Soil Field Screening from February to March 2019
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample ID	Sample Date (dd-mmm-yy)	Depth (mbgs)	Field Vapour Reading (ppm)
C-9188	14-Mar-19	-	17.4
C-9189	14-Mar-19	-	3.4
C-9190	14-Mar-19	-	2.8
C-9191	14-Mar-19	-	5.5
C-9192	14-Mar-19	-	5.4
C-9193	14-Mar-19	-	2.8
C-9194	14-Mar-19	-	3.7
C-9195	14-Mar-19	-	5.4
C-9195-B	17-Mar-19	-	5.3
C-9196	14-Mar-19	-	2.9
C-9197	14-Mar-19	-	3.8
C-9198	14-Mar-19	-	4.3
C-9199	14-Mar-19	-	3.8
C-9200	14-Mar-19	-	1.0
C-9201	14-Mar-19	-	0.3
C-9202	14-Mar-19	-	3.1
C-9203	14-Mar-19	-	3.8
C-9204	14-Mar-19	-	4.3
C-9205	14-Mar-19	-	3.4
C-9206	14-Mar-19	-	3.3
C-9207	14-Mar-19	-	3.2
C-9208	14-Mar-19	-	3.4
C-9209	14-Mar-19	-	3.4
C-9210	14-Mar-19	-	3.4
C-9211	14-Mar-19	-	3.4
C-9212	14-Mar-19	-	6.0
C-9213	14-Mar-19	-	4.1
C-9214	14-Mar-19	-	3.0
C-9215	14-Mar-19	-	4.7
C-9216	14-Mar-19	-	4.1
C-9217	14-Mar-19	-	4.8
C-9218	14-Mar-19	-	3.9
C-9219	14-Mar-19	-	3.9
C-9220	14-Mar-19	-	4.1
C-9221	14-Mar-19	-	4.0
C-9222	14-Mar-19	-	4.4
C-9223	14-Mar-19	-	4.7
C-9224	14-Mar-19	-	5.1
C-9225	14-Mar-19	-	4.6
C-9226	14-Mar-19	-	1.7
C-9227	14-Mar-19	-	2.9
C-9228	14-Mar-19	-	3.9
C-9229	14-Mar-19	-	4.6
C-9230	14-Mar-19	-	3.1
C-9231	14-Mar-19	-	4.1
C-9232	14-Mar-19	-	5.0
C-9233	14-Mar-19	-	5.4
C-9234	14-Mar-19	-	4.3
C-9235	14-Mar-19	-	5.1
C-9236	14-Mar-19	-	3.5
C-9237	14-Mar-19	-	4.6
C-9238	14-Mar-19	-	4.1
C-9239	14-Mar-19	-	7.4
C-9239-B	17-Mar-19	-	4.5
C-9240	14-Mar-19	-	4.3
C-9241	14-Mar-19	-	4.2
C-9242	14-Mar-19	-	4.3
C-9243	14-Mar-19	-	3.2
C-9244	14-Mar-19	-	5.0
C-9245	14-Mar-19	-	5.5
C-9246	14-Mar-19	-	3.9
C-9247	14-Mar-19	-	2.0
C-9248	14-Mar-19	-	2.1
C-9249	14-Mar-19	-	2.1
C-9250	14-Mar-19	-	5.0
C-9251	14-Mar-19	-	3.1
C-9252	14-Mar-19	-	6.4
C-9253	14-Mar-19	-	5.9
C-9254	14-Mar-19	-	5.1
C-9255	14-Mar-19	-	4.5
C-9256	14-Mar-19	-	4.4
C-9257	14-Mar-19	-	7.1
C-9258	14-Mar-19	-	5.9
C-9259	14-Mar-19	-	6.5

Notes:
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ppm - parts per million.
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Table 1
Soil Field Screening from February to March 2019
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample ID	Sample Date (dd-mmm-yy)	Depth (mbgs)	Field Vapour Reading (ppm)
C-9260	14-Mar-19	-	7.0
C-9261	14-Mar-19	-	5.7
C-9262	14-Mar-19	-	6.0
C-9263	14-Mar-19	-	224.9
C-9264	14-Mar-19	-	4.9
C-9266	15-Mar-19	-	2.3
C-9267	15-Mar-19	-	2.2
C-9268	15-Mar-19	-	2.2
C-9269	15-Mar-19	-	2.0
C-9270	15-Mar-19	-	4.0
C-9271	15-Mar-19	-	5.9
C-9272	15-Mar-19	-	6.7
C-9273	15-Mar-19	-	6.5
C-9274	15-Mar-19	-	5.2
C-9275	15-Mar-19	-	2.1
C-9276	15-Mar-19	-	2.9
C-9277	15-Mar-19	-	2.1
C-9278	15-Mar-19	-	3.3
C-9279	15-Mar-19	-	2.0
C-9280	15-Mar-19	-	2.1
C-9281	15-Mar-19	-	35.4
C-9282	15-Mar-19	-	1.4
C-9283	15-Mar-19	-	4.0
C-9284	15-Mar-19	-	36.2
C-9285	15-Mar-19	-	5.0
C-9286	15-Mar-19	-	164.4
C-9287	15-Mar-19	-	5.3
C-9288	15-Mar-19	-	20.2
C-9289	16-Mar-19	-	3.4
C-9290	16-Mar-19	-	8.7
C-9291	16-Mar-19	-	8.1
C-9292	16-Mar-19	-	8.9
C-9293	16-Mar-19	-	8.4
C-9294	16-Mar-19	-	8.8
C-9295	16-Mar-19	-	17.9
C-9296	16-Mar-19	-	7.6
C-9297	16-Mar-19	-	6.1
Containment Cell #3			
C-9300	16-Mar-19	-	6.4
C-9301	16-Mar-19	-	7.9
C-9302	16-Mar-19	-	9.1
C-9303	16-Mar-19	-	13.1
C-9304	16-Mar-19	-	10.9
C-9305	16-Mar-19	-	10.7
C-9306	16-Mar-19	-	15.1
C-9307	16-Mar-19	-	10.0
C-9308	16-Mar-19	-	9.5
C-9309	16-Mar-19	-	11.1
C-9310	16-Mar-19	-	11.6
C-9311	16-Mar-19	-	10.1
C-9312	16-Mar-19	-	11.5
C-9313	16-Mar-19	-	10.6
C-9314	16-Mar-19	-	10.1
C-9315	16-Mar-19	-	11.2
C-9316	16-Mar-19	-	9.6
C-9317	16-Mar-19	-	11.5
C-9318	16-Mar-19	-	10.7
C-9319	16-Mar-19	-	10.5
C-9320	16-Mar-19	-	9.3
C-9321	16-Mar-19	-	9.8
C-9322	16-Mar-19	-	8.6
C-9323	16-Mar-19	-	10.1
C-9324	16-Mar-19	-	8.5
C-9325	16-Mar-19	-	9.8
C-9326	16-Mar-19	-	9.3
C-9327	16-Mar-19	-	10.2
C-9328	16-Mar-19	-	7.0
C-9329	16-Mar-19	-	3.6
C-9330	16-Mar-19	-	3.7
C-9331	16-Mar-19	-	7.6
C-9332	16-Mar-19	-	3.8
C-9333	16-Mar-19	-	3.6
C-9334	16-Mar-19	-	3.9
C-9335	17-Mar-19	-	2.3

Notes:
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ppm - parts per million.
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Table 1
Soil Field Screening from February to March 2019
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample ID	Sample Date (dd-mmm-yy)	Depth (mbgs)	Field Vapour Reading (ppm)
C-9336	17-Mar-19	-	5.6
C-9337	17-Mar-19	-	3.1
C-9338	17-Mar-19	-	14.4
C-9338-B	17-Mar-19	-	1.5
C-9339	17-Mar-19	-	3.5
C-9340	17-Mar-19	-	2.5
C-9341	17-Mar-19	-	16.2
C-9341-B	17-Mar-19	-	1.3
C-9342	17-Mar-19	-	3.3
C-9343	17-Mar-19	-	3.2
C-9344	17-Mar-19	-	1.3
C-9345	17-Mar-19	-	2.7
C-9346	17-Mar-19	-	4.8
C-9347	17-Mar-19	-	2.1
C-9348	17-Mar-19	-	1.0
C-9349	17-Mar-19	-	0.8
C-9350	17-Mar-19	-	2.9
C-9351	17-Mar-19	-	2.7
C-9352	17-Mar-19	-	2.5
C-9353	17-Mar-19	-	1.4
C-9354	17-Mar-19	-	0.7
C-9355	17-Mar-19	-	1.0
C-9356	17-Mar-19	-	0.7
C-9357	17-Mar-19	-	1.1
C-9358	17-Mar-19	-	1.4
C-9359	17-Mar-19	-	1.2
C-9360	17-Mar-19	-	1.1
C-9361	17-Mar-19	-	12.6
C-9361-B	17-Mar-19	-	1.5
C-9362	17-Mar-19	-	1.0
C-9363	17-Mar-19	-	0.9
C-9364	17-Mar-19	-	1.5
C-9365	17-Mar-19	-	7.5
C-9366	17-Mar-19	-	7.4
C-9367	17-Mar-19	-	3.4
C-9368	17-Mar-19	-	1.9
C-9369	17-Mar-19	-	1.8
C-9370	17-Mar-19	-	3.3
C-9371	17-Mar-19	-	4.2
C-9372	17-Mar-19	-	6.5
C-9373	17-Mar-19	-	3.9
C-9374	17-Mar-19	-	2.5
C-9375	17-Mar-19	-	3.7
C-9376	17-Mar-19	-	3.0
C-9377	17-Mar-19	-	4.0
C-9400	17-Mar-19	-	11.3
C-9401	17-Mar-19	-	10.1
C-9402	17-Mar-19	-	9.5
C-9403	17-Mar-19	-	6.9
C-9404	17-Mar-19	-	11.2
C-9405	17-Mar-19	-	12.1
C-9406	17-Mar-19	-	36.9
C-9406-B	17-Mar-19	-	4.2
C-9407	17-Mar-19	-	12.4
C-9408	17-Mar-19	-	13.7
C-9409	17-Mar-19	-	9.4
C-9410	17-Mar-19	-	10.8
C-9411	17-Mar-19	-	8.2
C-9412	17-Mar-19	-	8.4
C-9413	17-Mar-19	-	8.0
C-9414	17-Mar-19	-	4.1
C-9415	17-Mar-19	-	4.2
C-9416	17-Mar-19	-	4.1
C-9417	17-Mar-19	-	3.6
C-9418	17-Mar-19	-	3.7
C-9419	17-Mar-19	-	3.2
C-9420	17-Mar-19	-	4.0
C-9421	17-Mar-19	-	5.3
C-9422	17-Mar-19	-	3.1
C-9423	17-Mar-19	-	2.4
C-9424	17-Mar-19	-	2.8
C-9425	17-Mar-19	-	18.0
C-9425-B	17-Mar-19	-	4.6
C-9426	17-Mar-19	-	4.3
C-9427	17-Mar-19	-	2.5

Notes:
"-" - not analyzed.
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ppm - parts per million.
Table to be read in conjunction with accompanying report.

Table 1
Soil Field Screening from February to March 2019
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample ID	Sample Date (dd-mmm-yy)	Depth (mbgs)	Field Vapour Reading (ppm)
C-9428	17-Mar-19	-	2.7
C-9429	17-Mar-19	-	15.0
C-9429-B	17-Mar-19	-	5.1
C-9430	17-Mar-19	-	3.1
C-9431	17-Mar-19	-	2.9
Drainage Basin			
DB001	2-Mar-19	1.2	1.8
DB002	2-Mar-19	0.7	1.1
DB003	2-Mar-19	1.0	1.2
DB004	2-Mar-19	0.6	1.5
DB005	2-Mar-19	0.7	0.4
DB006	2-Mar-19	1.7	8.7
DB007	2-Mar-19	1.6	1.4
DB008	2-Mar-19	0.4	0.6
DB009	2-Mar-19	1.1	0.8
DB010	2-Mar-19	1.4	1.0
DB011	2-Mar-19	0.5	3.6
DB012	2-Mar-19	0.3	1.2
DB013	2-Mar-19	0.0	0.9
DB014	2-Mar-19	0.0	0.3
DB015	2-Mar-19	1.2	2.2
DB016	2-Mar-19	1.3	1.0
DB017	2-Mar-19	0.6	3.4
DB018	2-Mar-19	0.6	1.0
Drainage Basin, West End by Oxbow			
DB-100	8-Mar-19	0.5-1.0	1.9
DB-101	8-Mar-19	0.5-1.0	2.1
DB-102	8-Mar-19	0.5-1.0	1.5
DB-103	8-Mar-19	0.5-1.0	16.1
DB-103-B	8-Mar-19	0.5-1.0	3.9
DB-104	8-Mar-19	0.5-1.0	56.1
DB-104-B	8-Mar-19	0.5-1.0	2.1
DB-105	8-Mar-19	0.5-1.0	7.2
DB-106	8-Mar-19	0.5-1.0	1.9
DB-107	8-Mar-19	0.5-1.0	229.0
DB-107-B	8-Mar-19	0.5-1.0	3.4
DB-108	8-Mar-19	0.5-1.0	108.0
DB-108-B	8-Mar-19	0.5-1.0	3.6
DB-109	8-Mar-19	0.5-1.0	5.5
DB-109-B	8-Mar-19	0.5-1.0	3.1
DB-110	8-Mar-19	0.5-1.0	119.0
DB-110-B	8-Mar-19	0.5-1.0	19.3
DB-110-C	8-Mar-19	-	30.1
DB-111	8-Mar-19	0.5-1.0	165.0
DB-111-B	8-Mar-19	0.5-1.0	8.6
DB-112	8-Mar-19	0.5-1.0	198.0
DB-112-B	8-Mar-19	0.5-1.0	4.1
DB-113	8-Mar-19	0.5-1.0	16.5
DB-114	8-Mar-19	0.5-1.0	1.9
Off-site, Sourcing for Fill			
G01	9-Mar-19	0-0.5	0.8
G02	9-Mar-19	1.0-1.5	10.3
G03	9-Mar-19	2.5-3.0	3.7
G04	9-Mar-19	4.5-5.0	14.0
G05	9-Mar-19	6.5-7.0	14.0
G06	9-Mar-19	-	3.6
G07	9-Mar-19	-	9.6
G08	9-Mar-19	-	6.9
G09	9-Mar-19	-	12.8
G10	9-Mar-19	-	5.6
G11	9-Mar-19	-	10.1
G12	9-Mar-19	-	7.8
G13	9-Mar-19	-	14.0
G14	9-Mar-19	-	2.6
G15	9-Mar-19	-	1.1
G16	9-Mar-19	-	0.3
G17	9-Mar-19	-	0.2
G18	9-Mar-19	-	3.9
G100 or 101 (clay fill for south remediation area)	9-Mar-19	-	1.4
North Side of Tracks			
N-001	27-Feb-19	0-0.1	1.1
N-002	27-Feb-19	0-0.1	1.1

Notes:
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ppm - parts per million.
Table to be read in conjunction with accompanying report.

Table 1
Soil Field Screening from February to March 2019
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample ID	Sample Date (dd-mmm-yy)	Depth (mbgs)	Field Vapour Reading (ppm)
N-003	27-Feb-19	0-0.1	1.0
N-004	27-Feb-19	0-0.1	0.8
N-005	27-Feb-19	0-0.1	0.8
N-006	27-Feb-19	0-0.1	1.2
N-007	27-Feb-19	0-0.1	1.0
N-008	27-Feb-19	0-0.1	0.8
N-009	27-Feb-19	0-0.1	2.2
N-010	27-Feb-19	0-0.1	1.3
N-011	27-Feb-19	0-0.1	1.2
N-012	27-Feb-19	0-0.1	0.9
N-013	27-Feb-19	0-0.1	2.0
N-014	27-Feb-19	0-0.1	0.6
N-015	27-Feb-19	0-0.1	0.7
N-016	27-Feb-19	0-0.1	1.6
N-017	27-Feb-19	0-0.1	0.8
N-018	27-Feb-19	0-0.1	0.5
N-019	27-Feb-19	0-0.1	0.5
N-020	27-Feb-19	0-0.1	0.6
N-021	27-Feb-19	0-0.1	0.6
N-022	27-Feb-19	0-0.1	0.7
N-023	27-Feb-19	0-0.1	0.9
N-024	27-Feb-19	0-0.1	0.5
N-025	27-Feb-19	0-0.1	0.5
N-026	27-Feb-19	0-0.1	0.4
N-027	27-Feb-19	0-0.1	0.4
N-028	27-Feb-19	0-0.1	0.2
N-029	27-Feb-19	0-0.1	0.3
N-030	27-Feb-19	0-0.1	0.5
N-031	27-Feb-19	0-0.1	0.2
N-032	27-Feb-19	0-0.1	0.1
N-033	27-Feb-19	0-0.1	0.1
N-034	27-Feb-19	0-0.1	0.4
N-035	27-Feb-19	0-0.1	0.2
N-036	27-Feb-19	0-0.1	0.3
S001A	26-Feb-19	0 - 0.1	1.7
S001B	26-Feb-19	1.0	2.1
S002	26-Feb-19	0 - 0.1	1.8
S002-B	26-Feb-19	1.0	3.0
S003	26-Feb-19	0 - 0.1	2.9
S004A	26-Feb-19	0 - 0.1	2.2
S004B	26-Feb-19	1.0	2.2
S005	26-Feb-19	0 - 0.1	2.6
S006	26-Feb-19	0 - 0.1	2.5
S007A	26-Feb-19	0 - 0.1	2.9
S007B	26-Feb-19	1.0	1.2
S008	26-Feb-19	0 - 0.1	2.1
S009	26-Feb-19	0 - 0.1	11.3
S010A	26-Feb-19	0 - 0.1	1.8
S010B	26-Feb-19	1.0	1.6
S011	26-Feb-19	0 - 0.1	8.0
S012	26-Feb-19	0 - 0.1	1.4
S013A	26-Feb-19	0 - 0.1	1.7
S013B	26-Feb-19	1.0	1.7
S014	26-Feb-19	0 - 0.1	2.5
S015	26-Feb-19	0 - 0.1	2.9
S016A	26-Feb-19	0 - 0.1	2.1
S016B	26-Feb-19	1.0	2.0
S017	26-Feb-19	0 - 0.1	3.7
S018	26-Feb-19	0 - 0.1	1.9
S019A	26-Feb-19	0 - 0.1	2.2
S019B	26-Feb-19	1.0	2.3
S020A	26-Feb-19	0 - 0.1	2.5
S020B	26-Feb-19	0 - 0.1	2.5
S021	26-Feb-19	0 - 0.1	4.1
S022	26-Feb-19	0 - 0.1	3.3
S023A	26-Feb-19	0 - 0.1	11.5
S023B	26-Feb-19	1.3	1.7
S024	26-Feb-19	0 - 0.1	5.6
S025	26-Feb-19	0 - 0.1	8.7
S026A	26-Feb-19	0 - 0.1	11.0
S026B	26-Feb-19	1.4	2.6
S027	26-Feb-19	0 - 0.1	2.5
S028	26-Feb-19	0 - 0.1	5.5
S029A	26-Feb-19	0 - 0.1	7.5

Notes:
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ppm - parts per million.
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Table 1
Soil Field Screening from February to March 2019
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample ID	Sample Date (dd-mmm-yy)	Depth (mbgs)	Field Vapour Reading (ppm)
S029A-B	26-Feb-19	1.0	5.8
S029B	26-Feb-19	1.2	0.8
S030	26-Feb-19	0 - 0.1	74.1
S031	26-Feb-19	0 - 0.1	3.4
S032A	26-Feb-19	0 - 0.1	7.0
S032B	26-Feb-19	1.1	0.6
S033	26-Feb-19	0 - 0.1	1.3
S034	26-Feb-19	0 - 0.1	2.6
S035A	26-Feb-19	0 - 0.1	2.8
S035B	26-Feb-19	1.0	1.9
S036	26-Feb-19	0 - 0.1	2.6
S036-B	26-Feb-19	1.0	2.5
S037	26-Feb-19	0 - 0.1	23.9
S037-B	26-Feb-19	1.0	3.8
S038	26-Feb-19	0 - 0.1	26.1
S039A	26-Feb-19	0 - 0.1	2.4
S039B	26-Feb-19	1.2	0.8
S040	26-Feb-19	0 - 0.1	1.3
S041	26-Feb-19	0 - 0.1	2.7
S042A	26-Feb-19	0 - 0.1	5.6
S042B	26-Feb-19	1.1	1.8
S043	26-Feb-19	0 - 0.1	5.9
S044	26-Feb-19	0 - 0.1	56.1
S044 Floor	26-Feb-19	0 - 0.1	2.2
S045A	26-Feb-19	0 - 0.1	56.1
S045B	26-Feb-19	1.5	2.8
S046	26-Feb-19	0 - 0.1	72.4
S047A	26-Feb-19	0 - 0.1	visible product - discarded
S047B	26-Feb-19	1.0	visible product - discarded
S047C	26-Feb-19	1.0	0.8
S047D	26-Feb-19	1.0	0.5
S047E	26-Feb-19	1.0	3.1
S047F	26-Feb-19	1.0	1.8
S047G	26-Feb-19	1.0	2.7
S048	26-Feb-19	0 - 0.1	1.3
S049	26-Feb-19	0 - 0.1	1.3
S050	26-Feb-19	0 - 0.1	2.3
S051A	26-Feb-19	0 - 0.1	1.9
S051B	26-Feb-19	1.0	27.5
S052	26-Feb-19	0 - 0.1	2.2
S053	26-Feb-19	0 - 0.1	2.0
S054A	26-Feb-19	0 - 0.1	1.2
S054B	26-Feb-19	1.0	3.8
S055	26-Feb-19	0 - 0.1	2.4
S056	27-Feb-19	0 - 0.1	all liquid - did not screen
S057A	27-Feb-19	0 - 0.1	51.7
S057B	27-Feb-19	1.0	11.1
S058	27-Feb-19	0 - 0.1	139.3
S059	27-Feb-19	0 - 0.1	8.8
S060A	27-Feb-19	0 - 0.1	7.0
S060B	27-Feb-19	1.4	11.8
S061	27-Feb-19	0 - 0.1	13.7
S062	27-Feb-19	0 - 0.1	all liquid - did not screen
S063	27-Feb-19	0 - 0.1	38.4
S064	27-Feb-19	0 - 0.1	18.4
S065A	27-Feb-19	0 - 0.1	12.6
S065B	27-Feb-19	0 - 0.1	36.7
S066	27-Feb-19	0 - 0.1	22.4
S068B	27-Feb-19	1.0	90.7
S069	27-Feb-19	0 - 0.1	50.6
S070	27-Feb-19	0 - 0.1	48.2
S071A	27-Feb-19	0 - 0.1	32.1
S071B	27-Feb-19	1.1	107.3
S072	27-Feb-19	0 - 0.1	33.6
S073	27-Feb-19	0 - 0.1	32.4
S074A	27-Feb-19	0 - 0.1	77.8
S074B	27-Feb-19	1.0	557.4
S075	27-Feb-19	0 - 0.1	61.8
S076	27-Feb-19	0 - 0.1	54.8
S077A	27-Feb-19	0 - 0.1	104.3
S077B	27-Feb-19	1.0	5.6
S078A	27-Feb-19	0 - 0.1	76.5
S078B	27-Feb-19	1.0	176.2
S079	27-Feb-19	0 - 0.1	127.6

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Table 1
Soil Field Screening from February to March 2019
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample ID	Sample Date (dd-mmm-yy)	Depth (mbgs)	Field Vapour Reading (ppm)
S080	27-Feb-19	0 - 0.1	42.1
S081	27-Feb-19	0 - 0.1	38.3
S082	27-Feb-19	0 - 0.1	65.7
S083A	27-Feb-19	0 - 0.1	136.7
S083B	27-Feb-19	1.0	109.4
S084	27-Feb-19	0 - 0.1	53.4
S085	27-Feb-19	0 - 0.1	96.0
S086A	27-Feb-19	0 - 0.1	35.4
S086B	27-Feb-19	1.0	318.2
S087	27-Feb-19	0 - 0.1	90.3
S088	27-Feb-19	0 - 0.1	51.1
S089	27-Feb-19	0 - 0.1	103.7
S090A	27-Feb-19	0 - 0.1	5.6
S090B	27-Feb-19	1.0	40.6
S091	27-Feb-19	0 - 0.1	13.2
S092	27-Feb-19	0 - 0.1	20.0
S093A	27-Feb-19	0 - 0.1	15.1
S093B	27-Feb-19	1.2	60.9
S094A	27-Feb-19	0 - 0.1	17.4
S094B	27-Feb-19	1.0	1.3
S095	27-Feb-19	0 - 0.1	29.9
S096A	27-Feb-19	0 - 0.1	36.8
S096B	27-Feb-19	1.0	208.7
S097	27-Feb-19	0 - 0.1	74.1
S098	27-Feb-19	0 - 0.1	70.2
S099A	27-Feb-19	0 - 0.1	20.3
S099B	27-Feb-19	1.0	193.6
S099W	27-Feb-19	0.6	15.9
S100	28-Feb-19	0 - 0.1	41.4
S101A	28-Feb-19	0 - 0.1	23.0
S101A-A	28-Feb-19	0.75	240.8
S101A-B	9-Mar-19	1.25	27.7
S101-C	9-Mar-19	1.75	3.1
S102	28-Feb-19	0 - 0.1	1.9
S102A-A	28-Feb-19	0.75	559.6
S103	28-Feb-19	0 - 0.1	2.0
S104A	28-Feb-19	0 - 0.1	30.1
S104B	28-Feb-19	1.2	0.1
S105	28-Feb-19	0 - 0.1	3.5
S106	28-Feb-19	0 - 0.1	0.0
S107	28-Feb-19	0 - 0.1	1.0
S108A	28-Feb-19	0 - 0.1	122.0
S108B	28-Feb-19	1.1	45.6
S109	28-Feb-19	1.2	163.9
S109-B	28-Feb-19	1.75	18.0
S110	28-Feb-19	1.2	121.9
S111	28-Feb-19	1.2	44.1
S112	28-Feb-19	1.2	54.8
S112W	28-Feb-19	0.6	18.5
S113	28-Feb-19	0 - 0.1	4.8
S114A	28-Feb-19	0 - 0.1	0.5
S114B	28-Feb-19	1.0	11.4
S115	28-Feb-19	0 - 0.1	0.0
S116	28-Feb-19	0 - 0.1	3.7
S117	28-Feb-19	0 - 0.1	0.0
S118A	28-Feb-19	0 - 0.1	0.0
S118B	28-Feb-19	1.0	10.6
S119	28-Feb-19	0 - 0.1	0.0
S120	28-Feb-19	0 - 0.1	0.0
S121A	28-Feb-19	0 - 0.1	0.8
S121B	28-Feb-19	0.9	1.3
S122	28-Feb-19	0 - 0.1	1.4
S123	28-Feb-19	0 - 0.1	2.9
S124	28-Feb-19	0 - 0.1	0.0
S125	28-Feb-19	0 - 0.1	3.5
S126	28-Feb-19	0 - 0.1	0.0
S127A	28-Feb-19	0 - 0.1	0.0
S127B	28-Feb-19	1.0	2.1
S128	28-Feb-19	0 - 0.1	1.0
S129	28-Feb-19	0 - 0.1	1.2
S130A	28-Feb-19	0 - 0.1	15.2
S130B	28-Feb-19	1.1	5.1
S131	28-Feb-19	0 - 0.1	2.9
S132	28-Feb-19	0 - 0.1	10.9

Notes:
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Table 1
Soil Field Screening from February to March 2019
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample ID	Sample Date (dd-mmm-yy)	Depth (mbgs)	Field Vapour Reading (ppm)
S133	28-Feb-19	0 - 0.1	4.0
S134	28-Feb-19	0 - 0.1	0.2
S135	28-Feb-19	1.2	24.5
S136	28-Feb-19	1.2	22.7
S137	28-Feb-19	1.2	19.7
S137-B	7-Mar-19	0.75	6.9
S138	28-Feb-19	1.2	98.5
S138-B	7-Mar-19	0.75	13.0
S139	28-Feb-19	0 - 0.1	112.0
S140A	28-Feb-19	0 - 0.1	58.4
S140B	28-Feb-19	1.00	124.4
S141	28-Feb-19	0 - 0.1	28.6
S141-B	7-Mar-19	0.75	5.1
S200	28-Feb-19	1.5	5.4
S200W	28-Feb-19	0.6	18.7
S201	28-Feb-19	1.0	1.7
S201W	28-Feb-19	0.6	7.6
S202	28-Feb-19	1.0	3.3
S202W	1-Mar-19	0.6	12.5
S203	28-Feb-19	1.0	1.8
S204	28-Feb-19	1.0	5.5
S205	28-Feb-19	1.0	5.4
S206	28-Feb-19	1.0	5.2
S207	28-Feb-19	1.0	8.1
S208	28-Feb-19	1.0	12.4
S209	28-Feb-19	1.0	19.6
S210	28-Feb-19	1.0	17.6
S211	28-Feb-19	1.2	2.2
S211W	28-Feb-19	0.6	9.0
S212	28-Feb-19	1.0	1.3
S212W	28-Feb-19	0.6	54.5
S212W-B	28-Feb-19	0.75	34.0
S212W-C	28-Feb-19	1.25	18.5
S213	28-Feb-19	1.0	25.4
S214	28-Feb-19	1.0	0.0
S215	28-Feb-19	1.0	1.0
S216	28-Feb-19	1.0	1.9
S216W	28-Feb-19	0.6	9.1
S217	28-Feb-19	1.5	2.2
S217W	28-Feb-19	0.6	6.1
S218	28-Feb-19	1.0	12.4
S219	28-Feb-19	1.5	4.6
S220	28-Feb-19	1.5	5.6
S220W	1-Mar-19	0.6	10.1
S221	28-Feb-19	1.0	7.0
S221W	1-Mar-19	0.6	0.3
S222	28-Feb-19	1.0	24.3
S223	28-Feb-19	1.0	4.0
S223W	1-Mar-19	0.6	4.1
S224	28-Feb-19	1.0	8.5
S224W	1-Mar-19	0.6	0.5
S225	28-Feb-19	1.0	1.5
S225W	1-Mar-19	0.6	7.5
S226	28-Feb-19	1.0	4.6
S226W	1-Mar-19	0.6	7.0
S227	28-Feb-19	1.0	11.6
S227W	1-Mar-19	0.6	12.1
S228	28-Feb-19	1.0	5.8
S229	28-Feb-19	1.0	4.2
S230	28-Feb-19	1.0	0.4
S300W	2-Mar-19	0.6	0.3
S301F	2-Mar-19	1.0	0.0
S302W	2-Mar-19	0.6	0.0
S303W	2-Mar-19	0.6	0.1
S304F	2-Mar-19	1.0	0.4
S305W	2-Mar-19	0.6	0.1
S306W	2-Mar-19	0.6	0.2
S307F	2-Mar-19	1.0	0.6
S308W	2-Mar-19	0.6	1.2
S309W	2-Mar-19	0.6	2.3
S310F	2-Mar-19	1.0	10.0
S311W	2-Mar-19	0.6	0.8

Notes:
"-" - not analyzed.
mbgs - meters below ground surface.
ppm - parts per million.
Table to be read in conjunction with accompanying report.

Table 1
Soil Field Screening from February to March 2019
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample ID	Sample Date (dd-mmm-yy)	Depth (mbgs)	Field Vapour Reading (ppm)
S312W	2-Mar-19	0.6	0.7
S313F	2-Mar-19	1.0	1.8
S314W	2-Mar-19	0.6	0.7
S315W	2-Mar-19	0.6	3.2
S316F	2-Mar-19	1.0	3.8
S317W	2-Mar-19	0.6	21.8
S318W	2-Mar-19	0.6	5.1
S319F	2-Mar-19	1.0	5.5
S320W	2-Mar-19	0.6	16.9
S321W	2-Mar-19	0.6	6.4
S322F	2-Mar-19	1.0	6.4
S323F	2-Mar-19	1.0	7.4
S324W	2-Mar-19	0.6	4.5
S325F	2-Mar-19	1.0	2.5
S326F	2-Mar-19	1.0	2.8
S327W	2-Mar-19	0.6	4.3
S328F	2-Mar-19	1.0	3.2
S329W	2-Mar-19	0.6	6.7
S330W	2-Mar-19	0.6	21.2
S331F	2-Mar-19	1.0	55.7
S332W	2-Mar-19	0.6	5.4
S333W	2-Mar-19	0.6	48.8
S334F	2-Mar-19	1.0	2.3
S335F	2-Mar-19	1.0	82.9
S336W	2-Mar-19	0.6	28.8
S337F	2-Mar-19	1.0	5.9
TP-1	2-Mar-19	1.5	20.0
TP-2	2-Mar-19	1.5	2.2
TP-3	2-Mar-19	1.5	3.9
TP-4	2-Mar-19	1.5	4.5
TP-5	2-Mar-19	1.5	2.3
TP-6	2-Mar-19	1.5	2.5
TP-7	2-Mar-19	1.5	4.0
TP-13	2-Mar-19	1.5	158.0
TP-14	2-Mar-19	1.5	415.0
TP-15	2-Mar-19	1.5	153.0
TP-16	2-Mar-19	1.5	107.9
TP-17	2-Mar-19	1.5	94.7
TP-18	2-Mar-19	1.5	46.7
TP-19	2-Mar-19	1.5	not screened - assessed for visual impacts
TP-20	2-Mar-19	1.5	not screened - assessed for visual impacts
TP-21	2-Mar-19	1.5	not screened - assessed for visual impacts
TP-22	2-Mar-19	1.5	not screened - assessed for visual impacts
TP-23	2-Mar-19	1.5	not screened - assessed for visual impacts
TP-24	2-Mar-19	1.5	not screened - assessed for visual impacts
TP-25	2-Mar-19	1.5	not screened - assessed for visual impacts
TP-26	2-Mar-19	1.5	not screened - assessed for visual impacts
TP-27	2-Mar-19	1.5	not screened - assessed for visual impacts
TP-28	2-Mar-19	1.5	not screened - assessed for visual impacts
TP-29	2-Mar-19	1.5	not screened - assessed for visual impacts
TP-30	2-Mar-19	1.5	not screened - assessed for visual impacts
TP-31	2-Mar-19	1.5	not screened - assessed for visual impacts
TP-32	2-Mar-19	1.5	not screened - assessed for visual impacts
TP-33	2-Mar-19	1.5	not screened - assessed for visual impacts
TP34	4-Mar-19	1.15	not screened - assessed for visual impacts
TP35	4-Mar-19	1.05	not screened - assessed for visual impacts

Notes:
"-" - not analyzed.
mbgs - meters below ground surface.
ppm - parts per million.
Table to be read in conjunction with accompanying report.

Table 1
Soil Field Screening from February to March 2019
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample ID	Sample Date (dd-mmm-yy)	Depth (mbgs)	Field Vapour Reading (ppm)
TP36	4-Mar-19	0.9	not screened - assessed for visual impacts
TP37	4-Mar-19	0.95	not screened - assessed for visual impacts
TP38	4-Mar-19	0.8	not screened - assessed for visual impacts
TP39	4-Mar-19	0.95	not screened - assessed for visual impacts
TP40	4-Mar-19	0.9	not screened - assessed for visual impacts
TP41	4-Mar-19	1.5	not screened - assessed for visual impacts
TP42	4-Mar-19	0.84	not screened - assessed for visual impacts
TP43	4-Mar-19	0.6	13.7
TP44	4-Mar-19	0.55	4.1
TP45	4-Mar-19	0.6	2.8
TP46	4-Mar-19	0.55	2.9
TP47	4-Mar-19	0.45	5.3
TP48	4-Mar-19	0.5	4.3
TP49	4-Mar-19	0.5	7.5
TP50	4-Mar-19	0.5	9.1
Samples Collected for Waste Characterization			
S1A	28-Feb-19	0-0.1	168.0
S1B	28-Feb-19	0-0.1	210.7
S1C	28-Feb-19	0-0.1	412.0
S2A	28-Feb-19	0-0.1	423.3
S2B	28-Feb-19	0-0.1	10.1
S2C	28-Feb-19	0-0.1	170.1
S3A	28-Feb-19	0-0.1	156.0
S3B	28-Feb-19	0-0.1	29.3
S3C	28-Feb-19	0-0.1	137.3
S4A	28-Feb-19	0-0.1	19.7
S4B	28-Feb-19	0-0.1	58.9
S4C	28-Feb-19	0-0.1	12.1
S5A	28-Feb-19	0-0.1	49.5
S5B	28-Feb-19	0-0.1	43.0
S5C	28-Feb-19	0-0.1	15.8
S6A	28-Feb-19	0-0.1	90.3
S6B	28-Feb-19	0-0.1	8.9
S6C	28-Feb-19	0-0.1	136.0
N01	28-Feb-19	0-0.1	61.2
N02	28-Feb-19	0-0.1	100.5
N03	28-Feb-19	0-0.1	33.2
N04	28-Feb-19	0-0.1	399.0
TCLP-24	25-Feb-18	-	77.5
TCLP-25	25-Feb-18	-	406.9
TCLP-26	25-Feb-18	-	15.3
TCLP-27	25-Feb-18	-	33.2
TCLP-28	25-Feb-18	-	2.7
TCLP-29	25-Feb-18	-	210.6
TCLP-30	25-Feb-18	-	3.8
TCLP-31	25-Feb-18	-	76.5
TCLP-32	25-Feb-18	-	475.5
TCLP-33	25-Feb-18	-	499.4
4000	25-Feb-18	-	14.5

Notes:
"-" - not analyzed.
mbgs - meters below ground surface.
ppm - parts per million.
Table to be read in conjunction with accompanying report.

Table 2
Initial Response Soil Analytical Results - Petroleum Hydrocarbons
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample ID	Sample Date (dd-mmm-yy)	Petroleum Hydrocarbons								
		Benzene	Toluene	Ethylbenzene	Xylenes (Total)	F1 (C6-C10)-BTEX	F2 (C10-C16)	F3 (C16-C34)	F4 (C34-C50)	Reached Baseline at C50
Guideline[1] (CN Right-of-Way)		**0.03**	**0.37**	**0.082**	**11**	**320**	**260**	**1700**	**3300**	**-**
Guideline[2] (Outside CN Right-of-Way)		**0.03**	**0.37**	**0.082**	**11**	**30**	**150**	**300**	**2800**	**-**
Units		**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**-**
Confirmatory Locations										
CN Right-of-Way										
BG-1	16-Feb-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
BG-5	18-Feb-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-1000W	3-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-1001W	3-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-1002W-B	7-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-1004W	3-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-1006W	3-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-2001F	3-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-2003F	3-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-2004F	3-Mar-19	0.017	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-2002F	3-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-2009	5-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-2017	5-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-2025-B	5-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
S-3009 (duplicate of C-2025-B)	5-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-2028	5-Mar-19	0.015	0.12	0.068	0.87	<10	130	400	150	YES
C-2045	5-Mar-19	0.0083	<0.050	<0.010	0.058	<10	20	97	<50	YES
C-2061-B	6-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
DUP-3011 (duplicate of C-2061-B)	6-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-2064	5-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-2066	5-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-2082	5-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-2058-B	8-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-2071	5-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-2074	5-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-2076-B	6-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-2080	5-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	57	<50	YES
C-2083	5-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-2086-B	6-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-2088	5-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-2094	5-Mar-19	0.026	0.08	<0.010	0.068	<10	<10	<50	<50	YES
C-2097	5-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-2100	5-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	13	63	<50	YES
C-2102	5-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-2104	5-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-2106	6-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-2112	5-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-2114-B	7-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-2117-B	1-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-2119-B	7-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-2121-C	7-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-2122-B	6-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-2127	6-Mar-19	0.0075	<0.050	<0.010	<0.045	<10	<10	53	<50	YES
C-2133	6-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	78	<50	YES
C-2136C**	24-Feb-20	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-2138	6-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	13	92	<50	YES
DUPE-3010 (duplicate of C-2138)	6-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	11	110	<50	YES
C-2160	6-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-2162	6-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-2166	6-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-2168	6-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-2170	6-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-2174	6-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-2176	6-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-2178	6-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-2180	6-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	11	62	<50	YES
C-2183	6-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-2188	6-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-2191	6-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
DUP-3012 (duplicate of C-2191)	6-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES

Notes:

1. Canadian Council of Ministers of the Environment (CCME) Soil Quality Guidelines for the Protection of Environmental and Human Health, values for industrial land use and coarse-grained soils (CCME 1999, updated 2001).

2. Canadian Council of Ministers of the Environment (CCME) Soil Quality Guidelines for the Protection of Environmental and Human Health, values for agricultural land use and coarse-grained soils (CCME 1999, updated 2001).

BOLD/HIGHLIGHTED - Exceeds the applicable guideline.

mg/kg - milligrams per kilogram.

italic - indicates Recordable Detection Limit (RDL) is greater than the guideline.

n/a - not applicable.

< Indicates parameter was below laboratory equipment detection limit.

"-" Chemical not analyzed or criteria not defined.

* - indicates samples also presented in Table 21.

** - indicates samples also presented in Table 24.

(1) Detection limits raised due to high moisture content, sample contains => 50% moisture.

(2) Detection limits calculated based on method detection limits (MDLs) due to sample weight used for analysis and high moisture content, sample contains => 50% moisture.

(3) Detection limits raised based on sample weight used for analysis.

(4) Detection limits calculated based on method detection limits (MDLs) due to sample weight used for analysis.

Table to be read in conjunction with accompanying report.

Table 2
Initial Response Soil Analytical Results - Petroleum Hydrocarbons
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample ID	Sample Date (dd-mmm-yy)	Petroleum Hydrocarbons								
		Benzene	Toluene	Ethylbenzene	Xylenes (Total)	F1 (C6-C10)-BTEX	F2 (C10-C16)	F3 (C16-C34)	F4 (C34-C50)	Reached Baseline at C50
Guideline[1] (CN Right-of-Way)		**0.03**	**0.37**	**0.082**	**11**	**320**	**260**	**1700**	**3300**	**-**
Guideline[2] (Outside CN Right-of-Way)		**0.03**	**0.37**	**0.082**	**11**	**30**	**150**	**300**	**2800**	**-**
Units		**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**-**
C-2198	6-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-2202	6-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-2208	6-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	51	<50	YES
C-2308	7-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
DUP-3015 (duplicate of C-2308)	7-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-2226-B	8-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-2228W	10-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-2300	7-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-2303	7-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-2311	7-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-2500	8-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-2508-B	8-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-2509	8-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-2516-W	8-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-2518	8-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-2519W-B	8-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	62	<50	YES
DUP-3017 (duplicate of C-2519W-B)	8-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-3000	3-Mar-19	**95**	**220**	**22**	**220**	**4200**	**7200**	**19000**	**8300**	NO
C-3001	3-Mar-19	**3**	**9.9**	**1.2**	**13**	210	**890**	**2300**	920	NO
C-3002	3-Mar-19	**0.26**	0.19	<0.010	<0.045	<10	<10	<50	<50	YES
C-4002	6-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-4003	6-Mar-19	**0.63**	**2.5**	**0.4**	4.4	130	240	650	260	YES
C-4004	6-Mar-19	**6.5**	**21**	**3**	**34**	**590**	**830**	**2200**	920	NO
C-4007	6-Mar-19	**0.11**	0.23	0.026	0.3	<10	<10	<50	<50	YES
C-4008	6-Mar-19	**2.8**	**7.1**	**0.84**	9.1	240	83	220	75	YES
C-4012	6-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-7104	8-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-7111	8-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-7120	8-Mar-19	**0.092**	**0.97**	**0.58**	7.4	57	**540**	1700	730	NO
C-7134	8-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-7144	8-Mar-19	**0.047**	0.13	<0.010	0.068	<10	<10	71	<50	YES
C-7214	11-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	110	58	YES
C-7218	11-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	100	<50	YES
C-9158B*	2-Jun-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
DUP4 (duplicate of C-9158B)*	2-Jun-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-9400	17-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-9402	17-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	13	<50	<50	YES
C-9404	17-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-9405	17-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-9406-B	17-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-9408	17-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
DUPE-3033 (duplicate of C-9408)	17-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
DB-002	2-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
DB-004	2-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
DB-009	2-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
DB-013	2-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
DB-101	8-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
DB-104	8-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
DB108-B	8-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
DB-110-C	11-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
N-001	26-Feb-19	0.0066	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
N-007	26-Feb-19	0.0079	0.061	0.015	0.065	<10	<10	<50	<50	YES
N-013	26-Feb-19	0.011	0.073	<0.010	0.064	<10	<10	110	<50	YES
N-031	26-Feb-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
S-014	27-Feb-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
S-017	27-Feb-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
S-019A	27-Feb-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
DUP100 (duplicate of S-019A)	27-Feb-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
S-022	27-Feb-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
S-023B	27-Feb-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
S-025	27-Feb-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
S-051B	27-Feb-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
S-054A	27-Feb-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES

Notes:

1. Canadian Council of Ministers of the Environment (CCME) Soil Quality Guidelines for the Protection of Environmental and Human Health, values for industrial land use and coarse-grained soils (CCME 1999, updated 2001).

2. Canadian Council of Ministers of the Environment (CCME) Soil Quality Guidelines for the Protection of Environmental and Human Health, values for agricultural land use and coarse-grained soils (CCME 1999, updated 2001).

BOLD/HIGHLIGHTED - Exceeds the applicable guideline.

mg/kg - milligrams per kilogram.

italic - indicates Recordable Detection Limit (RDL) is greater than the guideline.

n/a - not applicable.

< Indicates parameter was below laboratory equipment detection limit.

"-" Chemical not analyzed or criteria not defined.

* - indicates samples also presented in Table 21.

** - indicates samples also presented in Table 24.

(1) Detection limits raised due to high moisture content, sample contains => 50% moisture.

(2) Detection limits calculated based on method detection limits (MDLs) due to sample weight used for analysis and high moisture content, sample contains => 50% moisture.

(3) Detection limits raised based on sample weight used for analysis.

(4) Detection limits calculated based on method detection limits (MDLs) due to sample weight used for analysis.

Table to be read in conjunction with accompanying report.

Table 2
Initial Response Soil Analytical Results - Petroleum Hydrocarbons
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample ID	Sample Date (dd-mmm-yy)	Petroleum Hydrocarbons								
		Benzene	Toluene	Ethylbenzene	Xylenes (Total)	F1 (C6-C10)-BTEX	F2 (C10-C16)	F3 (C16-C34)	F4 (C34-C50)	Reached Baseline at C50
Guideline[1] (CN Right-of-Way)		**0.03**	**0.37**	**0.082**	**11**	**320**	**260**	**1700**	**3300**	**-**
Guideline[2] (Outside CN Right-of-Way)		**0.03**	**0.37**	**0.082**	**11**	**30**	**150**	**300**	**2800**	**-**
Units		**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**-**
S-063	27-Feb-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
S-065A	27-Feb-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
S-068A	27-Feb-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
S-073	27-Feb-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
S-74B	27-Feb-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
S-075	27-Feb-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
S-083A	27-Feb-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	51	<50	YES
S-085	27-Feb-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
S-086B	27-Feb-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
S-088	27-Feb-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
S-93B	27-Feb-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
S-094	27-Feb-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
S-3001 (duplicate of S-094)	27-Feb-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
S-097	27-Feb-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
S-098	27-Feb-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
S-099A	27-Feb-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
S-101-C	8-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
S-104A	28-Feb-19	0.022	<0.050	<0.010	<0.045	<10	21	110	<50	YES
S-3003 (duplicate of S-104A)	28-Feb-19	0.019	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
S-109-B	7-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	Yes
S-112	28-Feb-19	0.013	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
S-114B	28-Feb-19	0.012	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
S-118B	28-Feb-19	0.011	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
S-123	28-Feb-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
S-127A	28-Feb-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
S-130A	28-Feb-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
S-132	28-Feb-19	<0.0050	<0.050	<0.010	0.08	<10	<10	<50	<50	YES
S-135	28-Feb-19	0.029	<0.050	<0.010	<0.045	<10	15	99	<50	YES
S-137-B	7-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
S-138-B	7-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
S-140B	28-Feb-19	0.019	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
S-141-B	7-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	62	<50	YES
DUP-3014 (duplicate of S-141-B)	7-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	76	<50	YES
S-200	28-Feb-19	0.023	0.079	0.017	0.15	<10	22	100	<50	YES
S-202W	1-Mar-19	0.017	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
S-209	28-Feb-19	<0.0050	<0.050	<0.010	<0.045	<10	21	91	<50	YES
S-212W-C	7-Mar-19	0.021	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
S-213	28-Feb-19	0.018	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
S-227W	28-Feb-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	58	<50	YES
S-320W	2-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
S-323F	2-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
S-329W	2-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
S-331F	2-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
S-333W	2-Mar-19	0.016	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
S-335F	2-Mar-19	0.016	<0.050	<0.010	0.14	<10	31	120	<50	YES
DUPE 3006 (duplicate of S-3006)	2-Mar-19	0.016	<0.050	<0.010	0.065	<10	15	77	<50	YES
TP-2	2-Mar-19	0.018	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
TP-7	2-Mar-19	0.018	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
TP-18	2-Mar-19	0.025	0.075	<0.010	<0.045	<10	<10	<50	<50	YES
Backfill Used for Initial Response - CN Right-of-Way										
G101	10-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
Declined Backfill										
4000-FILL	5-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
G100	8-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
Outside CN Right-of-Way										
BG-2	16-Feb-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
BG-3	18-Feb-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
BG-4	18-Feb-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
BG-6	18-Feb-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-1011W	3-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-1013F	3-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	16	53	<50	YES
C-3008 (duplicate of C-1013F)	3-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-1016F	3-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-1018F	3-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-1019F	3-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-2131	6-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-2140	6-Mar-19	0.011	<0.050	<0.010	<0.045	<10	<10	99	<50	YES
C-2146	6-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	85	<50	YES

Notes:

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BOLD/HIGHLIGHTED - Exceeds the applicable guideline.
mg/kg - milligrams per kilogram.
italic - indicates Recordable Detection Limit (RDL) is greater than the guideline.
n/a - not applicable.
< Indicates parameter was below laboratory equipment detection limit.
"-" Chemical not analyzed or criteria not defined.
* - indicates samples also presented in Table 21.
** - indicates samples also presented in Table 24.
(1) Detection limits raised due to high moisture content, sample contains => 50% moisture.
(2) Detection limits calculated based on method detection limits (MDLs) due to sample weight used for analysis and high moisture content, sample contains => 50% moisture.
(3) Detection limits raised based on sample weight used for analysis.
(4) Detection limits calculated based on method detection limits (MDLs) due to sample weight used for analysis.
Table to be read in conjunction with accompanying report.

Table 2
Initial Response Soil Analytical Results - Petroleum Hydrocarbons
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample ID	Sample Date (dd-mmm-yy)	Petroleum Hydrocarbons								
		Benzene	Toluene	Ethylbenzene	Xylenes (Total)	F1 (C6-C10)-BTEX	F2 (C10-C16)	F3 (C16-C34)	F4 (C34-C50)	Reached Baseline at C50
Guideline[1] (CN Right-of-Way)		**0.03**	**0.37**	**0.082**	**11**	**320**	**260**	**1700**	**3300**	**-**
Guideline[2] (Outside CN Right-of-Way)		**0.03**	**0.37**	**0.082**	**11**	**30**	**150**	**300**	**2800**	**-**
Units		**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**-**
C-2148	6-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	20	97	<50	YES
C-2150-B	6-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-2153	6-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	10	89	<50	YES
C-2156	6-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	81	<50	YES
C-2203	6-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-2318	7-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-2321	7-Mar-19	0.027	0.098	0.017	0.21	<10	64	240	95	YES
C-2324	7-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-2327	7-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-2400	8-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-2404	8-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-2406-B	10-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-2410	8-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	100	<50	YES
C-2414	8-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	82	<50	YES
C-2419	8-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	93	<50	YES
C-2422	8-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	75	<50	YES
C-2424	8-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
DUP3016 (duplicate of C-2424)	8-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-2600B**	25-Feb-20	<0.0050 (3)	<0.050 (3)	<0.012 (3)	<0.11	<18	<10	<50	<50	YES
C-2601	10-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-5001	8-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-5008	8-Mar-19	0.025	**0.4**	**0.092**	0.94	25	22	86	<50	YES
C-5011W	9-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-5012W	9-Mar-19	0.022	0.1	<0.010	0.072	<10	<10	<50	<50	YES
C-5014W	9-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-5017	10-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
DUP-3019 (duplicate of C-5017)	10-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-5020W	10-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-5024	10-Mar-19	0.015	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-5029W	10-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-5033W	11-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-5037W	11-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-5041W	11-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-5046W	11-Mar-19	<0.0050	<0.050	<0.010	0.061	<10	<10	<50	<50	YES
C-5050W	11-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-5053W	11-Mar-19	**0.27**	**1**	**0.16**	1.8	**52**	<10	<50	<50	YES
C-5058W	11-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
DUPE-3020 (duplicate of C-5058W)	11-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-5061W	11-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-5065W	11-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-5070W	11-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-5073W	11-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-5078W	11-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-6001	6-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	71	<50	YES
C-6005-B	9-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	130	<50	YES
C-6013B**	14-Aug-19	<0.0060 (2)	<0.050 (2)	<0.013 (2)	<0.13	<20	32 (1)	210 (1)	<120 (1)	YES
C-6015B**	14-Aug-19	<0.0050 (4)	<0.050 (4)	<0.010 (4)	<0.097	<22	12	84	<50	YES
C-6020	6-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	90	<50	YES
C-6023	6-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	83	<50	YES
C-6027	6-Mar-19	0.014	<0.050	<0.010	0.2	<10	36	190	60	YES
C-6029	6-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	57	<50	YES
C-6035B**	14-Aug-19	<0.0050 (2)	<0.050 (2)	<0.011 (2)	<0.11	<17	<20 (1)	140 (1)	<100 (1)	YES
C-6042**	6-Mar-19	**0.037**	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-6042B**	14-Aug-19	<0.0050	<0.050	<0.010	<0.045	<10	12	100	<50	YES
C-6044-B	9-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-6045	6-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
DUP 6999 (duplicate of C-6045)	6-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-6050	6-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	67	<50	YES
C-6058	6-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	67	<50	YES
C-6061	6-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	120	<50	YES
C-6064	6-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
DUP 6998 (duplicate of C-6064)	6-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-6072	6-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	15	110	<50	YES
C-6076	6-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-6081	6-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	96	<50	YES
C-6092	6-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	60	<50	YES
C-6103	7-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-6105	7-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES

Notes:

1. Canadian Council of Ministers of the Environment (CCME) Soil Quality Guidelines for the Protection of Environmental and Human Health, values for industrial land use and coarse-grained

2. Canadian Council of Ministers of the Environment (CCME) Soil Quality Guidelines for the Protection of Environmental and Human Health, values for agricultural land use and coarse-grained

BOLD/HIGHLIGHTED - Exceeds the applicable guideline.

mg/kg - milligrams per kilogram.

italic - indicates Recordable Detection Limit (RDL) is greater than the guideline.

n/a - not applicable.

< Indicates parameter was below laboratory equipment detection limit.

* - indicates samples also presented in Table 21.

** - indicates samples also presented in Table 24.

"-" Chemical not analyzed or criteria not defined.

(1) Detection limits raised due to high moisture content, sample contains => 50% moisture.

(2) Detection limits calculated based on method detection limits (MDLs) due to sample weight used for analysis and high moisture content, sample contains => 50% moisture.

(3) Detection limits raised based on sample weight used for analysis.

(4) Detection limits calculated based on method detection limits (MDLs) due to sample weight used for analysis.

Table to be read in conjunction with accompanying report.

Table 2
Initial Response Soil Analytical Results - Petroleum Hydrocarbons
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample ID	Sample Date (dd-mmm-yy)	Petroleum Hydrocarbons								
		Benzene	Toluene	Ethylbenzene	Xylenes (Total)	F1 (C6-C10)-BTEX	F2 (C10-C16)	F3 (C16-C34)	F4 (C34-C50)	Reached Baseline at C50
Guideline[1] (CN Right-of-Way)		**0.03**	**0.37**	**0.082**	**11**	**320**	**260**	**1700**	**3300**	**-**
Guideline[2] (Outside CN Right-of-Way)		**0.03**	**0.37**	**0.082**	**11**	**30**	**150**	**300**	**2800**	**-**
Units		**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**-**
C-6108	7-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-6200	9-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	110	<50	YES
DUPE-3018 (duplicate of C-6200)	9-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	110	<50	YES
C-6204	9-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-6207-B	11-Mar-19	<0.0050	<0.050	<0.010	<0.15	<24	<22	<110	<110	YES
C-6211	9-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-6216	9-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-6219	9-Mar-19	0.019	0.067	<0.010	<0.045	<10	<10	<50	<50	YES
C-7201	11-Mar-19	**0.084**	0.15	0.023	0.21	<22	**210**	**1000**	400	NO
C-7202	11-Mar-19	0.026	0.09	0.016	0.2	<10	**310**	**1600**	640	NO
C-7206	11-Mar-19	**0.13**	0.16	0.013	0.13	<10	64	**380**	150	YES
DUPE-3022 (duplicate of C-7206)	11-Mar-19	**0.12**	0.13	<0.010	0.1	<10	68	**460**	180	YES
C-7220	11-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	88	<50	YES
DUPE-3021 (duplicate of C-7220)	11-Mar-19	0.028	0.25	0.071	0.89	<10	<10	<50	<50	YES
C-7222	11-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-7225	11-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-8007-B	16-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-8014	12-Mar-19	0.017	0.19	0.046	0.23	<20	14	240	56	YES
C-8015	12-Mar-19	<0.0050	<0.050	0.025	0.11	<10	32	220	72	YES
C-8018-B	16-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-8024	12-Mar-19	0.014	0.093	0.02	0.14	<10	<10	94	<50	YES
C-8026	12-Mar-19	0.027	0.13	0.025	0.1	<10	<10	150	<50	YES
C-8030	12-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	18	120	<50	YES
C-8040-B	16-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	54	<50	YES
C-8041	12-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	120	<50	YES
C-8042	12-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	150	<50	YES
C-8051	12-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	57	<50	YES
C-8061	14-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	15	65	<50	YES
C-8064	15-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-8066	15-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	59	<50	YES
C-8069	15-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	66	<50	YES
C-8071	15-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-8074-B	20-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	100	<50	YES
C-8077	15-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	94	<50	YES
C-8078	16-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-8080	16-Mar-19	0.016	0.11	0.054	0.67	<10	28	120	<50	YES
DUPE-3031 (duplicate of C-8080)	16-Mar-19	0.01	<0.050	<0.010	0.16	<10	31	160	54	YES
C-8087	16-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-8090	16-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	12	82	<50	YES
C-8091	16-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-8096	16-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-8098	16-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-8100	16-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-8104	16-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-8108	16-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	12	<50	<50	YES
C-8109	16-Mar-19	0.0099	<0.050	0.022	<0.045	<10	14	74	<50	YES
C-9000	18-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-9021	18-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-9030	18-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
DUPE-3034 (duplicate of C-9030)	18-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-9033	18-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-9039	18-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	27	130	51	YES
C-9041	18-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
DUPE-3035 (duplicate of C-9041)	18-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-9044	12-Mar-19	0.015	<0.050	<0.010	0.082	<10	11	110	<50	YES
C-9045	12-Mar-19	0.017	<0.050	<0.010	0.1	<10	29	240	75	YES
DUPE-3026 (duplicate of C-9045)	12-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	16	140	<50	YES
C-9046B*	2-Jun-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-9049B*	2-Jun-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-9050	12-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	15	110	<50	YES
C-9051	12-Mar-19	<0.0050	<0.050	0.013	0.17	<10	43	200	80	YES
C-9052	12-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	16	120	<50	YES
C-9053	12-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	15	85	<50	YES

Notes:
1. Canadian Council of Ministers of the Environment (CCME) Soil Quality Guidelines for the Protection of Environmental and Human Health, values for industrial land use and coarse-grained
2. Canadian Council of Ministers of the Environment (CCME) Soil Quality Guidelines for the Protection of Environmental and Human Health, values for agricultural land use and coarse-grained

BOLD/HIGHLIGHTED - Exceeds the applicable guideline.
mg/kg - milligrams per kilogram.
italic - indicates Recordable Detection Limit (RDL) is greater than the guideline.
n/a - not applicable.
< Indicates parameter was below laboratory equipment detection limit.
"-" Chemical not analyzed or criteria not defined.
* - indicates samples also presented in Table 21.
** - indicates samples also presented in Table 24.
(1) Detection limits raised due to high moisture content, sample contains => 50% moisture.
(2) Detection limits calculated based on method detection limits (MDLs) due to sample weight used for analysis and high moisture content, sample contains => 50% moisture.
(3) Detection limits raised based on sample weight used for analysis.
(4) Detection limits calculated based on method detection limits (MDLs) due to sample weight used for analysis.
Table to be read in conjunction with accompanying report.

Table 2
Initial Response Soil Analytical Results - Petroleum Hydrocarbons
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample ID	Sample Date (dd-mmm-yy)	Petroleum Hydrocarbons								
		Benzene	Toluene	Ethylbenzene	Xylenes (Total)	F1 (C6-C10)-BTEX	F2 (C10-C16)	F3 (C16-C34)	F4 (C34-C50)	Reached Baseline at C50
Guideline[1] (CN Right-of-Way)		**0.03**	**0.37**	**0.082**	**11**	**320**	**260**	**1700**	**3300**	**-**
Guideline[2] (Outside CN Right-of-Way)		**0.03**	**0.37**	**0.082**	**11**	**30**	**150**	**300**	**2800**	**-**
Units		**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**-**
C-9055	12-Mar-19	<0.0050	<0.050	<0.010	0.081	<10	21	130	<50	YES
C-9056B*	2-Jun-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-9059	12-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	13	200	69	YES
C-9061	12-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	11	130	53	YES
C-9062	12-Mar-19	0.0075	0.063	<0.010	<0.045	<10	<10	86	<50	YES
C-9063	12-Mar-19	0.012	0.082	0.017	0.068	<10	23	260	73	YES
C-9064	12-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	140	<50	YES
C-9069	12-Mar-19	0.02	0.11	0.02	0.12	<10	<10	<50	<50	YES
C-9075	12-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	10	190	<50	YES
C-9081B*	2-Jun-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-9084B	24-Jul-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-9085	12-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	98	<50	YES
C-9086	12-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	26	250	77	YES
DUPE-3025 (duplicate of C-9086)	12-Mar-19	<0.0050	<0.050	0.017	0.21	10	35	270	93	YES
C-9089B*	2-Jun-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-9093B	24-Jul-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-9094B	24-Jul-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-9106B*	2-Jun-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-9107B*	2-Jun-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-9113B*	2-Jun-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-9142	17-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-9161	13-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-9177	18-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-9178	18-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-9182	18-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-9186-C	18-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-9191	14-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	15	250	53	YES
C-9193	14-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	160	<50	YES
C-9195B	17-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	13	81	<50	YES
C-9199	14-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	72	<50	YES
C-9202	14-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	62	<50	YES
C-9205	14-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	29	130	<50	YES
C-9209	14-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	150	<50	YES
C-9212	14-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	98	<50	YES
DUPE-3027 (duplicate of C-9212)	14-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	80	<50	YES
C-9216	14-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-9219	14-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	190	64	YES
C-9222	14-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	70	<50	YES
C-9229	14-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	100	<50	YES
C-9232	14-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	190	50	YES
C-9235	14-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	100	<50	YES
C-9239B	17-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	22	200	54	YES
C-9241	14-Mar-19	0.0075	<0.050	<0.010	<0.045	<10	15	200	70	YES
C-9242	14-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	58	<50	YES
C-9248	14-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	130	<50	YES
C-9250	14-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	170	51	YES
C-9252	14-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	52	<50	YES
C-9256	14-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-9257	18-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-9272	18-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-9274	18-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-9278	18-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-9292	16-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-9298	17-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-9300	16-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-9303	16-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	12	170	<50	YES
C-9306	16-Mar-19	<0.0050	0.11	<0.010	<0.045	<10	<10	68	<50	YES
DUPE-3030 (duplicate of C-9306)	16-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	73	<50	YES
C-9309	16-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	58	<50	YES
C-9312	16-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-9315	16-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-9319	16-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-9321	16-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	130	<50	YES

Notes:
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2. Canadian Council of Ministers of the Environment (CCME) Soil Quality Guidelines for the Protection of Environmental and Human Health, values for agricultural land use and coarse-grained

BOLD/HIGHLIGHTED - Exceeds the applicable guideline.
mg/kg - milligrams per kilogram.
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n/a - not applicable.
< Indicates parameter was below laboratory equipment detection limit.
"-" Chemical not analyzed or criteria not defined.
* - indicates samples also presented in Table 21.
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(1) Detection limits raised due to high moisture content, sample contains => 50% moisture.
(2) Detection limits calculated based on method detection limits (MDLs) due to sample weight used for analysis and high moisture content, sample contains => 50% moisture.
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(4) Detection limits calculated based on method detection limits (MDLs) due to sample weight used for analysis.
Table to be read in conjunction with accompanying report.

Table 2
Initial Response Soil Analytical Results - Petroleum Hydrocarbons
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample ID	Sample Date (dd-mmm-yy)	Petroleum Hydrocarbons								
		Benzene	Toluene	Ethylbenzene	Xylenes (Total)	F1 (C6-C10)-BTEX	F2 (C10-C16)	F3 (C16-C34)	F4 (C34-C50)	Reached Baseline at C50
Guideline[1] (CN Right-of-Way)		**0.03**	**0.37**	**0.082**	**11**	**320**	**260**	**1700**	**3300**	**-**
Guideline[2] (Outside CN Right-of-Way)		**0.03**	**0.37**	**0.082**	**11**	**30**	**150**	**300**	**2800**	**-**
Units		**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**-**
C-9324	16-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	54	<50	YES
C-9327	16-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	74	<50	YES
C-9331	16-Mar-19	<0.0050	<0.050	<0.010	<0.045	17	10	64	<50	YES
C-9334	16-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	10	<50	<50	YES
C-9336	17-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	56	<50	YES
C-9338-B	17-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-9341-B	17-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-9346	17-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	64	<50	YES
C-9348	17-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-9350	17-Mar-19	0.016	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-9353	17-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-9358	17-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-9361-B	17-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-9365	17-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	17	100	<50	YES
DUPE-3032 (duplicate of C-9365)	17-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-9368	17-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-9370	17-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	53	<50	YES
C-9372	17-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-9375	17-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-9377	17-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-9410	17-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-9415	17-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-9418	17-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-9421	17-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-9425-B	17-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-9426	17-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-9429-B	17-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
DB-011	2-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
S-3006 (duplicate of DB-011)	2-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
DB-018	6-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
DUP-3013 (duplicate of DB-018)	6-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
DB-016	6-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
N-006	26-Feb-19	0.0086	<0.050	0.012	0.056	<10	14	110	<50	YES
N-009	26-Feb-19	0.0096	0.065	0.012	0.1	<10	49	240	97	YES
N-1000 (duplicate of N-009)	26-Feb-19	0.012	0.078	0.014	0.078	<10	14	100	<50	YES
N-010	26-Feb-19	0.0086	0.058	0.012	0.046	<10	<10	<50	<50	YES
N-015	26-Feb-19	0.01	0.067	<0.010	0.053	<10	<10	<50	<50	YES
N-016	26-Feb-19	0.013	0.082	0.015	0.06	<10	<10	<50	<50	YES
N-021	26-Feb-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
N-027	26-Feb-19	0.019	0.14	0.026	0.13	<10	<10	<50	<50	YES
N-036	26-Feb-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
S-002-B	4-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	64	<50	YES
S007B	27-Feb-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
S-008	27-Feb-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
S-011	27-Feb-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
S-029A-B	4-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	62	<50	YES
S-031	27-Feb-19	<0.016	<0.16	<0.032	<0.14	*<32*	<24	<120	<120	YES
S-032B	27-Feb-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
S-036	27-Feb-19	<0.0050	<0.050	<0.010	<0.045	<10	18	130	60	YES
S-036-B	4-Mar-19	<0.0050	0.13	<0.010	<0.045	<10	<10	150	<50	YES
S-037-B	4-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	58	<50	YES
S-039B	27-Feb-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
S-044 FLOOR	27-Feb-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
S-047C	27-Feb-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
DUP101 (duplicate of S-047C)	27-Feb-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
S-047G	27-Feb-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
S-048	27-Feb-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
S-057B	27-Feb-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	65	<50	YES
S-059	27-Feb-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	55	<50	YES
S-079	27-Feb-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
S-203	28-Feb-19	<0.0050	<0.050	<0.010	<0.045	<10	12	77	<50	YES
S-218	28-Feb-19	<0.0050	<0.050	<0.010	<0.045	<10	14	55	<50	YES
S-220	28-Feb-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
S-220W	1-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES

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Table 2
Initial Response Soil Analytical Results - Petroleum Hydrocarbons
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample ID	Sample Date (dd-mmm-yy)	Petroleum Hydrocarbons								
		Benzene	Toluene	Ethylbenzene	Xylenes (Total)	F1 (C6-C10)-BTEX	F2 (C10-C16)	F3 (C16-C34)	F4 (C34-C50)	Reached Baseline at C50
Guideline[1] (CN Right-of-Way)		**0.03**	**0.37**	**0.082**	**11**	**320**	**260**	**1700**	**3300**	**-**
Guideline[2] (Outside CN Right-of-Way)		**0.03**	**0.37**	**0.082**	**11**	**30**	**150**	**300**	**2800**	**-**
Units		**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**-**
S-3005 (duplicate of S-3005)	1-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
S-221	28-Feb-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	58	<50	YES
S-222	28-Feb-19	<0.0050	<0.050	<0.010	<0.045	<10	19	100	<50	YES
S-224	28-Feb-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
S-229	28-Feb-19	<0.0050	<0.050	<0.010	<0.045	<10	15	120	<50	YES
S-302W	2-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
S-304F	2-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
S-306W	2-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
S-310F	2-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	12	56	<50	YES
S-314W	2-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
WA-SOIL-201	14-Aug-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
WA-SOIL-201-1	16-Oct-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
WA-SOIL-202	14-Aug-19	<0.0050	<0.050	<0.010	<0.045	<10	70	**610**	230	YES
WA-SOIL-203	14-Aug-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
WA-SOIL-204	14-Aug-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
WA-SOIL-205	14-Aug-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
DUP001 (duplicate of WA-SOIL-205)	14-Aug-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
WA-SOIL-206	14-Aug-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
WA-SOIL-207	14-Aug-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
WA-SOIL-208	14-Aug-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	57	<50	YES
WA-SOIL-209	14-Aug-19	<0.0050	<0.050	<0.010	<0.045	<10	12	240	87	YES
WA-SOIL-211-1	16-Oct-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
WA-SOIL-211-2	13-Nov-19	<0.011 (1)	<0.080 (1)	<0.022 (1)	<0.096	<22	<10	<50	<50	YES
Excavated / Resampled Locations										
CN Right-of-Way										
C-1002W	3-Mar-19	**0.14**	0.095	<0.010	<0.045	<10	<10	<50	<50	YES
C-2033	5-Mar-19	0.0058	<0.050	0.012	0.11	<10	12	54	<50	YES
C-2058	5-Mar-19	**0.061**	0.15	0.018	0.18	<10	<10	<50	<50	YES
C-2076	2-Mar-19	**0.034**	<0.050	<0.010	<0.045	<10	-	-	-	-
C-2136**	6-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-9158	13-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	250	850	350	NO
DUPE-3024 (duplicate of C-9158)	13-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	**290**	1100	460	NO
DB110-B	8-Mar-19	**0.23**	**0.83**	**0.12**	1.3	35	<10	<50	<50	YES
S-100	28-Feb-19	**0.12**	0.13	<0.010	<0.045	<10	<10	<50	<50	YES
S-101A-A	27-Feb-19	**0.12**	0.27	0.03	0.3	<10	<10	<50	<50	YES
S-3000 (duplicate of S101A-A)	27-Feb-19	**0.13**	0.26	0.027	0.27	<10	<10	<50	<50	YES
S-101A-B	4-Mar-19	**0.044**	0.072	<0.010	<0.045	<10	<10	<50	<50	YES
S-109	28-Feb-19	**0.27**	**0.72**	**0.1**	1.2	16	29	110	<50	YES
S-3004 (duplicate of S-109)	28-Feb-19	**0.21**	**0.57**	**0.092**	1.1	10	12	56	<50	YES
S-137	28-Feb-19	**0.037**	0.11	0.017	0.17	<10	19	88	<50	YES
S-138	28-Feb-19	**0.33**	**0.76**	**0.095**	1.1	22	26	120	<50	YES
S-141	28-Feb-19	**0.097**	0.29	0.065	0.73	20	10	58	<50	YES
S-3002 (duplicate of S-141)	28-Feb-19	**0.052**	0.14	0.016	0.16	<10	<10	<50	<50	YES
S212W	1-Mar-19	**0.043**	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
TP-14	2-Mar-19	**0.94**	**4.4**	**0.79**	8.8	130	**2100**	**5700**	2400	NO
DUPE 3007 (duplicate of TP-14)	2-Mar-19	-	-	-	-	-	**2600**	**6800**	2900	NO
Outside CN Right-of-Way										
C-2406	8-Mar-19	0.016	0.075	<0.010	0.068	<10	130	**750**	300	NO
C-2600**	10-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	69	<50	YES
C-6005	6-Mar-19	**0.05**	0.15	<0.010	0.15	<10	<10	110	<50	YES
C-6013**	6-Mar-19	**0.032**	0.14	<0.010	0.14	<10	15	110	<50	YES
C-6015**	6-Mar-19	**0.035**	<0.050	<0.010	<0.045	<10	<10	66	<50	YES
C-6035**	6-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	51	**320**	110	YES
C-6207	9-Mar-19	**0.16**	0.16	<0.010	<0.045	<10	<10	<50	<50	YES
C-8007	12-Mar-19	0.012	<0.050	0.021	0.19	<10	71	**440**	160	YES
DUPE-3023 (duplicate of C-8007)	12-Mar-19	<0.0050	<0.050	0.017	0.24	<10	130	**670**	250	YES
C-8018	12-Mar-19	0.014	0.087	0.029	0.28	<10	**240**	**1100**	470	NO
C-8040	12-Mar-19	<0.0070	<0.012	<0.010	<0.16	<21	<22	**420**	120	YES
C-8074	15-Mar-19	<0.0050	<0.050	0.016	0.18	<10	140	**620**	230	YES
DUPE-3029 (duplicate of C-8074)	15-Mar-19	<0.0050	<0.050	0.012	0.14	<10	110	**530**	210	YES
C-9046	12-Mar-19	0.017	<0.050	<0.010	<0.045	<10	**200**	**1100**	440	NO
C-9049	12-Mar-19	0.012	<0.050	<0.010	<0.045	<10	110	**850**	200	YES
C-9056	12-Mar-19	<0.0050	<0.050	0.02	0.23	<10	100	**450**	180	YES
C-9081	12-Mar-19	<0.0050	<0.050	<0.010	0.15	<10	95	**880**	300	YES
C-9084	12-Mar-19	**0.21**	**1.6**	**0.32**	3.7	**33**	**920**	**2500**	1100	NO

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Table to be read in conjunction with accompanying report.

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Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample ID	Sample Date (dd-mmm-yy)	Petroleum Hydrocarbons								
		Benzene	Toluene	Ethylbenzene	Xylenes (Total)	F1 (C6-C10)-BTEX	F2 (C10-C16)	F3 (C16-C34)	F4 (C34-C50)	Reached Baseline at C50
Guideline[1] (CN Right-of-Way)		**0.03**	**0.37**	**0.082**	**11**	**320**	**260**	**1700**	**3300**	**-**
Guideline[2] (Outside CN Right-of-Way)		**0.03**	**0.37**	**0.082**	**11**	**30**	**150**	**300**	**2800**	**-**
Units		**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**-**
C-9089	12-Mar-19	<0.0050	<0.050	0.016	0.11	<10	61	**600**	210	YES
C-9093	12-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	69	**590**	160	YES
C-9094	12-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	45	**420**	140	YES
C-9106	13-Mar-19	0.013	<0.050	<0.010	0.2	<10	**640**	**2800**	1200	NO
C-9107	13-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	91	**790**	260	YES
C-9113	13-Mar-19	<0.0050	<0.050	<0.010	0.16	<10	**360**	**1500**	560	NO
C-9186-T	17-Mar-19	0.025	0.11	<0.010	<0.045	<10	<10	<50	<50	YES
C-9195	14-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	52	**470**	130	YES
C-9239	14-Mar-19	0.012	<0.050	<0.010	<0.045	<10	94	**610**	250	YES
DUPE-3028 (duplicate of C-9239)	14-Mar-19	0.013	<0.050	<0.010	<0.045	<10	48	**310**	120	YES
S-002	27-Feb-19	<0.0050	**0.39**	<0.010	<0.045	<10	<10	79	<50	YES
S-029A	27-Feb-19	**0.076**	**0.56**	**0.12**	1.6	**31**	64	290	110	YES
S-037	27-Feb-19	**0.039**	0.12	0.023	0.19	<10	<10	53	<50	YES

Notes:

1. Canadian Council of Ministers of the Environment (CCME) Soil Quality Guidelines for the Protection of Environmental and Human Health, values for industrial land use and coarse-grained
2. Canadian Council of Ministers of the Environment (CCME) Soil Quality Guidelines for the Protection of Environmental and Human Health, values for agricultural land use and coarse-grained

BOLD/HIGHLIGHTED - Exceeds the applicable guideline.
mg/kg - milligrams per kilogram.
italic - indicates Recordable Detection Limit (RDL) is greater than the guideline.
n/a - not applicable.
< Indicates parameter was below laboratory equipment detection limit.
"-" Chemical not analyzed or criteria not defined.
* - indicates samples also presented in Table 21.
** - indicates samples also presented in Table 24.
(1) Detection limits raised due to high moisture content, sample contains => 50% moisture.
(2) Detection limits calculated based on method detection limits (MDLs) due to sample weight used for analysis and high moisture content, sample contains => 50% moisture.
(3) Detection limits raised based on sample weight used for analysis.
(4) Detection limits calculated based on method detection limits (MDLs) due to sample weight used for analysis.
Table to be read in conjunction with accompanying report.

Table 3
Initial Response Soil Analytical Results - Polycyclic Aromatic Hydrocarbons
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample ID	Sample Date (dd-mmm-yy)	Carcinogenic Polycyclic Aromatic Hydrocarbons											Non-Carcinogenic Polycyclic Aromatic Hydrocarbons															
		Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b&j)fluoranthene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Benzo(g,h,i)perylene	Indeno(1,2,3-cd)pyrene	Total PAH	Index of Additive Cancer Risk(IACR)	B[a]P TPE Total Potency Equivalents	Acenaphthene	Acenaphthylene	Acridine	Anthracene	Benzo(c)phenanthrene	Benzo(e)pyrene	Fluoranthene	Fluorene	2-Methylnaphthalene	Naphthalene	Phenanthrene	Perylene	Pyrene	Quinoline	Low Molecular Weight PAH`s	High Molecular Weight PAH`s
Guideline[1] (CN Right-of-Way)		**10**	**72**	**-**	**10**	**-**	**10**	**-**	**10**	**-**	**1**	**0.6**	**0.28**	**320**	**-**	**32**	**-**	**-**	**180**	**0.25**	**-**	**0.013**	**0.046**	**-**	**100**	**-**	**-**	**-**
Guideline[2] (Outside CN Right-of-Way)		**0.1**	**20**	**-**	**0.1**	**6.2**	**0.1**	**-**	**0.1**	**-**	**1**	**0.6**	**0.28**	**320**	**-**	**2.5**	**-**	**-**	**50**	**0.25**	**-**	**0.013**	**0.046**	**-**	**0.1**	**-**	**-**	**-**
Units		**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**n/a**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**
Confirmatory Locations																											
CN Right-of-Way																											
BG-1	16-Feb-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.0050
BG-5	18-Feb-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.0050
C-1002WC	16-Oct-19	0.010	0.012	0.032	0.0098	0.021	<0.0050	0.014	0.014	0.19	0.35	0.021	<0.0050	<0.0050	<0.010	0.0058	<0.0050	0.019	0.024	<0.0050	0.0074	<0.0050	0.017	0.015	0.020	<0.010	0.030	0.16
C-1004W	3-Mar-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.0050
C-2017	5-Mar-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0059	<0.0050	0.06	<0.10	<0.0071	<0.0050	<0.0050	<0.010	0.0083	<0.0050	<0.0050	0.013	0.0057	<0.0050	<0.0050	0.017	<0.0050	0.0097	<0.010	0.031	0.029
C-2028B	16-Oct-19	0.014	0.023	0.047	0.014	0.021	0.0072	0.044	0.032	0.29	0.54	0.041	<0.0050	0.015	<0.010	0.028	<0.0050	0.038	0.017	<0.0050	<0.0050	<0.0050	0.0078	0.0090	0.018	<0.010	0.051	0.24
C-2071	5-Mar-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.0050
C-2074B	16-Oct-19	<0.0050	0.012	0.032	0.0098	0.017	<0.0050	0.014	0.0092	0.13	0.32	0.020	<0.0050	<0.0050	<0.010	0.0044	<0.0050	0.027	0.014	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.013	<0.010	<0.010	0.12
C-2080B	16-Oct-19	0.017	0.015	0.043	0.012	0.031	0.0055	0.021	0.015	0.24	0.48	0.030	<0.0050	<0.0050	<0.010	0.0095	0.0052	0.030	0.030	<0.0050	<0.0050	<0.0050	0.011	<0.0050	0.021	<0.010	0.021	0.22
C-2082	5-Mar-19	0.018	0.016	0.022	0.0087	0.016	<0.0050	0.0083	0.0098	0.18	0.31	0.024	<0.0050	<0.0050	<0.010	0.0064	<0.0050	0.011	0.038	<0.0050	<0.0050	<0.0050	0.011	0.007	0.029	<0.010	0.017	0.17
C-2100	5-Mar-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.074	<0.10	<0.0071	<0.0050	<0.0050	0.012	<0.0040	<0.0050	<0.0050	<0.0050	0.0065	0.024	0.0065	0.02	0.0077	0.0053	<0.010	0.068	0.0053
C-2106	6-Mar-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.083	<0.10	<0.0071	0.007	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	0.016	0.0062	0.0095	0.013	0.02	0.0056	0.012	<0.010	0.056	0.028
C-2106B	16-Oct-19	<0.0050	<0.0050	0.0092	<0.0050	0.012	<0.0050	<0.0050	<0.0050	0.034	0.11	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	0.0064	<0.0050	<0.0050	<0.0050	<0.0050	0.013	0.0056	<0.010	<0.010	0.034
C-2136C*	24-Feb-20	0.019	0.033	0.078	0.024	0.051	0.009	0.036	0.035	0.41	0.86	0.058	<0.0050	<0.0050	<0.010	0.0092	<0.0050	0.047	0.051	<0.0050	0.0083	<0.0050	0.021	0.021	0.037	<0.010	0.038	0.37
C-2160	6-Mar-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.0050
C-2176	6-Mar-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.0050
C-2178	6-Mar-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.0050
C-2180B	16-Oct-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.031	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	0.011	<0.0050	<0.0050	<0.0050	0.013	0.011	0.0083	<0.010	0.013	0.019
DUP16 (duplicate of C-2180B)	16-Oct-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.03	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	0.0076	<0.0050	<0.0050	0.0092	0.013	0.0084	<0.0050	<0.010	0.023	0.0076
C-2311	7-Mar-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.067	<0.0050	<0.010	<0.010	<0.0050
C-2509B	16-Oct-19	<0.0050	<0.0050	0.015	<0.0050	0.0096	<0.0050	<0.0050	<0.0050	0.070	0.14	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	0.0091	0.014	<0.0050	0.0098	<0.0050	0.011	0.026	0.011	<0.010	0.021	0.049
DB-004	2-Mar-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.0050
DB-110-C	11-Mar-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.015	<0.0050	<0.010	<0.010	<0.0050
NSERIESDIL-1	16-Oct-19	0.015	0.026	0.058	0.016	0.038	0.0076	0.033	0.02	0.33	0.64	0.046	<0.0050	<0.0050	<0.010	0.0099	0.0058	0.052	0.05	<0.0050	<0.0050	<0.0050	0.02	0.0074	0.036	<0.010	0.03	0.31
NSERIESDIL-4	16-Oct-19	<0.0050	<0.0050	0.01	<0.0050	<0.0050	<0.0050	0.0055	<0.0050	0.029	0.11	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	0.0074	0.0074	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0058	<0.010	<0.010	0.029
N-001	26-Feb-19	0.0082	0.0082	0.019	0.0061	0.012	<0.0050	0.0096	0.009	0.27	0.23	0.015	0.017	<0.0050	<0.010	0.013	<0.0050	0.012	0.04	0.018	0.017	0.012	**0.058**	<0.0050	0.028	<0.010	0.13	0.14
N-007	26-Feb-19	0.039	0.018	0.048	0.015	0.058	<0.0050	0.014	0.013	1	0.61	0.033	0.036	<0.0050	<0.010	0.053	0.0095	0.026	0.24	0.044	0.019	0.013	**0.24**	<0.0050	0.16	0.013	0.42	0.61
N-013	26-Feb-19	0.026	0.018	0.045	0.013	0.04	<0.0050	0.021	0.016	0.84	0.53	0.031	0.052	0.0062	<0.010	0.078	0.0064	0.03	0.14	0.049	0.034	**0.019**	**0.17**	<0.0050	0.093	0.015	0.42	0.41
N-031	26-Feb-19	0.05	0.1	0.28	0.076	0.2	0.027	0.12	0.089	1.7	**2.90**	0.18	0.016	0.014	<0.010	0.041	0.026	0.24	0.27	0.013	0.031	**0.088**	**0.092**	0.021	0.21	<0.010	0.3	1.5
S-014	27-Feb-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.0050
S-017	27-Feb-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.0050
S-019A	27-Feb-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.0050
DUP-100 (duplicate of S-019A)	27-Feb-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.0050
S-022	27-Feb-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.0050
S-023B	27-Feb-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.0050
S-025	27-Feb-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.11	<0.10	<0.0071	<0.0050	<0.0050	0.017	<0.0040	<0.0050	<0.0050	<0.0050	0.01	0.037	0.0089	0.033	<0.0050	0.0065	<0.010	0.11	0.0065
S-051B	27-Feb-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.0050
S-054A	27-Feb-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.0050
S-063	27-Feb-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.0050
S-065A	27-Feb-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.0050
S-073	27-Feb-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0059	<0.0050	<0.010	<0.010	<0.0050

Notes:
1. Canadian Council of Ministers of the Environment (CCME) Soil Quality Guidelines for the Protection of Environmental and Human Health, values for industrial land use and coarse-grained soils (CCME 1999, updated 2001).
2. Canadian Council of Ministers of the Environment (CCME) Soil Quality Guidelines for the Protection of Environmental and Human Health, values for agricultural land use and coarse-grained soils (CCME 1999, updated 2001).

BOLD/HIGHLIGHTED - Exceeds the applicable guideline.
mg/kg - milligrams per kilogram.
* - indicates samples also presented in Table 25.
n/a - not applicable.
< Indicates parameter was below laboratory equipment detection limit.
"-" Chemical not analyzed or criteria not defined.
(1) Qualifying ion outside of acceptance criteria. Results are tentatively identified and potentially biased high.
Table to be read in conjunction with accompanying report.

Table 3
Initial Response Soil Analytical Results - Polycyclic Aromatic Hydrocarbons
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample ID	Sample Date (dd-mmm-yy)	Carcinogenic Polycyclic Aromatic Hydrocarbons											Non-Carcinogenic Polycyclic Aromatic Hydrocarbons															
		Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b&j)fluoranthene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Benzo(g,h,i)perylene	Indeno(1,2,3-cd)pyrene	Total PAH	Index of Additive Cancer Risk(IACR)	B[a]P TPE Total Potency Equivalents	Acenaphthene	Acenaphthylene	Acridine	Anthracene	Benzo(c)phenanthrene	Benzo[e]pyrene	Fluoranthene	Fluorene	2-Methylnaphthalene	Naphthalene	Phenanthrene	Perylene	Pyrene	Quinoline	Low Molecular Weight PAH's	High Molecular Weight PAH's
Guideline[1] (CN Right-of-Way)		**10**	**72**	**-**	**10**	**-**	**10**	**-**	**10**	**-**	**1**	**0.6**	**0.28**	**320**	**-**	**32**	**-**	**-**	**180**	**0.25**	**-**	**0.013**	**0.046**	**-**	**100**	**-**	**-**	**-**
Guideline[2] (Outside CN Right-of-Way)		**0.1**	**20**	**-**	**0.1**	**6.2**	**0.1**	**-**	**0.1**	**-**	**1**	**0.6**	**0.28**	**320**	**-**	**2.5**	**-**	**-**	**50**	**0.25**	**-**	**0.013**	**0.046**	**-**	**0.1**	**-**	**-**	**-**
Units		**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**n/a**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**
S-074B	27-Feb-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.0050
S-075	27-Feb-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.0050
S-085	27-Feb-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.0050
S-088	27-Feb-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.0050
S-093B	27-Feb-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0068	<0.0050	<0.0050	<0.010	<0.010	<0.0050
S-094B	16-Oct-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0080	<0.0050	<0.0050	<0.010	<0.010	<0.0050
S-097	27-Feb-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.0050
S-098	27-Feb-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.023	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	0.0083	<0.0050	<0.0050	<0.0050	0.015	<0.0050	<0.0050	<0.0050	<0.010	0.015	0.0083
S-101-C	8-Mar-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.0050
S202WB	16-Oct-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0099	<0.0050	<0.0050	<0.010	<0.010	<0.0050
S-212W-C	7-Mar-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.0050
S323F	2-Mar-19	0.02	0.016	0.043	0.016	0.073	<0.0050	0.017	0.017	0.35	0.53	0.029	<0.0050	<0.0050	<0.010	0.023	<0.0050	0.025	0.044	<0.0050	0.014	0.0099	0.025	0.011	0.032	<0.010	0.072	0.28
WA-SOIL-211-1	16-Oct-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.016	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	0.0067	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0091	<0.010	<0.010	0.016
WA-SOIL-211-2	13-Nov-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.016	<0.10	<0.0071	0.009	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	0.011	<0.0050	<0.0050	**0.015**	<0.0050	<0.0050	0.0083	<0.010	<0.010	0.016
Outside CN Right-of-Way																													
BG-2	16-Feb-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.0050
BG-3	18-Feb-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.0050
BG-4	18-Feb-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.011	<0.0050	<0.010	<0.010	<0.0050
BG-6	18-Feb-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.014	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.014	0.014	<0.0050
C-1011W	3-Mar-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0099	<0.0050	<0.0050	<0.010	<0.010	<0.0050
C-1016F	3-Mar-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	0.0079	<0.0050	<0.0050	0.013	<0.0050	<0.0050	<0.010	<0.010	<0.0050
C-1018F	3-Mar-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.022	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	0.013	0.0091	<0.0050	0.0079	<0.0050	<0.0050	<0.010	0.022	<0.0050
C-2131	6-Mar-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0069	<0.0050	<0.0050	<0.010	<0.010	<0.0050
C-2140B*	16-Oct-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.0050
C-2146	6-Mar-19	0.011	0.018	0.048	0.014	0.024	<0.0050	0.019	0.022	0.24	0.51	0.031	<0.0050	<0.0050	<0.010	0.005	<0.0050	0.028	0.041	<0.0050	<0.0050	<0.0050	0.0097	0.018	0.031	<0.010	0.015	0.23
C-2150C*	16-Oct-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0066	<0.0050	<0.010	<0.010	<0.0050
C-2153	6-Mar-19	0.0053	0.011	0.027	0.0076	0.012	<0.0050	0.01	0.012	0.13	0.28	0.019	<0.0050	<0.0050	<0.010	0.004	<0.0050	0.017	0.021	<0.0050	<0.0050	<0.0050	0.0072	0.013	0.017	<0.010	0.011	0.12
C-2156	6-Mar-19	0.0084	0.013	0.031	0.0092	0.015	<0.0050	0.013	0.014	0.16	0.34	0.022	<0.0050	<0.0050	<0.010	0.0055	<0.0050	0.019	0.025	<0.0050	<0.0050	<0.0050	<0.0050	0.014	0.023	<0.010	<0.010	0.15
C-2404	8-Mar-19	<0.0050	<0.0050	0.0065	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.013	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	0.0067	<0.0050	<0.0050	<0.0050	<0.0050	0.017	<0.0050	<0.010	<0.010	0.013
C-2406-B	10-Mar-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.061	<0.0050	<0.010	<0.010	<0.0050
C-2410	8-Mar-19	0.0084	0.011	0.024	<0.0050	0.023	<0.0050	0.011	0.01	0.12	0.25	0.018	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	0.014	0.018	<0.0050	<0.0050	<0.0050	<0.0050	0.02	0.013	<0.010	<0.010	0.12
C-2419	8-Mar-19	0.024	0.036	0.068	0.024	0.052	0.0098	0.039	0.041	0.41	0.84	0.062	<0.0050	<0.0050	<0.010	0.0086	<0.0050	0.045	0.053	<0.0050	<0.0050	<0.0050	0.014	0.03	0.042	<0.010	0.023	0.39
C-2422	8-Mar-19	<0.0050	0.014	0.031	0.0093	0.015	<0.0050	0.015	0.015	0.16	0.32	0.022	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	0.018	0.026	<0.0050	<0.0050	<0.0050	0.011	0.027	0.02	<0.010	0.011	0.15
C-2424	8-Mar-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.0050
C-2600B*	25-Feb-20	<0.0050	<0.0050	0.017	<0.0050	0.011	<0.0050	<0.0050	<0.0050	0.14	0.16	0.008	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	0.0097	0.025	0.0084	0.021	0.0097	0.027	0.015	0.021	<0.010	0.067	0.074
C-2601	10-Mar-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.038	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	0.012	<0.0050	0.016	0.0087	<0.0050	0.011	0.038	<0.0050
C-6020	6-Mar-19	<0.0050	<0.0050	0.0078	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.03	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	0.0071	0.0093	<0.0050	<0.0050	<0.0050	0.0056	0.027	0.0075	<0.010	<0.010	0.025
C-6204	9-Mar-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0077	<0.0050	<0.010	<0.010	<0.0050
C-6219	9-Mar-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0086	<0.0050	<0.010	<0.010	<0.0050
DB-011	2-Mar-19	0.011	0.013	0.026	0.009	0.017	<0.0050	0.0094	0.01	0.18	0.31	0.021	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	0.013	0.039	<0.0050	<0.0050	<0.0050	0.011	0.015	0.029	<0.010	0.011	0.16
NSERIESDIL-2	16-Oct-19	**0.25**	0.26	0.39	**0.15**	0.36	0.039	0.2	**0.16**	2.5	**5.30**	0.4	<0.0050	0.071	<0.010	0.15	0.064	0.28	0.14	0.0064	<0.0050	<0.0050	0.01	0.074	**0.26**	<0.010	0.24	2.3
NSERIESDIL-3	16-Oct-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.028	<0.0050	<0.010	<0.010	<0.0050
N-006	26-Feb-19	0.029	0.025	0.079	0.024	0.057	<0.0050	0.023	0.024	1	0.85	0.044	0.053	0.01	0.023	0.043	0.0099	0.042	0.14	0.043	0.055	**0.026**	**0.25**	0.0086	**0.11**	<0.010	0.5	0.52
N-009	26-Feb-19	0.025	0.034	0.077	0.023	0.05	0.011	0.085	0.048	0.67	0.89	0.064	0.012	0.013	0.013	0.028	0.0061	0.067	0.066	0.014	0.035	**0.022**	**0.053**	0.012	0.057	<0.010	0.19	0.48
N-1000 (duplicate of N-009)	26-Feb-19	**0.40**	0.37	0.65	**0.20**	0.36	0.064	0.24	**0.20**	3.5	**8.10**	0.59	0.016	0.12	0.017	0.2	0.064	0.42	0.22	0.029	0.042	**0.031**	**0.077**	0.1	**0.26**	<0.010	0.53	3

Notes:

1. Canadian Council of Ministers of the Environment (CCME) Soil Quality Guidelines for the Protection of Environmental and Human Health, values for industrial land use and coarse-grained soils (CCME 1999, updated 2001).
2. Canadian Council of Ministers of the Environment (CCME) Soil Quality Guidelines for the Protection of Environmental and Human Health, values for agricultural land use and coarse-grained soils (CCME 1999, updated 2001).

BOLD/HIGHLIGHTED - Exceeds the applicable guideline.
mg/kg - milligrams per kilogram.
* - indicates samples also presented in Table 25.
n/a - not applicable.
< Indicates parameter was below laboratory equipment detection limit.
"-" Chemical not analyzed or criteria not defined.
(1) Qualifying ion outside of acceptance criteria. Results are tentatively identified and potentially biased high.
Table to be read in conjunction with accompanying report.

Table 3
Initial Response Soil Analytical Results - Polycyclic Aromatic Hydrocarbons
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample ID	Sample Date (dd-mmm-yy)	Carcinogenic Polycyclic Aromatic Hydrocarbons											Non-Carcinogenic Polycyclic Aromatic Hydrocarbons														
		Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b&j)fluoranthene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Benzo(g,h,i)perylene	Indeno(1,2,3-cd)pyrene	Total PAH	Index of Additive Cancer Risk(IACR)	B[a]P TPE Total Potency Equivalents	Acenaphthene	Acenaphthylene	Acridine	Anthracene	Benzo(c)phenanthrene	Benzo[e]pyrene	Fluoranthene	Fluorene	2-Methylnaphthalene	Naphthalene	Phenanthrene	Perylene	Pyrene	Quinoline	Low Molecular Weight PAH's	High Molecular Weight PAH's
Guideline[1] (CN Right-of-Way)		**10**	**72**	**-**	**10**	**-**	**10**	**-**	**10**	**-**	**1**	**0.6**	**0.28**	**320**	**-**	**32**	**-**	**-**	**180**	**0.25**	**-**	**0.013**	**0.046**	**-**	**100**	**-**	**-**	**-**
Guideline[2] (Outside CN Right-of-Way)		**0.1**	**20**	**-**	**0.1**	**6.2**	**0.1**	**-**	**0.1**	**-**	**1**	**0.6**	**0.28**	**320**	**-**	**2.5**	**-**	**-**	**50**	**0.25**	**-**	**0.013**	**0.046**	**-**	**0.1**	**-**	**-**	**-**
Units		**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**n/a**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**
N-010	26-Feb-19	<0.0050	<0.0050	0.0082	<0.0050	<0.0050	<0.0050	0.0091	0.0062	0.055	<0.10	<0.0071	<0.0050	<0.0050	<0.010	0.009	<0.0050	0.0064	0.0093	<0.0050	<0.0050	<0.0050	0.0056	<0.0050	0.0076	<0.010	0.015	0.04
N-015	26-Feb-19	0.014	0.018	0.046	0.014	0.032	<0.0050	0.042	0.025	0.38	0.51	0.031	0.011	0.0073	<0.010	0.019	<0.0050	0.037	0.047	0.011	0.011	0.007	0.039	<0.0050	0.038	<0.010	0.11	0.27
N-016	26-Feb-19	0.043	0.024	0.049	0.016	0.056	<0.0050	0.026	0.02	1.1	0.65	0.04	0.087	0.013	<0.010	0.061	0.0084	0.03	0.21	0.068	0.017	0.01	**0.22**	0.0076	**0.15**	0.013	0.49	0.6
N-021	26-Feb-19	0.014	0.014	0.036	0.011	0.02	<0.0050	0.02	0.017	0.61	0.41	0.025	0.077	0.006	<0.010	0.023	<0.0050	0.026	0.065	0.063	0.02	0.01	**0.13**	<0.0050	0.048	0.029	0.36	0.25
N-027	26-Feb-19	<0.0050	0.0074	0.015	<0.0050	0.0053	<0.0050	0.011	0.0085	0.083	0.15	0.013	<0.0050	<0.0050	<0.010	0.0097	<0.0050	0.012	0.0094	<0.0050	<0.0050	<0.0050	0.0081	<0.0050	0.0083	<0.010	0.018	0.065
N-036	26-Feb-19	0.042	0.074	0.13	0.052	0.089	0.016	0.073	0.073	0.72	**1.60**	0.12	<0.0050	0.031	<0.010	0.065	0.0059	0.098	0.025	<0.0050	<0.0050	<0.0050	0.014	0.029	0.032	<0.010	0.11	0.61
S-007B	27-Feb-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.014	<0.0050	<0.010	<0.010	<0.0050
S-008	27-Feb-19	<0.0050	<0.0050	0.019	<0.0050	0.009	<0.0050	<0.0050	<0.0050	0.06	0.17	0.008	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	0.01	0.018	<0.0050	<0.0050	<0.0050	<0.0050	0.032	0.013	<0.010	<0.010	0.06
S-011	27-Feb-19	0.02	0.034	0.089	0.031	0.054	<0.0050	0.026	0.032	0.42	0.95	0.054	<0.0050	<0.0050	<0.010	<0.0040	0.008	0.042	0.07	<0.0050	<0.0050	<0.0050	<0.0050	0.0097	0.057	<0.010	<0.010	0.42
S-029A-B	4-Mar-19	<0.0050	0.01	0.023	<0.0050	0.01	<0.0050	0.011	0.011	0.14	0.22	0.017	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	0.015	0.026	<0.0050	0.013	<0.0050	0.016	0.027	0.021	<0.010	0.029	0.11
S-031	27-Feb-19	<0.011	<0.011	0.018	<0.011	<0.011	<0.011	<0.011	<0.011	0.032	0.2	<0.015	<0.011	<0.011	<0.021	<0.0084	<0.011	<0.011	0.014	<0.011	<0.011	<0.011	<0.011	0.036	<0.011	<0.021	<0.021	0.032
S-032B	27-Feb-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.014	<0.0050	<0.010	<0.010	<0.0050
S-036	27-Feb-19	<0.0050	0.01	0.024	<0.0050	0.0083	<0.0050	0.0093	0.011	0.12	0.22	0.017	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	0.013	0.017	<0.0050	0.01	<0.0050	0.016	0.032	0.014	<0.010	0.026	0.094
S-039B	27-Feb-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.014	<0.0050	<0.010	<0.010	<0.0050
S-044 FLOOR	27-Feb-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.047	<0.0050	<0.010	<0.010	<0.0050
S-047C	27-Feb-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.033	<0.0050	<0.010	<0.010	<0.0050
DUP-101 (duplicate of S-047C)	27-Feb-19	<0.0050	<0.0050	0.018	<0.0050	0.009	<0.0050	<0.0050	<0.0050	0.058	0.16	0.008	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	0.0087	0.018	<0.0050	<0.0050	<0.0050	<0.0050	0.025	0.014	<0.010	<0.010	0.058
S-047G	27-Feb-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.072	<0.0050	<0.010	<0.010	<0.0050
S-048	27-Feb-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.011	<0.0050	<0.010	<0.010	<0.0050
S-059	27-Feb-19	0.0097	0.013	0.031	0.0097	0.02	<0.0050	0.0094	0.012	0.16	0.34	0.022	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	0.018	0.023	<0.0050	<0.0050	<0.0050	0.013	0.029	0.018	<0.010	0.013	0.15
S-079B*	16-Oct-19	<0.0050	<0.0050	0.0099	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.026	0.11	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	0.0074	0.0077	<0.0050	<0.0050	<0.0050	<0.0050	0.021	0.0087	<0.010	<0.010	0.026
S-314WB	16-Oct-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.0050
DUP16 (duplicate of S-314WB)	16-Oct-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.0050
WA-SOIL-201	14-Aug-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	0.0073	<0.0050	<0.0050	<0.0050	<0.0050	0.0071	<0.0050	<0.010	<0.010	0.0073
WA-SOIL-201-1	16-Oct-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.043	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	0.015	<0.0050	<0.0050	<0.0050	0.014	0.0092	0.014	<0.010	0.014	0.029
WA-SOIL-202	14-Aug-19	0.0082	0.0086	0.016	<0.0050	0.016	<0.0050	0.0075	0.0063	0.24	0.18	0.015	<0.0050	<0.0050	0.068	<0.0040	<0.0050	0.014	0.018	0.011 (1)	0.0089	<0.0050	0.041	0.021	0.033	<0.010	0.13	0.11
WA-SOIL-203	14-Aug-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.0050
WA-SOIL-204	14-Aug-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.0050
WA-SOIL-205	14-Aug-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0084	<0.0050	<0.010	<0.010	<0.0050
DUP001 (duplicate of WA-SOIL-205)	14-Aug-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0086	<0.0050	<0.010	<0.010	<0.0050
WA-SOIL-206	14-Aug-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.0050
WA-SOIL-207	14-Aug-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.0050
WA-SOIL-208	14-Aug-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0079	<0.0050	<0.0050	<0.010	<0.010	<0.0050
WA-SOIL-209	14-Aug-19	<0.0050	0.0072	0.017	<0.0050	0.019	<0.0050	0.0078	<0.0050	0.13	0.17	0.012	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	0.013	0.027	<0.0050	0.014	0.0072	0.018	0.018 (1)	0.018	<0.010	0.039	0.096
Excavated / Resampled Locations																												
CN Right-of-Way																												
C-1002W-B	7-Mar-19	0.039	0.059	0.14	0.045	0.076	0.015	0.062	0.064	0.72	**1.5**	0.1	<0.0050	0.0083	<0.010	0.014	0.01	0.081	0.096	<0.0050	<0.0050	<0.0050	0.027	0.019	0.071	<0.010	0.05	0.67
C-2028	5-Mar-19	0.16	0.075	0.14	0.044	0.24	0.012	0.045	0.036	2.8	**2.0**	0.13	**0.33**	0.016	0.062	0.22	0.026	0.081	0.69	0.091	0.015	**0.028**	**0.048**	0.038	0.55	0.014	0.83	2
C-2033	5-Mar-19	0.049	0.019	0.032	0.01	0.048	<0.0050	0.013	0.0089	1.20	0.50	0.032	0.094	0.0064	0.017	0.093	0.0074	0.019	0.22	0.097	0.034	<0.0050	**0.29**	0.011	0.16	<0.010	0.63	0.57
C-2058-B	8-Mar-19	<0.0050	<0.0050	0.013	<0.0050	0.0079	<0.0050	<0.0050	<0.0050	0.16	0.13	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	0.0083	0.0079	<0.0050	0.071	**0.041**	0.023	<0.0050	<0.0050	<0.010	0.14	0.029
C-2058C	16-Oct-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.015	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	0.0080	<0.0050	<0.0050	<0.0050	<0.0050	0.015	0.0072	<0.010	<0.010	0.015
C-2074	5-Mar-19	0.16	0.13	0.16	0.063	0.13	0.02	0.071	0.081	2.2	**2.40**	0.2	0.029	0.012	<0.010	0.096	0.023	0.082	0.42	0.076	0.0062	<0.0050	**0.4**	0.031	0.31	<0.010	0.62	1.6
C-2080	5-Mar-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.06	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	0.01	<0.0050	0.0084	**0.02**	0.015	<0.0050	0.0072	<0.010	0.043	0.017
C-2136*	6-Mar-19	0.12	0.11	0.2	0.067	0.17	0.017	0.068	0.078	2	**2.50**	0.18	0.0076	0.021	<0.010	0.031	0.026	0.1	0.49	0.013	<0.0050	<0.0050	**0.2**	0.026	0.35	<0.010	0.28	1.7
C-2136B*	16-Oct-19	0.019	0.011	0.021	0.0069	0.016	<0.0050	0.0080	0.0069	0.76	0.28	0.020	0.083	<0.0050	<0.010	0.014	<0.0050	0.011	0.098	0.054	0.051	**0.13**	**0.17**	0.018	0.071	<0.010	0.50	0.26
C-2180	6-Mar-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.09	<0.10	<0.0071	0.0096	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	0.015	0.0087	0.0082	**0.016**	0.022	<0.0050	0.01	<0.010	0.065	0.025
C-2509	8-Mar-19	0.041	0.063	0.15	0.049	0.084	0.015	0.064	0.069	0.85	**1.70**	0.11	<0.0050	0.011	<0.010	0.015	0.012	0.09	0.13	<0.0050	<0.0050	<0.0050	0.04	0.017	0.1	<0.010	0.066	0.78
S-094	27-Feb-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0073	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.0050
S-3001 (duplicate of S-094)	27-Feb-19	0.027	0.011	0.021	0.0072	0.033	<0.0050	<0.0050	<0.0050	1	0.32	0.019	0.083	<0.0050	<0.010	0.067	<0.0050	0.011	0.15	0.082	0.063	**0.087**	**0.27**	<0.0050	0.1	0.011	0.66	0.35
S-101A-A	27-Feb-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.015	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	0.0079	<0.0050	0.0072	<0.0050	<0.0050	<0.010	0.015	<0.0050
S202W	1-Mar-19	0.014	0.023	0.055	0.018	0.035	<0.0050	0.022	0.023	0.38	0.6	0.037	<0.0050	<0.0050	<0.010	0.0058	<0.0050	0.029	0.083	<0.0050	<0.0050	<0.0050	**0.048**	0.0094	0.058	<0.010	0.054	0.33
S-3000 (duplicate of S-101A-A)	27-Feb-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.0050
Outside CN Right-of-Way																												
C-2140*	6-Mar-19	0.061	0.089	0.17	0.054	0.099	0.016	0.064	0.069	0.89	**2.0**	0.14	<0.0050	0.0091	<0.010	0.019	0.013	0.096	0.11	<0.0050	<0.0050	<0.0050	0.021	0.023	0.1	<0.010	0.05	0.84
C-2150-B	6-Mar-19	0.018	0.029	0.063	0.019	0.041	<0.0050	0.025	0.026	0.5	0.69	0.045	0.0077	0.0072	0.015	0.013	<0.0050	0.036	0.074	0.011	0.031	0.008	**0.05**	0.018	0.059	<0.010	0.14	0.35
C-2600*	10-Mar-19	0.018	0.025	0.072	0.025	0.071	<0.0050	0.024	0.024	0.9	0.79	0.042	0.012	0.0096	<0.010	0.014	0.0096	0.037	0.2	0.017	0.011	0.007	**0.23**	0.0082	**0.14**	<0.010	0.3	0.6
S-002	27-Feb-19	<0.0050	<0.0050	0.016	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.036	0.14	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	0.0095	0.012	<0.0050	<0.0050	<0.0050	<0.0050	0.034	0.0091	<0.010	<0.010	0.036
S-029A	27-Feb-19	0.014	0.016	0.034	0.009	0.024	<0.0050	0.015	0.02	0.55	0.38	0.027	0.022	<0.0050	0.031	0.033	<0.0050	0.021	0.067	**0.03**	0.063	**0.028**	**0.09**	0.022	0.053	<0.010	0.3	0.25
S-037	27-Feb-19	<0.0050	0.013	0.033	0.0098	0.013	<0.0050	0.013	0.015	0.12	0.33	0.021	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	0.018	0.014	<0.0050	<0.0050	<0.0050	<0.0050	0.018	0.011	<0.010	<0.010	0.12
S-079	27-Feb-19	**0.12**	0.11	0.24	0.093	0.23	0.019	0.077	0.098	1.8	**3.00**	0.19	<0.0050	0.036	<0.010	0.055	0.021	0.11	0.27	0.031	<0.0050	0.0083	**0.2**	0.03	**0.2**	<0.010	0.33	1.5
S314W	2-Mar-19	**0.12**	0.16	0.32	**0.12**	0.27	0.029	0.12	**0.12**	2.1	**3.80**	0.26	<0.0050	0.016	<0.010	0.03	0.03	0.17	0.32	0.012	<0.0050	0.0074	**0.14**	0.036	**0.26**	<0.010	0.2	1.9

Notes:

1. Canadian Council of Ministers of the Environment (CCME) Soil Quality Guidelines for the Protection of Environmental and Human Health, values for industrial land use and coarse-grained soils (CCME 1999, updated 2001).
2. Canadian Council of Ministers of the Environment (CCME) Soil Quality Guidelines for the Protection of Environmental and Human Health, values for agricultural land use and coarse-grained soils (CCME 1999, updated 2001).

BOLD/HIGHLIGHTED - Exceeds the applicable guideline.

mg/kg - milligrams per kilogram.

* - indicates samples also presented in Table 25.

n/a - not applicable.

< Indicates parameter was below laboratory equipment detection limit.

"-" Chemical not analyzed or criteria not defined.

(1) Qualifying ion outside of acceptance criteria. Results are tentatively identified and potentially biased high.

Table to be read in conjunction with accompanying report.

Table 4
Insitu Surface Water Monitoring
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample ID	Date (dd-mmm-yy)	Temperature (°C)	pH	Conductivity (mS/cm)	Dissolved Oxygen (mg/L)
TH-1	24-Jul-19	29.6	9.82	1.48	13.16
	21-Aug-19	19.8	9.34	1.45	6.06
	18-Sep-19	21.5	8.23	1.33	6.71
	17-Oct-19	3.5	-	-	11.25
TH-6	24-Jul-19	30.3	9.66	0.97	12.51
	21-Aug-19	21.4	9.65	1.17	10.17
	18-Sep-19	22	8.05	1.29	4.85
	17-Oct-19	3.3	-	-	11.6
TH-7	24-Jul-19	29.2	9.52	0.83	14.27
	21-Aug-19	20.7	9.56	0.8	10.22
	18-Sep-19	21.4	8.18	1.27	4.94
	17-Oct-19	3.2	-	-	11.45
TH-10	24-Jul-19	29.6	9.88	0.62	10.34
	21-Aug-19	18.3	9.6	0.61	5.5
	18-Sep-19	21.5	8.64	0.58	8.22
	17-Oct-19	2.8	-	-	10.9
TH-11	24-Jul-19	31.1	9.91	0.63	9.01
	21-Aug-19	19	9.71	0.6	7.77
	18-Sep-19	21.1	8.53	0.59	7.15
	17-Oct-19	3.2	-	-	11.28
TH-13	24-Jul-19	30.6	9.78	1.51	7.95
	21-Aug-19	18.8	9.63	1.4	9.87
	18-Sep-19	21.6	8.29	1.33	7.19
	17-Oct-19	4.1	-	-	10.55
	13-Nov-19				
TH-18	24-Jul-19	26.2	9.09	1.76	7.81
	21-Aug-19	18.9	9.49	1.89	8.55
	18-Sep-19	20.6	8.47	1.98	8.34
	17-Oct-19	4	-	-	10.94
TH-20	24-Jul-19	28.8	9.38	1.59	6.5
	21-Aug-19	20	8.79	2	9.42
	18-Sep-19	20.3	7.93	1.86	7.43

Notes:
L - litres.

°C - degrees Celsius.

mg/L - milligram per litre.

ppm - parts per million.

mS/cm - millisiemens per centimeter.

"-" - not analyzed.

Table to be read in conjunction with accompanying report.

Table 4
Insitu Surface Water Monitoring
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample ID	Date (dd-mmm-yy)	Temperature (°C)	pH	Conductivity (mS/cm)	Dissolved Oxygen (mg/L)
TH-20	17-Oct-19	3.5	-	-	9.49
TH-21	24-Jul-19	27.9	9.1	1.84	7.46
South Berm (background)	25-Mar-19	1.8	7.64	0.27	9.49
	28-Mar-19	1.5	7.44	0.28	6.7
	1-Apr-19	3.3	8.02	0.45	6.13
	8-Apr-19	3.9	8	0.8	10.5
	15-Apr-19	8.2	8.51	0.74	15.76
	29-Apr-19	8.3	8.9	0.83	9.5
	6-May-19	9.3	8.78	0.86	9.94
	13-May-19	15.9	8.83	0.9	15.77
	29-May-19	18.4	8.63	0.84	19.35
	12-Jun-19	17	9.56	0.87	9.35
	26-Jun-19	20.4	11.32	1.07	8.6
	10-Jul-19	19.4	9.99	1.09	6.49
	24-Jul-19	29.6	9.82	1.48	11.26
	14-Aug-19	16.3	-	-	6.25
	16-Aug-19	21.6	-	-	11.17
	21-Aug-19	19.7	-	-	5.18
	28-Aug-19	18.3	-	-	8.63
	18-Sep-19	21.3	-	-	6.71
	25-Sep-19	13.7	-	-	9.27
	9-Oct-19	8.3	-	-	9.85
	16-Oct-19	4.2	-	-	9.46
South Berm (within monitoring area	25-Mar-19	3.8	7.7	0.53	9.47
	28-Mar-19	4.3	7.41	0.62	9.25
	1-Apr-19	4.2	8.15	0.68	9.52
	8-Apr-19	5.6	8	0.87	10.5
	15-Apr-19	6.3	8.26	1	10.88
	29-Apr-19	7	8.6	1.26	10.3
	6-May-19	9.1	8.66	1.32	9.7
	13-May-19	14.9	8.61	1.37	13.25
	29-May-19	18.1	8.12	1.4	11.04

Notes:
L - litres.
°C - degrees Celsius.
mg/L - millagram per litre.
ppm - parts per million.
mS/cm - millisiemens per centimeter.
"-" - not analyzed.
Table to be read in conjunction with accompanying report.

Table 4
Insitu Surface Water Monitoring
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample ID	Date (dd-mmm-yy)	Temperature (°C)	pH	Conductivity (mS/cm)	Dissolved Oxygen (mg/L)
South Berm (within monitoring area	12-Jun-19	18.6	8.46	1.56	7.88
	26-Jun-19	20.3	10.1	1.73	8.6
	10-Jul-19	22.1	9.31	1.87	9.31
	24-Jul-19	26.2	9.09	1.76	11.58
	14-Aug-19	18.2	-	-	8.24
	16-Aug-19	21.4	-	-	10.16
	21-Aug-19	18.5	-	-	8.66
	28-Aug-19	16.9	-	-	7.71
	19-Jan-00	21.3	-	-	8.58
	25-Sep-19	14.8	-	-	8.66
	9-Oct-19	7.2	-	-	9.13
	16-Oct-19	4.3	-	-	9.41
Monitoring Area (middle)	25-Mar-19	3.7	7.93	0.53	9.53
	28-Mar-19	2.8	7.36	0.57	9.91
	1-Apr-19	5.2	8.15	0.69	9.4
	8-Apr-19	4.6	8.1	0.87	9.7
	15-Apr-19	8.4	7.27	1.01	11.7
	29-Apr-19	7.9	9.1	1.27	11
	6-May-19	8.3	8.85	1.35	10.34
	13-May-19	17.69	8.77	1.38	14.68
	29-May-19	18.6	8.1	1.42	10.44
	12-Jun-19	17.4	8.94	1.56	8.86
	26-Jun-19	21	10.45	1.82	7.55
	10-Jul-19	19.8	9.54	7.88	9.54
	24-Jul-19	27.9	9.1	1.84	7.46
	14-Aug-19	18.2	-	-	8.81
	16-Aug-19	21.9	-	-	9.13
	21-Aug-19	19.4	-	-	9.88
	28-Aug-19	18.9	-	-	9.72
	18-Sep-19	20.8	-	-	8.35
	25-Sep-19	14.3	-	-	11.35
	9-Oct-19	7.1	-	-	10.19

Notes:
L - litres.
°C - degrees Celsius.
mg/L - millagram per litre.
ppm - parts per million.
mS/cm - millisiemens per centimeter.
"-" - not analyzed.
Table to be read in conjunction with accompanying report.

Table 4
Insitu Surface Water Monitoring
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample ID	Date (dd-mmm-yy)	Temperature (°C)	pH	Conductivity (mS/cm)	Dissolved Oxygen (mg/L)
Monitoring Area (middle)	16-Oct-19	4.6	-	-	10.09
East Berm (within monitoring area)	25-Mar-19	3.1	7.69	0.49	9.35
	28-Mar-19	2.9	7.53	0.48	9.84
	1-Apr-19	5.9	8.19	0.72	9.46
	8-Apr-19	5.8	8.1	0.8	9
	15-Apr-19	8.6	7.9	1.02	11.99
	29-Apr-19	6.7	8.8	1.39	11.4
	6-May-19	7.8	8.74	1.5	10.54
	13-May-19	16.7	8.48	1.61	14.65
	29-May-19	18.8	7.49	1.98	9.3
	12-Jun-19	17.8	8.35	2.4	8.63
	26-Jun-19	22.4	10.1	2.35	9.18
	10-Jul-19	18.6	8.24	2.43	5.9
	24-Jul-19	28.8	8.24	1.57	6.5
	14-Aug-19	16.6	-	-	7.9
	16-Aug-19	21.3	-	-	10.74
	21-Aug-19	20.4	-	-	9.42
	28-Aug-19	16.5	-	-	11.3
	18-Sep-19	20.6	-	-	7.41
	25-Sep-19	12.9	-	-	10.17
	9-Oct-19	5.6	-	-	9.13
	16-Oct-19	4.6	-	-	9.54
East Berm (background)	25-Mar-19	0.9	7.91	0.34	9.53
	28-Mar-19	1.6	7.41	0.34	9.14
	1-Apr-19	2.5	8.21	0.47	9.5
	8-Apr-19	2.6	8.3	0.47	11.4
	15-Apr-19	6.2	8.39	0.51	13.15
	29-Apr-19	7.6	9	0.6	9
	6-May-19	10	8.88	0.6	8.25
	13-May-19	16.4	8.7	0.64	15.45
	29-May-19	17.5	9.22	0.56	20

Notes:
L - litres.
°C - degrees Celsius.
mg/L - millagram per litre.
ppm - parts per million.
mS/cm - millisiemens per centimeter.
"-" - not analyzed.
Table to be read in conjunction with accompanying report.

Table 4
Insitu Surface Water Monitoring
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample ID	Date (dd-mmm-yy)	Temperature (°C)	pH	Conductivity (mS/cm)	Dissolved Oxygen (mg/L)
East Berm (background)	12-Jun-19	17.4	10.09	0.63	16
	26-Jun-19	21	10.84	0.61	18.11
	10-Jul-19	18.6	9.76	0.7	19.05
	24-Jul-19	29.6	9.88	0.63	10.34
	14-Aug-19	16.2	-	-	5.54
	16-Aug-19	23.9	-	-	10.01
	21-Aug-19	18.6	-	-	5.5
	28-Aug-19	18.6	-	-	5.5
	18-Sep-19	21.5	-	-	7.62
	25-Sep-19	13.7	-	-	10.51
	9-Oct-19	6.5	-	-	9.91
	16-Oct-19	4.6	-	-	10.06

Notes:
L - litres.
°C - degrees Celsius.
mg/L - millagram per litre.
ppm - parts per million.
mS/cm - millisiemens per centimeter.
"-" - not analyzed.
Table to be read in conjunction with accompanying report.

Table 5
Surface Water Analytical Results - Petroleum Hydrocarbons
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample ID	Sample Date (dd-mmm-yy)	Petroleum Hydrocarbons									
		Benzene	Toluene	Ethylbenzene	Xylenes (Total)	F1 (C6-C10)-BTEX	F2 (C10-C16)	F3 (C16-C34)	F4 (C34-C50)	F1 (C6-C10)	Dissolved Oxygen
	Guideline[1]	**370**	**2**	**2.4**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
	Units	**ug/L**	**ug/L**	**ug/L**	**ug/L**	**ug/L**	**mg/L**	**mg/L**	**mg/L**	**ug/L**	**mg/L**
GW-BG-TP	27-Feb-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	1
GW-BG-TP	28-Feb-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	2.3
O-T3-GW	27-Feb-19	<0.40	0.69	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	1
O-T4-GW	27-Feb-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	1
TH-1	19-Feb-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	<0.10
TH-1	20-Feb-19	0.78	0.83	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	<0.10
TH-1	21-Feb-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	0.4	<0.20	<100	<0.10
TH-1	23-Feb-19	<0.40	<0.40	<0.40	<0.89	<100	0.16	1.1	<0.20	<100	<0.10
TH-1	24-Feb-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	0.53	<0.20	<100	<0.10
TH-1	25-Feb-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	<0.10
TH-1	26-Feb-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	<0.10
TH-1	28-Feb-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	1.2
TH-1	1-Mar-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	0.5
TH-1	2-Mar-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	0.8
TH-1	3-Mar-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	<0.10
TH-1	6-Mar-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	<0.10
TH-1	13-Mar-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	3.1
TH-1	20-Mar-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-1	27-Mar-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-1	3-Apr-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-1	10-Apr-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-1	17-Apr-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-1	24-Apr-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-1	2-May-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-1	8-May-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-1	22-May-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-1	5-Jun-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-1	19-Jun-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-1	24-Jul-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-1	21-Aug-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
DUP6 (duplciate of TH-1)	21-Aug-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-1	18-Sep-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-1	17-Oct-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-2	19-Feb-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	<0.10
TH-2	20-Feb-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	<0.10
TH-2	21-Feb-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	0.2
TH-2	23-Feb-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	0.54	<0.20	<100	<0.10
TH-2	24-Feb-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	<0.10
TH-2	25-Feb-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	0.28	<0.20	<100	<0.10
TH-2	26-Feb-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	<0.10
TH-2	27-Feb-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	<0.10
TH-2	28-Feb-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	0.2
TH-2	1-Mar-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	<0.10
TH-2	2-Mar-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	0.6
TH-2	3-Mar-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	<0.10
TH-2	6-Mar-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	<0.10
TH-3	19-Feb-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	0.3
TH-3	20-Feb-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	0.5
TH-3	21-Feb-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	<0.10
TH-3	23-Feb-19	1.3	0.87	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	1
TH-3	24-Feb-19	0.43	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	1.1
TH-3	25-Feb-19	<0.40	0.6	<0.40	1.8	<100	<0.10	<0.10	<0.20	<100	0.5
TH-3	26-Feb-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	0.7
TH-3	27-Feb-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	<0.10
TH-3	28-Feb-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	<0.10
TH-3	1-Mar-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	<0.10

Notes:
1. Canadian Council of Ministers of the Environment (CCME) Water Quality Guidelines for the most stringent of Protection of Aquatic Life or Agriculture (CCME 1999, updated

BOLD/HIGHLIGHTED - Exceeds the applicable guideline.

ug/L - microgram per litre.

n/a - not applicable.

< Indicates parameter was below laboratory equipment detection limit.

"-" Chemical not analyzed or criteria not defined.

(1) Detection limits raised due to dilution to bring analyte within the calibrated range.

Table to be read in conjunction with accompanying report.

Table 5
Surface Water Analytical Results - Petroleum Hydrocarbons
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample ID	Sample Date (dd-mmm-yy)	Petroleum Hydrocarbons									
		Benzene	Toluene	Ethylbenzene	Xylenes (Total)	F1 (C6-C10)-BTEX	F2 (C10-C16)	F3 (C16-C34)	F4 (C34-C50)	F1 (C6-C10)	Dissolved Oxygen
Guideline[1]		**370**	**2**	**2.4**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Units		**ug/L**	**ug/L**	**ug/L**	**ug/L**	**ug/L**	**mg/L**	**mg/L**	**mg/L**	**ug/L**	**mg/L**
TH-3	2-Mar-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	<0.10
TH-3	3-Mar-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	<0.10
TH-3	6-Mar-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	<0.10
TH-4	19-Feb-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	0.6
TH-4	20-Feb-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	0.3
TH-4	21-Feb-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	0.9
TH-4	23-Feb-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	1.6
TH-4	24-Feb-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	2.4
TH-4	25-Feb-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	3
TH-4	26-Feb-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	0.6
TH-4	27-Feb-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	<0.10
TH-4	28-Feb-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	0.13	<0.20	<100	0.4
TH-4	1-Mar-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	1.5
TH-4	2-Mar-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	1.1
TH-4	3-Mar-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	<0.10
TH-4	6-Mar-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	<0.10
TH-6	19-Feb-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	0.3
TH-6	20-Feb-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	<0.10
TH-6	21-Feb-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	<0.10
TH-6	23-Feb-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	0.26
TH-6	24-Feb-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	0.52
TH-6	25-Feb-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	<0.10
TH-6	26-Feb-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	<0.10
TH-6	27-Feb-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	<0.10
TH-6	28-Feb-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	<0.10
TH-6	1-Mar-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	<0.10
TH-6	2-Mar-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	<0.10
TH-6	3-Mar-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	<0.10
TH-6	6-Mar-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	<0.10
TH-6	13-Mar-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	0.5
TH-6	20-Mar-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-6	27-Mar-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-6	3-Apr-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-6	10-Apr-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-6	17-Apr-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-6	24-Apr-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-6	2-May-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-6	8-May-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-6	22-May-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-6	5-Jun-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-6	19-Jun-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-6	24-Jul-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
DUP5 (duplicate of TH-6)	24-Jul-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-6	21-Aug-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-6	18-Sep-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-6	17-Oct-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-7	19-Feb-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	<0.10
TH-7	20-Feb-19	<0.40	<0.40	<0.40	2.4	<100	<0.10	<0.10	<0.20	<100	0.7
TH-7	21-Feb-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	0.1
TH-7	23-Feb-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	0.18
TH-7	24-Feb-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	0.76
TH-7	25-Feb-19	<0.40	<0.40	0.49	4.2	<100	0.17	0.28	<0.20	<100	1.2
TH-7	26-Feb-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	0.7
TH-7	27-Feb-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	<0.10
TH-7	28-Feb-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	<0.10
TH-7	1-Mar-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	<0.10

Notes:
1. Canadian Council of Ministers of the Environment (CCME) Water Quality Guidelines for the most stringent of Protection of Aquatic Life or Agriculture (CCME 1999, updated

BOLD/HIGHLIGHTED - Exceeds the applicable guideline.

ug/L - microgram per litre.

n/a - not applicable.

< Indicates parameter was below laboratory equipment detection limit.

"-" Chemical not analyzed or criteria not defined.

(1) Detection limits raised due to dilution to bring analyte within the calibrated range.

Table to be read in conjunction with accompanying report.

Table 5
Surface Water Analytical Results - Petroleum Hydrocarbons
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample ID	Sample Date (dd-mmm-yy)	Petroleum Hydrocarbons									
		Benzene	Toluene	Ethylbenzene	Xylenes (Total)	F1 (C6-C10)-BTEX	F2 (C10-C16)	F3 (C16-C34)	F4 (C34-C50)	F1 (C6-C10)	Dissolved Oxygen
	Guideline[1]	**370**	**2**	**2.4**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
	Units	**ug/L**	**ug/L**	**ug/L**	**ug/L**	**ug/L**	**mg/L**	**mg/L**	**mg/L**	**ug/L**	**mg/L**
TH-7	2-Mar-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	<0.10
TH-7	3-Mar-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	<0.10
TH-7	6-Mar-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	<0.10
TH-7	13-Mar-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	<0.10
TH-7	20-Mar-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-7	27-Mar-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-7	3-Apr-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-7	10-Apr-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-7	17-Apr-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-7	24-Apr-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-7	2-May-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-7	8-May-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-7	22-May-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-7	5-Jun-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-7	19-Jun-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-7	24-Jul-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-7	21-Aug-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-7	18-Sep-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-7	17-Oct-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-10	19-Feb-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	<0.10
TH-10	20-Feb-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	0.6
TH-10	21-Feb-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	0.3
TH-10	23-Feb-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	0.36
TH-10	24-Feb-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	<0.10
TH-10	25-Feb-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	0.8
TH-10	26-Feb-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	0.8
TH-10	27-Feb-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	<0.10
TH-10	28-Feb-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	<0.10
TH-10	1-Mar-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	0.2
TH-10	2-Mar-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	0.3
TH-10	3-Mar-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	<0.10
TH-10	6-Mar-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	<0.10
TH-10	13-Mar-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	0.7
TH-10	20-Mar-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-10	27-Mar-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-10	3-Apr-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-10	10-Apr-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-10	17-Apr-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-10	24-Apr-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-10	2-May-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-10	8-May-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	
TH-10	22-May-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-10	5-Jun-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-10	19-Jun-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-10	24-Jul-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
DUP4 (duplicate of TH-10)	24-Jul-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-10	21-Aug-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-10	18-Sep-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-10	17-Oct-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-11	19-Feb-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	<0.10
TH-11	20-Feb-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	0.3
TH-11	21-Feb-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	0.4
TH-11	23-Feb-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	0.34
TH-11	24-Feb-19	<0.40	<0.40	<0.40	2.1	<100	<0.10	0.24	<0.20	<100	<0.10
TH-11	25-Feb-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	1
TH-11	26-Feb-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	0.5

Notes:
1. Canadian Council of Ministers of the Environment (CCME) Water Quality Guidelines for the most stringent of Protection of Aquatic Life or Agriculture (CCME 1999, updated

BOLD/HIGHLIGHTED - Exceeds the applicable guideline.

ug/L - microgram per litre.

n/a - not applicable.

< Indicates parameter was below laboratory equipment detection limit.

"-" Chemical not analyzed or criteria not defined.

(1) Detection limits raised due to dilution to bring analyte within the calibrated range.

Table to be read in conjunction with accompanying report.

Table 5
Surface Water Analytical Results - Petroleum Hydrocarbons
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample ID	Sample Date (dd-mmm-yy)	Petroleum Hydrocarbons									
		Benzene	Toluene	Ethylbenzene	Xylenes (Total)	F1 (C6-C10)-BTEX	F2 (C10-C16)	F3 (C16-C34)	F4 (C34-C50)	F1 (C6-C10)	Dissolved Oxygen
	Guideline[1]	**370**	**2**	**2.4**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
	Units	**ug/L**	**ug/L**	**ug/L**	**ug/L**	**ug/L**	**mg/L**	**mg/L**	**mg/L**	**ug/L**	**mg/L**
TH-11	27-Feb-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	<0.10
TH-11	28-Feb-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	<0.10
TH-11	1-Mar-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	<0.10
TH-11	2-Mar-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	<0.10
TH-11	3-Mar-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	0.2
TH-11	6-Mar-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	<0.10
TH-11	13-Mar-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	0.9
TH-11	20-Mar-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-11	27-Mar-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-11	3-Apr-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-11	10-Apr-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-11	17-Apr-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-11	24-Apr-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-11	2-May-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-11	8-May-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-11	22-May-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-11	5-Jun-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-11	19-Jun-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-11	24-Jul-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-11	21-Aug-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-11	18-Sep-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-11	17-Oct-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-12	21-Feb-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	<0.10
TH-13	28-Feb-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	1.4
TH-13	1-Mar-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	0.3
TH-13	2-Mar-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	0.2
TH-13	3-Mar-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	<0.10
TH-13	6-Mar-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	<0.10
TH-13	13-Mar-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	4.4
TH-13	20-Mar-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-13	27-Mar-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-13	3-Apr-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-13	10-Apr-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-13	17-Apr-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-13	24-Apr-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-13	2-May-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-13	8-May-19	<0.40 (1)	<0.40 (1)	<0.40 (1)	<0.89	<100	<0.10	<0.10	<0.20	<100 (1)	-
TH-13	22-May-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-13	5-Jun-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-13	19-Jun-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-13	24-Jul-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-13	21-Aug-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-13	18-Sep-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-13	17-Oct-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-14	27-Feb-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	<0.10
TH-14	28-Feb-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	<0.10
TH-14	1-Mar-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	<0.10
TH-14	2-Mar-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	<0.10
TH-14	3-Mar-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	<0.10
TH-14	6-Mar-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	<0.10
TH-16	13-Mar-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	<0.10
TH-17	13-Mar-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	1.6
TH-18	13-Mar-19	3	**6.3**	0.59	6.1	<100	<0.10	<0.10	<0.20	<100	<0.10
TH-18	14-Mar-19	3.9	**8.1**	0.81	8	<0.10	<0.10	<0.10	<0.20	<100	0.4
TH-18	15-Mar-19	2.8	**6**	0.65	6.2	<100	<0.10	<0.10	<0.20	<100	0.7
TH-18	16-Mar-19	2.2	**5.4**	0.52	5.4	<100	<0.1	<0.1	<0.2	<100	1

Notes:

1. Canadian Council of Ministers of the Environment (CCME) Water Quality Guidelines for the most stringent of Protection of Aquatic Life or Agriculture (CCME 1999, updated 2001).

BOLD/HIGHLIGHTED - Exceeds the applicable guideline.

ug/L - microgram per litre.

n/a - not applicable.

< Indicates parameter was below laboratory equipment detection limit.

"-" Chemical not analyzed or criteria not defined.

(1) Detection limits raised due to dilution to bring analyte within the calibrated range.

Table to be read in conjunction with accompanying report.

Table 5
Surface Water Analytical Results - Petroleum Hydrocarbons
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample ID	Sample Date (dd-mmm-yy)	Petroleum Hydrocarbons									
		Benzene	Toluene	Ethylbenzene	Xylenes (Total)	F1 (C6-C10)-BTEX	F2 (C10-C16)	F3 (C16-C34)	F4 (C34-C50)	F1 (C6-C10)	Dissolved Oxygen
Guideline[1]		**370**	**2**	**2.4**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Units		**ug/L**	**ug/L**	**ug/L**	**ug/L**	**ug/L**	**mg/L**	**mg/L**	**mg/L**	**ug/L**	**mg/L**
TH-18	17-Mar-19	0.51	1.1	<0.40	1.1	<100	<0.10	<0.10	<0.20	<100	8.7
TH-18	18-Mar-19	<0.40	<0.40	<0.40	<0.89	<100	<0.1	<0.1	<0.2	<100	12
TH-18	19-Mar-19	<0.40	<0.40	<0.40	<0.89	<100	<0.1	<0.1	<0.2	<100	11
TH-18	20-Mar-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-18	27-Mar-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-18	3-Apr-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-18	10-Apr-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-18	17-Apr-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-18	24-Apr-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-18	2-May-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-18	8-May-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-18	22-May-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-18	5-Jun-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-18	19-Jun-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-18	24-Jul-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-18	21-Aug-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-18	18-Sep-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
DUP8 (duplicate of TH-18)	18-Sep-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-18	17-Oct-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
DUP9 (duplicate of TH-18)	17-Oct-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-19	13-Mar-19	2.8	**5.6**	0.5	<0.10	<0.10	<0.10	<0.10	<0.20	<100	0.3
TH-20	15-Mar-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	16
TH-20	16-Mar-19	<0.40	0.49	<0.40	<0.89	<100	<0.1	<0.1	<0.2	<100	18
TH-20	17-Mar-19	<0.40	0.52	<0.40	<0.89	<100	<0.1	<0.1	<0.2	<100	6.5
TH-20	18-Mar-19	<0.40	<0.40	<0.40	<0.89	<100	<0.1	<0.1	<0.2	<100	11
TH-20	19-Mar-19	<0.40	<0.40	<0.40	<0.89	<100	<0.1	0.13	<0.2	<100	11
TH-20	20-Mar-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-20	27-Mar-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-20	3-Apr-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-20	10-Apr-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-20	17-Apr-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-20	24-Apr-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-20	2-May-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-20	8-May-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-20	22-May-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-20	5-Jun-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-20	19-Jun-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-20	24-Jul-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-20	21-Aug-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
DUP7 (duplciate of TH-20)	21-Aug-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-20	18-Sep-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-20	17-Oct-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-21	3-Apr-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-21	19-Jun-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-21	24-Jul-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-22	3-Apr-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-22	5-Jun-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-23	3-Apr-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-23	2-May-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-23	22-May-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-23	5-Jun-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-23	19-Jun-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-24	3-Apr-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-24	2-May-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-24	22-May-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-

Notes:

1. Canadian Council of Ministers of the Environment (CCME) Water Quality Guidelines for the most stringent of Protection of Aquatic Life or Agriculture (CCME 1999, updated

BOLD/HIGHLIGHTED - Exceeds the applicable guideline.

ug/L - microgram per litre.

n/a - not applicable.

< Indicates parameter was below laboratory equipment detection limit.

"-" Chemical not analyzed or criteria not defined.

(1) Detection limits raised due to dilution to bring analyte within the calibrated range.

Table to be read in conjunction with accompanying report.

Table 5
Surface Water Analytical Results - Petroleum Hydrocarbons
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample ID	Sample Date (dd-mmm-yy)	Petroleum Hydrocarbons									
		Benzene	Toluene	Ethylbenzene	Xylenes (Total)	F1 (C6-C10)-BTEX	F2 (C10-C16)	F3 (C16-C34)	F4 (C34-C50)	F1 (C6-C10)	Dissolved Oxygen
Guideline[1]		**370**	**2**	**2.4**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Units		**ug/L**	**ug/L**	**ug/L**	**ug/L**	**ug/L**	**mg/L**	**mg/L**	**mg/L**	**ug/L**	**mg/L**
TH-24	5-Jun-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-24	19-Jun-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-25	3-Apr-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-26	3-Apr-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-27	5-Jun-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-27	19-Jun-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-28	5-Jun-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-28	19-Jun-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-29	5-Jun-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-29	19-Jun-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
TH-30	19-Jun-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
BEFORE CULVERT	28-Aug-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
MID CULVERT	28-Aug-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
MID CULVERT 2	28-Aug-19	<0.40	<0.40	<0.40	<0.89	<100	0.14	0.61	0.2	<100	-
AFTER CULVERT	28-Aug-19	<0.40	1	1.2	7.2	<100	0.38	<0.10	<0.20	<100	-
INSIDE	21-Oct-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
INSIDE AM	22-Oct-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
INSIDE PM	22-Oct-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
OUTSIDE	21-Oct-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
OUTSIDE AM	22-Oct-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
OUTSIDE PM	22-Oct-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
WA-16	14-Aug-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
19-SW1	18-Oct-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
19-SW2	18-Oct-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
19-SW3	18-Oct-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
WA-18	5-Feb-20	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-
WA-19	5-Feb-20	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100	-

Notes:
1. Canadian Council of Ministers of the Environment (CCME) Water Quality Guidelines for the most stringent of Protection of Aquatic Life or Agriculture (CCME 1999, updated

BOLD/HIGHLIGHTED - Exceeds the applicable guideline.

ug/L - microgram per litre.

n/a - not applicable.

< Indicates parameter was below laboratory equipment detection limit.

"-" Chemical not analyzed or criteria not defined.

(1) Detection limits raised due to dilution to bring analyte within the calibrated range.

Table to be read in conjunction with accompanying report.

Table 6
Surface Water Analytical Results - Polycyclic Aromatic Hydrocarbons
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample ID	Sample Date (dd-mmm-yy)	Polycyclic Aromatic Hydrocarbons																							
		Low Molecular Weight PAH's	High Molecular Weight PAH's	Total PAH	B[a]P TPE Total Potency Equivalents	Acenaphthene	Acenaphthylene	Acridine	Anthracene	Benzo(a)anthracene	Benzo(b&j)fluoranthene	Benzo(k)fluoranthene	Benzo(g,h,i)perylene	Benzo(c)phenanthrene	Benzo(a)pyrene	Benzo[e]pyrene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	2-Methylnaphthalene	Naphthalene	Phenanthrene	Perylene	Pyrene	Quinoline
Guideline[1]		-	-	-	-	5.8	-	4.4	0.012	0.018	-	-	-	-	0.015	-	-	-	0.04	3	-	-	1.1	0.4	-	0.025	3.4
Units		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
TH-1	2-May-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
TH-1	8-May-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
TH-1	22-May-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
TH-1	5-Jun-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
TH-1	19-Jun-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
TH-1	24-Jul-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
TH-1	21-Aug-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
DUP6 (duplicate of TH-1)	21-Aug-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
TH-1	18-Sep-19	-	-	-	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
TH-1	17-Oct-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
TH-6	2-May-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
TH-6	8-May-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
TH-6	22-May-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
TH-6	5-Jun-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
TH-6	19-Jun-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
TH-6	24-Jul-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
DUP5 (duplicate of TH-6)	24-Jul-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
TH-6	21-Aug-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
TH-6	18-Sep-19	-	-	-	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
TH-6	17-Oct-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
TH-7	2-May-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
TH-7	8-May-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
TH-7	22-May-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
TH-7	5-Jun-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
TH-7	19-Jun-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
TH-7	24-Jul-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
TH-7	21-Aug-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
TH-7	18-Sep-19	-	-	-	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
TH-7	17-Oct-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
TH-10	2-May-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
TH-10	8-May-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
TH-10	22-May-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
TH-10	5-Jun-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	0.051	<0.050	<0.020	<0.20
TH-10	19-Jun-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
TH-10	24-Jul-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
DUP4 (duplicate of TH-10)	24-Jul-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
TH-10	21-Aug-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
TH-10	18-Sep-19	-	-	-	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
TH-10	17-Oct-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
TH-11	2-May-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
TH-11	8-May-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
TH-11	22-May-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
TH-11	5-Jun-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
TH-11	19-Jun-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
TH-11	24-Jul-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
TH-11	21-Aug-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
TH-11	18-Sep-19	-	-	-	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
TH-11	17-Oct-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
TH-13	2-May-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
TH-13	8-May-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
TH-13	22-May-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20

Notes:

1. Canadian Council of Ministers of the Environment (CCME) Water Quality Guidelines for the most stringent of Protection of Aquatic Life or Agriculture (CCME 1999, updated 2001).

BOLD/HIGHLIGHTED - Exceeds the applicable guideline.

ug/L - microgram per litre.

n/a - not applicable.

< Indicates parameter was below laboratory equipment detection limit.

"-" Chemical not analyzed or criteria not defined.

(1) Qualifying ion outside of acceptance criteria. Results are tentatively identified and potentially biased high.

Table to be read in conjunction with accompanying report.

Table 6
Surface Water Analytical Results - Polycyclic Aromatic Hydrocarbons
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample ID	Sample Date (dd-mmm-yy)	Polycyclic Aromatic Hydrocarbons																								
		Low Molecular Weight PAH's	High Molecular Weight PAH's	Total PAH	B[a]P TPE Total Potency Equivalents	Acenaphthene	Acenaphthylene	Acridine	Anthracene	Benzo(a)anthracene	Benzo(b&j)fluoranthene	Benzo(k)fluoranthene	Benzo(g,h,i)perylene	Benzo(c)phenanthrene	Benzo(a)pyrene	Benzo[e]pyrene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	2-Methylnaphthalene	Naphthalene	Phenanthrene	Perylene	Pyrene	Quinoline
Guideline[1]		-	-	-	-	5.8	-	4.4	0.012	0.018	-	-	-	-	0.015	-	-	-	0.04	3	-	-	1.1	0.4	-	0.025	3.4
Units		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
TH-13	5-Jun-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
TH-13	19-Jun-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
TH-13	24-Jul-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
TH-13	21-Aug-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
TH-13	18-Sep-19	-	-	-	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
TH-13	17-Oct-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
TH-18	2-May-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
TH-18	8-May-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
TH-18	22-May-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
TH-18	5-Jun-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
TH-18	19-Jun-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
TH-18	24-Jul-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
TH-18	21-Aug-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
TH-18	18-Sep-19	-	-	-	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
DUP8 (duplicate of TH-18)	18-Sep-19	-	-	-	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
TH-18	17-Oct-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
DUP9 (duplicate of TH-18)	17-Oct-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
TH-20	2-May-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
TH-20	8-May-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
TH-20	22-May-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	0.01	<0.050	<0.0085	<0.10	<0.10	0.066	<0.050	<0.020	<0.20
TH-20	5-Jun-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	0.051	<0.050	<0.020	<0.20
TH-20	19-Jun-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
TH-20	24-Jul-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
TH-20	21-Aug-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
DUP7 (duplicate of TH-20)	21-Aug-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
TH-20	18-Sep-19	-	-	-	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
TH-20	17-Oct-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
TH-21	19-Jun-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	0.012	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
TH-21	24-Jul-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
TH-22	5-Jun-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
TH-23	2-May-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
TH-23	22-May-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
TH-23	5-Jun-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
TH-23	19-Jun-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
TH-24	2-May-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
TH-24	22-May-19	-	-	-	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
TH-24	5-Jun-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
TH-24	19-Jun-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
TH-27	5-Jun-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
TH-27	19-Jun-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
TH-28	5-Jun-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
TH-28	19-Jun-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
TH-29	5-Jun-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	0.059	<0.050	<0.020	<0.20
TH-30	19-Jun-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
AFTER CULVERT	28-Aug-19	6.9	<0.050	6.9	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	0.054	<0.0085	0.5	**6.3**	0.06	<0.050	<0.020	<0.20
BEFORE CULVERT	28-Aug-19	<0.20	<0.050	<0.20	0.01	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	0.0099 (1)	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
INSIDE	21-Oct-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
INSIDE AM	22-Oct-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
INSIDE PM	22-Oct-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
MID CULVERT	28-Aug-19	<0.20	0.055	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	0.025	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	**0.03**	<0.20
MID CULVERT 2	28-Aug-19	0.33	0.33	0.66	0.018	<0.10	<0.10	0.067	**0.021**	0.0093	0.012	0.031 (1)	<0.0085	<0.050	0.0087	<0.050	0.017	<0.0075	**0.13**	0.064	<0.0085	<0.10	<0.10	0.18	<0.050	**0.13**	<0.20

Notes:

1. Canadian Council of Ministers of the Environment (CCME) Water Quality Guidelines for the most stringent of Protection of Aquatic Life or Agriculture (CCME 1999, updated 2001).

BOLD/HIGHLIGHTED - Exceeds the applicable guideline.

ug/L - microgram per litre.

n/a - not applicable.

< Indicates parameter was below laboratory equipment detection limit.

"-" Chemical not analyzed or criteria not defined.

(1) Qualifying ion outside of acceptance criteria. Results are tentatively identified and potentially biased high.

Table to be read in conjunction with accompanying report.

Table 6
Surface Water Analytical Results - Polycyclic Aromatic Hydrocarbons
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample ID	Sample Date (dd-mmm-yy)	Polycyclic Aromatic Hydrocarbons																								
		Low Molecular Weight PAH's	High Molecular Weight PAH's	Total PAH	B[a]P TPE Total Potency Equivalents	Acenaphthene	Acenaphthylene	Acridine	Anthracene	Benzo(a)anthracene	Benzo(b&j)fluoranthene	Benzo(k)fluoranthene	Benzo(g,h,i)perylene	Benzo(c)phenanthrene	Benzo(a)pyrene	Benzo[e]pyrene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	2-Methylnaphthalene	Naphthalene	Phenanthrene	Perylene	Pyrene	Quinoline
Guideline[1]		-	-	-	-	5.8	-	4.4	0.012	0.018	-	-	-	-	0.015	-	-	-	0.04	3	-	-	1.1	0.4	-	0.025	3.4
Units		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
OUTSIDE	21-Oct-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
OUTSIDE AM	22-Oct-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
OUTSIDE PM	22-Oct-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
WA-16	14-Aug-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
19-SW1	18-Oct-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
19-SW2	18-Oct-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
19-SW3	18-Oct-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
WA-18	5-Feb-20	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
WA-19	5-Feb-20	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20

Notes:

1. Canadian Council of Ministers of the Environment (CCME) Water Quality Guidelines for the most stringent of Protection of Aquatic Life or Agriculture (CCME 1999, updated 2001).

BOLD/HIGHLIGHTED - Exceeds the applicable guideline.

ug/L - microgram per litre.

n/a - not applicable.

< Indicates parameter was below laboratory equipment detection limit.

"-" Chemical not analyzed or criteria not defined.

(1) Qualifying ion outside of acceptance criteria. Results are tentatively identified and potentially biased high.

Table to be read in conjunction with accompanying report.

Table 7
Surface Water Analytical Results - Routine Parameters
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample ID	Sample Date (dd-mmm-yy)	Calculated Parameters								Misc. Inorganics		Anions							Nutrients	
		Anion Sum	Cation Sum	Hardness ($CaCO_3$)	Ion Balance (% Difference)	Dissolved Nitrate (NO_3)	Nitrate plus Nitrite (N)	Dissolved Nitrite (NO_2)	TDS	Conductivity	pH	Alkalinity (PP as $CaCO_3$)	Alkalinity (Total as $CaCO_3$)	Bicarbonate (HCO_3)	Carbonate (CO_3)	Hydroxide (OH)	Dissolved Chloride (Cl)	Dissolved Sulphate (SO_4)	Dissolved Nitrite (N)	Dissolved Nitrate (N)
Guideline[1]		-	-	-	-	**13**	**100**	-	**3,000**	-	**6.5 to 9.0**	-	-	-	-	-	**120**	**1,000**	**0.06**	-
Units		meq/L	meq/L	mg/L	%	mg/L	mg/L	mg/L	mg/L	uS/cm	pH	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
TH-21	3-Apr-19	7.7	7.9	200	1.2	1.8	0.43	0.084	490	780	7.91	<1.0	83	100	<1.0	<1.0	19	260 (1)	0.026	0.4
TH-22	3-Apr-19	7.4	7.7	200	1.8	1.7	0.41	0.065	470	760	7.92	<1.0	82	100	<1.0	<1.0	19	250 (1)	0.02	0.39
TH-23	3-Apr-19	7.3	7	240	2.3	0.32	0.086	0.042	420	660	8.34	1.5	140	170	1.8	<1.0	16	190	0.013	0.073
TH-23	2-May-19	9.4	9.6	310	1.2	<0.044	<0.014	<0.033	540	840	8.33	1.3	240	290	1.5	<1.0	26	190	<0.010	<0.010
TH-24	3-Apr-19	5.6	5.7	210	0.53	1.8	0.41	0.041	320	530	8.1	<1.0	140	180	<1.0	<1.0	12	110	0.012	0.4
TH-24	2-May-19	6.9	6.9	240	0.028	<0.044	<0.014	<0.033	380	630	8.22	<1.0	190	240	<1.0	<1.0	15	120	<0.010	<0.010
TH-25	3-Apr-19	6.4	6.5	190	0.75	0.96	0.24	0.081	370	610	8	<1.0	150	180	<1.0	<1.0	17	140	0.025	0.22
TH-26	3-Apr-19	5	5	180	0.61	1.6	0.38	0.034	280	470	8.11	<1.0	140	170	<1.0	<1.0	10	94	0.01	0.37

Notes:

1. Canadian Council of Ministers of the Environment (CCME) Water Quality Guidelines for the most stringent of Protection of Aquatic Life or Agriculture (CCME 1999, updated 2001).

BOLD/HIGHLIGHTED - Exceeds the applicable guideline.

uS/cm - microSiemens.

mg/L - milligram per litre.

meq/L - milliequivalents per litre.

TDS - total dissolved solids.

% - percent.

n/a - not applicable.

< Indicates parameter was below laboratory equipment detection limit.

"-" Chemical not analyzed or criteria not defined.

(1) Detection limits raised due to dilution to bring analyte within the calibrated range.

Table to be read in conjunction with accompanying report.

Table 8
Surface Water Analytical Results - Total Metals
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample ID	Sample Date (dd-mmm-yy)	Total Aluminum (Al)	Total Antimony (Sb)	Total Arsenic (As)	Total Barium (Ba)	Total Beryllium (Be)	Total Boron (B)	Total Cadmium (Cd)	Total Calcium (Ca)	Total Chromium (Cr)	Total Cobalt (Co)	Total Copper (Cu)	Total Iron (Fe)	Total Lead (Pb)	Total Lithium (Li)	Total Magnesium (Mg)	Total Mercury (Hg)	Total Manganese (Mn)	Total Molybdenum (Mo)	Total Nickel (Ni)	Total Phosphorus (P)	Total Potassium (K)	Total Selenium (Se)	Total Silicon (Si)	Total Silver (Ag)	Total Sodium (Na)	Total Strontium (Sr)	Total Sulphur (S)	Total Thallium (Tl)	Total Tin (Sn)	Total Titanium (Ti)	Total Uranium (U)	Total Vanadium (V)	Total Zinc (Zn)
Guideline[1]		**5**	**-**	**0.005**	**-**	**0.1**	**1.5**	**0.09**	**1,000**	**-**	**1**	**0.004**	**0.3**	**0.007**	**-**	**-**	**0.026**	**-**	**0.073**	**0.15**	**-**	**-**	**0.001**	**-**	**0.00025**	**-**	**-**	**-**	**0.0008**	**-**	**-**	**0.015**	**0.1**	**0.007**
Units		**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**ug/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**ug/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
TH-21	3-Apr-19	5	<0.00060	0.0031	0.054	<0.0010	0.091	<0.020	37	0.0074	0.0011	**0.0067**	**2.9**	0.0017	0.1	24	0.017 (1)	0.13	0.0011	0.0092	0.37	8.2	**0.0013**	8.1	<0.00010	75	0.21	82	<0.00020	<0.0010	0.17	0.0014	0.014	**0.017**
TH-22	3-Apr-19	4.7	<0.00060	0.0028	0.073	<0.0010	0.093	<0.020	36	0.0055	0.0011	**0.0063**	**3.8**	0.0014	0.1	24	0.016 (1)	0.13	0.00099	0.0084	0.35	8.7	**0.0013**	19	<0.00010	74	0.21	80	<0.00020	<0.0010	0.18	0.0014	0.014	**0.016**
TH-23	3-Apr-19	0.53	<0.00060	0.005	0.036	<0.0010	0.046	<0.020	40	<0.0010	0.00039	0.002	**0.8**	<0.00020	0.052	30	0.0038	0.18	0.00091	0.0024	0.22	9.2	0.00061	4.2	<0.00010	42	0.19	55	<0.00020	<0.0010	0.014	0.0019	0.0024	0.0053
TH-23	2-May-19	0.048	<0.00060	**0.0068**	0.044	<0.0010	0.089	<0.020	51	<0.0010	<0.00030	0.0014	0.21	<0.00020	0.081	47	<0.0020	0.092	0.0018	0.0035	<0.10	13	0.00033	3.2	<0.00010	70	0.27	56	<0.00020	<0.0010	0.002	0.0019	0.0017	<0.0030
TH-24	3-Apr-19	0.87	<0.00060	0.0032	0.042	<0.0010	0.056	<0.020	40	0.0014	0.00037	0.002	**0.99**	0.00028	0.033	23	0.0082 (1)	0.16	0.0014	0.0025	0.29	9.5	0.0004	8.6	<0.00010	27	0.16	32	<0.00020	<0.0010	0.023	0.0019	0.0035	0.0057
TH-24	2-May-19	0.13	<0.00060	0.0044	0.042	<0.0010	0.069	<0.020	49	<0.0010	0.00033	0.0018	**0.34**	<0.00020	0.045	32	<0.0020	0.11	0.002	0.0027	<0.10	9.4	0.00036	4.4	<0.00010	42	0.2	36	<0.00020	<0.0010	0.0042	0.0032	0.0018	<0.0030
TH-25	3-Apr-19	1.7	<0.00060	**0.0073**	0.044	<0.0010	0.06	<0.020	32	0.0019	0.00068	0.0026	**1.6**	0.00048	0.059	24	0.0098 (1)	0.5	0.00088	0.0041	0.49	7.7	0.00064	8.5	<0.00010	49	0.17	40	<0.00020	<0.0010	0.059	0.00092	0.0054	0.0066
TH-26	3-Apr-19	0.96	<0.00060	0.0028	0.039	<0.0010	0.048	<0.020	35	0.0011	0.00032	0.0019	**0.94**	0.00025	0.03	20	0.0070 (1)	0.22	0.0012	0.002	0.22	7.3	0.0004	8.2	<0.00010	25	0.13	26	<0.00020	<0.0010	0.028	0.0017	0.0038	0.0039

Notes:
1. Canadian Council of Ministers of the Environment (CCME) Water Quality Guidelines for the most stringent of Protection of Aquatic Life or Agriculture (CCME 1999, updated 2001).

BOLD/HIGHLIGHTED - Exceeds the applicable guideline.

ug/L - microgram per litre.

mg/L - milligram per litre.

< Indicates parameter was below laboratory equipment detection limit.

"-" Chemical not analyzed or criteria not defined.

(1) Due to the sample matrix, sample required dilution. Detection limit was adjusted accordingly.

Table to be read in conjunction with accompanying report.

Table 9
Monitoring Well Construction Details
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Monitoring Well	Date (dd-mmm-yy)	Elevation Top of Well Casing (masl)	Elevation Ground Surface (masl)	Well Depth (mbtoc)	Depth to Water (mbtoc)	Depth to Water (mbgs)	Screen Interval (mbgs)	Water Table Elevation (masl)	Free Hydrocarbon Product Thickness (mbtoc)
MW19-1	29-May-19	390.297	389.356	4.36	DRY	n/a	1.22 - 3.35	n/a	NP
	26-Jun-19			4.36	3.380	2.439		386.917	NP
	24-Jul-19			4.36	3.253	2.312		387.044	NP
	14-Aug-19			4.36	3.392	2.451		386.905	NP
	21-Aug-19			4.36	4.099	3.158		386.198	NP
	18-Sep-19			4.36	3.387	2.446		386.910	NP
	16-Oct-19			4.36	3.365	2.424		386.932	NP
	30-Oct-19			4.36	3.890	2.949		386.407	NP
	13-Nov-19			4.36	3.125	2.184		387.172	NP
	27-Nov-19			4.36	3.050	2.109		387.247	NP
	11-Dec-19			4.36	2.864	1.923		387.433	NP
MW19-2	5-Jun-19	391.732	390.748	5.53	4.318	3.334	1.52 - 4.57	387.414	NP
	26-Jun-19			5.52	4.260	3.276		387.472	NP
	24-Jul-19			5.53	3.923	2.939		387.809	NP
	14-Aug-19			5.53	3.277	2.293		388.455	NP
	21-Aug-19			5.53	3.245	2.261		388.487	NP
	18-Sep-19			5.53	2.786	1.802		388.946	NP
	16-Oct-19			5.52	2.932	1.948		388.800	NP
	30-Oct-19			5.53	3.125	2.141		388.607	NP
	13-Nov-19			5.53	3.162	2.178		388.570	NP
	27-Nov-19			5.53	3.295	2.311		388.437	NP
	11-Dec-19			5.53	3.460	2.476		388.272	NP
MW19-3	3-Jun-19	391.631	390.66	5.50	1.249	0.278	1.52 - 4.57	390.382	NP
	26-Jun-19			5.55	1.760	0.789		389.871	NP
	24-Jul-19			5.55	1.068	0.097		390.563	NP
	14-Aug-19			5.55	1.195	0.224		390.436	NP
	21-Aug-19			5.55	1.239	0.268		390.392	NP
	18-Sep-19			5.55	1.015	0.044		390.616	NP
	16-Oct-19			5.55	1.073	0.102		390.558	NP
	30-Oct-19			5.55	1.292	0.321		390.339	NP
	13-Nov-19			5.55	1.311	0.340		390.320	NP
	27-Nov-19			5.5	1.445	0.474		390.186	NP
	11-Dec-19			5.5	1.480	0.509		390.151	np
MW19-4	3-Jun-19	392.49	391.461	5.20	2.831	1.802	1.07 - 4.12	389.659	NP
	5-Jun-19	392.55*		4.94	n/a	n/a	0.81 - 3.86	n/a	n/a
	26-Jun-19			4.78	2.400	1.311		389.061	NP
	24-Jul-19			4.78	1.155	0.066		390.306	NP
	14-Aug-19			4.78	1.116	0.027		390.345	NP
	21-Aug-19			4.78	1.180	0.091		390.281	NP
	18-Sep-19			4.78	0.985	-0.104		390.476	NP
	16-Oct-19			4.78	1.042	-0.047		390.419	NP
	30-Oct-19			5.2	1.170	0.081		390.291	NP
	13-Nov-19			Frozen at 1.15 mtoc		n/a		n/a	n/a
	27-Nov-19			Frozen at 1.15 mtoc		n/a		n/a	n/a
	11-Dec-19			Frozen at 1.15 mtoc		n/a		n/a	n/a
MW19-5	5-Jun-19	392.73	391.676	7.05	5.836	4.782	3.05 - 6.10	386.894	NP
	26-Jun-19			7.05	6.840	5.786		385.890	NP
	24-Jul-19			7.05	6.771	5.717		385.959	NP
	14-Aug-19			7.05	6.800	5.746		385.930	NP
	21-Aug-19			7.05	6.856	5.802		385.874	NP
	18-Sep-19			7.05	6.730	5.676		386.000	NP
	16-Oct-19			7.05	6.629	5.575		386.101	NP
	30-Oct-19			7.05	6.766	5.712		385.964	NP
	13-Nov-19			7.05	7.050	5.996		385.680	NP
	27-Nov-19			7.05	6.763	5.709		385.967	NP
	11-Dec-19			7.05	6.788	5.734		385.942	NP
MW19-6	5-Jun-19	391.774	390.779	4.37	3.045	2.050	1.22 - 3.35	388.729	NP
	26-Jun-19			4.37	3.340	2.345		388.434	NP
	24-Jul-19			4.37	3.489	2.494		388.285	NP
	14-Aug-19			4.37	3.834	2.839		387.940	NP
	21-Aug-19			4.37	3.795	2.800		387.979	NP
	18-Sep-19			4.37	3.785	2.790		387.989	NP
	16-Oct-19			4.37	3.734	2.739		388.040	NP
	30-Oct-19			4.37	3.875	2.880		387.899	NP
	13-Nov-19			4.37	3.935	2.940		387.839	NP
	27-Nov-19			4.37	3.965	2.970		387.809	NP
	11-Dec-19			4.37	4.020	3.025		387.754	NP
MW19-7	11-Dec-19	393.437	391.182	5.25	DRY	n/a	2.74 - 4.27	n/a	NP
	18-Dec-19			5.25	DRY	n/a		n/a	NP
MW19-8	11-Dec-19	393.437	392.465	5.856	DRY	n/a	3.35 - 4.88	n/a	NP
	18-Dec-19			5.85	DRY	n/a		n/a	NP
MW19-9	11-Dec-19	388.842	387.84	5.67	DRY	n/a	3.05 - 4.47	n/a	NP
	18-Dec-19			5.67	DRY	n/a		n/a	NP

Notes:
masl - meters above sea level.
mtoc - meters below top of casing.
mbgs- meters below ground surface.
NP - no free product detected in monitoring well.
Elevation survey completed by KGS Group Consulting Engineers (KGS) on May 7, 2019 and December 18, 2019.
* MW19-4 was resurveyed by KGS after repairs completed on June 5, 2019.
n/a - not applicable.
Table to be read in conjunction with accompanying report.

Table 9
Monitoring Well Construction Details
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Monitoring Well	Date (dd-mmm-yy)	Elevation Top of Well Casing (masl)	Elevation Ground Surface (masl)	Well Depth (mbtoc)	Depth to Water (mbtoc)	Depth to Water (mbgs)	Screen Interval (mbgs)	Water Table Elevation (masl)	Free Hydrocarbon Product Thickness (mbtoc)
MW19-10	11-Dec-19	391.69	390.708	6.48	DRY	n/a	2.74 - 5.79	n/a	NP
	18-Dec-19			6.48	DRY	n/a		n/a	NP
MW19-11	11-Dec-19	389.246	388.351	3.62	DRY	n/a	1.22 - 2.74	n/a	NP
	18-Dec-19			3.62	DRY	n/a		n/a	NP
MW19-12	11-Dec-19	389.245	388.342	3.65	DRY	n/a	1.52 - 3.05	n/a	NP
	18-Dec-19			3.65	DRY	n/a		n/a	NP
MW19-13	11-Dec-19	389.277	388.402	3.92	DRY	n/a	1.52 - 3.05	n/a	NP
	18-Dec-19			3.92	3.333	2.458		385.944	NP
MW19-14	11-Dec-19	390.325	389.343	8.24	7.275	6.293	4.27 - 7.31	383.050	NP
	18-Dec-19			8.24	6.330	5.348		383.995	NP
MW19-15	11-Dec-19	393.165	391.936	4.89	3.590	2.361	2.13 - 3.66	389.575	NP
	18-Dec-19			4.89	2.525	1.296		390.640	NP
MW19-16	11-Dec-19	392.473	391.372	4.695	DRY	n/a	2.13 - 3.66	n/a	NP
	18-Dec-19			4.69	DRY	n/a		n/a	NP
MW19-17	11-Dec-19	397.848	396.989	5.427	DRY	n/a	1.52 - 4.57	n/a	NP
	18-Dec-19			5.42	DRY	n/a		n/a	NP
MW19-18	11-Dec-19	394.126	393.183	5.2	DRY	n/a	1.22 - 4.27	n/a	NP
	18-Dec-19			5.2	DRY	n/a		n/a	NP

Notes:
masl - meters above sea level.
mtoc - meters below top of casing.
mbgs- meters below ground surface.
NP - no free product detected in monitoring well.
Elevation survey completed by KGS Group Consulting Engineers (KGS) on May 7, 2019 and December 18, 2019.
* MW19-4 was resurveyed by KGS after repairs completed on June 5, 2019.
n/a - not applicable.
Table to be read in conjunction with accompanying report.

Table 10
Intrusive Investigation Soil Analytical Results - Grain Size Analysis
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample ID	Sample Date (dd-mmm-yy)	Depth (mbgs)	Sieve - Pan	Sieve - #200 (>0.075mm)	Grain Size	% sand by hydrometer	% silt by hydrometer	Clay Content	Texture
Guideline[1] (CN Right-of-Way)			-	-	-	-	-	-	-
Guideline[2] (Outside CN Right-of-Way)			-	-	-	-	-	-	-
Units			%	%	%	%	%	%	n/a
BH19-1-3	1-May-19	2.74 - 3.05	5.5	94	COARSE	-	-	-	-
BH19-1-5	1-May-19	3.05 - 3.96	96	4	FINE	-	-	-	-
MW19-1-3	3-May-19	2.13 - 2.44	0.77	99	COARSE	-	-	-	-
MW19-8-5	4-Dec-19	3.35 - 3.67	99	1.1	FINE	-	-	-	-
MW19-12-3	4-Dec-19	1.83 - 2.13	93	6.7	FINE	-	-	-	-
MW19-14-8	4-Dec-19	5.49 - 5.79	98	1.8	FINE	-	-	-	-
TOPSOIL 1	1-Sep-19	n/a	62	38	FINE	46	33	22	LOAM
TOPSOIL 2	1-Sep-19	n/a	66	34	FINE	38	34	28	CLAY LOAM
TOPSOIL 3	1-Sep-19	n/a	63	37	FINE	45	34	21	LOAM
TOPSOIL 4	1-Sep-19	n/a	72	28	FINE	38	37	26	LOAM
TOPSOIL 5	1-Sep-19	n/a	68	32	FINE	41	34	26	LOAM
TOPSOIL 6	1-Sep-19	n/a	72	28	FINE	38	38	24	LOAM
TOPSOIL 7	1-Sep-19	n/a	74	26	FINE	35	39	26	LOAM
SUBSOIL 1	1-Sep-19	n/a	66	34	FINE	37	30	33	CLAY LOAM
SUBSOIL 2	1-Sep-19	n/a	72	28	FINE	40	28	32	CLAY LOAM
SUBSOIL 3	1-Sep-19	n/a	64	36	FINE	40	28	32	CLAY LOAM

Notes:

1. Canadian Council of Ministers of the Environment (CCME) Soil Quality Guidelines for the Protection of Environmental and Human Health, values for industrial land use and coarse-grained soils (CCME 1999, updated 2001).

2. Canadian Council of Ministers of the Environment (CCME) Soil Quality Guidelines for the Protection of Environmental and Human Health, values for agricultural land use and coarse-grained soils (CCME 1999, updated 2001).

BOLD/HIGHLIGHTED - Exceeds the applicable guideline.

mbgs - meters below ground surface.

n/a - not applicable.

< Indicates parameter was below laboratory equipment detection limit.

% - percent.

"-" Chemical not analyzed or criteria not defined.

Table to be read in conjunction with accompanying report.

Table 11
Intrusive Investigation Soil Analytical Results - Petroleum Hydrocarbons
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample ID	Sample Date (dd-mmm-yy)	Depth (mbgs)	Petroleum Hydrocarbons								
			Benzene	Toluene	Ethylbenzene	Xylenes (Total)	F1 (C_6-C_{10})-BTEX	F2 (C_{10}-C_{16})	F3 (C_{16}-C_{34})	F4 (C_{34}-C_{50})	Reached Baseline at C_{50}
Guideline[1] (CN Right-of-Way)			**0.03**	**0.37**	**0.082**	**11**	**320**	**260**	**1700**	**3300**	**-**
Guideline[2] (Outside CN Right-of-Way)			**0.03**	**0.37**	**0.082**	**11**	**30**	**150**	**300**	**2800**	**-**
Units			**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**-**
Confirmatory Locations											
CN Right-of-Way											
BH19-4-4	2-May-19	3.05 - 4.57	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
BH19-6-4	3-May-19	2.44 - 2.74	0.0089	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
BH19-7-1	4-May-19	0.91 - 1.22	**0.11**	0.11	<0.010	<0.045	<10	<10	<50	<50	YES
BH19-7-2	4-May-19	1.22 - 1.52	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
BH19-8-3	4-May-19	4.57 - 5.18	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
BH19-8-4	4-May-19	6.25 - 6.55	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
BH19-9-2	4-May-19	3.35 - 3.66	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
BH19-10-3	5-May-19	3.05 - 3.66	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
BH19-11-5	5-May-19	5.18 - 5.49	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
BH19-12-12	5-May-19	8.38 - 9.14	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
BH19-13-5	6-May-19	3.05 - 3.35	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
BH19-15-4	7-May-19	4.27 - 4.57	**0.06**	0.25	**0.11**	0.63	<10	35	77	<50	YES
BH19-100-3	5-Dec-19	1.52 - 1.83	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
BH19-100-4	5-Dec-19	2.74 - 3.05	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
BH19-100-6	5-Dec-19	3.96 - 4.27	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
DUP 104 (duplicate of BH19-100-6)	5-Dec-19	3.96 - 4.27	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
BH19-110-3	5-Dec-19	1.52 - 1.83	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
BH19-110-4	5-Dec-19	2.74 - 3.05	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
BH19-110-6	5-Dec-19	3.96 - 4.27	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
BH19-120-2	5-Dec-19	1.22 - 1.52	**0.10**	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
BH19-120-3	5-Dec-19	1.52 - 1.83	**0.40**	<0.050	0.056	0.20	18	28	95	<50	YES
DUP 105 (duplicate of BH19-120-3)	5-Dec-19	1.52 - 1.83	**0.34**	<0.050	0.068	0.33	19	43	120	<50	YES
BH19-120-4	5-Dec-19	2.44 - 2.74	<0.0050	<0.050	<0.010	<0.045	11	<10	<50	<50	YES
BH19-130-3	5-Dec-19	1.52 - 1.83	**0.08**	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
BH19-130-4	5-Dec-19	2.44 - 2.74	**0.041**	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
BH19-130-6	5-Dec-19	3.81 - 4.57	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C (collected along north of rail)	3-May-19	0 - 0.15	**1.2**	**28**	**7.1**	**91**	**940**	**6900**	**21000**	**9100**	YES
D (collected at BH19-15)	7-May-19	0 - 0.15	0.0059	<0.050	0.021	0.31	11	**420**	1400	560	NO
E (collected at BH19-16)	7-May-19	0 - 0.15	**0.6**	**2.6**	**0.35**	3.7	34	11	<50	<50	YES
MW19-1-3	3-May-19	2.13 - 2.44	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
DUP 1 (duplicate of MW19-1-3)	3-May-19	2.13 - 2.44	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
MW19-2-4	5-May-19	3.96 - 4.57	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
MW19-3-5	6-May-19	3.96 - 4.57	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
DUP 2 (duplicate of MW19-3-5)	6-May-19	3.96 - 4.57	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
MW19-4-6	6-May-19	3.96 - 4.27	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
MW19-5-6	6-May-19	3.96 - 4.27	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
MW19-6-2	6-May-19	2.74 - 3.05	0.0082	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
DUP 3 (duplicate of MW19-6-2)	6-May-19	2.74 - 3.05	0.0062	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
MW19-7-4	4-Dec-19	2.74 - 3.05	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
MW19-7-5	4-Dec-19	3.35 - 3.66	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
MW19-7-8	4-Dec-19	5.80 - 6.10	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
MW19-8-5	4-Dec-19	3.35 - 3.66	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
MW19-8-6	4-Dec-19	3.96 - 4.27	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
MW19-8-8	4-Dec-19	5.18 - 5.49	<0.0050	<0.050	<0.010	<0.045	<10	<10	54	<50	YES
MW19-9-4	4-Dec-19	3.35 - 3.66	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
MW19-9-5	4-Dec-19	3.81 - 4.11	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
MW19-9-7	4-Dec-19	4.88 - 5.18	<0.0050	<0.050	<0.010	<0.045	<10	<10	68	<50	YES
MW19-10-4	4-Dec-19	3.05 - 3.35	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
DUP100 (duplicate of MW19-10-4)	4-Dec-19	3.05 - 3.35	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
MW19-10-7	4-Dec-19	5.49 - 5.79	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
MW19-11-2	4-Dec-19	0.76 - 1.52	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
MW19-11-3	4-Dec-19	1.52 - 1.83	<0.0050	<0.050	<0.010	<0.045	<10	25	130	55	YES
MW19-11-5	4-Dec-19	3.05 - 3.35	<0.0050	<0.050	<0.010	0.067	<10	23	91	<50	YES
MW19-12-2	4-Dec-19	1.22 - 1.52	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
MW19-12-3	4-Dec-19	1.83 - 2.13	<0.0050	<0.050	<0.010	<0.045	<10	18	62	<50	YES
DUP101 (duplicate of MW19-12-3)	4-Dec-19	1.83 - 2.13	<0.0050	<0.050	<0.010	<0.045	<10	15	53	<50	YES
MW19-12-5	4-Dec-19	3.05 - 3.35	<0.0050	<0.050	<0.010	<0.045	<10	16	58	<50	YES
MW19-13-2	4-Dec-19	1.22 - 1.52	**0.67**	<0.050	<0.010	0.12	<10	140	360	130	YES
MW19-13-3	4-Dec-19	1.83 - 2.13	**0.41**	<0.050	**0.088**	0.59	32	42	130	<50	YES
DUP102 (duplicate of MW19-13-3)	4-Dec-19	1.83 - 2.13	**0.46**	<0.050	**0.12**	0.76	43	41	140	<50	YES
MW19-13-6	4-Dec-19	4.27 - 4.57	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
MW19-14-7	4-Dec-19	4.56 - 5.18	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
MW19-14-8	4-Dec-19	5.49 - 5.79	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
MW19-14-10	4-Dec-19	7.01 - 7.31	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES

Notes:

1. Canadian Council of Ministers of the Environment (CCME) Soil Quality Guidelines for the Protection of Environmental and Human Health, values for industrial land use and coarse-grained soils (CCME 1999, updated 2001).

2. Canadian Council of Ministers of the Environment (CCME) Soil Quality Guidelines for the Protection of Environmental and Human Health, values for agricultural land use and coarse-grained soils (CCME 1999, updated 2001).

BOLD/HIGHLIGHTED - Exceeds the applicable guideline.

mg/kg - milligrams per kilogram.

mbgs - meters below ground surface.

< Indicates parameter was below laboratory equipment detection limit.

"-" Chemical not analyzed or criteria not defined.

(1) Detection limits raised due to dilution to bring analyte within the calibrated range.

Table to be read in conjunction with accompanying report.

Table 11
Intrusive Investigation Soil Analytical Results - Petroleum Hydrocarbons
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample ID	Sample Date (dd-mmm-yy)	Depth (mbgs)	Petroleum Hydrocarbons								
			Benzene	Toluene	Ethylbenzene	Xylenes (Total)	F1 (C_6-C_{10})-BTEX	F2 (C_{10}-C_{16})	F3 (C_{16}-C_{34})	F4 (C_{34}-C_{50})	Reached Baseline at C_{50}
Guideline[1] (CN Right-of-Way)			**0.03**	**0.37**	**0.082**	**11**	**320**	**260**	**1700**	**3300**	**-**
Guideline[2] (Outside CN Right-of-Way)			**0.03**	**0.37**	**0.082**	**11**	**30**	**150**	**300**	**2800**	**-**
Units			**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**-**
MW19-15-3	5-Dec-19	1.52 - 2.13	**0.22**	<0.050	0.054	0.16	13	31	140	<50	YES
MW19-15-4	5-Dec-19	2.44 - 3.05	**0.17**	0.2	0.077	0.5	22	**330**	940	350	YES
MW19-15-6	5-Dec-19	3.96 - 4.27	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
MW19-16-3	5-Dec-19	1.83 - 2.13	**0.2**	0.09	**0.092**	0.67	31	120	420	160	YES
MW19-16-4	5-Dec-19	2.74 - 3.05	**0.17**	**0.53**	0.059	0.29	17	40	160	53	YES
DUP103 (duplicate of MW19-16-4)	5-Dec-19	2.74 - 3.05	**1.1**	0.29	**0.33**	1.6	81	120	350	130	YES
MW19-16-6	5-Dec-19	3.81 - 4.11	**0.079**	0.093	0.029	0.15	10	<10	<50	<50	YES
Outside CN Right-of-Way											
MW19-17-A	5-Dec-19	0.30 - 0.61	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
DUP106 (duplicate of MW19-17-A)	5-Dec-19	0.30 - 0.61	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
MW19-17-B	5-Dec-19	1.98 - 2.29	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
MW19-17-C	5-Dec-19	3.66 - 3.96	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
MW19-17-D	5-Dec-19	5.03 - 5.33	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
MW19-18-A	5-Dec-19	0.46 - 0.76	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
MW19-18-B	5-Dec-19	1.98 - 2.29	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
MW19-18-C	5-Dec-19	5.03 - 5.33	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
Excavated / Resampled Locations											
CN Right-of-Way											
A (collected along south of rail)	2-May-19	0 - 0.15	**0.045**	0.18	**0.15**	3	38	**4200**	**23000**	**9400**	YES
B (collected along south of rail)	2-May-19	0 - 0.15	**0.25**	**0.82**	**0.24**	3.6	44	**6600**	**25000**	**9700**	YES
BH19-1-3	1-May-19	2.74 - 3.05	**0.12**	0.14	0.018	0.13	<10	<10	<50	<50	YES
BH19-1-4	1-May-19	4.0 - 4.57	0.024	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
BH19-2-11	1-May-19	8.38 - 9.14	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
BH19-3-5.5	2-May-19	6.10 - 6.25	**0.049**	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
BH19-3-6 POLE	2-May-19	6.25 - 6.71	**0.4**	0.3	**0.11**	0.87	<10	**37000 (1)**	**56000 (1)**	**5600 (1)**	YES
BH19-3-7	2-May-19	7.93 - 8.23	**0.13**	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
BH19-14-4	7-May-19	3.35 - 3.66	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
BH19-17-2	7-May-19	3.05 - 3.35	**0.94**	0.37	<0.010	<0.045	<10	<10	<50	<50	YES
BH19-18-3	7-May-19	1.83 - 2.13	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
F (collected at BH19-17)	7-May-19	1.52 - 1.83	**230 (1)**	**460 (1)**	**50 (1)**	**490**	**9600**	**6100**	**15000**	**6600**	NO
G (collected at BH19-18)	7-May-19	1.22 - 1.52	**100 (1)**	**240 (1)**	**28 (1)**	**280**	**5400**	**2100**	**5300**	2200	NO

Notes:
1. Canadian Council of Ministers of the Environment (CCME) Soil Quality Guidelines for the Protection of Environmental and Human Health, values for industrial land use and coarse-grained soils
2. Canadian Council of Ministers of the Environment (CCME) Soil Quality Guidelines for the Protection of Environmental and Human Health, values for agricultural land use and coarse-grained soils

BOLD/HIGHLIGHTED - Exceeds the applicable guideline.
mg/kg - milligrams per kilogram.
mbgs - meters below ground surface.
< Indicates parameter was below laboratory equipment detection limit.
"-" Chemical not analyzed or criteria not defined.
(1) Detection limits raised due to dilution to bring analyte within the calibrated range.
Table to be read in conjunction with accompanying report.

Table 12
Intrusive Investigation Soil Analytical Results - Polycyclic Aromatic Hydrocarbons and Cresols
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample ID	Sample Date (dd-mmm-yy)	Depth (mbgs)	Carcinogenic Polycyclic Aromatic Hydrocarbons											Non-Carcinogenic Polycyclic Aromatic Hydrocarbons															Phenols	
			Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b&j)fluoranthene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Benzo(g,h,i)perylene	Indeno(1,2,3-cd)pyrene	Total PAH	Index of Additive Cancer Risk(IACR)	B[a]P TPE Total Potency Equivalents	Acenaphthene	Acenaphthylene	Acridine	Anthracene	Benzo(c)phenanthrene	Benzo[e]pyrene	Fluoranthene	Fluorene	2-Methylnaphthalene	Naphthalene	Phenanthrene	Perylene	Pyrene	Quinoline	Low Molecular Weight PAH's	High Molecular Weight PAH's	Cresols	Phenol
Guideline[1] (CN Right-of-Way)			**10**	**72**	**-**	**10**	**-**	**10**	**-**	**10**	**-**	**1**	**0.6**	**0.28**	**320**	**-**	**32**	**-**	**-**	**180**	**0.25**	**-**	**0.013**	**0.046**	**-**	**100**	**-**	**-**	**-**	**-**	**128**
Guideline[2] (Outside CN Right-of-Way)			**0.1**	**20**	**-**	**0.1**	**6.2**	**0.1**	**-**	**0.1**	**-**	**1**	**0.6**	**0.28**	**320**	**-**	**2.5**	**-**	**-**	**50**	**0.25**	**-**	**0.013**	**0.046**	**-**	**0.1**	**-**	**-**	**-**	**-**	**20**
Units			**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**n/a**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**
Confirmatory Locations																														
CN Right-of-Way																														
BH19-100-3	5-Dec-19	1.52 - 1.83	<0.0050	<0.0050	0.0084	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.05	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	0.015	<0.0050	<0.0050	<0.0050	0.014	0.031	0.013	<0.010	0.014	0.037	-	-
BH19-100-4	5-Dec-19	2.74 - 3.05	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.0050	-	-
BH19-100-6	5-Dec-19	3.96 - 4.27	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.0050	-	-
DUP 104 (duplicate of BH19-100-6)	5-Dec-19	3.96 - 4.27	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.0050	-	-
BH19-110-3	5-Dec-19	1.52 - 1.83	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.041	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	0.0081	**0.023**	0.01	<0.0050	<0.0050	<0.010	0.041	<0.0050	-	-
BH19-110-4	5-Dec-19	2.74 - 3.05	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.013	<0.0050	<0.010	<0.010	<0.0050	-	-
BH19-110-6	5-Dec-19	3.96 - 4.27	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.011	<0.0050	<0.010	<0.010	<0.0050	-	-
BH19-120-2	5-Dec-19	1.22 - 1.52	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.0050	-	-
BH19-120-3	5-Dec-19	1.52 - 1.83	0.39	0.27	0.41	0.16	0.42	0.041	0.13	0.15	4.6	**5.9**	0.43	0.089	0.0087	0.014	0.15	0.052	0.19	0.86	0.1	0.041	**0.046**	**0.37**	0.071	0.85	<0.010	0.82	3.7	-	-
DUP 105 (duplicate of BH19-120-3)	5-Dec-19	1.52 - 1.83	0.0079	<0.0050	0.016	<0.0050	0.011	<0.0050	0.0063	0.0063	0.41	0.17	0.008	0.027	<0.0050	0.017	0.014	<0.0050	0.009	0.039	0.028	0.055	**0.089**	**0.065**	0.018	0.032	<0.010	0.29	0.12	-	-
BH19-120-4	5-Dec-19	2.44 - 2.74	<0.0050	<0.0050	0.008	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.021	<0.0050	<0.010	<0.010	0.008	-	-
BH19-130-3	5-Dec-19	1.52 - 1.83	0.085	0.024	0.039	0.015	0.075	<0.0050	0.0064	0.0068	4.3	0.71	0.042	**0.46**	0.0084	<0.010	0.24 (4)	0.017	0.018	0.6	**0.30**	0.26	**0.76**	1.00	0.023	0.46	<0.010	3.00	1.3	-	-
BH19-130-4	5-Dec-19	2.44 - 2.74	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.11	<0.10	<0.0071	0.014	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	0.015	0.0087	0.0086	**0.026**	0.029	0.037	0.013	<0.010	0.086	0.027	-	-
BH19-130-6	5-Dec-19	3.81 - 4.57	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.099	<0.10	<0.0071	0.012	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	0.015	0.0067	0.0067	**0.02**	0.025	0.022	0.013	<0.010	0.071	0.029	-	-
C (collected adjacent to the north of the rail)	3-May-19	0 - 0.15	0.25 (4)	0.27 (4)	0.42 (4)	0.090 (4)	0.61 (4)	0.071 (4)	0.24 (4)	0.17 (4)	23	**5.4**	0.44	**1.4 (3)**	0.34 (4)	<0.10 (4)	0.88 (4)	<0.050 (3)	0.40 (3)	0.96 (3)	**1.8 (3)**	6.5 (3)	**1.9 (3)**	**5.9 (3)**	0.83 (3)	1.5 (3)	NC (5)	19	4.6	-	-
D (collected at BH19-15)	7-May-19	0 - 0.15	0.14	0.081	0.12	0.033	0.17	0.017	0.078	0.055	4.00	**1.8**	0.14	**0.39**	0.033 (a)	<0.010	0.29	0.026 (a)	0.089	0.69	**0.38**	0.071	**0.014**	**0.79**	0.084	0.54	0.08	2.1	2	-	-
E (collected at BH19-16)	7-May-19	0 - 0.15	0.017	0.011	0.022	0.007	0.019	<0.0050	0.018	0.012	0.36	0.29	0.02	0.027	0.0057	<0.010	0.017	<0.0050	0.016	0.068	0.017	0.011	0.011	**0.047**	0.0052	0.052	<0.010	0.14	0.23	-	-
MW19-7-4	4-Dec-19	2.74 - 3.05	<0.0050	<0.0050	<0.0050	<0.0050	0.0066	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	0.0066	-	-
MW19-7-5	4-Dec-19	3.35 - 3.66	<0.0050	<0.0050	0.0085	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.033	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	0.0083	<0.0050	<0.0050	<0.0050	0.008	0.036	0.0081	<0.010	<0.010	0.025	-	-
MW19-7-8	4-Dec-19	5.80 - 6.10	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.013	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.15	0.012	<0.010	<0.010	0.013	-	-
MW19-8-5	4-Dec-19	3.35 - 3.66	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.0050	-	-
MW19-8-6	4-Dec-19	3.96 - 4.27	0.021	0.037	0.083	0.029	0.043	0.01	0.045	0.04	0.48	0.95	0.066	<0.0050	0.009	<0.010	0.014	0.0062 (a)	0.051	0.065	<0.0050	<0.0050	<0.0050	0.027	0.017	0.053	<0.010	0.051	0.43	-	-
MW19-8-8	4-Dec-19	5.18 - 5.49	0.007	0.012	0.028	0.009	0.014	<0.0050	0.015	0.013	0.15	0.31	0.02	<0.0050	<0.0050	<0.010	0.0056	<0.0050	0.017	0.022	<0.0050	<0.0050	<0.0050	0.0096	0.0091	0.018	<0.010	0.015	0.14	-	-
MW19-9-4	4-Dec-19	3.35 - 3.66	<0.0050	<0.0050	0.0074	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.064	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	0.0089	<0.0050	0.014	0.012	0.015	<0.0050	0.0073	<0.010	0.041	0.024	-	-
MW19-9-5	4-Dec-19	3.81 - 4.11	0.088	0.063	0.15	0.051	0.14	0.014	0.057	0.056	4.0	**1.8**	0.11	**0.37**	0.016	<0.010	0.13	0.026	0.083	0.55	**0.34**	0.12	**0.056**	**1.4**	0.02	0.43	<0.010	2.4	1.6	-	-
MW19-9-7	4-Dec-19	4.88 - 5.18	0.043	0.043	0.10	0.034	0.089	0.01	0.041	0.041	1.5	**1.2**	0.076	0.11	0.0091	<0.010	0.042	0.012	0.058	0.19	0.089	0.067	**0.042**	**0.37**	0.017	0.15	<0.010	0.73	0.76	-	-
MW19-10-4	4-Dec-19	3.05 - 3.35	<0.0050	<0.0050	0.0066	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.022	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	0.0071	<0.0050	<0.0050	<0.0050	0.0083	<0.0050	<0.0050	<0.010	<0.010	0.014	-	-
DUP100 (duplicate of MW19-10-4)	4-Dec-19	3.05 - 3.35	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.0050	-	-
MW19-10-7	4-Dec-19	5.49 - 5.79	0.028	0.042	0.10	0.035	0.065	0.0097	0.038	0.039	0.62	**1.1**	0.073	<0.0050	<0.0050	<0.010	0.0093	0.0099	0.056	0.11	<0.0050	<0.0050	<0.0050	0.037	0.014	0.088	<0.010	0.046	0.57	-	-
MW19-11-2	4-Dec-19	0.76 - 1.52	<0.0050	<0.0050	0.0072	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.32	<0.10	<0.0071	0.051	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	0.023	0.022	0.045	**0.11**	0.046	0.029	0.018	<0.010	0.27	0.048	-	-
MW19-11-3	4-Dec-19	1.52 - 1.83	0.0071	<0.0050	0.015	<0.0050	0.011	<0.0050	0.0072	<0.0050	0.41	0.15	0.008	0.027	<0.0050	<0.010	0.0073	<0.0050	0.0098	0.035	0.019	0.055	**0.12**	**0.074**	0.015	0.027	<0.010	0.31	0.1	-	-
MW19-11-5	4-Dec-19	3.05 - 3.35	<0.0050	<0.0050	0.011	<0.0050	0.0076	<0.0050	<0.0050	<0.0050	0.28	0.11	<0.0071	0.024	<0.0050	<0.010	0.0057	<0.0050	<0.0050	0.028	0.017	0.053	**0.058**	**0.057**	0.012	0.021	<0.010	0.21	0.068	-	-
MW19-12-2	4-Dec-19	1.22 - 1.52	<0.0050	<0.0050	0.013	<0.0050	0.0064	<0.0050	0.0065	<0.0050	0.098	0.13	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	0.0086	0.012	<0.0050	0.017	0.012	0.023	0.0094	0.0093	<0.010	0.051	0.047	-	-
MW19-12-3	4-Dec-19	1.83 - 2.13	<0.0050	<0.0050	0.01	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.097	0.11	<0.0071	0.008	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	0.013	0.0076	0.014	0.007	0.027	<0.0050	0.011	<0.010	0.063	0.034	-	-
DUP101 (duplicate of MW19-12-3)	4-Dec-19	1.83 - 2.13	<0.0050	0.0085	0.018	<0.0050	0.0095	<0.0050	0.011	0.01	0.12	0.18	0.015	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	0.013	0.018	<0.0050	0.01	<0.0050	0.021	0.0089	0.015	<0.010	0.032	0.09	-	-
MW19-12-5	4-Dec-19	3.05 - 3.35	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.031	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	0.0081	<0.0050	0.008	<0.0050	0.015	0.0073	<0.0050	<0.010	0.023	0.0081	-	-
MW19-13-2	4-Dec-19	1.22 - 1.52	0.0082	0.0078	0.013	<0.0050	0.018	<0.0050	0.0081	<0.0050	0.52	0.16	0.013	0.025	0.0064	0.055	0.011	<0.0050	0.011	0.018	0.029	0.14	**0.052**	**0.096**	0.019	0.026	<0.010	0.42	0.099	-	-
MW19-13-3	4-Dec-19	1.83 - 2.13	<0.0050	<0.0050	0.0082	<0.0050	0.0068	<0.0050	<0.0050	<0.0050	0.15	<0.10	<0.0071	0.008	<0.0050	0.015	<0.0040	<0.0050	<0.0050	0.012	0.0094	0.035	0.013	0.03	0.011	0.011	<0.010	0.11	0.038	-	-
DUP102 (duplicate of MW19-13-3)	4-Dec-19	1.83 - 2.13	<0.0050	<0.0050	0.0065	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.013	<0.0050	<0.010	<0.010	0.0065	-	-
MW19-13-6	4-Dec-19	4.27 - 4.57	<0.0050	<0.0050	0.015	<0.0050	<0.0050	<0.0050	0.0067	<0.0050	0.13	0.14	<0.0071	0.0071	<0.0050	0.012	<0.0040	<0.0050	0.0092	0.0089	0.0077	0.028	0.012	0.025	0.012	0.0096	<0.010	0.092	0.04	-	-

Notes:
1. Canadian Council of Ministers of the Environment (CCME) Soil Quality Guidelines for the Protection of Environmental and Human Health, values for industrial land use and coarse-grained soils (CCME 1999, updated 2001).
2. Canadian Council of Ministers of the Environment (CCME) Soil Quality Guidelines for the Protection of Environmental and Human Health, values for agricultural land use and coarse-grained soils (CCME 1999, updated 2001).

BOLD/HIGHLIGHTED - Exceeds the applicable guideline.
mg/kg - milligrams per kilogram.
n/a - not applicable.
< Indicates parameter was below laboratory equipment detection limit.
NC - not calculated.
"-" Chemical not analyzed or criteria not defined.
(1) Detection limits raised due to dilution to bring analyte within the calibrated range.
(2) Quinoline not calculated due to required dilution caused by sample matrix.
(3) Detection limits raised due to dilution as a result of sample matrix interference.
(4) Duplicate exceeds acceptance criteria due to sample non homogeneity. Reanalysis yields similar results.
(5) Detection limits raised due to dilution as a result of sample matrix interference. Quinoline not calculated due to required dilution caused by sample matrix.
(a) Qualifying ion outside of acceptance criteria. Results are tentatively identified and potentially biased high.
(b) Detection limits raised due to dilution as a result of sample matrix interference.
(c) Detection limits raised due to dilution as a result of sample matrix interference. Qualifying ion outside of acceptance criteria. Results are tentatively identified and potentially biased high.
(d) Detection limits raised due to matrix interference.
(e) Detection limits raised due to dilution to bring analyte within the calibrated range.
Table to be read in conjunction with accompanying report.

Table 12
Intrusive Investigation Soil Analytical Results - Polycyclic Aromatic Hydrocarbons and Cresols
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample ID	Sample Date (dd-mmm-yy)	Depth (mbgs)	Carcinogenic Polycyclic Aromatic Hydrocarbons											Non-Carcinogenic Polycyclic Aromatic Hydrocarbons															Phenols	
			Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b&j)fluoranthene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Benzo(g,h,i)perylene	Indeno(1,2,3-cd)pyrene	Total PAH	Index of Additive Cancer Risk(IACR)	B[a]P TPE Total Potency Equivalents	Acenaphthene	Acenaphthylene	Acridine	Anthracene	Benzo(c)phenanthrene	Benzo[e]pyrene	Fluoranthene	Fluorene	2-Methylnaphthalene	Naphthalene	Phenanthrene	Perylene	Pyrene	Quinoline	Low Molecular Weight PAH's	High Molecular Weight PAH's	Cresols	Phenol
Guideline[1] (CN Right-of-Way)			**10**	**72**	**-**	**10**	**-**	**10**	**-**	**10**	**-**	**1**	**0.6**	**0.28**	**320**	**-**	**32**	**-**	**-**	**180**	**0.25**	**-**	**0.013**	**0.046**	**-**	**100**	**-**	**-**	**-**	**-**	**128**
Guideline[2] (Outside CN Right-of-Way)			**0.1**	**20**	**-**	**0.1**	**6.2**	**0.1**	**-**	**0.1**	**-**	**1**	**0.6**	**0.28**	**320**	**-**	**2.5**	**-**	**-**	**50**	**0.25**	**-**	**0.013**	**0.046**	**-**	**0.1**	**-**	**-**	**-**	**-**	**20**
Units			**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**n/a**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**
MW19-14-7	4-Dec-19	4.56 - 5.18	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.024	<0.0050	<0.010	<0.010	<0.0050	-	-
MW19-14-8	4-Dec-19	5.49 - 5.79	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.029	<0.0050	<0.010	<0.010	<0.0050	-	-
MW19-14-10	4-Dec-19	7.01 - 7.31	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.32	0.0095	<0.010	<0.010	0.0095	-	-
MW19-15-3	5-Dec-19	1.52 - 2.13	<0.0050	<0.0050	0.0084	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.11	<0.10	<0.0071	0.0085	<0.0050	0.013	<0.0040	<0.0050	<0.0050	0.011	0.0093	0.016	<0.0050	0.03	0.024	0.012	<0.010	0.077	0.032	-	-
MW19-15-4	5-Dec-19	2.44 - 3.05	0.039	0.051	0.12	0.036	0.083	0.015	0.054	0.049	1.7	**1.4**	0.092	0.063	0.022	0.12	0.036	0.0099	0.077	0.1	0.068	0.32	**0.13**	**0.25**	0.055	0.099	0.021	1.0	0.66	-	-
MW19-15-6	5-Dec-19	3.96 - 4.27	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.0050	-	-
MW19-16-3	5-Dec-19	1.83 - 2.13	0.038	0.044	0.11	0.037	0.081	0.012	0.045	0.04	1.1	**1.3**	0.08	0.029	0.013	0.053	0.021	0.010 (a)	0.067	0.11	0.031	0.11	**0.05**	**0.13**	0.039	0.098	<0.010	0.44	0.63	-	-
MW19-16-4	5-Dec-19	2.74 - 3.05	0.12	0.16	0.35	0.13	0.25	0.033	0.14	0.15	4.3	**4.2**	0.27	0.21	0.053	0.024	0.088	0.044	0.19	0.73	0.18	0.092	**0.087**	**0.95**	0.037	0.51	<0.010	1.7	2.6	-	-
DUP103 (duplicate of MW19-16-4)	5-Dec-19	2.74 - 3.05	0.047	0.061	0.12	0.043	0.076	0.013	0.046	0.046	1.2	**1.5**	0.1	0.037	0.013	0.043	0.02	0.011	0.071	0.12	0.034	0.14	**0.059**	**0.15**	0.032	0.094	<0.010	0.49	0.68	-	-
MW19-16-6	5-Dec-19	3.81 - 4.11	0.0096	0.013	0.037	0.012	0.022	<0.0050	0.014	0.013	0.24	0.39	0.023	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	0.02	0.044	<0.0050	0.0094	0.0074	0.03	0.032	0.034	<0.010	0.046	0.2	-	-
Outside CN Right-of-Way																																
MW19-17-A	5-Dec-19	0.30 - 0.61	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.0050	-	-
DUP106 (duplicate of MW19-17-A)	5-Dec-19	0.30 - 0.61	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.0050	-	-
MW19-17-B	5-Dec-19	1.98 - 2.29	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.026	<0.0050	<0.010	<0.010	<0.0050	-	-
MW19-17-C	5-Dec-19	3.66 - 3.96	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.22	0.0083	<0.010	<0.010	0.0083	-	-
MW19-17-D	5-Dec-19	5.03 - 5.33	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.014	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.54	0.014	<0.010	<0.010	0.014	-	-
MW19-18-A	5-Dec-19	0.46 - 0.76	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.26	0.0078	<0.010	<0.010	0.0078	-	-
MW19-18-B	5-Dec-19	1.98 - 2.29	<0.0050	<0.0050	0.0061	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.032	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	0.0084	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.017	<0.010	<0.010	0.032	-	-
MW19-18-C	5-Dec-19	5.03 - 5.33	<0.0050	<0.0050	0.0064	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.032	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	0.0079	<0.0050	<0.0050	<0.0050	<0.0050	0.54	0.018	<0.010	<0.010	0.032	-	-
Excavated / Resampled Locations																																
CN Right-of-Way																																
A (collected adjacent to the south of rail)	2-May-19	0 - 0.15	5.3 (3)	2.5 (3)	3.8 (3)	1.3 (3)	7.3 (3)	0.36 (3)	1.1 (3)	1.0 (3)	220	**60**	**4.1**	**26 (3)**	0.67 (3)	<0.10 (3)	13 (3)	0.83 (3)	2.0 (3)	29 (3)	**22 (3)**	13 (3)	**12 (3)**	**54 (3)**	1.4 (3)	21 (3)	NC (5)	140	74	-	-
B (collected adjacent to the south of the rail)	2-May-19	0 - 0.15	0.62 (3)	0.56 (3)	0.90 (3)	0.22 (3)	1.1 (3)	0.17 (3)	0.73 (3)	0.47 (3)	42	**12**	**0.98**	**3.0 (3)**	0.47 (3)	<0.10 (3)	1.6 (3)	0.14 (3)	0.78 (3)	2.8 (3)	**2.8 (3)**	7.2 (3)	**7.6 (3)**	**8.5 (3)**	1.1 (3)	2.9 (3)	NC (5)	31	11	-	-
BH19-3-6 POLE	2-May-19	6.25 - 6.71	**820 (1)**	**300 (1)**	430 (1)	**150 (1)**	530 (1)	**27 (1)**	69 (1)	**88 (1)**	41000	**7300**	**480**	**3300 (1)**	83 (1)	130 (1)	**880 (1)**	120 (1)	200 (1)	**4500 (1)**	**2900 (1)**	2200 (1)	**13000 (1)**	**8400 (1)**	75 (1)	**3100 (1)**	- (2)	31000	10000	63	18 (3)
BH19-3-7	2-May-19	7.93 - 8.23	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.12	<0.10	<0.0071	0.0097	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	0.016 (4)	0.009	<0.0050	**0.047**	0.030 (4)	<0.0050	0.011 (4)	<0.010	0.095	0.027	<0.0071	<0.0010
F (collected at BH19-17)	7-May-19	1.52 - 1.83	0.46 (b)	0.23 (b)	0.32 (b)	0.080 (b)	0.45 (b)	<0.079 (d)	0.26 (b)	0.18 (b)	38	**5**	0.38	**1.0 (b)**	0.31 (c)	<0.10 (b)	0.64 (b)	<0.058 (d)	0.34 (b)	0.46 (b)	**1.6 (b)**	5.9 (b)	**2.0 (b)**	**4.4 (b)**	0.64 (b)	1.1 (b)	18 (e)	34	3.5	-	-
G (collected at BH19-18)	7-May-19	1.22 - 1.52	0.45	0.21	0.42	0.1	0.44	0.063	0.2	0.13	24	**5.7**	0.39	**1.9**	0.18 (a)	<0.010	0.72	0.085 (a)	0.34	1.9	**1.8**	4.1	**4.2**	**5.2**	0.2	1.5	0.56	19	5.5	-	-

Notes:

1. Canadian Council of Ministers of the Environment (CCME) Soil Quality Guidelines for the Protection of Environmental and Human Health, values for industrial land use and coarse-grained soils (CCME 1999, updated 2001).
2. Canadian Council of Ministers of the Environment (CCME) Soil Quality Guidelines for the Protection of Environmental and Human Health, values for agricultural land use and coarse-grained soils (CCME 1999, updated 2001).

BOLD/HIGHLIGHTED - Exceeds the applicable guideline.
mg/kg - milligrams per kilogram.
n/a - not applicable.
< Indicates parameter was below laboratory equipment detection limit.
NC - not calculated.
"-" Chemical not analyzed or criteria not defined.
(1) Detection limits raised due to dilution to bring analyte within the calibrated range.
(2) Quinoline not calculated due to required dilution caused by sample matrix.
(3) Detection limits raised due to dilution as a result of sample matrix interference.
(4) Duplicate exceeds acceptance criteria due to sample non homogeneity. Reanalysis yields similar results.
(5) Detection limits raised due to dilution as a result of sample matrix interference. Quinoline not calculated due to required dilution caused by sample matrix.
(a) Qualifying ion outside of acceptance criteria. Results are tentatively identified and potentially biased high.
(b) Detection limits raised due to dilution as a result of sample matrix interference.
(c) Detection limits raised due to dilution as a result of sample matrix interference. Qualifying ion outside of acceptance criteria. Results are tentatively identified and potentially biased high.
(d) Detection limits raised due to matrix interference.
(e) Detection limits raised due to dilution to bring analyte within the calibrated range.
Table to be read in conjunction with accompanying report.

Table 13
Groundwater Monitoring Results and Analytical Schedule
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Monitoring Well	Date (dd-mmm-yy)	Volume Purged (L)	Temperature (°C)	pH	Conductivity (mS/cm)	Dissolved Oxygen (mg/L)	Organic Vapour Measurements (ppm)	Groundwater Samples by Type					
								BTEX, PHC F1-F4	PAH	Nutrients	Total Metals	Routine	Dissolved Metals
MW19-1	29-May-19	DRY					0	DRY					
	26-Jun-19	3	7.43	8.1	0.733	9.33	0	X	X	-	-	X	X
	24-Jul-19	6	11	5.99	1.013	2.55	0	X	X	-	-	X	X
	14-Aug-19	6	10.1	6.89	1.079	2.62	0	X	X	-	-	X	X
	21-Aug-19	0	INSUFFICENT WATER TO SAMPLE				0	X	X	-	-	-	-
	18-Sep-19	1.5	11.2	7.28	0.874	6.60	0	X	X	-	-	X	X
	16-Oct-19	2	11.5	5.69	1.022	3.30	0	X	X	-	-	X	X
	30-Oct-19	0	-*	7.08	1.019	10.19	0	X	X	-	-	X	X
	13-Nov-19	5	1.4	7.54	1.086	7.83	-*	X	X	-	-	X	X
	27-Nov-19	5	1.4	7.11	1.086	8.03	0	X	X	-	-	X	X
	11-Dec-19	9	-1.4	7.64	1.594	10.8	0	X	X	-	-	X	X
MW19-2	5-Jun-19	1	9.1	7.76	13.73	2.06	0	X	X	-	-	-	-
	26-Jun-19	2	6.6	8.01	10.8	3.76	0	X	X	-	-	X	X
	24-Jul-19	9	8	6.09	7.95	0.72	0	X	X	-	-	X	X
	14-Aug-19	13	10.2	6.9	6.52	0.8	0	X	X	-	-	X	X
	21-Aug-19	14	8.8	6.93	6.85	2.5	0	X	X	-	-	X	X
	18-Sep-19	17	10.4	7.16	10.01	3.67	0	X	X	-	-	X	X
	16-Oct-19	15	10.8	6.52	5.66	4.05	0	X	X	-	-	X	X
	30-Oct-19	15	2.3	7.12	4.04	6.52	0	X	X	-	-	X	X
	13-Nov-19	14	6.8	7.17	6.1	2.4	-*	X	X	-	-	X	X
	27-Nov-19	15	6.5	6.99	7.66	4.52	0	X	X	-	-	X	X
	11-Dec-19	12	5.7	7.1	6.65	-*	0	X	X	-	-	X	X
MW19-3	3-Jun-19	20	6.8	7.31	3.11	3.66	0	X	X	X	X	X	-
	26-Jun-19	23.5	7.8	7.8	2.38	7.44	0	X	X	-	-	X	X
	24-Jul-19	19	9.1	6.3	2.69	0.66	0	X	X	-	-	X	X
	14-Aug-19	10	14.8	6.92	2.41	2.45	0	X	X	-	-	X	X
	21-Aug-19	16	9.4	6.85	3.62	2.91	0	X	X	-	-	X	X
	18-Sep-19	20	13.7	6.87	3.84	4.1	0	X	X	-	-	X	X
	16-Oct-19	20	9	7.35	3.04	-*	0	X	X	-	-	X	X
	30-Oct-19	21	4.2	7.06	3.47	7.22	0	X	X	-	-	X	X
	13-Nov-19	19	6.4	7.27	2.34	6.46	-*	X	X	-	-	X	X
	27-Nov-19	20	5.6	6.95	3.9	6.12	0	X	X	-	-	X	X
	11-Dec-19	24	1.8	7.21	2.69	-*	0	X	X	-	-	X	X
MW19-4	3-Jun-19	4	9.4	7.84	13.62	4.01	0	X	X	X	X	X	-
	26-Jun-19	3.5	12	7.6	8.06	7.05	0	X	X	-	-	X	X
	24-Jul-19	15	15.3	6.72	10.42	2.11	0	X	X	-	-	X	X
	14-Aug-19	22	11	7.23	13.07	3.6	0	X	X	-	-	X	X
	21-Aug-19	16	9.4	7.17	10.69	5.49	0	X	X	-	-	X	X
	18-Sep-19	18	15.3	7.27	11.96	6.99	0	X	X	-	-	X	X
	16-Oct-19	18	8.2	7.69	9.8	5.1	0	X	X	-	-	X	X
	30-Oct-19	FROZEN UNABLE TO SAMPLE						FROZEN UNABLE TO SAMPLE					
	13-Nov-19	FROZEN UNABLE TO SAMPLE						FROZEN UNABLE TO SAMPLE					
	27-Nov-19	FROZEN UNABLE TO SAMPLE						FROZEN UNABLE TO SAMPLE					
	11-Dec-19	FROZEN UNABLE TO SAMPLE						FROZEN UNABLE TO SAMPLE					
MW19-5	5-Jun-19	0.3	10.41	7.34	12.74	3.61	0	X	-	-	-	-	-
	26-Jun-19	0.5	12.8	8.07	21.5	-	0	X	-	-	-	-	-
	24-Jul-19	1	26.2	6.53	21.89	2.72	0	X	X	-	-	X	X
	14-Aug-19	0.75	INSUFFICENT WATER TO SAMPLE				0	INSUFFICENT WATER TO SAMPLE					
	21-Aug-19	0.25	6.4	6.44	24.2	1.52	0	X	X	-	-	-	-
	18-Sep-19	0.25	11.9	6.98	25.8	3.22	0	X	X	-	-	-	-
	16-Oct-19	0.25	INSUFFICENT WATER TO SAMPLE				0	INSUFFICENT WATER TO SAMPLE					
	30-Oct-19	0	1.9	7.17	26.2	12.4	0	X	X	-	-	-	-
	13-Nov-19	0	INSUFFICENT WATER TO SAMPLE				-*	X	X	-	-	-	-
	27-Nov-19	0	INSUFFICENT WATER TO SAMPLE				0	X	X	-	-	X	-
	11-Dec-19	0	INSUFFICENT WATER TO SAMPLE				0	X	X	-	-	-	-
MW19-6	5-Jun-19	4	10.3	7.23	6.83	1.95	0	X	X	X	X	X	-
	26-Jun-19	2	14.5	8.48	6.36	1.7	0	X	X	-	-	X	X
	24-Jul-19	6	14.7	5.77	5.01	1.28	0	X	X	-	-	X	X
	14-Aug-19	3	14.3	7.14	5.45	1.74	0	X	X	-	-	X	X
	21-Aug-19	4	12.2	7.30	5.29	4.6	0	X	X	-	-	X	X
	18-Sep-19	4	13.2	7.33	5.55	3.45	0	X	X	-	-	X	X
	16-Oct-19	4	8.2	7.46	6.29	3.05	0	X	X	-	-	X	X
	30-Oct-19	3	4.1	7.28	6.12	8.9	0	X	X	-	-	X	X
	13-Nov-19	4	2.2	7.74	6.93	6.45	-*	X	X	-	-	X	X
	27-Nov-19	2	1.9	7.17	7.37	4.34	5	X	X	-	-	X	X
	11-Dec-19	0.25	1.6	7.61	8.06	-*	0	X	X	-	-	X	X
MW19-7	11-Dec-19	DRY					0	DRY					

Notes:
L - litres.

°C - degrees Celsius.

mg/L - milligram per litre.

ppm - parts per million.

* - equipment malfunction or ambient temperature too cold for use.

mS/cm - millisiemens per centimeter.

"-" - not analyzed.

BTEX, PHC F1-F4 - benzene, toluene, ethylbenzene, xylene and petroleum hydrocarbon fractions F1 through F4.

PAH - Polycyclic Aromatic Hydrocarbons.

Table to be read in conjunction with accompanying report.

Table 13
Groundwater Monitoring Results and Analytical Schedule
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Monitoring Well	Date (dd-mmm-yy)	Volume Purged (L)	Temperature (°C)	pH	Conductivity (mS/cm)	Dissolved Oxygen (mg/L)	Organic Vapour Measurements (ppm)	Groundwater Samples by Type					
								BTEX, PHC F1-F4	PAH	Nutrients	Total Metals	Routine	Dissolved Metals
MW19-7	18-Dec-19	DRY					5	DRY					
MW19-8	11-Dec-19	DRY					0	DRY					
	18-Dec-19	DRY					0	DRY					
MW19-9	11-Dec-19	DRY					0	DRY					
	18-Dec-19	DRY					0	DRY					
MW19-10	11-Dec-19	DRY					0	DRY					
	18-Dec-19	DRY					0	DRY					
MW19-11	11-Dec-19	DRY					0	DRY					
	18-Dec-19	DRY					0	DRY					
MW19-12	11-Dec-19	DRY					0	DRY					
	18-Dec-19	DRY					0	DRY					
MW19-13	11-Dec-19	DRY					0	DRY					
	18-Dec-19	2	3.1	7.1	16.18	-*	15	INSUFFICENT WATER TO SAMPLE					
MW19-14	11-Dec-19	DRY					0	DRY					
	18-Dec-19	6.5	5.7	7.07	23.8	-*	0	X	X	-	-	X	-
MW19-15	11-Dec-19	DRY					0	DRY					
	18-Dec-19	7.75	5	7.02	1.2	-*	0	X	X	-	-	X	-
MW19-16	11-Dec-19	DRY					0	DRY					
	18-Dec-19	DRY					0	DRY					
MW19-17	11-Dec-19	DRY					0	DRY					
	18-Dec-19	DRY					0	DRY					
MW19-18	11-Dec-19	DRY					0	DRY					
	18-Dec-19	DRY					0	DRY					

Notes:
L - litres.
°C - degrees Celsius.
mg/L - milligram per litre.
ppm - parts per million.
* - equipment malfunction or ambient temperature too cold for use.
mS/cm - millisiemens per centimeter.
"-" - not analyzed.
BTEX, PHC F1-F4 - benzene, toluene, ethylbenzene, xylene and petroleum hydrocarbon fractions F1 through F4.
PAH - Polycyclic Aromatic Hydrocarbons.
Table to be read in conjunction with accompanying report.

Table 14
Groundwater Analytical Results - Petroleum Hydrocarbons
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample ID	Sample Date (dd-mmm-yy)	Petroleum Hydrocarbons								
		Benzene	Toluene	Ethylbenzene	Xylenes (Total)	F1 C_6-C_{10})-BTEX	F2 (C_{10}-C_{16})	F3 (C_{16}-C_{34})	F4 (C_{34}-C_{50})	F1 (C_6-C_{10})
Guideline[1]		**370**	**2**	**2.4**	**-**	**-**	**-**	**-**	**-**	**-**
Units		**ug/L**	**ug/L**	**ug/L**	**ug/L**	**ug/L**	**ug/L**	**ug/L**	**ug/L**	**ug/L**
EX2	5-Jun-19	11	**30**	**3.7**	42	100	0.11	<0.10	<0.20	190
MW19-1	26-Jun-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	0.2	<0.20	<100
MW19-1	24-Jul-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100
MW19-1	14-Aug-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100
MW19-1	21-Aug-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100
MW19-1	18-Sep-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100
MW19-1	16-Oct-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100
MW19-1	30-Oct-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100
MW19-1	13-Nov-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100
MW19-1	27-Nov-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100
MW19-1	11-Dec-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100
MW19-2	5-Jun-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100
MW19-2	26-Jun-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100
MW19-2	24-Jul-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100
MW19-2	14-Aug-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	0.1	<0.20	<100
MW19-2	21-Aug-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100
MW19-2	18-Sep-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100
MW19-2	16-Oct-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100
MW19-2	30-Oct-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100
MW19-2	13-Nov-19	<0.60 (1)	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100
MW19-2	27-Nov-19	0.58	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100
MW19-2	11-Dec-19	0.60	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100
MW19-3	3-Jun-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100
DUP1 (duplicate of MW19-3)	3-Jun-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100
MW19-3	26-Jun-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100
MW19-3	24-Jul-19	<0.40	**5.3**	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100
MW19-3	14-Aug-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100
MW19-3	21-Aug-19	<0.40	0.8	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100
MW19-3	18-Sep-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100
MW19-3	16-Oct-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100
MW19-3	30-Oct-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100
MW19-3	13-Nov-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100
MW19-3	27-Nov-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100
MW19-3	11-Dec-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100
MW19-4	3-Jun-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.14 (1)	<0.20	<100
MW19-4	26-Jun-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100
DUP2 (duplicate of MW19-4)	26-Jun-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100
MW19-4	24-Jul-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100
MW19-4	14-Aug-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100
MW19-4	21-Aug-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100
MW19-4	18-Sep-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100
MW19-4	16-Oct-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100
MW19-5	5-Jun-19	<0.40	<0.40	<0.40	<0.89	<100	0.12	0.51	<0.20	<100
MW19-5	26-Jun-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	0.57	<0.20	<100
MW19-5	24-Jul-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100
MW19-5	21-Aug-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100
MW19-5	18-Sep-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100

Notes:

1. Canadian Council of Ministers of the Environment (CCME) Water Quality Guidelines for the most stringent of Protection of Aquatic Life or Agriculture (CCME 1999, updated 2001).

BOLD/HIGHLIGHTED - Exceeds the applicable guideline.

ug/L - microgram per litre.

< Indicates parameter was below laboratory equipment detection limit.

"-" Chemical not analyzed or criteria not defined.

(1) Detection limit raised due to interferent.

(2) Detection limits raised due to dilution to bring analyte within the calibrated range.

Table to be read in conjunction with accompanying report.

Table 14
Groundwater Analytical Results - Petroleum Hydrocarbons
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample ID	Sample Date (dd-mmm-yy)	Petroleum Hydrocarbons								
		Benzene	Toluene	Ethylbenzene	Xylenes (Total)	F1 C_6-C_{10})-BTEX	F2 (C_{10}-C_{16})	F3 (C_{16}-C_{34})	F4 (C_{34}-C_{50})	F1 (C_6-C_{10})
Guideline[1]		**370**	**2**	**2.4**	**-**	**-**	**-**	**-**	**-**	**-**
Units		**ug/L**	**ug/L**	**ug/L**	**ug/L**	**ug/L**	**ug/L**	**ug/L**	**ug/L**	**ug/L**
MW19-5	30-Oct-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100
MW19-5	13-Nov-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100
MW19-5	27-Nov-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100
MW19-5	11-Dec-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100
MW19-6	5-Jun-19	26	0.56	<0.40	1.4	<100	<0.10	<0.10	<0.20	<100
MW19-6	26-Jun-19	**2900 (2)**	**850**	**17**	380	1100	0.13	<0.10	<0.20	5200
MW19-6	24-Jul-19	**860**	**6**	**25**	370	1100	0.13	<0.10	<0.20	2300
DUP3 (duplicate of MW19-6)	24-Jul-19	**860**	**6**	**25**	370	910	0.12	<0.10	<0.20	2200
MW19-6	14-Aug-19	**410**	1.5	2.3	48	540	<0.10	<0.10	<0.20	1000
DUP4 (duplicate of MW19-6)	14-Aug-19	**440**	1.5	2.2	49	560	<0.10	<0.10	<0.20	1000
MW19-6	21-Aug-19	260	1	0.54	31	460	<0.10	<0.10	<0.20	750
DUP5 (duplicate of MW19-6)	21-Aug-19	370	1.3	0.85	42	330	<0.10	<0.10	<0.20	750
MW19-6	18-Sep-19	360	0.57	<0.40	9	310	<0.10	<0.10	<0.20	690
DUP6 (duplicate of MW19-6)	18-Sep-19	310	0.47	<0.40	7.4	210	0.1	<0.10	<0.20	530
MW19-6	16-Oct-19	**630**	<0.40	<0.40	1.3	170	<0.10	<0.10	<0.20	800
DUP7 (duplicate of MW19-6)	16-Oct-19	**690**	<0.40	<0.40	1.5	200	<0.10	<0.10	<0.20	900
MW19-6	30-Oct-19	**560**	<0.40	<0.40	0.98	<100	<0.10	0.12	<0.20	590
DUP8 (duplicate of MW19-6)	30-Oct-19	**830**	<0.40	<0.40	<0.89	140	<0.10	<0.10	<0.20	980
MW19-6	13-Nov-19	**1200 (2)**	<0.40	<0.40	<0.89	140	<0.10	<0.10	<0.20	1300
DUP9 (duplicate of MW19-6)	13-Nov-19	**1300 (2)**	<0.40	<0.40	<0.89	140	<0.10	<0.10	<0.20	1100
MW19-6	27-Nov-19	**870**	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	770
DUP10 (duplicate of MW19-6)	27-Nov-19	**940 (2)**	<0.40	<0.40	<0.89	130	<0.10	<0.10	<0.20	1100
MW19-6	11-Dec-19	**1100 (2)**	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	1200
DUP11 (duplicate of MW19-6)	11-Dec-19	**1200 (2)**	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	1100
MW19-14	18-Dec-19	<0.40	<0.40	<0.40	<0.89	<100	<0.10	<0.10	<0.20	<100
MW19-15	18-Dec-19	64	<0.40	0.41	7.3	<100	<0.10	<0.10	<0.20	<100

Notes:

1. Canadian Council of Ministers of the Environment (CCME) Water Quality Guidelines for the most stringent of Protection of Aquatic Life or Agriculture (CCME 1999, updated 2001).

BOLD/HIGHLIGHTED - Exceeds the applicable guideline.

ug/L - microgram per litre.

< Indicates parameter was below laboratory equipment detection limit.

"-" Chemical not analyzed or criteria not defined.

(1) Detection limit raised due to interferent.

(2) Detection limits raised due to dilution to bring analyte within the calibrated range.

Table to be read in conjunction with accompanying report.

Table 15
Groundwater Analytical Results - Polycyclic Aromatic Hydrocarbons
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample ID	Sample Date (dd-mmm-yy)	Polycyclic Aromatic Hydrocarbons																										
		Low Molecular Weight PAH's	High Molecular Weight PAH's	Total PAH	B[a]P TPE Total Potency Equivalents	Acenaphthene	Acenaphthylene	Acridine	Anthracene	Benzo(a)anthracene	Benzo(b&j)fluoranthene	Benzo(k)fluoranthene	Benzo(g,h,i)perylene	Benzo(c)phenanthrene	Benzo(a)pyrene	Benzo[e]pyrene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	1-Methylnaphthalene	2-Methylnaphthalene	Naphthalene	Phenanthrene	Perylene	Pyrene	Quinoline
	Guideline[1]	-	-	-	-	5.8	-	4.4	0.012	0.018	-	-	-	-	0.015	-	-	-	0.04	3	-	-	-	1.1	0.4	-	0.025	3.4
	Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
EX2	5-Jun-19	na	na	2.296	<0.010	0.14	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	0.026	0.13	<0.0085	0.46	0.68	0.68	0.18	<0.050	<0.020	<0.20
MW19-1	26-Jun-19	na	na	0.502	<0.010	<0.10	<0.10	<0.040	0.011	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	**0.19**	<0.050	<0.0085	<0.10	<0.10	<0.10	0.051	<0.050	**0.25**	<0.20
MW19-1	24-Jul-19	<0.20	<0.050	<0.02	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	-	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
MW19-1	14-Aug-19	<0.20	<0.050	<0.02	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	-	<0.10	<0.10	<0.050	<0.050	0.021	<0.20
MW19-1	21-Aug-19	<0.20	0.059	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	0.016	<0.050	<0.0085	-	<0.10	<0.10	<0.050	<0.050	**0.043**	<0.20
MW19-1	18-Sep-19	na	na	0.117	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	0.038	<0.050	<0.0085	<0.10	<0.10	<0.10	<0.050	<0.050	**0.079**	<0.20
MW19-1	16-Oct-19	na	na	0	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
MW19-1	30-Oct-19	<0.20	<0.050	<0.02	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	-	<0.10	<0.10	<0.050	<0.050	0.023	<0.20
MW19-1	13-Nov-19	na	na	0	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.10	<0.050	<0.050	0.023	<0.20
MW19-1	27-Nov-19	na	na	0	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
MW19-1	11-Dec-19	<0.20	<0.050	<0.02	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	-	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
MW19-2	5-Jun-19	<0.2	0.071	0.24	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	**0.049**	0.051	<0.0085	-	<0.10	<0.10	0.12	<0.050	0.022	<0.20
MW19-2	26-Jun-19	na	na	0.088	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	**0.053**	<0.050	<0.0085	<0.10	<0.10	<0.10	<0.050	<0.050	**0.035**	<0.20
MW19-2	24-Jul-19	<0.2	0.1	<0.2	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	**0.058**	<0.050	<0.0085	-	<0.10	<0.10	<0.050	<0.050	**0.043**	<0.20
MW19-2	14-Aug-19	<0.2	0.078	<0.2	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	**0.047**	<0.050	<0.0085	-	<0.10	<0.10	<0.050	<0.050	**0.032**	<0.20
MW19-2	21-Aug-19	<0.20	0.064	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	0.037	<0.050	<0.0085	-	<0.10	<0.10	<0.050	<0.050	**0.027**	<0.20
MW19-2	18-Sep-19	na	na	0.011	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	0.011	<0.050	<0.0085	<0.10	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
MW19-2	16-Oct-19	na	na	0.013	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	0.013	<0.050	<0.0085	<0.10	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
MW19-2	30-Oct-19	<0.20	<0.050	<0.02	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	0.021	<0.050	<0.0085	-	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
MW19-2	13-Nov-19	na	na	0.023	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.10	<0.050	<0.050	0.023	<0.20
MW19-2	27-Nov-19	na	na	0	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
MW19-2	11-Dec-19	<0.20	<0.050	<0.02	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	0.011	<0.050	<0.0085	-	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
MW19-3	3-Jun-19	<0.20	<0.050	<0.02	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	-	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
DUP1 (duplicate of MW19-3)	3-Jun-19	<0.20	<0.050	<0.02	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	0.016	<0.050	<0.0085	-	<0.10	0.12	<0.050	<0.050	<0.020	<0.20
MW19-3	26-Jun-19	na	na	2.446	<0.010	0.35	<0.10	<0.040	**0.018**	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	0.018	0.19	<0.0085	0.15	0.23	**1.3**	0.19	<0.050	<0.020	<0.20
MW19-3	24-Jul-19	0.49	<0.050	0.49	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	-	<0.10	0.49	<0.050	<0.050	<0.020	<0.20
MW19-3	14-Aug-19	2.9	<0.050	2.9	<0.010	0.42	<0.10	<0.040	**0.017**	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	0.024	<0.0075	0.016	0.15	<0.0085	-	0.22	**2**	0.086	<0.050	<0.020	<0.20
MW19-3	21-Aug-19	17	0.11	17	<0.010	1.7	0.18	<0.040	**0.064**	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	**0.071**	0.77	<0.0085	-	1.6	**12**	**0.68**	<0.050	**0.044**	<0.20
MW19-3	18-Sep-19	na	na	3.049	<0.010	0.21	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	0.069	<0.0085	0.16	0.21	**2.4**	<0.050	<0.050	<0.020	<0.20
MW19-3	16-Oct-19	na	na	2.205	<0.010	0.23	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	0.014	0.089	<0.0085	0.14	0.17	**1.5**	0.062	<0.050	<0.020	<0.20
MW19-3	30-Oct-19	2.6	<0.050	2.6	<0.010	0.26	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	0.084	<0.0085	-	0.2	**2.1**	<0.050	<0.050	<0.020	<0.20
MW19-3	13-Nov-19	na	na	40.56	<0.010	3.6	0.38	0.2	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	**0.21**	1.3	<0.0085	2.3	2.8	**29**	**0.53**	<0.050	**0.24**	<0.20
MW19-3	27-Nov-19	na	na	0.43	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	0.43	<0.050	<0.050	<0.020	<0.20
MW19-3	11-Dec-19	1.4	<0.050	1.5	<0.010	0.18	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	0.016	0.065	<0.0085	-	0.13	1.1	<0.050	<0.050	<0.020	<0.20
MW19-4	3-Jun-19	<0.20	<0.050	<0.02	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	-	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
MW19-4	26-Jun-19	na	na	0	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
DUP2 (duplicate of MW19-4)	26-Jun-19	na	na	0	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
MW19-4	24-Jul-19	<0.20	<0.050	<0.02	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	-	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
MW19-4	14-Aug-19	<0.20	<0.050	<0.02	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	-	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
MW19-4	21-Aug-19	<0.20	<0.050	<0.02	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	-	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
MW19-4	18-Sep-19	na	na	0	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
MW19-4	16-Oct-19	na	na	0	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
MW19-5	24-Jul-19	<0.20	<0.050	<0.02	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	-	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20

Notes:

1. Canadian Council of Ministers of the Environment (CCME) Water Quality Guidelines for the most stringent of Protection of Aquatic Life or Agriculture (CCME 1999, updated 2001).

BOLD/HIGHLIGHTED - Exceeds the applicable guideline.

ug/L - microgram per litre.

< Indicates parameter was below laboratory equipment detection limit.

"-" Chemical not analyzed or criteria not defined.

(1) Qualifying ion outside of acceptance criteria. Results are tentatively identified and potentially biased high.

Table to be read in conjunction with accompanying report.

Table 15
Groundwater Analytical Results - Polycyclic Aromatic Hydrocarbons
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample ID	Sample Date (dd-mmm-yy)	Polycyclic Aromatic Hydrocarbons																									
		Low Molecular Weight PAH's	High Molecular Weight PAH's	Total PAH	B[a]P TPE Total Potency Equivalents	Acenaphthene	Acenaphthylene	Acridine	Anthracene	Benzo(a)anthracene	Benzo(b&j)fluoranthene	Benzo(k)fluoranthene	Benzo(g,h,i)perylene	Benzo(c)phenanthrene	Benzo(a)pyrene	Benzo[e]pyrene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	1-Methylnaphthalene	2-Methylnaphthalene	Naphthalene	Phenanthrene	Perylene	Pyrene	Quinoline
	Guideline[1]	-	-	-	-	5.8	-	4.4	0.012	0.018	-	-	-	-	0.015	-	-	-	0.04	3	-	-	-	1.1	0.4	-	0.025	3.4
	Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
MW19-5	21-Aug-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	-	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
MW19-5	18-Sep-19	na	na	0	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
MW19-5	30-Oct-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	-	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
MW19-5	13-Nov-19	na	na	0	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
MW19-5	27-Nov-19	na	na	0	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
MW19-5	11-Dec-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	-	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
MW19-6	5-Jun-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	-	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
MW19-6	26-Jun-19	na	na	0.012	<0.010	<0.10	<0.10	<0.040	0.012	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
MW19-6	24-Jul-19	0.74	0.085	0.83	0.01	<0.10	<0.10	<0.040	**0.015**	<0.0085	0.01	<0.0085	<0.0085	<0.050	<0.0075	<0.050	0.014	<0.0075	0.032	<0.050	<0.0085	-	<0.10	0.73	<0.050	<0.050	**0.029**	<0.20
DUP3 (duplicate of MW19-6)	24-Jul-19	0.68	0.15	0.83	0.011	<0.10	<0.10	<0.040	**0.016**	<0.0085	0.019	<0.0085	<0.0085	<0.050	<0.0075	<0.050	0.015	<0.0075	**0.062**	<0.050	<0.0085	-	<0.10	0.67	<0.050	<0.050	**0.05**	<0.20
MW19-6	14-Aug-19	0.39	<0.050	0.4	<0.010	<0.10	<0.10	<0.040	**0.014**	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	0.018	<0.050	<0.0085	-	<0.10	0.37	<0.050	<0.050	<0.020	<0.20
DUP4 (duplicate of MW19-6)	14-Aug-19	0.37	<0.050	0.38	<0.010	<0.10	<0.10	<0.040	0.011	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	0.016	<0.050	<0.0085	-	<0.10	0.36	<0.050	<0.050	<0.020	<0.20
MW19-6	21-Aug-19	<0.20	<0.050	0.21	<0.010	<0.10	<0.10	<0.040	0.012	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	0.015	<0.050	<0.0085	-	<0.10	0.18	<0.050	<0.050	<0.020	<0.20
DUP5 (duplicate of MW19-6)	21-Aug-19	0.31	<0.050	0.32	<0.010	<0.10	<0.10	<0.040	**0.013**	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	0.015	<0.050	<0.0085	-	<0.10	0.3	<0.050	<0.050	<0.020	<0.20
MW19-6	18-Sep-19	na	na	0.313	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	0.022	<0.050	<0.0085	<0.10	<0.10	0.27	<0.050	<0.050	0.021	<0.20
DUP6 (duplicate of MW19-6)	18-Sep-19	na	na	0.209	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	0.019	<0.050	<0.0085	<0.10	<0.10	0.19	<0.050	<0.050	<0.020	<0.20
MW19-6	16-Oct-19	na	na	0.2	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	0.02	<0.050	<0.0085	<0.10	<0.10	0.18	<0.050	<0.050	<0.020	<0.20
DUP7 (duplicate of MW19-6)	16-Oct-19	na	na	0.249	0.01	<0.10	<0.10	<0.040	<0.010	<0.0085	0.01	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	0.019	<0.050	<0.0085	<0.10	<0.10	0.22	<0.050	<0.050	<0.020	<0.20
MW19-6	30-Oct-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	0.02	<0.050	<0.0085	-	<0.10	0.11	<0.050	<0.050	0.020	<0.20
DUP8 (duplicate of MW19-6)	30-Oct-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	0.018	<0.050	<0.0085	-	<0.10	0.14	<0.050	<0.050	<0.020	<0.20
MW19-6	13-Nov-19	na	na	0.213	0.011	<0.10	<0.10	<0.040	<0.010	**0.019 (1)**	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	0.027	<0.050	<0.0085	<0.10	<0.10	0.14	<0.050	<0.050	0.027	<0.20
DUP9 (duplicate of MW19-6)	13-Nov-19	na	na	0.167	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	0.017	<0.050	<0.0085	<0.10	<0.10	0.15	<0.050	<0.050	<0.020	<0.20
MW19-6	27-Nov-19	na	na	0.018	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	0.018	<0.050	<0.0085	<0.10	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
DUP10 (duplicate of MW19-6)	27-Nov-19	na	na	0.143	0.01	<0.10	<0.10	<0.040	<0.010	<0.0085	0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	0.023	<0.050	<0.0085	<0.10	<0.10	0.12	<0.050	<0.050	<0.020	<0.20
MW19-6	11-Dec-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	0.017	<0.050	<0.0085	-	<0.10	0.11	<0.050	<0.050	<0.020	<0.20
DUP11 (duplicate of MW19-6)	11-Dec-19	<0.20	<0.050	<0.20	0.01	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	0.0093 (1)	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	0.019	<0.050	<0.0085	-	<0.10	0.11	<0.050	<0.050	0.021	<0.20
MW19-14	18-Dec-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	<0.010	<0.050	<0.0085	<0.10	<0.10	<0.10	<0.050	<0.050	<0.020	<0.20
MW19-15	18-Dec-19	<0.20	<0.050	<0.20	<0.010	<0.10	<0.10	<0.040	<0.010	<0.0085	<0.0085	<0.0085	<0.0085	<0.050	<0.0075	<0.050	<0.0085	<0.0075	0.013	<0.050	<0.0085	0.16	<0.10	<0.10	0.051	<0.050	<0.020	<0.20

Notes:

1. Canadian Council of Ministers of the Environment (CCME) Water Quality Guidelines for the most stringent of Protection of Aquatic Life or Agriculture (CCME 1999, updated 2001).

BOLD/HIGHLIGHTED - Exceeds the applicable guideline.

ug/L - microgram per litre.

< Indicates parameter was below laboratory equipment detection limit.

"-" Chemical not analyzed or criteria not defined.

(1) Qualifying ion outside of acceptance criteria. Results are tentatively identified and potentially biased high.

Table to be read in conjunction with accompanying report.

Table 16
Groundwater Analytical Results - Dissolved Metals
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample ID	Sample Date (dd-mmm-yy)	Dissolved Aluminum (Al)	Dissolved Antimony (Sb)	Dissolved Arsenic (As)	Dissolved Barium (Ba)	Dissolved Beryllium (Be)	Dissolved Boron (B)	Dissolved Cadmium (Cd)	Dissolved Calcium (Ca)	Dissolved Chromium (Cr)	Dissolved Cobalt (Co)	Dissolved Copper (Cu)	Dissolved Iron (Fe)	Dissolved Lead (Pb)	Dissolved Lithium (Li)	Dissolved Magnesium (Mg)	Dissolved Manganese (Mn)	Dissolved Mercury (Hg)	Dissolved Molybdenum (Mo)	Dissolved Nickel (Ni)	Dissolved Phosphorus (P)	Dissolved Potassium (K)	Dissolved Selenium (Se)	Dissolved Silicon (Si)	Dissolved Silver (Ag)	Dissolved Sodium (Na)	Dissolved Strontium (Sr)	Dissolved Sulphur (S)	Dissolved Thallium (Tl)	Dissolved Tin (Sn)	Dissolved Titanium (Ti)	Dissolved Uranium (U)	Dissolved Vanadium (V)	Dissolved Zinc (Zn)
	Guideline[1]	5	-	0.005	-	0.1	1.5	0.09	1,000	-	1	0.004	0.3	0.007	-	-	-	0.026	0.073	0.15	-	-	0.001	-	0.00025	-	-	-	0.0008	-	-	0.015	0.1	0.007
	Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	ug/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	ug/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MW19-1	26-Jun-19	0.0036	<0.00060	0.0014	0.032	<0.0010	0.54	**0.12**	410	<0.0010	0.0043	**0.0081**	**0.37**	<0.00020	0.7	370	2.4	<0.0020	0.0034	0.015	<0.10	17	**0.038**	8.3	<0.00010	1100 (1)	2.8	1300 (1)	<0.00020	<0.0010	<0.0010	**0.075**	<0.0010	**0.017**
MW19-1	24-Jul-19	0.0038	<0.00060	0.0016	0.028	<0.0010	0.59	**0.15**	410	<0.0010	0.0061	**0.015**	**0.46**	<0.00020	0.92	390	3.1	0.0024	0.0033	0.026	<0.10	15	**0.10**	6.1	<0.00010	1600 (1)	3.7	1800 (1)	<0.00020	<0.0010	<0.0010	**0.20**	<0.0010	**0.020**
MW19-1	14-Aug-19	0.0038	0.00074	0.0024	0.024	<0.0010	0.64	**0.24**	480	<0.0010	0.0092	**0.016**	**0.47**	<0.00020	1.0	460	5.5	<0.0020	0.003	0.037	<0.10	17	**0.097**	6	<0.00010	1800 (1)	4.4	2000 (1)	<0.00020	<0.0010	0.002	**0.25**	<0.0010	**0.017**
MW19-1	21-Aug-19	-	-	-	-	-	-	-	450	-	-	-	**0.46**	-	-	420	5.4	-	-	-	-	18	-	-	-	1600 (1)	-	-	-	-	-	-	-	-
MW19-1	18-Sep-19	<0.0030	<0.00060	0.0015	0.022	<0.0010	0.66	0.089	370	<0.0010	0.0017	**0.012**	**0.38**	<0.00020	0.80	340	1.3	0.0032	0.0025	0.015	0.12	13	**0.047**	7.4	<0.00010	1400 (1)	3	1600 (1)	<0.00020	<0.0010	<0.0010	**0.14**	<0.0010	**0.013**
MW19-1	16-Oct-19	0.0044	<0.00060	0.0015	0.023	<0.0010	0.78	**0.10**	460	<0.0010	0.0022	**0.012**	**0.50**	<0.00020	1.0	450	2.5	0.0085	0.0024	0.02	<0.10	16	**0.036**	7.5	<0.00010	1700 (1)	3.8	1900 (1)	<0.00020	<0.0010	<0.0010	**0.19**	<0.0010	**0.016**
MW19-1	30-Oct-19	0.0059	<0.00060	0.0017	0.022	<0.0010	0.76	**0.14**	430	<0.0010	0.0061	**0.013**	**0.44**	<0.00020	0.97	370	4.7	0.0031	0.0024	0.031	<0.10	15	**0.024**	5.8	<0.00010	1600 (1)	4.1	1700 (1)	<0.00020	<0.0010	0.002	**0.18**	<0.0010	**0.012**
MW19-1	13-Nov-19	0.0041	<0.00060	0.0021	0.018	<0.0010	0.67	**0.094**	450	<0.0010	0.0064	**0.012**	**0.52**	<0.00020	1.1	460	3.2	0.0022	0.0027	0.021	<0.10	14	**0.091**	6.6	<0.00010	2100 (1)	3.5	2200 (1)	<0.00020	<0.0010	0.0011	**0.26**	<0.0010	**0.013**
MW19-1	27-Nov-19	0.0051	<0.00060	0.0018	0.019	<0.0010	0.56	0.051	450	<0.0010	0.0007	**0.01**	<0.060	<0.00020	1.1	570 (1)	1.2	<0.0020	0.0025	0.0097	<0.10	15	**0.049**	9.3	<0.00010	2000 (1)	3.0	2100 (1)	<0.00020	<0.0010	<0.0010	**0.25**	<0.0010	**0.01**
MW19-1	11-Dec-19	<0.0030	0.00081	0.0011	0.012	<0.0010	0.64	0.044	340	<0.0010	0.0013	**0.0057**	**0.46**	<0.00020	0.84	350	1.1	<0.0020	0.0020	0.0091	<0.10	11	**0.0220**	6.3	<0.00010	1500 (1)	2.4	1600 (1)	<0.00020	<0.0010	0.0012	**0.16**	<0.0010	0.0039
MW19-2	26-Jun-19	0.0077	<0.00060	0.0011	0.034	<0.0010	0.82	**0.36**	350	<0.0010	0.0021	**0.0089**	**0.39**	<0.00020	0.99	360	1.2	0.0043	0.0068	0.029	<0.10	17	**0.0014**	12	<0.00010	1300 (1)	3.1	1200 (1)	<0.00020	<0.0010	0.001	**0.12**	<0.0010	**0.039**
MW19-2	24-Jul-19	0.0042	<0.00060	0.0019	0.044	<0.0010	0.74	**0.25**	290	<0.0010	0.016	0.0025	**0.33**	<0.00020	0.69	190	3.4	0.0030	0.0068	0.045	<0.10	13	0.00075	8	<0.00010	1100 (1)	2.7	1100 (1)	<0.00020	<0.0010	<0.0010	**0.12**	<0.0010	**0.036**
MW19-2	14-Aug-19	0.014	0.00061	0.0015	0.034	<0.0010	0.89	**0.39**	350	<0.0010	0.011	**0.0066**	**1.3**	<0.00020	1.1	330	3.3	<0.0020	0.0072	0.046	0.16	15	0.001	8.6	<0.00010	1500 (1)	3.6	1500 (1)	<0.00020	<0.0010	<0.0010	**0.14**	<0.0010	**0.048**
MW19-2	21-Aug-19	<0.0030	<0.00060	0.0013	0.026	<0.0010	0.82	**0.24**	400	<0.0010	0.0083	**0.0042**	**0.33**	<0.00020	0.76	240	3.4	0.0029	0.0059	0.057	<0.10	14	0.00052	11	<0.00010	1100 (1)	3	1200 (1)	<0.00020	<0.0010	<0.0010	**0.09**	<0.0010	**0.012**
MW19-2	18-Sep-19	0.0032	<0.00060	0.0016	0.026	<0.0010	0.81	**0.091**	350	<0.0010	0.011	0.0020	**0.32**	<0.00020	0.80	230	3.8	0.0023	0.0074	0.060	<0.10	14	0.00049	9.2	<0.00010	1100 (1)	3	1200 (1)	<0.00020	<0.0010	<0.0010	**0.097**	<0.0010	**0.018**
MW19-2	16-Oct-19	<0.0030	<0.00060	0.00078	0.022	<0.0010	0.81	0.061	380	<0.0010	0.0062	0.0017	**0.46**	<0.00020	0.74	240	3.2	<0.0020	0.0047	0.048	<0.10	13	0.00048	11	<0.00010	1000	2.9	1100	<0.00020	<0.0010	<0.0010	**0.085**	<0.0010	**0.0091**
MW19-2	30-Oct-19	<0.0030	<0.00060	0.0014	0.022	<0.0010	0.93	0.029	370	<0.0010	0.0075	0.0011	**0.62**	<0.00020	1.0	300	3.2	<0.0020	0.0054	0.053	<0.10	14	0.00073	9.4	<0.00010	1300 (1)	3.5	1400 (1)	<0.00020	<0.0010	<0.0010	**0.11**	<0.0010	**0.0092**
MW19-2	13-Nov-19	<0.0030	<0.00060	0.0011	0.019	<0.0010	0.81	0.074	380	<0.0010	0.006	0.0017	**0.86**	<0.00020	0.78	240	3.4	<0.0020	0.0041	0.048	<0.10	13	0.00047	10	<0.00010	1100 (1)	2.9	1200 (1)	<0.00020	<0.0010	0.0014	**0.085**	<0.0010	**0.0086**
MW19-2	27-Nov-19	0.004	<0.00060	0.0012	0.022	<0.0010	0.81	**0.091**	480 (1)	<0.0010	0.0059	0.0017	0.16	<0.00020	1.0	400	4.4	<0.0020	0.0043	0.048	<0.10	17	0.00052	13	<0.00010	1300 (1)	3.7	1400 (1)	<0.00020	<0.0010	<0.0010	**0.095**	<0.0010	**0.024**
MW19-2	11-Dec-19	<0.0030	<0.00060	0.00084	0.015 (2)	<0.0010	0.71	**0.15**	350	<0.0010	0.0043	0.0028	**0.36**	<0.00020	0.63 (2)	210	2.4	<0.0020	0.0036	0.044	<0.10	11	0.00041	9.1	<0.00010	930 (1)	2.6 (2)	1100 (1)	<0.00020	<0.0010	<0.0010	**0.079**	<0.0010	0.0068
MW19-3	26-Jun-19	<0.0030	<0.00060	0.00059	0.078	<0.0010	0.55	<0.020	250	<0.0010	0.005	0.00087	0.16	<0.00020	0.22	110	4.6	<0.0020	0.001	0.0062	<0.10	20	0.00028	9.6	<0.00010	190	1.8	240	<0.00020	<0.0010	<0.0010	0.0049	<0.0010	<0.0030
MW19-3	24-Jul-19	<0.0030	<0.00060	0.0010	0.044	<0.0010	0.79	0.022	300	<0.0010	0.0180	<0.00020	0.21	<0.00020	0.39	110	4.4	0.0023	0.00078	0.018	<0.10	11	0.00032	5.7	<0.00010	310	2.3	320	<0.00020	<0.0010	<0.0010	0.014	<0.0010	0.0068
MW19-3	14-Aug-19	0.0084	<0.00060	0.00066	0.086	<0.0010	0.57	0.034	210	<0.0010	0.0054	0.001	0.14	<0.00020	0.22	87	3.9	<0.0020	0.00099	0.0071	<0.10	17	0.00024	7.7	<0.00010	200	1.7	170	<0.00020	<0.0010	<0.0010	0.0056	<0.0010	<0.0030
MW19-3	21-Aug-19	<0.0030	<0.00060	0.0011	0.073	<0.0010	0.59	<0.020	210	<0.0010	0.0045	0.00029	0.17	<0.00020	0.21	86	3.7	<0.0020	0.00074	0.0057	<0.10	16	0.00027	7.7	<0.00010	190	1.7	170	<0.00020	<0.0010	<0.0010	0.0063	<0.0010	<0.0030
MW19-3	18-Sep-19	<0.0030	<0.00060	0.0014	0.04	<0.0010	0.84	<0.020	270	<0.0010	0.0087	<0.00020	**0.52**	<0.00020	0.38	100	3.5	<0.0020	0.00065	0.012	<0.10	12	0.00085	6.6	<0.00010	290	2.1	290	<0.00020	<0.0010	<0.0010	0.0090	<0.0010	0.0034
MW19-3	16-Oct-19	<0.0030	<0.00060	0.00099	0.062	<0.0010	0.82	<0.020	260	<0.0010	0.0061	0.00047	0.22	<0.00020	0.34	110	3.5	<0.0020	0.00078	0.0095	<0.10	15	0.0003	8.2	<0.00010	270	2	250	<0.00020	<0.0010	<0.0010	0.01	<0.0010	<0.0030
MW19-3	30-Oct-19	<0.012	<0.0024	<0.00080	0.043	<0.0040	0.80	<0.080	250	<0.0040	0.0069	<0.00080	**1.1**	<0.00080	0.33	95	3.5	<0.0020	<0.00080	0.0094	<0.10	14	<0.00080	7.3	<0.00040	260	2	230	<0.00080	<0.0040	0.0049	0.0086	<0.0040	0.0021
MW19-3	13-Nov-19	<0.0030	<0.00060	0.0011	0.057	<0.0010	0.75	<0.020	230	<0.0010	0.0056	0.00033	**1.6**	<0.00020	0.31	89	3.9	<0.0020	0.0007	0.0085	<0.10	14	0.00034	6.7	<0.00010	260	1.9	250	<0.00020	<0.0010	<0.0010	0.0095	<0.0010	**0.0072**
MW19-3	27-Nov-19	<0.0030	<0.00060	0.0015	0.038	<0.0010	0.80	<0.020	310	<0.0010	0.007	<0.00020	**0.82**	<0.00020	0.38	140	4.4	<0.0020	0.00055	0.0099	<0.10	17	0.00063	8.9	<0.00010	320	2	330	<0.00020	<0.0010	<0.0010	0.0089	<0.0010	<0.0030
MW19-3	11-Dec-19	<0.0030	<0.00060	0.00058	0.063	<0.0010	0.54	0.031	190	<0.0010	0.0035	0.00075	**0.56**	<0.00020	0.19	74	3.7	<0.0020	0.00061	0.006	<0.10	16	<0.00020	6.9	<0.00010	170	1.6	160	<0.00020	<0.0010	<0.0010	0.0059	<0.0010	<0.0030
MW19-4	26-Jun-19	0.023	0.00070	0.0019	0.030	<0.0010	1.2	**0.13**	380	<0.0010	0.0019	**0.0093**	**0.38**	<0.00020	1.1	340	1.5	0.0049	0.0019	0.018	<0.10	19	**0.0017**	9.8	<0.00010	1400 (1)	2.8	1300 (1)	<0.00020	0.0018	0.0012	**0.13**	<0.0010	**0.010**
MW19-4	24-Jul-19	0.0060	<0.00060	0.0022	0.038	<0.0010	1.0	**0.14**	300	<0.0010	0.0062	**0.011**	**0.38**	<0.00020	1.0	260	1.6	0.0028	0.0019	0.029	<0.10	20	**0.0015**	6.2	<0.00010	1600 (1)	3.1	1500 (1)	<0.00020	<0.0010	0.001	**0.15**	<0.0010	0.0048
MW19-4	14-Aug-19	0.011	<0.00060	0.0017	0.021	<0.0010	1.1	**0.12**	320	<0.0010	0.00081	**0.011**	**0.48**	<0.00020	1.9	590 (1)	0.27	<0.0020	0.0017	0.019	0.10	41	**0.0014**	6.6	<0.00010	2600 (1)	4.6	2500 (1)	<0.00020	<0.0010	0.0026	**0.19**	<0.0010	0.0043
MW19-4	21-Aug-19	0.0036	<0.00060	0.0013	0.017	<0.0010	1.2	**0.13**	330	<0.0010	0.0019	**0.0095**	**0.42**	<0.00020	1.3	340	0.95	0.0032	0.0017	0.019	<0.10	29	**0.0013**	7	<0.00010	2000 (1)	3.6	1900 (1)	<0.00020	<0.0010	0.0014	**0.13**	<0.0010	<0.0030
MW19-4	18-Sep-19	<0.0030	<0.00060	0.0017	0.016	<0.0010	1.1	**0.13**	300	<0.0010	0.0015	**0.0091**	**0.40**	<0.00020	1.5	340	0.51	0.0029	0.0015	0.019	<0.10	32	**0.0017**	6.3	<0.00010	2100 (1)	3.8	1900 (1)	<0.00020	<0.0010	0.0018	**0.15**	<0.0010	0.0043
MW19-4	16-Oct-19	0.0058	<0.00060	0.0012	0.022	<0.0010	1.1	**0.15**	360	<0.0010	0.0033	**0.0078**	**0.41**	<0.00020	1.2	340	1.4	<0.0020	0.0014	0.022	<0.10	27	**0.0012**	7.9	<0.00010	1800 (1)	3.4	1700 (1)	<0.00020	<0.0010	<0.0010	**0.11**	<0.0010	**0.0091**
MW19-5	24-Jul-19	<0.0030	<0.00060	0.0027	0.017	<0.0010	1.0	**0.63**	320	<0.0010	0.019	**0.025**	**0.61**	<0.00020	3.5	830 (1)	8.4	0.0025	0.0014	0.079	0.10	79	**0.0029**	7.6	<0.00010	4600 (1)	8.3 (1)	3700 (1)	0.00031	0.0058	0.0015	**0.086**	<0.0010	**0.030**
MW19-5	27-Nov-19	-	-	-	-	-	-	-	490	-	-	-	<0.060	-	-	1300 (1)	15	-	-	-	-	100	-	-	-	6500 (1)	-	-	-	-	-	-	-	-
MW19-6	26-Jun-19	0.0033	<0.00060	0.00081	0.044 (2)	<0.0010	0.52	**0.14**	420	<0.0010	0.0032	**0.0049**	**0.46**	<0.00020	1.1	480 (1)	0.78	0.0023	0.002	0.013	<0.10	22	**0.0028**	12	<0.00010	920 (1)	3.2	1400 (1)	<0.00020	<0.0010	<0.0010	**0.035**	<0.0010	**0.014**
MW19-6	24-Jul-19	<0.0030	<0.00060	0.00062	0.018	<0.0010	0.48	**0.12**	160	<0.0010	0.0024	**0.0049**	0.25	<0.00020	0.64	180	0.44	0.0025	0.0029	0.012	<0.10	16	**0.0011**	9.5	<0.00010	740 (1)	1.5	820 (1)	<0.00020	<0.0010	0.0011	**0.017**	<0.0010	<0.0030
MW19-6	14-Aug-19	<0.0030	<0.00060	0.0012	0.02	<0.0010	0.55	**0.14**	190	<0.0010	0.0017	**0.0075**	0.25	<0.00020	0.72	220	0.57	<0.0020	0.0037	0.015	<0.10	18	**0.0012**	10	<0.00010	810 (1)	1.7	880 (1)	<0.00020	<0.0010	<0.0010	**0.022**	<0.0010	0.0042
MW19-6	21-Aug-19	<0.0030	<0.00060	0.0013	0.021	<0.0010	0.59	**0.11**	200	<0.0010	0.0017	**0.0072**	0.29	<0.00020	0.72	220	0.51	<0.0020	0.0036	0.013	<0.10	18	0.001	10	<0.00010	800 (1)	1.7	910 (1)	<0.00020	<0.0010	<0.0010	**0.021**	<0.0010	0.0035
MW19-6	18-Sep-19	<0.0030	<0.00060	0.00063	0.024	<0.0010	0.57	0.070	240	<0.0010	0.0060	0.0027	**0.40**	<0.00020	0.78	240	1.6	<0.0020	0.0043	0.021	<0.10	18	0.00084	9.7	<0.00010	840 (1)	2.1	980 (1)	<0.00020	<0.0010	<0.0010	**0.025**	<0.0010	0.0034
MW19-6	16-Oct-19	<0.0030	<0.00060	0.00032	0.024	<0.0010	0.53	**0.10**	300	<0.0010	0.0086	0.0037	**0.40**	<0.00020	0.86	290	2.6	<0.0020	0.0047	0.032	<0.10	19	0.00087	9.7	<0.00010	830 (1)	2.4	1100 (1)	<0.00020	<0.0010	<0.0010	**0.032**	<0.0010	0.005
MW19-6	30-Oct-19	<0.012	<0.0024	<0.00080	0.025	<0.0040	0.52	**0.19**	320	<0.0040	0.011	0.0033	**0.38**	<0.00080	0.92	310	2.9	<0.0020	0.0047	0.045	<0.10	19	<0.00080	8.9	<0.00040	880 (1)	2.8	1200 (1)	<0.00080	<0.0040	<0.0040	**0.035**	<0.0040	**0.00735**
MW19-6	13-Nov-19	<0.0030	<0.00060	0.00064	0.023	<0.0010	0.45	**0.23**	360	<0.0010	0.012	0.0027	**0.49**	<0.00020	0.92	330	3.9	<0.0020	0.0054	0.05	<0.10	17	0.00077	8.2	<0.00010	910 (1)	2.9	1200 (1)	<0.00020	<0.0010	<0.0010	**0.034**	<0.0010	**0.0074**
MW19-6	27-Nov-19	<0.0030	<0.00060	0.001	0.026	<0.0010	0.43	**0.20**	420 (1)	<0.0010	0.012	0.0027	<0.060	<0.00020	1.1	430 (1)	4.4	<0.0020	0.0049	0.052	<0.10	24	**0.0017**	9.5	<0.00010	1000 (1)	3.1	1400 (1)	<0.00020	<0.0010	<0.0010	**0.041**	<0.0010	<0.0030
MW19-6	11-Dec-19	<0.0030	<0.00060	0.00079	0.021	<0.0010	0.44	**0.14**	390	<0.0010	0.013	0.0023	**0.4**	<0.00020	0.91	350	4.2	<0.0020	0.0049	0.058	<0.10	18	0.00061	7.4	<0.00010	1100 (1)	3.1	1500 (1)	<0.00020	<0.0010	0.0019	**0.039**	<0.0010	**0.0077**
MW19-14	18-Dec-19	-	-	-	-	-	-	-	430 (1)	-	-	-	<0.060	-	-	1200 (1)	8.7	-	-	-	-	86	-	-	-	-	-	-	-	-	-	-	-	-
MW19-15	18-Dec-19	-	-	-	-	-	-	-	470	-	-	-	<0.060	-	-	580 (1)	3.6	-	-	-	-	41	-	-	-	-	-	-	-	-	-	-	-	-

Notes:
1. Canadian Council of Ministers of the Environment (CCME) Water Quality Guidelines for the most stringent of Protection of Aquatic Life or Agriculture (CCME 1999, updated 2001).

BOLD/HIGHLIGHTED - Exceeds the applicable guideline.
ug/L - microgram per litre.
mg/L - milligram per litre.
"-" Chemical not analyzed or criteria not defined.
italics - indicates the recordable detection limit (RDL) is above the guideline.
< Indicates parameter was below laboratory equipment detection limit.
(1) Detection limits raised due to dilution to bring analyte within the calibrated range.
(2) Matrix spike exceeds acceptance limits due to matrix interference.
Table to be read in conjunction with accompanying report.

Table 17
Groundwater Analytical Results - Total Metals
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample ID	Sample Date (dd-mmm-yy)	Total Aluminum (Al)	Total Antimony (Sb)	Total Arsenic (As)	Total Barium (Ba)	Total Beryllium (Be)	Total Boron (B)	Total Cadmium (Cd)	Total Calcium (Ca)	Total Chromium (Cr)	Total Cobalt (Co)	Total Copper (Cu)	Total Iron (Fe)	Total Lead (Pb)	Total Lithium (Li)	Total Magnesium (Mg)	Total Mercury (Hg)	Total Manganese (Mn)	Total Molybdenum (Mo)	Total Nickel (Ni)	Total Phosphorus (P)	Total Potassium (K)	Total Selenium (Se)	Total Silicon (Si)	Total Silver (Ag)	Total Sodium (Na)	Total Strontium (Sr)	Total Sulphur (S)	Total Thallium (Tl)	Total Tin (Sn)	Total Titanium (Ti)	Total Uranium (U)	Total Vanadium (V)	Total Zinc (Zn)
Guideline[1]		**5**	**-**	**0.005**	**-**	**0.1**	**1.5**	**0.09**	**1,000**	**-**	**1**	**0.004**	**0.3**	**0.007**	**-**	**-**	**0.026**	**-**	**0.073**	**0.15**	**-**	**-**	**0.001**	**-**	**0.00025**	**-**	**-**	**-**	**0.0008**	**-**	**-**	**0.015**	**0.1**	**0.007**
Units		**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**ug/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**ug/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
MW19-3	3-Jun-19	2.0	<0.00060	0.0028	0.083	<0.0010	0.53	0.085	290	0.0038	0.0087	**0.0054**	**5.6**	0.0028	0.24	120	-	4.6	0.00092	0.013	0.13	17	0.0004	11	<0.00010	210	1.8	270	<0.00020	<0.0010	0.071	0.0063	0.0061	**0.0083**
MW19-4	3-Jun-19	3.7	0.0014	**0.0053**	0.043	0.0010	0.79	**0.18**	330	0.044	0.0039	**0.026**	**5.6**	**0.0080**	1.9	660 (1)	-	0.48	0.0033	0.044	0.82	48	**0.0017**	17	<0.00010	3100 (1)	4.1	2800 (1)	<0.00020	<0.0010	0.10	**0.20**	0.011	**0.032**
MW19-6	5-Jun-19	**5.1**	0.00065	**0.012**	0.084	0.0016	0.48	**0.67**	290	0.015	0.016	**0.025**	**13**	**0.018**	0.95	320	0.10 (4)	2.4	0.0022	0.038	2.6	23	0.00087	20	<0.00010	1100 (1)	2.2	1300 (1)	<0.00020	0.0013	0.13	**0.035**	0.017	**0.065**

Notes:
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BOLD/HIGHLIGHTED - Exceeds the applicable guideline.

ug/L - microgram per litre.

mg/L - milligram per litre.

"-" Chemical not analyzed or criteria not defined.

< Indicates parameter was below laboratory equipment detection limit.

(1) Detection limits raised due to dilution to bring analyte within the calibrated range.

(2) Detection limits raised due to sample matrix.

(3) Detection limits raised due to matrix interference.

(4) Due to the sample matrix, sample required dilution. Detection limit was adjusted accordingly.

Table to be read in conjunction with accompanying report.

Table 18
Groundwater Analytical Results - Routine Parameters & Nutrients
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample ID	Sample Date (dd-mmm-yy)	Anion Sum	Cation Sum	Hardness ($CaCO_3$)	Ion Balance (% Difference)	Dissolved Nitrate (NO_3)	Nitrate plus Nitrite (N)	Dissolved Nitrite (NO_2)	Calculated Total Dissolved Solids	Conductivity	pH	Alkalinity (PP as $CaCO_3$)	Alkalinity (Total as $CaCO_3$)	Bicarbonate (HCO_3)	Carbonate (CO_3)	Hydroxide (OH)	Dissolved Chloride (Cl)	Dissolved Sulphate (SO_4)	Dissolved Nitrite (N)	Dissolved Nitrate (N)	Total Organic Carbon (C)	Total Kjeldahl Nitrogen
	Guideline[1]	-	-	-	-	13	100	-	3000	-	6.5 - 9	-	-	-	-	-	120	1000	0.06	-	-	-
	Units	meq/L	meq/L	mg/L	%	mg/L	mg/L	mg/L	mg/L	uS/cm	pH	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MW19-1	26-Jun-19	99	99	2600	0.27	10	2.4	0.34	**6400**	7200	7.82	<1.0	580	710	<1.0	<1.0	**250 (3)**	**3900 (3)**	**0.1**	2.3	-	-
MW19-1	24-Jul-19	150	120	2600	9.2	6.5	1.5	0.2	**9100**	10000	7.18	<1.0	850	1000	<1.0	<1.0	**410 (3)**	**5800 (3)**	**0.062**	1.5	-	-
MW19-1	14-Aug-19	150	140	3100	2.3	-	-	-	**9500**	5000	7.25	<1.0	390	480	<1.0	<1.0	**430 (3)**	**6100 (3)**	-	-	-	-
MW19-1	21-Aug-19	140	130	2900	5.9	12	2.9	0.63	**9000**	10000	7.65	<1.0	910	1100	<1.0	<1.0	**380 (3)**	**5600 (3)**	**0.19**	2.7	-	-
MW19-1	18-Sep-19	120	110	2300	4	**22**	5.2	0.41	**7400**	8700	7.3	<1.0	650	790	<1.0	<1.0	**250 (3)**	**4600 (3)**	**0.12**	5.1	-	-
MW19-1	16-Oct-19	150	130	3000	6.1	**17**	4.4	1.9	**9600**	10000	7.33	<1.0	810	980	<1.0	<1.0	**300 (3)**	**6100 (3)**	**0.57**	3.8	-	-
MW19-1	30-Oct-19	130	120	2600	2.7	10	2.8	1.7	**8200**	9900	7.2	<1.0	950	1200	<1.0	<1.0	**310 (3)**	**4900 (3)**	**0.52**	2.3	-	-
MW19-1	13-Nov-19	160	150	3000	2.3	**23**	5.4	0.85	**10000**	11000	7.74	<1.0	850	1000	<1.0	<1.0	**380 (3)**	**6200 (3)**	**0.26**	5.1	-	-
MW19-1	27-Nov-19	140	160	3500	5.2	**20**	4.6	<0.033	**9500**	9900	7.61	<1.0	700	850	<1.0	<1.0	**250 (3)**	**5800 (3)**	<0.010	4.6	-	-
MW19-1	11-Dec-19	110	110	2300	0.75	**22**	4.9	0.14	**7100**	8200	7.61	<1.0	630	770	<1.0	<1.0	**190 (3)**	**4400 (3)**	0.042	4.9	-	-
MW19-2	26-Jun-19	110	100	2300	3.5	2.6	0.62	0.13	**6900**	8700	7.74	<1.0	1200	1500	<1.0	<1.0	**280 (3)**	**3900 (3)**	0.04	0.58	-	-
MW19-2	24-Jul-19	100	78	1500	14	0.047	<0.014	<0.033	**6100**	7200	7.13	<1.0	1100	1300	<1.0	<1.0	**180**	**3700 (3)**	<0.010	0.011	-	-
MW19-2	14-Aug-19	98	110	2200	6.8	-	-	-	**6500**	7000	7.13	<1.0	990	1200	<1.0	<1.0	**190**	**3500 (3)**	-	-	-	-
MW19-2	21-Aug-19	96	86	2000	5.8	0.051	0.027	0.05	**6000**	6900	7.54	<1.0	850	1000	<1.0	<1.0	**170**	**3600 (3)**	0.015	0.012	-	-
MW19-2	18-Sep-19	110	86	1800	12	<0.044	<0.014	<0.033	**6500**	7400	7.61	<1.0	950	1200	<1.0	<1.0	**190 (3)**	**4000 (3)**	<0.010	<0.010	-	-
MW19-2	16-Oct-19	90	84	2000	3.6	<0.044	<0.014	0.044	**5700**	6600	7.54	<1.0	800	980	<1.0	<1.0	**170**	**3300 (3)**	0.013	<0.010	-	-
MW19-2	30-Oct-19	110	100	2200	5.3	0.14	0.031	<0.033	**7000**	8400	7.28	<1.0	960	1200	<1.0	<1.0	**220 (3)**	**4200 (3)**	<0.010	0.031	-	-
MW19-2	13-Nov-19	95	87	1900	4.6	<0.044	<0.014	<0.033	**5900**	7000	7.57	<1.0	830	1000	<1.0	<1.0	**180 (3)**	**3500 (3)**	<0.010	<0.010	-	-
MW19-2	27-Nov-19	110	110	2800	0.41	0.074	0.017	<0.033	**7200**	7500	7.26	<1.0	880	1100	<1.0	<1.0	**200 (3)**	**4300 (3)**	<0.010	0.017	-	-
MW19-2	11-Dec-19	88	76	1700	7.4	0.44	0.12	0.062	**5400**	6500	7.18	<1.0	770	940	<1.0	<1.0	**160**	**3300 (3)**	0.019	0.1	-	-
MW19-3	3-Jun-19	-	-	-	-	0.058	<0.014	<0.033	-	3000	-	-	-	-	-	-	-	-	<0.010	0.013	6.7	2.9 (1)
MW19-3	5-Jun-19	-	-	-	-	<0.044	<0.014	<0.033	-	-	-	-	-	-	-	-	-	-	<0.010	<0.010	-	-
MW19-3	26-Jun-19	30	30	1100	0.71	0.086	0.019	<0.033	1800	2500	7.81	<1.0	620	760	<1.0	<1.0	110	690 (3)	<0.010	0.019	-	-
MW19-3	24-Jul-19	51	38	1200	15	<0.044	<0.014	<0.033	2800	4000	7.17	<1.0	770	940	<1.0	<1.0	**200 (3)**	**1400 (3)**	<0.010	<0.010	-	-
MW19-3	14-Aug-19	29	27	900	3.8	-	-	-	1600	2400	7.06	<1.0	690	840	<1.0	<1.0	110	600 (3)	-	-	-	-
MW19-3	21-Aug-19	29	27	890	4.9	0.27	0.078	0.057	1600	2500	7.55	<1.0	700	850	<1.0	<1.0	110	590 (3)	0.017	0.061	-	-
MW19-3	18-Sep-19	45	35	1100	12	1.4	0.34	0.11	2500	3500	7.24	<1.0	790	960	<1.0	<1.0	**190**	**1100 (3)**	0.034	0.31	-	-
MW19-3	16-Oct-19	37	34	1100	3.9	3.5	0.86	0.19	2100	3100	7.46	<1.0	710	870	<1.0	<1.0	**170**	860 (3)	0.057	0.8	-	-
MW19-3	30-Oct-19	36	32	1000	5.3	2.9	0.71	0.15	2000	3000	7.36	<1.0	740	910	<1.0	<1.0	**140**	820 (3)	0.045	0.66	-	-
MW19-3	13-Nov-19	40	31	940	14	2.1	0.51	0.089	2200	3200	7.15	<1.0	720	880	<1.0	<1.0	**150**	1000 (3)	0.027	0.48	-	-
MW19-3	27-Nov-19	38	41	1300	3.7	1.6	0.37	0.059	2300	3200	7.09	<1.0	720	880	<1.0	<1.0	**160**	910 (3)	0.018	0.36	-	-
MW19-3	11-Dec-19	29	24	790	9.6	9.8	2.2	0.083	1600	2500	7.17	<1.0	640	780	<1.0	<1.0	110	620 (3)	0.025	2.2	-	-

Notes:

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BOLD/HIGHLIGHTED - Exceeds the applicable guideline.

uS/cm - microsiemens per centimeter.

mg/L - milligram per litre.

< Indicates parameter was below laboratory equipment detection limit.

"-" Chemical not analyzed or criteria not defined.

(1) Detection limits raised due to sample matrix.

(2) Due to the sample matrix, sample required dilution. Detection limit was adjusted accordingly.

(3) Detection limits raised due to dilution to bring analyte within the calibrated range.

(4) Detection limits raised due to matrix interference.

Table to be read in conjunction with accompanying report.

Table 18
Groundwater Analytical Results - Routine Parameters & Nutrients
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample ID	Sample Date (dd-mmm-yy)	Anion Sum	Cation Sum	Hardness ($CaCO_3$)	Ion Balance (% Difference)	Dissolved Nitrate (NO_3)	Nitrate plus Nitrite (N)	Dissolved Nitrite (NO_2)	Calculated Total Dissolved Solids	Conductivity	pH	Alkalinity (PP as $CaCO_3$)	Alkalinity (Total as $CaCO_3$)	Bicarbonate (HCO_3)	Carbonate (CO_3)	Hydroxide (OH)	Dissolved Chloride (Cl)	Dissolved Sulphate (SO_4)	Dissolved Nitrite (N)	Dissolved Nitrate (N)	Total Organic Carbon (C)	Total Kjeldahl Nitrogen
	Guideline[1]	-	-	-	-	13	100	-	3000	-	6.5 - 9	-	-	-	-	-	120	1000	0.06	-	-	-
	Units	meq/L	meq/L	mg/L	%	mg/L	mg/L	mg/L	mg/L	uS/cm	pH	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MW19-4	3-Jun-19	-	-	-	-	1.2	0.27	<0.33	-	14000	-	-	-	-	-	-	-	-	<0.10 (3)	0.27 (3)	34 (2)	0.96
MW19-4	26-Jun-19	120	110	2300	3.7	3.4	1.1	0.96	**7200**	8200	7.55	<1.0	980	1200	<1.0	<1.0	**200 (3)**	**4300 (3)**	**0.29**	0.78	-	-
MW19-4	24-Jul-19	130	110	1800	9.3	2	0.5	0.16	**7800**	9300	7.33	<1.0	1000	1300	<1.0	<1.0	**230 (3)**	**4800 (3)**	0.048	0.46	**-**	**-**
MW19-4	14-Aug-19	190	180	3200	3.2	-	-	-	**12000**	13000	7.54	<1.0	1200	1500	<1.0	<1.0	**450 (3)**	**7400 (3)**	-	-	**-**	**-**
MW19-4	21-Aug-19	140	130	2200	2.7	3.1	0.71	<0.033	**8900**	10000	7.79	<1.0	940	1100	<1.0	<1.0	**330 (3)**	**5300 (3)**	<0.010	0.71	**-**	**-**
MW19-4	18-Sep-19	160	140	2200	6.2	<0.044	<0.014	<0.033	**9800**	11000	7.67	<1.0	1000	1200	<1.0	<1.0	**390 (3)**	**6000 (3)**	<0.010	<0.010	**-**	**-**
MW19-4	16-Oct-19	120	120	2300	1.5	3	0.67	<0.033	**7900**	9500	7.71	<1.0	900	1100	<1.0	<1.0	**320 (3)**	**4500 (3)**	<0.010	0.67	**-**	**-**
MW19-5	24-Jul-19	320	290	4200	6.1	4.3	1.1	0.32	**20000**	22000	7.56	<1.0	670	820	<1.0	<1.0	**2000 (3)**	**12000 (3)**	**0.098**	0.98	**-**	**-**
MW19-5	27-Nov-19	400	420	6500	1.6	**16**	4.6	3.3	**27000**	26000	7.47	<1.0	700	860	<1.0	<1.0	**2200 (3)**	**16000 (3)**	**0.99 (2)**	3.6 (2)	**-**	**-**
MW19-6	5-Jun-19	-	-	-	-	0.16	0.036	<0.033	-	7200	-	-	-	-	-	-	-	-	<0.010	0.036	15 (1)	3.1 (2)
MW19-6	26-Jun-19	100	100	3000	1.7	<0.22	<0.051	0.035	**6600**	7200	7.77	<1.0	470	570	<1.0	<1.0	**200 (3)**	**4300 (3)**	0.011	<0.050 (4)	-	-
MW19-6	24-Jul-19	65	56	1200	7.6	<0.044	<0.014	<0.033	**4100**	5000	7.53	<1.0	310	380	<1.0	<1.0	**130**	**2700 (3)**	<0.010	<0.010	-	-
MW19-6	14-Aug-19	79	63	1400	11	-	-	-	**4600**	11000	7.39	<1.0	1000	1200	<1.0	<1.0	120	**2700 (3)**	-	-	-	-
MW19-6	21-Aug-19	66	63	1400	1.7	0.11	0.025	<0.033	**4200**	5300	7.72	<1.0	390	480	<1.0	<1.0	120	**2600 (3)**	<0.010	0.025	-	-
MW19-6	18-Sep-19	75	69	1600	4.2	0.15	0.034	<0.033	**4700**	5800	7.45	<1.0	470	570	<1.0	<1.0	**140**	**2900 (3)**	<0.010	0.034	**-**	**-**
MW19-6	16-Oct-19	84	76	1900	5.4	0.32	0.072	<0.033	**5200**	6000	7.57	<1.0	520	640	<1.0	<1.0	**160**	**3300 (3)**	<0.010	0.072	**-**	**-**
MW19-6	30-Oct-19	83	80	2100	1.6	0.49	0.11	<0.033	**5300**	6300	7.46	<1.0	520	640	<1.0	<1.0	**170**	**3300 (3)**	<0.010	0.11	**-**	**-**
MW19-6	13-Nov-19	98	85	2200	6.9	0.29	0.065	<0.033	**6000**	6900	7.39	<1.0	520	640	<1.0	<1.0	**190**	**3900 (3)**	<0.010	0.065	**-**	**-**
MW19-6	27-Nov-19	95	100	2800	3	0.66	0.15	<0.033	**6200**	7100	7.34	<1.0	510	630	<1.0	<1.0	**200**	**3800 (3)**	<0.010	0.15	**-**	**-**
MW19-6	11-Dec-19	99	97	2400	0.91	0.57	0.13	<0.033	**6300**	7600	7.43	<1.0	540	660	<1.0	<1.0	**190 (3)**	**4000 (3)**	<0.010	0.13	**-**	**-**
MW19-14	18-Dec-19	350	350	5900	0.48	2.2	0.51	<0.16	**23000**	23000	7.79	<1.0	700	850	<1.0	<1.0	**1800 (1)**	**14000 (1)**	<0.050 (2)	0.51 (2)	**-**	**-**
MW19-15	18-Dec-19	160	170	3600	4.1	0.47	0.11	<0.033	**10000**	12000	7.82	<1.0	1300	1500	<1.0	<1.0	**620 (1)**	**5500 (1)**	<0.010	0.11	**-**	**-**

Notes:
1. Canadian Council of Ministers of the Environment (CCME) Water Quality Guidelines for the most stringent of Protection of Aquatic Life or Agriculture (CCME 1999, updated 2001).
BOLD/HIGHLIGHTED - Exceeds the applicable guideline.
uS/cm - microsiemens per centimeter.
mg/L - milligram per litre.
< Indicates parameter was below laboratory equipment detection limit.
"-" Chemical not analyzed or criteria not defined.
(1) Detection limits raised due to sample matrix.
(2) Due to the sample matrix, sample required dilution. Detection limit was adjusted accordingly.
(3) Detection limits raised due to dilution to bring analyte within the calibrated range.
(4) Detection limits raised due to matrix interference.
Table to be read in conjunction with accompanying report.

Table 19
Source Removal - Soil Field Screening
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample ID	Sample Date (dd-mmm-yy)	Depth (mbgs)	Field Vapour Reading (ppm)
Excavations			
EX1-1	4-Jun-19	3.628	0
EX1-2	4-Jun-19	3.606	0
EX1-3	4-Jun-19	2.328	230
EX1-4	4-Jun-19	2.313	580
EX1-5	4-Jun-19	3.634	0
EX1-6	4-Jun-19	3.8	0
EX1-7	4-Jun-19	2.906	30
EX1-8	4-Jun-19	3.021	570
EX1-9	4-Jun-19	4.008	0
EX1-10	4-Jun-19	3.99	0
EX1-11	4-Jun-19	4.432	0
EX1-12	4-Jun-19	5.315	0
EXW1-1	4-Jun-19	3.2	0
EXW1-2	4-Jun-19	3.451	0
EXW1-3	4-Jun-19	2.811	0
EXW1-4	4-Jun-19	5.4	0
EX2-1	5-Jun-19	2.4	30
EX2-2	5-Jun-19	2.236	165
EX2-3	5-Jun-19	2.3	0
EX2-4	5-Jun-19	1.819	80
EX2-5	5-Jun-19	2.447	0
EX2-6	5-Jun-19	4.559	240
EX2-7	5-Jun-19	2.245	0
EX2-8	5-Jun-19	2.009	0
EX2-9	5-Jun-19	4.462	0
EX2-10	5-Jun-19	4.484	0
EX2-11	5-Jun-19	4.89	0
EX2-12	5-Jun-19	4.549	0
EXW2-1	5-Jun-19	1.912	0
EXW2-2	5-Jun-19	3.817	0
EXW2-3	5-Jun-19	1.385	0
EXW2-4	5-Jun-19	4.275	0
SLOT1-1	6-Jun-19	2.069	0
SLOT1-2	6-Jun-19	2.337	0
SLOT1-3	6-Jun-19	2.365	0
SLOT1-4	6-Jun-19	1.856	0
SLOT2-1	6-Jun-19	1.34	0
Containment Cells			
1-1	9-Jun-19	0 - 0.15	0
1-2	9-Jun-19	0 - 0.15	0
1-3	9-Jun-19	0 - 0.15	0
1-4	9-Jun-19	0 - 0.15	0
1-5	9-Jun-19	0 - 0.15	0
1-6	9-Jun-19	0 - 0.15	0
2-1	9-Jun-19	0 - 0.15	0
2-2	9-Jun-19	0 - 0.15	0
2-3	9-Jun-19	0 - 0.15	0
2-4	9-Jun-19	0 - 0.15	0
2-5	9-Jun-19	0 - 0.15	0
2-6	9-Jun-19	0 - 0.15	0
3-1	9-Jun-19	0 - 0.15	0
3-2	9-Jun-19	0 - 0.15	0
3-3	9-Jun-19	0 - 0.15	0
3-4	9-Jun-19	0 - 0.15	0
3-5	9-Jun-19	0 - 0.15	0
3-6	9-Jun-19	0 - 0.15	0

Notes:
"-" - not analyzed.
mbgs - meters below ground surface.
ppm - parts per million.
Table to be read in conjunction with accompanying report.

Table 20
Source Removal Soil Analytical Results - Landfill
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample ID	Sample Date (dd-mmm-yy)	Flammability	Leachable (ZH) Benzene	Leachable (ZH) m & p-Xylene	Leachable (ZH) Xylenes (Total)	Leachable (ZH) Toluene	Leachable (ZH) Ethylbenzene	Leachable (ZH) o-Xylene	F2 (C_{10}-C_{16} Hydrocarbons)	F3 (C_{16}-C_{34} Hydrocarbons)	F4 (C_{34}-C_{50} Hydrocarbons)	Reached Baseline at C_{50}	F4G-SG (Heavy Hydrocarbons-Grav.)	Closed Cup Flash Point	Moisture	Free Liquid	F1 (C_6-C_{10})	Benzene	m & p-Xylene	Toluene	Ethylbenzene	o-Xylene	F1 (C_6-C_{10}) - BTEX	Xylenes (Total)
	Guideline[1]	-	500	-	30000	2500	240	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Units	mm/sec	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	deg. C	%	n/a	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
TCLP-04	25-Feb-19	-	-	-	-	-	-	-	7100	21000	8400	NO	-	>61	5.9	PASS	18	22	1.1	80	14	0.34	2400	150
TCLP-05	25-Feb-19	-	-	-	-	-	-	-	2000	6100	2300	NO	-	>61	7.4	PASS	<10	1.3	<0.040	9.1	2.8	<0.020	300	31
TCLP-09	25-Feb-19	-	-	-	-	-	-	-	18	100	<50	YES	-	>61	27	FAIL	<10	0.05	0.47	<0.21	<0.041	0.18	<41	0.19
TCLP-11	25-Feb-19	-	-	-	-	-	-	-	2000	6200	2400	NO	-	>61	8.2	PASS	<10	2.2	<0.040	16	3.2	<0.020	520	36
TCLP-24	25-Feb-19	-	-	-	-	-	-	-	150	530	200	YES	-	>61	7.5	PASS	<10	0.43	<0.040	0.63	0.12	<0.020	15	1.4
TCLP-26	25-Feb-19	-	-	-	-	-	-	-	<10	<50	<50	YES	-	>61	11	PASS	1700	0.015	76	<0.050	<0.010	19	<10	<0.045
TCLP-27	25-Feb-19	-	-	-	-	-	-	-	260	1300	250	YES	-	>61	4.6	PASS	<10	0.049	0.049	0.25	0.075	<0.020	<10	0.65
TCLP-28	25-Feb-19	-	-	-	-	-	-	-	<10	140	<50	YES	-	>61	8.6	PASS	450	0.0079	19	<0.050	<0.010	4.9	<10	<0.045
TCLP-30	25-Feb-19	-	-	-	-	-	-	-	<10	<50	<50	YES	-	>61	11	PASS	<10	0.02	<0.040	<0.050	<0.010	<0.020	<10	<0.045
TCLP-32	25-Feb-19	-	-	-	-	-	-	-	1900	5600	2100	NO	-	>61	27	PASS	250 (1)	14	10 (1)	76	9.8	3.4 (1)	1500	95
TCLP-34	25-Feb-19	-	-	-	-	-	-	-	<10	<50	<50	YES	-	>61	29	PASS	340	0.023	25	<0.050	<0.010	6.5	<10	0.049
TCLP-35	25-Feb-19	-	-	-	-	-	-	-	1200	3500	1400	NO	-	>61	31	PASS	2600	4.2	120	16	2.4	33	410	24
TCLP-36	25-Feb-19	-	-	-	-	-	-	-	50	200	55	YES	-	>61	27	PASS	<41 (1)	0.025	0.19 (1)	<0.050	<0.010	<0.082 (1)	<10	<0.045
TCLP-37	25-Feb-19	-	-	-	-	-	-	-	240	1100	400	NO	-	>61	17	PASS	570	0.47	28	3.6	1	7.8	230	14
TCLP-0-40	26-Feb-19	-	-	-	-	-	-	-	1000	3000	1200	NO	-	>61	52	FAIL	550 (2)	6.5	23 (2)	20	2.5	5.5 (2)	500	28
TCLP-0-41	26-Feb-19	-	-	-	-	-	-	-	380	1200	430	NO	-	>61	53	FAIL	310 (2)	2.8	15 (2)	11	1.6	4.0 (2)	270	19
TCLP-0-42	26-Feb-19	-	-	-	-	-	-	-	26	120	<110	YES	-	>61	53	FAIL	<44 (2)	0.15	<0.18 (2)	0.27	<0.044	<0.088 (2)	<44	<0.20
TCLP-0-43	26-Feb-19	-	-	-	-	-	-	-	<10	54	<50	YES	-	>61	48	PASS	<21 (1)	0.044	<0.085 (1)	<0.11	<0.021	<0.043 (1)	<21	<0.095
BH19-1-3	1-May-19	-	<10	<20	<20	<10	<10	<10	<10	<50	<50	Yes	-	>61	6	PASS	<10	0.12	0.1	0.14	0.018	0.03	<10	0.13
Landfill1	4-Jun-19	NON FLAM	24	29	29	36	0	0	1100	3100	1300	NO	9200	>61	18	PASS	530	6.5	25	22	2.9	6.2	470	31
Landfill2	4-Jun-19	NON FLAM	420	540	700	980	68	160	2200	6000	2600	NO	17000	>61	14	PASS	3200	40	100	110	12	25	2900	130
Landfill3	4-Jun-19	NON FLAM	88	190	250	230	23	58	1800	5300	2300	NO	15000	>61	17	PASS	1400	13	37	33	4.3	9.8	1300	47
Landfill4	4-Jun-19	NON FLAM	160	360	470	520	45	110	1200	3400	1500	NO	10000	>61	17	PASS	570	4.4	23	15	2.5	6.1	520	29
Landfill5	4-Jun-19	NON FLAM	81	190	240	230	23	56	1100	3300	1400	NO	8600	>61	16	PASS	480	3.1	14	9.7	1.6	4	440	18
Landfill6	4-Jun-19	NON FLAM	46	160	210	160	19	51	350	1100	470	NO	3100	>61	9	PASS	680	4.9	18	15	2	4.9	630	22

Notes:

1. Manitoba Sustainable Development (MSD) The Dangerous Goods Handling and Transportation Act (C.C.S.M. c. D12, 195/2016, November 25, 2015).

BOLD/HIGHLIGHTED - Exceeds the applicable guideline.

mg/kg - milligrams per kilogram.

mm/sec - millimeters per second.

ug/L - micrograms per liter.

deg . C - degrees celsius.

% - percent.

n/a - not applicable.

< Indicates parameter was below laboratory equipment detection limit.

"-" Chemical not analyzed or criteria not defined.

(1) Detection limits raised based on sample volume used for analysis.

(2) Detection limits raised due to high moisture content, sample contains => 50% moisture.

Table to be read in conjunction with accompanying report.

Table 21
Source Removal Soil Analytical Results - Petroleum Hydrocarbons
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample ID	Sample Date (dd-mmm-yy)	Depth (mbgs)	Petroleum Hydrocarbons								
			Benzene	Toluene	Ethylbenzene	Xylenes (Total)	F1 (C_6-C_{10})-BTEX	F2 (C_{10}-C_{16})	F3 (C_{16}-C_{34})	F4 (C_{34}-C_{50})	Reached Baseline at C_{50}
Guideline[1] (CN Right-of-Way)			**0.03**	**0.37**	**0.082**	**11**	**320**	**260**	**1700**	**3300**	**-**
Guideline[2] (Outside CN Right-of-Way)			**0.03**	**0.37**	**0.082**	**11**	**30**	**150**	**300**	**2800**	**-**
Units			**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**-**
Excavation - CN Right-of-Way											
EX1-1	4-Jun-19	3.63	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	Yes
EX1-2	4-Jun-19	3.61	0.012	<0.050	<0.010	<0.045	<10	<10	<50	<50	Yes
EX1-3	4-Jun-19	2.33	**0.087**	0.23	0.035	0.37	16	55	150	56	Yes
EX1-4	4-Jun-19	2.31	**0.071**	<0.050	<0.010	<0.045	<10	34	100	<50	Yes
DUP 6 (duplicate of EX1-4)	4-Jun-19	2.31	**0.26**	**0.73**	**0.12**	1.4	34	**350**	930	370	No
EX1-5	4-Jun-19	3.63	0.015	<0.050	<0.010	<0.045	<10	<10	<50	<50	Yes
EX1-6	4-Jun-19	3.80	0.026	<0.050	<0.010	<0.045	<10	<10	<50	<50	Yes
EX1-7	4-Jun-19	2.91	0.0082	<0.050	<0.010	<0.045	<10	32	94	<50	Yes
EX1-8	4-Jun-19	3.02	**0.22**	**0.49**	0.064	0.63	18	92	230	79	Yes
DUP 5 (duplicate of EX1-8)	4-Jun-19	3.02	0.027	<0.050	<0.010	0.06	13	190	540	220	Yes
EX1-9	4-Jun-19	4.01	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	Yes
EX1-10	4-Jun-19	3.99	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	Yes
EX1-11	4-Jun-19	4.43	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	Yes
EX1-12	4-Jun-19	5.32	**0.081**	0.11	<0.010	0.16	<10	23 (1)	72	<50	Yes
EXW1-1	4-Jun-19	3.18	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	Yes
EXW1-2	4-Jun-19	3.45	0.0083	<0.050	<0.010	<0.045	<10	**380**	970	390	No
EXW1-3	4-Jun-19	2.81	**1.9**	**0.53**	0.014	0.13	13	24	78	<50	Yes
EXW1-4	4-Jun-19	5.40	**0.77**	0.33	0.02	0.24	21	25	77	<50	Yes
WA-EX1-1	4-Jun-19	n/a	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	Yes
WA-EX1-2	4-Jun-19	n/a	**0.34**	0.18	<0.010	<0.045	<10	<10	<50	<50	Yes
WA-EX1-3	4-Jun-19	n/a	**0.47**	**0.41**	0.043	0.059	11	<10	<50	<50	Yes
EX2-1	5-Jun-19	2.44	**0.082**	0.37	0.071	0.78	10	-	<50	<50	Yes
DUP 7 (duplicate of EX2-1)	5-Jun-19	2.44	**0.055**	0.17	0.022	0.22	<10	<10	<50	<50	Yes
EX2-2	5-Jun-19	2.24	**0.88**	**4.6**	**0.67**	7.3	100	**440**	1200	490	No
EX2-3	5-Jun-19	2.29	**0.099**	0.25	0.037	0.4	<10	53	180	66	Yes
EX2-4	5-Jun-19	1.82	**0.095**	**0.45**	0.063	0.66	<10	**330**	950	400	No
EX2-5	5-Jun-19	2.45	0.017	0.059	<0.010	0.058	<10	<10	<50	<50	Yes
EX2-6	5-Jun-19	4.56	**0.059**	0.2	0.029	0.32	<10	27	63	<50	Yes
EX2-7	5-Jun-19	2.25	0.008	<0.050	<0.010	<0.045	<10	<10	<50	<50	Yes
EX2-8	5-Jun-19	2.01	**0.06**	0.29	0.048	0.5	<10	23	73	<50	Yes
DUP 8 (duplicate of EX2-8)	5-Jun-19	2.01	**0.076**	**0.38**	<0.010	0.64	11	48	150	59	Yes
EX2-9	5-Jun-19	4.46	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	Yes
EX2-10	5-Jun-19	4.48	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	Yes
EX2-11	5-Jun-19	4.89	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	Yes
EX2-12	5-Jun-19	4.55	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	Yes
EXW2-1	5-Jun-19	1.91	**0.059**	0.1	<0.010	0.097	<10	130	410	160	Yes
EXW2-2	5-Jun-19	3.82	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	Yes
EXW2-3	5-Jun-19	1.38	0.012	<0.050	<0.010	<0.045	<10	<10	<50	<50	Yes
EXW2-4	5-Jun-19	4.27	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	Yes
SLOT1-1	6-Jun-19	2.07	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	Yes
SLOT1-2	6-Jun-19	2.34	0.029	0.13	0.017	0.21	<10	<10	<50	<50	Yes
SLOT1-3	6-Jun-19	2.37	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	Yes
SLOT1-4	6-Jun-19	1.86	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	Yes
SLOT2-1	6-Jun-19	1.34	0.013	<0.050	<0.010	<0.045	<10	<10	<50	<50	Yes
DUP9 (duplicate of SLOT2-1)	6-Jun-19	1.34	**0.037**	0.13	<0.010	0.091	<10	<10	<50	<50	Yes

Notes:

1. Canadian Council of Ministers of the Environment (CCME) Soil Quality Guidelines for the Protection of Environmental and Human Health, values for industrial land use and coarse-grained soils (CCME 1999, updated 2001).

2. Canadian Council of Ministers of the Environment (CCME) Soil Quality Guidelines for the Protection of Environmental and Human Health, values for agricultural land use and coarse-grained soils (CCME 1999, updated 2001).

BOLD/HIGHLIGHTED - Exceeds the applicable guideline.

mg/kg - milligrams per kilogram.

mbgs - meters below ground surface.

n/a - not applicable.

< Indicates parameter was below laboratory equipment detection limit.

"-" Chemical not analyzed or criteria not defined.

(1) Duplicate exceeds acceptance criteria due to sample non-homogeneity. Reanalysis yields similar results.

Table to be read in conjunction with accompanying report.

Table 21
Source Removal Soil Analytical Results - Petroleum Hydrocarbons
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample ID	Sample Date (dd-mmm-yy)	Depth (mbgs)	Petroleum Hydrocarbons								
			Benzene	Toluene	Ethylbenzene	Xylenes (Total)	F1 (C_6-C_{10})-BTEX	F2 (C_{10}-C_{16})	F3 (C_{16}-C_{34})	F4 (C_{34}-C_{50})	Reached Baseline at C_{50}
Guideline[1] (CN Right-of-Way)			**0.03**	**0.37**	**0.082**	**11**	**320**	**260**	**1700**	**3300**	**-**
Guideline[2] (Outside CN Right-of-Way)			**0.03**	**0.37**	**0.082**	**11**	**30**	**150**	**300**	**2800**	**-**
Units			**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**-**
Excavation South Remediation Area - CN Right-of-Way											
C-9158B*	2-Jun-19	0 - 0.15	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	Yes
DUP4 (duplicate of C-9158B)*	2-Jun-19	0 - 0.15	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	Yes
Excavation South Remediation Area - Outside CN Right-of-Way											
C-9046B*	2-Jun-19	0 - 0.15	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	Yes
C-9049B*	2-Jun-19	0 - 0.15	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	Yes
C-9056B*	2-Jun-19	0 - 0.15	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	Yes
C-9081B*	2-Jun-19	0 - 0.15	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	Yes
C-9089B*	2-Jun-19	0 - 0.15	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	Yes
C-9106B*	2-Jun-19	0 - 0.15	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	Yes
C-9107B*	2-Jun-19	0 - 0.15	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	Yes
C-9113B*	2-Jun-19	0 - 0.15	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	Yes
Containment Cells - Outside CN Right-of-Way											
CELL1-1	9-Jun-19	0 - 0.15	**0.062**	0.083	<0.010	<0.045	<10	<10	<50	<50	Yes
CELL1-2	9-Jun-19	0 - 0.15	<0.0050	<0.050	<0.010	<0.045	<10	<10	67	<50	Yes
CELL2-1	9-Jun-19	0 - 0.15	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	Yes
CELL2-2	9-Jun-19	0 - 0.15	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	Yes
DUP14 (duplicate of CELL2-2)	9-Jun-19	0 - 0.15	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	Yes
CELL3-1	9-Jun-19	0 - 0.15	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	Yes
CELL3-2	9-Jun-19	0 - 0.15	<0.0050	<0.050	<0.010	<0.045	<10	12	160	<50	Yes
Backfill Used for Excavations - CN Right-of-Way											
BACKFILL 1	5-Jun-19	n/a	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	Yes
BACKFILL 2	5-Jun-19	n/a	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	Yes
BACKFILL 3	5-Jun-19	n/a	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	Yes
BACKFILL 4	5-Jun-19	n/a	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	Yes
BACKFILL 5	5-Jun-19	n/a	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	Yes
BACKFILL 6	5-Jun-19	n/a	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	Yes
Backfill Used for Oxbow Island - Outside CN Right-of-Way											
TOPSOIL 1	10-Sep-19	n/a	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	Yes
TOPSOIL 2	10-Sep-19	n/a	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	Yes
TOPSOIL 3	10-Sep-19	n/a	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	Yes
TOPSOIL 4	10-Sep-19	n/a	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	Yes
TOPSOIL 5	10-Sep-19	n/a	<0.0050	<0.050	<0.010	<0.045	<10	<10	51	<50	Yes
TOPSOIL 6	10-Sep-19	n/a	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	Yes
TOPSOIL 7	10-Sep-19	n/a	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	Yes
SUBSOIL 1	10-Sep-19	n/a	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	Yes
SUBSOIL 2	10-Sep-19	n/a	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	Yes
SUBSOIL 3	10-Sep-19	n/a	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	Yes
WA-SOIL-216	5-Feb-20	n/a	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	Yes
WA-SOIL-217	5-Feb-20	n/a	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	Yes
Temporary Gravel Used for Safe Equipment Access - Outside CN Right-of-Way											
WA-SOIL-218	14-Feb-20	n/a	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	Yes

Notes:

1. Canadian Council of Ministers of the Environment (CCME) Soil Quality Guidelines for the Protection of Environmental and Human Health, values for industrial land use and coarse-grained soils (CCME 1999, updated 2001).

2. Canadian Council of Ministers of the Environment (CCME) Soil Quality Guidelines for the Protection of Environmental and Human Health, values for agricultural land use and coarse-grained soils (CCME 1999, updated 2001).

BOLD/HIGHLIGHTED - Exceeds the applicable guideline.

mg/kg - milligrams per kilogram.

mbgs - meters below ground surface.

n/a - not applicable.

< Indicates parameter was below laboratory equipment detection limit.

"-" Chemical not analyzed or criteria not defined.

* - indicates samples also presented in Table 2.

(1) Duplicate exceeds acceptance criteria due to sample non-homogeneity. Reanalysis yields similar results.

Table to be read in conjunction with accompanying report.

Table 22
Source Removal Soil Analytical Results - Polycyclic Aromatic Hydrocarbons
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample ID	Sample Date (dd-mmm-yy)	Depth (mbgs)	Carcinogenic Polycyclic Aromatic Hydrocarbons											Non-Carcinogenic Polycyclic Aromatic Hydrocarbons																
			Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b&j)fluoranthene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Benzo(g,h,i)perylene	Indeno(1,2,3-cd)pyrene	Total PAH	Index of Additive Cancer Risk(IACR)	B[a]P TPE Total Potency Equivalents	Acenaphthene	Acenaphthylene	Acridine	Anthracene	Benzo(c)phenanthrene	Benzo[e]pyrene	Fluoranthene	Fluorene	2-Methylnaphthalene	Naphthalene	Phenanthrene	Perylene	Pyrene	Quinoline	Low Molecular Weight PAH's	High Molecular Weight PAH's
Guideline[1] (CN Right-of-Way)			**10**	**72**	**-**	**10**	**-**	**10**	**-**	**10**	**-**	**1**	**0.6**	**0.28**	**320**	**-**	**32**	**-**	**-**	**180**	**0.25**	**-**	**0.013**	**0.046**	**-**	**100**	**-**	**-**	**-**
Guideline[2] (Outside CN Right-of-Way)			**0.1**	**20**	**-**	**0.1**	**6.2**	**0.1**	**-**	**0.1**	**-**	**1**	**0.6**	**0.28**	**320**	**-**	**2.5**	**-**	**-**	**50**	**0.25**	**-**	**0.013**	**0.046**	**-**	**0.1**	**-**	**-**	**-**
Units			**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**n/a**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**
Confirmatory Locations																													
Excavations - CN Right-of-Way																													
EX1-1	4-Jun-19	3.63	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.0050
EX1-2	4-Jun-19	3.61	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.0050
EX1-3	4-Jun-19	2.33	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.11	<0.10	<0.0071	0.0065	<0.0050	0.016	<0.0040	<0.0050	<0.0050	<0.0050	0.0092 (1)	0.035	0.013	0.027	0.015	<0.0050	<0.010	0.11	<0.0050
EX1-4	4-Jun-19	2.31	0.0096	<0.0050	0.011	<0.0050	0.011	<0.0050	0.01	<0.0050	0.26	0.14	0.008	0.016	<0.0050	0.015	0.0095	<0.0050	0.0071	0.031	0.018	0.037	**0.016**	**0.054**	0.0095	0.026	<0.010	0.16	0.098
DUP 6 (duplicate of EX1-4)	4-Jun-19	2.31	0.04	0.025	0.04	0.0099	0.067	<0.0050	0.024	0.016	1.7	0.55	0.039	0.093	0.016	0.14	0.043	0.0074	0.03	0.13	0.11	0.33	**0.13**	**0.31**	0.043	0.12	0.052	1.2	0.48
EX1-5	4-Jun-19	3.63	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.018	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	0.01	<0.0050	0.0082	0.012	<0.0050	<0.010	0.018	<0.0050
EX1-6	4-Jun-19	3.80	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.017	<0.0050	<0.010	<0.010	<0.0050
EX1-7	4-Jun-19	2.91	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.032	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	0.016	<0.0050	0.017	0.011	<0.0050	<0.010	0.032	<0.0050
EX1-8	4-Jun-19	3.02	0.01	0.0095	0.023	<0.0050	0.023	<0.0050	0.01	0.0091	0.43	0.24	0.017	0.017	<0.0050	0.032	0.0091 (1)	<0.0050	0.013	0.031	0.022 (1)	0.079	**0.032**	**0.077**	0.014	0.028	0.017	0.28	0.14
DUP 5 (duplicate of EX1-8)	4-Jun-19	3.02	0.02	0.014	0.028	0.008	0.031	<0.0050	0.015	0.012	0.85	0.36	0.024	0.044	0.0092	0.074	0.021	<0.0050	0.02	0.054	0.054	0.15	**0.055**	**0.17**	0.026	0.055	0.034	0.61	0.24
EX1-9	4-Jun-19	4.01	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0061	<0.0050	<0.010	<0.010	<0.0050
EX1-10	4-Jun-19	3.99	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.0050
EX1-11	4-Jun-19	4.43	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.011	<0.0050	<0.010	<0.010	<0.0050
EX1-12	4-Jun-19	5.32	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.048	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	0.0077	<0.0050	0.016 (2)	0.0075	0.017 (2)	0.0069	<0.0050	<0.010	0.041	0.0077
EXW1-1	4-Jun-19	3.18	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.008	<0.0050	<0.010	<0.010	<0.0050
EXW1-2	4-Jun-19	3.45	0.017	0.011	0.02	<0.0050	0.026	<0.0050	0.012	0.0088	1.1	0.25	0.019	0.048	0.012	0.13	0.019 (1)	<0.0050	0.018	0.034	0.069 (1)	0.28	**0.11**	**0.2**	0.032	0.05	0.06	0.92	0.18
EXW1-3	4-Jun-19	2.81	0.0089	<0.0050	0.011	<0.0050	0.018	<0.0050	<0.0050	<0.0050	0.32	0.14	0.008	0.0068	<0.0050	0.012	0.0058	<0.0050	0.01	0.026	0.011 (1)	0.088	**0.035**	**0.073**	<0.0050	0.023	<0.010	0.23	0.087
EXW1-4	4-Jun-19	5.40	0.018	0.012	0.034	0.0079	0.031	<0.0050	0.013	0.011	0.51	0.38	0.022	0.013	0.0058	0.014	0.011	<0.0050	0.023	0.048	0.017	0.082	**0.037**	**0.1**	0.0053	0.038	0.013	0.3	0.21
WA-EX1-1	4-Jun-19	n/a	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0078	<0.0050	<0.010	<0.010	<0.0050
WA-EX1-2	4-Jun-19	n/a	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0058	<0.0050	<0.010	<0.010	<0.0050
WA-EX1-3	4-Jun-19	n/a	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0069	<0.0050	<0.010	<0.010	<0.0050
EX2-1	5-Jun-19	2.44	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.0050
DUP 7 (duplicate of EX2-1)	5-Jun-19	2.44	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.0050
EX2-2	5-Jun-19	2.24	0.052	0.046	0.055	0.015	0.087	0.0089	0.074	0.036	2.5	0.83	0.072	0.17	0.025	0.19	0.096	0.0099	0.044	0.21	0.19	0.42	**0.17**	**0.42**	0.059	0.2	0.059	1.8	0.8
EX2-3	5-Jun-19	2.29	0.1	0.096	0.21	0.066	0.19	0.019	0.077	0.072	2	**2.5**	0.16	0.088	0.017	0.028	0.094	0.022	0.11	0.34	0.079	0.023	**0.022**	**0.2**	0.026	0.25	<0.010	0.55	1.4
EX2-4	5-Jun-19	1.82	0.25	0.12	0.18	0.048	0.27	0.018	0.18	0.082	6.7	**2.8**	0.2	**0.84**	0.04	0.18	0.4	0.045	0.11	1.1	**0.63**	0.28	**0.1**	**0.95**	0.078	0.85	0.069	3.5	3.2
EX2-5	5-Jun-19	2.45	0.0075	<0.0050	0.0098	<0.0050	0.0088	<0.0050	<0.0050	<0.0050	0.095	0.12	<0.0071	0.0088	<0.0050	<0.010	0.0053	<0.0050	0.0061	0.02	0.0062	<0.0050	<0.0050	0.012	<0.0050	0.017	<0.010	0.033	0.063
EX2-6	5-Jun-19	4.56	0.012	0.012	0.023	0.0077	0.022	<0.0050	0.0097	0.0086	0.33	0.28	0.02	0.02	<0.0050	<0.010	0.011	<0.0050	0.013	0.04	0.017	0.028	**0.031**	**0.052**	0.012	0.035	<0.010	0.16	0.17
EX2-7	5-Jun-19	2.25	0.0066	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.1	<0.10	<0.0071	0.012	<0.0050	<0.010	0.0062	<0.0050	<0.0050	0.035	0.0071	<0.0050	<0.0050	0.0086	<0.0050	0.025	<0.010	0.034	0.066
EX2-8	5-Jun-19	2.01	0.046	0.045	0.1	0.031	0.083	0.0085	0.041	0.034	1	**1.2**	0.075	0.052	0.012	0.012	0.075	0.011	0.052	0.18	0.045	<0.0050	<0.0050	**0.13**	0.012	0.13	<0.010	0.33	0.71
DUP 8 (duplicate of EX2-8)	5-Jun-19	2.01	0.076	0.07	0.14	0.044	0.12	0.012	0.069	0.052	1.8	**1.7**	0.12	0.15	0.024	0.024	0.11	0.018	0.075	0.27	0.1	<0.0050	0.0099	**0.25**	0.024	0.21	<0.010	0.67	1.1
EX2-9	5-Jun-19	4.46	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.009	<0.0050	<0.010	<0.010	<0.0050
EX2-10	5-Jun-19	4.48	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.0050
EX2-11	5-Jun-19	4.89	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.0050
EX2-12	5-Jun-19	4.55	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.0050
EXW2-1	5-Jun-19	1.91	0.02	0.012	0.021	0.0053	0.031	<0.0050	0.012	0.009	0.76	0.29	0.021	0.063	0.0065	0.057	0.033	<0.0050	0.014	0.078	0.071	0.058	**0.017**	**0.18**	0.034	0.068	0.026	0.51	0.26
EXW2-2	5-Jun-19	3.82	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.0050
EXW2-3	5-Jun-19	1.38	0.017	0.0071	0.012	<0.0050	0.018	<0.0050	<0.0050	<0.0050	0.39	0.18	0.013	0.029	<0.0050	<0.010	0.023	<0.0050	0.0067	0.081	0.035	<0.0050	<0.0050	**0.11**	<0.0050	0.056	<0.010	0.2	0.19
EXW2-4	5-Jun-19	4.27	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.0050
SLOT1-1	6-Jun-19	2.07	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.0050
SLOT1-2	6-Jun-19	2.34	<0.0050	<0.0050	0.0088	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.12	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	0.0071	0.0057	<0.0050	0.045	**0.022**	0.033	<0.0050	0.0061	<0.010	0.1	0.021
SLOT1-3	6-Jun-19	2.37	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.0050
SLOT1-4	6-Jun-19	1.86	<0.0050	<0.0050	0.0078	<0.0050	0.02	<0.0050	<0.0050	<0.0050	0.044	0.1	<0.0071	<0.0050	<0.0050	<0.010	0.016	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	0.016	0.028
SLOT2-1	6-Jun-19	1.34	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.0050
DUP9 (duplicate of SLOT2-1)	6-Jun-19	1.34	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.0050

Notes:
1. Canadian Council of Ministers of the Environment (CCME) Soil Quality Guidelines for the Protection of Environmental and Human Health, values for industrial land use and coarse-grained soils (CCME 1999, updated 2001).
2. Canadian Council of Ministers of the Environment (CCME) Soil Quality Guidelines for the Protection of Environmental and Human Health, values for agricultural land use and coarse-grained soils (CCME 1999, updated 2001).

BOLD/HIGHLIGHTED - Exceeds the applicable guideline.
mg/kg - milligrams per kilogram.
mbgs - meters below ground surface.
n/a - not applicable.
< Indicates parameter was below laboratory equipment detection limit.
"-" Chemical not analyzed or criteria not defined.
(1) Qualifying ion outside of acceptance criteria. Results are tentatively identified and potentially biased high.
(2) Duplicate exceeds acceptance criteria due to sample non homogeneity. Reanalysis yields similar results.
Table to be read in conjunction with accompanying report.

Table 22
Source Removal Soil Analytical Results - Polycyclic Aromatic Hydrocarbons
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample ID	Sample Date (dd-mmm-yy)	Depth (mbgs)	Carcinogenic Polycyclic Aromatic Hydrocarbons											Non-Carcinogenic Polycyclic Aromatic Hydrocarbons															
			Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b&j)fluoranthene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Benzo(g,h,i)perylene	Indeno(1,2,3-cd)pyrene	Total PAH	Index of Additive Cancer Risk(IACR)	B[a]P TPE Total Potency Equivalents	Acenaphthene	Acenaphthylene	Acridine	Anthracene	Benzo(c)phenanthrene	Benzo[e]pyrene	Fluoranthene	Fluorene	2-Methylnaphthalene	Naphthalene	Phenanthrene	Perylene	Pyrene	Quinoline	Low Molecular Weight PAH's	High Molecular Weight PAH's
Guideline[1] (CN Right-of-Way)			**10**	**72**	**-**	**10**	**-**	**10**	**-**	**10**	**-**	**1**	**0.6**	**0.28**	**320**	**-**	**32**	**-**	**-**	**180**	**0.25**	**-**	**0.013**	**0.046**	**-**	**100**	**-**	**-**	**-**
Guideline[2] (Outside CN Right-of-Way)			**0.1**	**20**	**-**	**0.1**	**6.2**	**0.1**	**-**	**0.1**	**-**	**1**	**0.6**	**0.28**	**320**	**-**	**2.5**	**-**	**-**	**50**	**0.25**	**-**	**0.013**	**0.046**	**-**	**0.1**	**-**	**-**	**-**
Units			**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**n/a**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**
Containment Cells - Outside CN Right-of-Way																													
CELL1-1	9-Jun-19	0 - 0.15	0.0064	<0.0050	0.019	<0.0050	0.014	<0.0050	0.008	0.0074	0.19	0.18	0.009	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	0.012	0.02	<0.0050	0.043	**0.026**	0.038	<0.0050	0.014	<0.010	0.11	0.089
CELL1-2	9-Jun-19	0 - 0.15	0.0069	0.0076	0.022	0.0061	0.015	<0.0050	0.0095	0.0092	0.21	0.24	0.015	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	0.013	0.025	0.0065	0.026	**0.015**	0.037	<0.0050	0.02	<0.010	0.084	0.12
CELL2-1	9-Jun-19	0 - 0.15	<0.0050	0.0076	0.02	<0.0050	0.011	<0.0050	0.023	0.017	0.15	0.19	0.015	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	0.015	0.014	<0.0050	0.019	0.01	0.021	<0.0050	0.011	<0.010	0.05	0.1
CELL2-2	9-Jun-19	0 - 0.15	<0.0050	<0.0050	0.0088	<0.0050	0.008	<0.0050	<0.0050	<0.0050	0.1	0.1	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	0.0098	<0.0050	0.028	**0.019**	0.022	<0.0050	0.0072	<0.010	0.069	0.034
DUP14 (duplicate of CELL2-2)	9-Jun-19	0 - 0.15	<0.0050	<0.0050	0.01	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.084	0.11	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	0.012	<0.0050	0.02	0.011	0.023	<0.0050	0.0082	<0.010	0.054	0.03
CELL3-1	9-Jun-19	0 - 0.15	<0.0050	<0.0050	0.0097	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.09	0.1	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	0.0078	<0.0050	0.028	**0.014**	0.024	<0.0050	0.0067	<0.010	0.066	0.024
CELL3-2	9-Jun-19	0 - 0.15	**0.12**	0.057	0.15	0.046	0.17	0.013	0.068	0.061	3.2	**1.9**	0.11	0.1	0.015	0.023	0.15	0.032	0.086	0.79	0.14	0.042	**0.026**	**0.64**	0.02	**0.52**	<0.010	1.1	2
Backfill Used for Excavations																													
BACKFILL 1	5-Jun-19	n/a	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.0050
BACKFILL 2	5-Jun-19	n/a	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.0050
BACKFILL 3	5-Jun-19	n/a	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.0050
BACKFILL 4	5-Jun-19	n/a	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.0050
BACKFILL 5	5-Jun-19	n/a	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.0050
BACKFILL 6	5-Jun-19	n/a	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.0050
Hand Auger South Remediation Area - CN Right-of-Way																													
19-H1-001	9-Jun-19	0 - 0.15	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.023	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	0.0071	<0.0050	<0.0050	<0.0050	0.0087	0.012	0.0067	<0.010	<0.010	0.014
19-H1-002B	16-Oct-19	1	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.12	<0.10	<0.0071	0.0088	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	0.023	0.0084	0.0067	0.011	**0.049**	0.024	0.017	<0.010	0.084	0.04
19-H2-001	9-Jun-19	0 - 0.15	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.039	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	0.014	<0.0050	<0.0050	<0.0050	0.013	0.008	0.011	<0.010	0.013	0.026
19-H2-002B	16-Oct-19	1	<0.0050	<0.0050	0.0088	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.13	<0.10	<0.0071	0.012	<0.0050	<0.010	0.0053	<0.0050	<0.0050	0.023	0.0087	0.0066	0.013	0.036	0.032	0.018	<0.010	0.082	0.050
19-H3-001	9-Jun-19	0 - 0.15	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0067	<0.0050	<0.010	<0.010	<0.0050
19-H3-002	9-Jun-19	1	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.044	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	0.0095	<0.0050	<0.0050	0.0084	0.018	0.013	0.0076	<0.010	0.027	0.017
19-H4-001B	16-Oct-19	0 - 0.15	<0.0050	0.0074	0.014	<0.0050	<0.0050	<0.0050	0.008	<0.0050	0.044	0.15	0.012	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	0.012	0.0062	<0.0050	<0.0050	<0.0050	<0.0050	0.017	0.0083	<0.010	<0.010	0.044
19-H4-002	9-Jun-19	1	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.056	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	0.02	<0.0050	<0.0050	<0.0050	0.022	<0.0050	0.014	<0.010	0.022	0.034
19-H5-001B	16-Oct-19	0 - 0.15	<0.0050	<0.0050	0.0073	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.021	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	0.0069	<0.0050	0.0070	0.012	<0.0050	<0.010	0.014	0.0073
19-H5-002	9-Jun-19	1	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0077	<0.0050	<0.0050	<0.010	<0.010	<0.0050
19-H6-001B	16-Oct-19	0 - 0.15	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0067	<0.0050	<0.010	<0.010	<0.0050
19-H6-002B	16-Oct-19	1	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0087	<0.0050	<0.010	<0.010	<0.0050
19-H7-001	9-Jun-19	0 - 0.15	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.042	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	0.016	<0.0050	<0.0050	<0.0050	0.011	0.021	0.014	<0.010	0.011	0.03
19-H7-002	9-Jun-19	1	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.0050
19-H8-001	9-Jun-19	0 - 0.15	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.0050
19-H8-002	9-Jun-19	1	<0.0050	<0.0050	0.0074	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.032	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	0.0095	<0.0050	<0.0050	<0.0050	0.0077	<0.0050	0.0074	<0.010	<0.010	0.024
19-H9-001	9-Jun-19	0 - 0.15	0.0067	<0.0050	0.0076	<0.0050	0.0071	<0.0050	<0.0050	<0.0050	0.12	0.11	<0.0071	0.0085	<0.0050	<0.010	0.0065	<0.0050	<0.0050	0.024	0.0073	<0.0050	<0.0050	0.034	0.0083	0.018	<0.010	0.056	0.064
DUP11 (duplicate of 19-H9-001)	9-Jun-19	0 - 0.15	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.044	<0.10	<0.0071	0.0075	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	0.0097	<0.0050	<0.0050	<0.0050	0.018	<0.0050	0.0082	<0.010	0.026	0.018
19-H9-002	9-Jun-19	1	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.0050
19-H10-001	9-Jun-19	0 - 0.15	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.0050
19-H10-002	9-Jun-19	1	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.0050
Hand Auger South Remediation Area - Outside CN Right-of-Way																													
19-H11-001	9-Jun-19	0 - 0.15	<0.0050	<0.0050	0.0066	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.069	<0.10	<0.0071	0.011	<0.0050	<0.010	0.0043	<0.0050	<0.0050	0.011	0.0074	<0.0050	<0.0050	0.018	0.0076	0.0096	<0.010	0.041	0.027
19-H11-002	9-Jun-19	1	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.007	0.0058	<0.0050	<0.010	<0.010	<0.0050
19-H12-001	9-Jun-19	0 - 0.15	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.024	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	0.0087	<0.0050	0.015	0.0077	<0.0050	<0.010	0.024	<0.0050
19-H13-001	9-Jun-19	0 - 0.15	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0086	<0.0050	<0.010	<0.010	<0.0050

Notes:

1. Canadian Council of Ministers of the Environment (CCME) Soil Quality Guidelines for the Protection of Environmental and Human Health, values for industrial land use and coarse-grained soils (CCME 1999, updated 2001).
2. Canadian Council of Ministers of the Environment (CCME) Soil Quality Guidelines for the Protection of Environmental and Human Health, values for agricultural land use and coarse-grained soils (CCME 1999, updated 2001).

BOLD/HIGHLIGHTED - Exceeds the applicable guideline.
mg/kg - milligrams per kilogram.
mbgs - meters below ground surface.
n/a - not applicable.
< Indicates parameter was below laboratory equipment detection limit.
"-" Chemical not analyzed or criteria not defined.
(1) Qualifying ion outside of acceptance criteria. Results are tentatively identified and potentially biased high.
(2) Duplicate exceeds acceptance criteria due to sample non homogeneity. Reanalysis yields similar results.
Table to be read in conjunction with accompanying report.

Table 22
Source Removal Soil Analytical Results - Polycyclic Aromatic Hydrocarbons
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample ID	Sample Date (dd-mmm-yy)	Depth (mbgs)	Carcinogenic Polycyclic Aromatic Hydrocarbons											Non-Carcinogenic Polycyclic Aromatic Hydrocarbons																
			Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b&j)fluoranthene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Benzo(g,h,i)perylene	Indeno(1,2,3-cd)pyrene	Total PAH	Index of Additive Cancer Risk(IACR)	B[a]P TPE Total Potency Equivalents	Acenaphthene	Acenaphthylene	Acridine	Anthracene	Benzo(c)phenanthrene	Benzo[e]pyrene	Fluoranthene	Fluorene	2-Methylnaphthalene	Naphthalene	Phenanthrene	Perylene	Pyrene	Quinoline	Low Molecular Weight PAH's	High Molecular Weight PAH's
Guideline[1] (CN Right-of-Way)			**10**	**72**	**-**	**10**	**-**	**10**	**-**	**10**	**-**	**1**	**0.6**	**0.28**	**320**	**-**	**32**	**-**	**-**	**180**	**0.25**	**-**	**0.013**	**0.046**	**-**	**100**	**-**	**-**	**-**
Guideline[2] (Outside CN Right-of-Way)			**0.1**	**20**	**-**	**0.1**	**6.2**	**0.1**	**-**	**0.1**	**-**	**1**	**0.6**	**0.28**	**320**	**-**	**2.5**	**-**	**-**	**50**	**0.25**	**-**	**0.013**	**0.046**	**-**	**0.1**	**-**	**-**	**-**
Units			**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**n/a**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**
19-H14-001	9-Jun-19	0 - 0.15	0.014	0.023	0.039	0.012	0.025	<0.0050	0.02	0.02	0.23	0.45	0.034	<0.0050	<0.0050	<0.010	0.0097	<0.0050	0.024	0.024	<0.0050	<0.0050	<0.0050	0.018	0.011	0.022	<0.010	0.028	0.2
19-H15-001	9-Jun-19	0 - 0.15	<0.0050	<0.0050	<0.0050	<0.0050	0.0082	<0.0050	<0.0050	<0.0050	0.02	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.012	0.013	<0.0050	<0.010	0.012	0.0082
19-H16-001	9-Jun-19	0 - 0.15	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0083	0.011	<0.0050	<0.010	<0.010	<0.0050
19-BG1-001	9-Jun-19	0 - 0.15	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.024	<0.0050	<0.010	<0.010	<0.0050
19-BG2-001	9-Jun-19	0 - 0.15	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.016	<0.0050	<0.010	<0.010	<0.0050
DUP12 (duplicate of 19-BG2-001)	9-Jun-19	0 - 0.15	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.019	<0.0050	<0.010	<0.010	<0.0050
19-BG3-001	9-Jun-19	0 - 0.15	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.013	<0.0050	<0.010	<0.010	<0.0050
19-BG4-001	9-Jun-19	0 - 0.15	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.011	<0.0050	<0.010	<0.010	<0.0050
19-BG5-001	9-Jun-19	0 - 0.15	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.018	<0.0050	<0.010	<0.010	<0.0050
19-BG6-001	9-Jun-19	0 - 0.15	<0.0050	<0.0050	0.01	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.033	0.11	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	0.013	<0.0050	<0.0050	<0.0050	<0.0050	0.012	0.01	<0.010	<0.010	0.033
19-BG7-001	9-Jun-19	0 - 0.15	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.0050
19-BG8-001	9-Jun-19	0 - 0.15	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.0050
19-BG9-001	9-Jun-19	0 - 0.15	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.0050
19-BG10-001	9-Jun-19	0 - 0.15	<0.0050	<0.0050	0.0078	<0.0050	0.0065	<0.0050	<0.0050	<0.0050	0.045	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	0.0075	<0.0050	0.011	<0.0050	0.012	<0.0050	<0.0050	<0.010	0.024	0.022
DUP13 (duplicate of 19-BG10-001)	9-Jun-19	0 - 0.15	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.014	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	0.0065	<0.0050	0.007	<0.0050	<0.0050	<0.010	0.014	<0.0050
Backfill Used for Oxbow Island - Outside CN Right-of-Way																													
TOPSOIL 1	10-Sep-19	n/a	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.0050
TOPSOIL 2	10-Sep-19	n/a	0.045	0.046	0.062	0.022	0.043	0.007	0.031	0.034	0.550	0.850	0.070	0.009	<0.0050	<0.010	0.013	<0.0050	0.034	0.096	<0.0050	<0.0050	<0.0050	0.061	0.012	0.080	<0.010	0.084	0.470
TOPSOIL 3	10-Sep-19	n/a	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.0050
TOPSOIL 4	10-Sep-19	n/a	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.0050
TOPSOIL 5	10-Sep-19	n/a	0.022	0.022	0.031	0.012	0.021	<0.0050	0.016	0.018	0.240	0.430	0.033	<0.0050	<0.0050	<0.010	0.005	<0.0050	0.017	0.039	<0.0050	<0.0050	<0.0050	0.016	<0.0050	0.033	<0.010	0.021	0.220
TOPSOIL 6	10-Sep-19	n/a	0.017	0.022	0.035	0.011	0.019	<0.0050	0.019	0.020	0.210	0.430	0.033	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	0.020	0.028	<0.0050	<0.0050	<0.0050	0.014	0.006	0.025	<0.010	0.014	0.200
TOPSOIL 7	10-Sep-19	n/a	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.0050
SUBSOIL 1	10-Sep-19	n/a	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.0050
SUBSOIL 2	10-Sep-19	n/a	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.0050
SUBSOIL 3	10-Sep-19	n/a	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.0050
WA-SOIL-216	5-Feb-20	n/a	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.0050
WA-SOIL-217	5-Feb-20	n/a	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.0050
Temporary Gravel Used for Safe Equipment Access - Outside CN Right-of-Way																													
WA-SOIL-218	14-Feb-20	n/a	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.0050
Excavated / Resampled Locations																													
Hand Auger South Remediation Area - CN Right-of-Way																													
19-H1-002	9-Jun-19	1	<0.0050	<0.0050	0.0084	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.14	<0.10	<0.0071	0.025	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	0.017	0.014	0.013	**0.018**	0.033	0.023	0.014	<0.010	0.1	0.039
19-H2-002	9-Jun-19	1	0.037	0.023	0.041	0.013	0.023	<0.0050	0.015	0.015	1.1	0.54	0.036	0.083	<0.0050	<0.010	0.031	0.0075	0.021	0.21	0.067	0.026	**0.052**	**0.32**	0.019	0.15	<0.010	0.58	0.53
19-H4-001	9-Jun-19	0 - 0.15	0.099	0.04	0.076	0.023	0.099	<0.0050	0.023	0.019	1.2	**1.1**	0.065	0.016	0.007	0.024	0.044	0.018 (1)	0.043	0.33	0.026	<0.0050	<0.0050	**0.087**	0.029	0.3	<0.010	0.2	1
19-H5-001	9-Jun-19	0 - 0.15	<0.0050	<0.0050	<0.0050	<0.0050	0.0059	<0.0050	<0.0050	<0.0050	0.15	<0.10	<0.0071	0.011	<0.0050	<0.010	0.0064	<0.0050	<0.0050	0.031	0.015	<0.0050	<0.0050	**0.064**	<0.0050	0.02	<0.010	0.097	0.057
19-H6-001	9-Jun-19	0 - 0.15	<0.0050	<0.0050	<0.0050	<0.0050	0.0068	<0.0050	<0.0050	<0.0050	0.066	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	0.026	<0.0050	<0.0050	<0.0050	0.014	<0.0050	0.019	<0.010	0.014	0.053
DUP10 (duplicate of 19-H6-001)	9-Jun-19	0 - 0.15	0.016	0.0086	0.02	<0.0050	0.021	<0.0050	<0.0050	<0.0050	0.28	0.24	0.015	0.0088	<0.0050	<0.010	0.012	<0.0050	0.01	0.074	0.015	<0.0050	<0.0050	**0.052**	0.007	0.056	<0.010	0.087	0.2
19-H6-002	9-Jun-19	1	0.019	0.0065	0.013	<0.0050	0.019	<0.0050	<0.0050	<0.0050	0.31	0.2	0.013	0.0086	<0.0050	<0.010	0.014	<0.0050	0.0073	0.095	0.013	<0.0050	<0.0050	**0.049**	0.0063	0.068	<0.010	0.084	0.22

Notes:
1. Canadian Council of Ministers of the Environment (CCME) Soil Quality Guidelines for the Protection of Environmental and Human Health, values for industrial land use and coarse-grained soils (CCME 1999, updated 2001).
2. Canadian Council of Ministers of the Environment (CCME) Soil Quality Guidelines for the Protection of Environmental and Human Health, values for agricultural land use and coarse-grained soils (CCME 1999, updated 2001).

BOLD/HIGHLIGHTED - Exceeds the applicable guideline.
mg/kg - milligrams per kilogram.
mbgs - meters below ground surface.
n/a - not applicable.
< Indicates parameter was below laboratory equipment detection limit.
"-" Chemical not analyzed or criteria not defined.
(1) Qualifying ion outside of acceptance criteria. Results are tentatively identified and potentially biased high.
(2) Duplicate exceeds acceptance criteria due to sample non homogeneity. Reanalysis yields similar results.
Table to be read in conjunction with accompanying report.

Table 23
Source Removal Soil Analytical Results - Salinity
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample ID	Sample Type	Sample Date (dd-mmm-yy)	Depth (mbgs)	Anion Sum	Cation Sum	Cation/ EC Ratio	Ion Balance	Calculated Calcium (Ca)	Calculated Magnesium (Mg)	Calculated Sodium (Na)	Calculated Potassium (K)	Calculated Chloride (Cl)	Calculated Sulphate (SO_4)	Soluble Chloride (Cl)	Soluble Conductivity (EC)	EC Rating *	Soluble ($CaCl_2$) pH	Sodium Adsorption Ratio (SAR)	SAR Rating *	Soluble Calcium (Ca)	Soluble Magnesium (Mg)	Soluble Sodium (Na)	Soluble Potassium (K)	Saturation %	Soluble Sulphate (SO_4)	Theoretical Gypsum Requirement
			Units	meq/L	meq/L	n/a	n/a	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/L	dS/m	n/a	pH	n/a	n/a	mg/L	mg/L	mg/L	mg/L	%	mg/L	tonnes/ha
Backfill Used for Initial Response - CN Right-of-Way																										
G101	Subsoil	10-Mar-19	n/a	11	11	10	1.1	65	27	80	8.1	20	380	25	1.1	Good	7.5	2.4	Good	82	34	100	10	80	480	<0.20
Declined Backfill Source																										
G100	Subsoil	8-Mar-19	n/a	120	120	14	0.99	250	390	1600	28	140	5300	150	8.7	Poor	7.14	**15**	**Unsuitable**	270	420	1700	30	94	5600	96
4000-FILL	Subsoil	15-Mar-19	n/a	130	130	13	0.99	370	410	1900	41	200	6300	200	9.9	Poor	7.61	**16**	**Unsuitable**	360	390	1800	39	100	6100	130
Excavation South Remediation Area - CN Right-of-Way																										
C-9158B	Topsoil	2-Jun-19	0 - 0.15	6.2	9.8	9.6	1.6	26	11	84	6.9	8.4	170	14	1	Good	7.97	4.4	Fair	42	18	140	11	62	280	<0.20
DUP4 (duplicate of C-9158B)	Topsoil	2-Jun-19	0 - 0.15	9	9.1	9.1	1	30	14	65	5.7	7.8	260	13	1	Good	7.69	3.1	Good	49	23	100	9.3	62	420	<0.20
Excavation South Remediation Area - Outside CN Right-of-Way																										
C-9056B	Topsoil	2-Jun-19	0 - 0.15	3	11	9.1	1.5	14	6.4	140	6.1	79	130	120	1.2	Good	**8.31**	**9.2**	**Poor**	20	9.4	200	9	68	190	0.87
C-9046B	Topsoil	2-Jun-19	0 - 0.15	150	140	14	0.95	450	410	1700	34	79	6600	83	**9.6**	**Unsuitable**	**8.76**	**14**	**Unsuitable**	470	430	1800	36	95	6900	110
C-9049B	Topsoil	2-Jun-19	0 - 0.15	140	130	15	0.96	410	290	1400	28	61	5300	76	**9**	**Unsuitable**	**8.77**	**15**	**Unsuitable**	510	360	1800	35	81	6500	91
C-9081B	Topsoil	2-Jun-19	0 - 0.15	6.3	9.9	12	1.6	11	4.8	110	5.4	73	79	120	0.84	Good	7.76	**8.9**	**Poor**	19	8.1	190	9.1	59	130	0.64
C-9106B	Topsoil	2-Jun-19	0 - 0.15	3.3	6.6	15	2	9.2	4.6	74	1.5	28	61	45	0.44	Good	7.72	**6.3**	**Fair**	15	7.5	120	2.5	62	98	0.21
Backfill Used for Excavations - Outside CN Right-of-Way																										
BACKFILL 1	Topsoil	5-Jun-19	n/a	4.7	6.6	12	1.4	11	5.2	8.9	2.2	12	32	57	0.56	Good	7.92	1.2	Good	51	24	41	10	22	150	<0.20
BACKFILL 2	Topsoil	5-Jun-19	n/a	3.2	5.3	11	1.7	11	4.9	7.4	2	7.6	28	30	0.47	Good	7.87	0.92	Good	45	20	29	8.1	25	110	<0.20
BACKFILL 3	Topsoil	5-Jun-19	n/a	2.9	5.3	12	1.8	11	4.2	8.7	2.2	7.4	25	30	0.43	Good	7.9	1.1	Good	44	17	35	8.7	25	100	<0.20
BACKFILL 4	Topsoil	5-Jun-19	n/a	1.6	4	12	2.5	7.1	3	3.9	1.4	3.4	11	17	0.34	Good	7.85	0.69	Good	35	15	19	6.8	20	53	<0.20
BACKFILL 5	Topsoil	5-Jun-19	n/a	2.4	4.8	12	2	11	5	6.7	2.3	7.8	21	28	0.42	Good	7.91	0.79	Good	41	18	24	8.2	28	78	<0.20
BACKFILL 6	Topsoil	5-Jun-19	n/a	3.7	6.6	13	1.8	17	7.8	8.1	3	9.2	39	31	0.53	Good	7.9	0.75	Good	59	27	28	10	29	130	<0.20
Backfill Used for Oxbow Island - Outside CN Right-of-Way																										
TOPSOIL 1	Topsoil	10-Sep-19	n/a	4.2	13	10	100	100	25	15	12	11	110	18	1.2	Good	7.24	0.43	Good	160	40	23	18	64	180	<0.20
TOPSOIL 2	Topsoil	10-Sep-19	n/a	8.4	17	11	110	110	33	30	9.9	44	180	76	1.6	Good	7.47	0.84	Good	190	57	51	17	58	300	<0.20
TOPSOIL 3	Topsoil	10-Sep-19	n/a	4.5	13	10	97	97	24	14	11	12	110	21	1.3	Good	7.3	0.44	Good	160	40	24	19	59	190	<0.20
TOPSOIL 4	Topsoil	10-Sep-19	n/a	8.1	15	11	92	92	28	30	6.7	29	180	51	1.3	Good	7.49	0.93	Good	160	50	53	12	56	320	<0.20
TOPSOIL 5	Topsoil	10-Sep-19	n/a	8.7	17	11	120	120	36	29	10	44	190	73	1.6	Good	7.46	0.77	Good	200	59	48	17	60	320	<0.20
TOPSOIL 6	Topsoil	10-Sep-19	n/a	1.9	9.5	9.7	70	70	18	9.4	8.4	13	36	22	0.98	Good	7.32	0.34	Good	120	31	16	14	60	60	<0.20
TOPSOIL 7	Topsoil	10-Sep-19	n/a	1	5.1	12	34	34	9.5	10	7	6.1	21	10	0.42	Good	7.14	0.51	Good	56	16	17	11	61	35	<0.20
SUBSOIL 1	Subsoil	10-Sep-19	n/a	29	29	12	140	140	61	45	16	38	630	79	2.4	Good	7.63	1.2	Good	280	130	93	32	48	1300	<0.20
SUBSOIL 2	Subsoil	10-Sep-19	n/a	30	31	12	140	140	78	40	14	42	640	86	2.5	Good	7.68	0.97	Good	280	160	82	28	49	1300	<0.20
SUBSOIL 3	Subsoil	10-Sep-19	n/a	1.3	3.8	12	12	12	4.8	19	5.5	9.3	20	18	0.32	Good	7.67	1.6	Good	23	9.3	36	11	52	39	<0.20
WA-SOIL-216	Topsoil	5-Feb-20	n/a	8.8	18	11	-	94	33	31	9.1	30	180	59	1.7	Good	7.52	0.99	Good	180	65	61	18	51	340	<0.20
WA-SOIL-217	Subsoil	5-Feb-20	n/a	51	51	14	-	180	140	49	6.9	57	1000	130	**3.6**	**Fair**	7.76	0.98	Good	390	320	110	15	45	2300	<0.20
Temporary Gravel Used for Safe Equipment Access - Outside CN Right-of-Way																										
WA-SOIL-218	Gravel	14-Feb-20	n/a	4.7	7.2	11	-	14	5.8	7.0	2.1	10	34	47	0.66	Good	8.08	0.86	Good	67	27	33	9.8	21	160	<0.20
Guideline[1] (CN Right-of-Way)				-	-	-	-	-	-	-	-	-	-	-	**4**	**n/a**	**6 to 8**	**12**	**n/a**	-	-	-	-	-	-	-
Guideline[2] (Outside CN Right-of-Way)				-	-	-	-	-	-	-	-	-	-	-	**2**	**n/a**	**6 to 8**	**5**	**n/a**	-	-	-	-	-	-	-
AB Tier 1 Agricultural[3]				-	-	-	-	-	-	-	-	-	-	-	**<3**	**Good**	**6 to 8.5**	**<4**	**Good**	-	-	-	-	-	-	-

Notes:

1. Canadian Council of Ministers of the Environment (CCME) Soil Quality Guidelines for the Protection of Environmental and Human Health, values for industrial land use and coarse-grained soils (CCME 1999, updated 2001).
2. Canadian Council of Ministers of the Environment (CCME) Soil Quality Guidelines for the Protection of Environmental and Human Health, values for agricultural land use and coarse-grained soils (CCME 1999, updated 2001).
3. Alberta Tier 1 Soil and Groundwater Remediation Guidelines and where applicable the Alberta Environment Salt Contamination Assessment and Remediation Guidelines for Agricultural Land Use (2016).

BOLD/HIGHLIGHTED - Value Exceeds the applicable CCME guideline.

mg/kg - milligrams per kilogram.

meq/L - Milli equivalents per litre.

n/a - not applicable.

EC - Electrical conductivity.

SAR - Sodium Adsorption Ratio.

< Indicates parameter was below laboratory equipment detection limit.

"-" Chemical not analyzed or criteria not defined.

tonnes/ha - tonnes per hectare.

* - EC and SAR rating categories are from the Alberta Tier 1 Salt Remediation Guidelines.

Table to be read in conjunction with accompanying report.

Alberta Tier 1 Rating Categories - Electrical Conductivity - Topsoil

<2	Good
2 to 4	Fair
4 to 8	Poor
>8	Unsuitable

Alberta Tier 1 Rating Categories - Sodium Adsorption Ratio - Topsoil

<4	Good
4 to 8	Fair
8 to 12	Poor
>12	Unsuitable

Alberta Tier 1 Rating Categories - Electrical Conductivity - Subsoil

<3	Good
3 to 5	Fair
5 to 10	Poor
>10	Unsuitable

Alberta Tier 1 Rating Categories - Sodium Adsorption Ratio - Subsoil

<4	Good
4 to 8	Fair
8 to 12	Poor
>12	Unsuitable

Table 24
Sediment Analytical Results - Petroleum Hydrocarbons
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample ID	Sample Date (dd-mmm-yy)	Petroleum Hydrocarbons								
		Benzene	Toluene	Ethylbenzene	Xylenes (Total)	F1 (C_6-C_{10})-BTEX	F2 (C_{10}-C_{16})	F3 (C_{16}-C_{34})	F4 (C_{34}-C_{50})	Reached Baseline at C_{50}
Guideline[1] (CN Right-of-Way)		**0.03**	**0.37**	**0.082**	**11**	**320**	**260**	**1700**	**3300**	**-**
Guideline[2] (Outside CN Right-of-Way)		**0.03**	**0.37**	**0.082**	**11**	**30**	**150**	**300**	**2800**	**-**
Units		**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**-**
Confirmatory Locations										
CN Right-of-Way										
AFTER CULVERT	28-Aug-19	<0.0050	<0.050	<0.010	<0.045	<10	11	<50	<50	YES
MID CULVERT	28-Aug-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
MID CULVERT 2	28-Aug-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
Outside CN Right-of-Way										
BEFORE CULVERT	28-Aug-19	<0.013 (2)	<0.050 (3)	<0.025 (2)	<0.11	<22	<25 (1)	<130 (1)	<130 (1)	YES
C-2136C*	24-Feb-20	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-2600B*	25-Feb-20	<0.0050 (3)	<0.050 (3)	<0.012 (3)	<0.11	<18	<10	<50	<50	YES
C-6013B*	14-Aug-19	<0.0060 (2)	<0.050 (2)	<0.013 (2)	<0.13	<20	32 (1)	210 (1)	<120 (1)	YES
C-6015B*	14-Aug-19	<0.0050 (4)	<0.050 (4)	<0.010 (4)	<0.097	<22	12	84	<50	YES
C-6035B*	14-Aug-19	<0.0050 (2)	<0.050 (2)	<0.011 (2)	<0.11	<17	<20 (1)	140 (1)	<100 (1)	YES
C-6042*	6-Mar-19	**0.037**	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-6042B*	14-Aug-19	<0.0050	<0.050	<0.010	<0.045	<10	12	100	<50	YES
WA-SED-101	13-Aug-19	<0.0050	0.18	<0.010	<0.045	<10	<10	52	<50	YES
WA-SED-102B	25-Feb-20	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
WA-SED-103B	25-Feb-20	<0.0050	<0.050	<0.010	<0.045	<10	26	130	<50	YES
DUP02 (duplicate of WA-SED-103B)	25-Feb-20	<0.0050	<0.050	<0.010	<0.045	<10	25	140	<50	YES
WA-SED-104	13-Aug-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
WA-SED-105C	25-Feb-20	<0.011 (4)	<0.050 (4)	<0.021 (4)	<0.094	<21	20	78	<50	YES
WA-SED-106B	25-Feb-20	<0.0050	<0.050	<0.010	<0.045	<10	11	<50	<50	YES
WA-SED-107B	25-Feb-20	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
WA-SED-108	13-Aug-19	<0.0050	<0.050	<0.010	<0.045	<10	21	130	<50	YES
WA-SED-109	13-Aug-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
WA-SED-110B	24-Feb-20	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
WA-SED-111B	24-Feb-20	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
WA-SED-112B	24-Feb-20	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
WA-SED-113B	24-Feb-20	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
WA-SED-114B	24-Feb-20	**0.042 (4)**	<0.050 (4)	<0.012 (4)	<0.12	<18	22	76	<50	YES
WA-SED-115B	24-Feb-20	<0.0050	<0.050	0.020	<0.045	<10	28	92	<50	YES
WA-SED-116	13-Aug-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	120	<50	YES
WA-SED-117	13-Aug-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	94	<50	YES
WA-SED-118	13-Aug-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
WA-SED-119	13-Aug-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
WA-SED-120	15-Aug-19	<0.0050	0.11	<0.010	<0.045	<10	<10	61	<50	YES
WA-SED-201	16-Oct-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
WA-SED-202	16-Oct-19	<0.0050	<0.050	<0.010	<0.045	<10	13	150	<50	YES
WA-SED-203	16-Oct-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
WA-SED-204	16-Oct-19	<0.011 (1)	<0.080 (1)	<0.022 (1)	<0.099	<22	<10	88	<50	YES
WA-SED-205	16-Oct-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	66	<50	YES
WA-SED-206	16-Oct-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
WA-SED-207	22-Oct-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
WA-SED-217	24-Feb-20	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
WA-SED-218	24-Feb-20	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
WA-SED-219	24-Feb-20	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
WA-SED-220	25-Feb-20	<0.0050 (4)	<0.050 (4)	<0.012 (4)	<0.12	<18	22	120	<50	YES
WA-SED-221	25-Feb-20	<0.0050 (4)	<0.050 (4)	<0.010 (4)	<0.093	<21	<10	<50	<50	YES
WA-SED-222	25-Feb-20	<0.0060 (4)	<0.050 (4)	<0.014 (4)	<0.13	<21	17 (5)	81 (5)	<50	YES
WA-SED-223	25-Feb-20	<0.0050	<0.050	<0.010	<0.045	<10	34	170	62	YES
WA-SED-224	25-Feb-20	<0.0050 (4)	<0.050 (4)	<0.010 (4)	<0.10	<23	22	130	<50	YES
DUP01 (duplicate of WA-SED-224)	25-Feb-20	<0.0050 (4)	<0.050 (4)	<0.010 (4)	<0.10	<23	35	190	70	YES
WA-SED-225	25-Feb-20	<0.0050 (4)	<0.050 (4)	<0.010 (4)	<0.091	<20	24	120	<50	YES
South Berm Removal - Outside CN Right-of-Way										
WA-SED-208	18-Feb-20	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
WA-SED-209	18-Feb-20	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
WA-SED-210	18-Feb-20	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
WA-SED-211	18-Feb-20	<0.0050	<0.050	<0.010	<0.045	<10	<10	66	<50	YES
WA-SED-212	18-Feb-20	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
WA-SED-213	18-Feb-20	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
East Berm Removal - Outside CN Right-of-Way										
WA-SED-214	20-Feb-20	<0.0050	<0.050	<0.010	<0.045	<10	13	140	<50	YES
WA-SED-215	20-Feb-20	<0.0050	<0.050	<0.010	<0.045	<10	<10	50	<50	YES
WA-SED-216	20-Feb-20	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
Excavated / Resampled Locations										
Outside CN Right-of-Way										
C-2136*	6-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
C-2600*	10-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	69	<50	YES
C-6013*	6-Mar-19	**0.032**	0.14	<0.010	0.14	<10	15	110	<50	YES
C-6015*	6-Mar-19	**0.035**	<0.050	<0.010	<0.045	<10	<10	66	<50	YES
C-6035*	6-Mar-19	<0.0050	<0.050	<0.010	<0.045	<10	51	**320**	110	YES
WA-SED-102	13-Aug-19	<0.0050	<0.050	<0.010	<0.045	<10	12	100	<50	YES
WA-SED-103	13-Aug-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
WA-SED-105	13-Aug-19	0.014	<0.050	<0.010	<0.045	<10	27	100	<50	YES
WA-SED-105D (duplicate of WA-SED-105)	13-Aug-19	<0.0050	<0.050	<0.010	<0.045	<10	21	69	<50	YES
WA-SED-106	13-Aug-19	<0.0050	<0.050	<0.010	<0.045	<10	32	100	<50	YES
WA-SED-107	13-Aug-19	<0.0050	<0.050	<0.010	<0.045	<10	15	120	<50	YES
WA-SED-110	13-Aug-19	<0.0050	<0.050	<0.010	<0.045	<10	21	170	63	YES
WA-SED-111	13-Aug-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	52	<50	YES
WA-SED-112	13-Aug-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	54	<50	YES
WA-SED-113	13-Aug-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
WA-SED-114	13-Aug-19	<0.0050	<0.050	<0.010	<0.045	<10	<10	<50	<50	YES
WA-SED-115	13-Aug-19	<0.0050	<0.050	<0.010	<0.045	<10	33	160	63	YES

Notes:

1. Canadian Council of Ministers of the Environment (CCME) Soil Quality Guidelines for the Protection of Environmental and Human Health, values for industrial land use and coarse-grained soils (CCME 1999, updated 2001).

2. Canadian Council of Ministers of the Environment (CCME) Soil Quality Guidelines for the Protection of Environmental and Human Health, values for agricultural land use and coarse-grained soils (CCME 1999, updated 2001).

BOLD/HIGHLIGHTED - Exceeds the applicable guideline.

mg/kg - milligrams per kilogram.

< Indicates parameter was below laboratory equipment detection limit.

"-" Chemical not analyzed or criteria not defined.

* - indicates samples also presented in Table 2.

(1) Detection limits raised due to high moisture content, sample contains => 50% moisture.

(2) Detection limits raised due to high moisture content, sample contains >= 50% moisture. Detection limits raised based on sample weight used for analysis.

(3) Detection limits calculated based on method detection limits (MDLs) due to high moisture content, sample contains => 50% moisture. Detection limits raised based on sample weight used for analysis.

(4) Detection limits calculated based on method detection limits (MDLs) due to sample weight used for analysis.

(5) Duplicate exceeds acceptance criteria due to sample non homogeneity. Reanalysis yields similar results.

Table to be read in conjunction with accompanying report.

Table 25
Sediment Analytical Results - Polycyclic Aromatic Hydrocarbons
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample ID	Sample Date (dd-mmm-yy)	Carcinogenic Polycyclic Aromatic Hydrocarbons											Non-Carcinogenic Polycyclic Aromatic Hydrocarbons														
		Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b&j)fluoranthene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Benzo(g,h,i)perylene	Indeno(1,2,3-cd)pyrene	Total PAH	Index of Additive Cancer Risk(IACR)	B[a]P TPE Total Potency Equivalents	Acenaphthene	Acenaphthylene	Acridine	Anthracene	Benzo(c)phenanthrene	Benzo(e)pyrene	Fluoranthene	Fluorene	2-Methylnaphthalene	Naphthalene	Phenanthrene	Perylene	Pyrene	Quinoline	Low Molecular Weight PAH's	High Molecular Weight PAH's
Guideline[1]		**0.0317**	**0.0319**	**-**	**-**	**0.0571**	**0.00622**	**-**	**-**	**-**	**1**	**0.6**	**0.00671**	**0.00587**	**-**	**0.0469**	**-**	**-**	**0.111**	**0.0212**	**0.0202**	**0.0346**	**0.0419**	**-**	**0.053**	**-**	**-**	**-**
Units		**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**n/a**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**
Confirmatory Locations																												
CN Right-of-Way																												
AFTER CULVERT	28-Aug-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.0050
AFTER CULVERT2	16-Oct-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.0050
AFTER CULVERT3	16-Oct-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.0050
MID CULVERT	28-Aug-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.0050
MID CULVERT 2	28-Aug-19	0.028	**0.059**	0.17	0.048	0.041	**0.017**	0.049	0.05	0.59	**1.7**	0.11	<0.0050	**0.029**	<0.010	**0.054**	<0.0050	0.11	0.021	<0.0050	<0.0050	<0.0050	0.021	0.021	0.027	<0.010	0.083	0.51
Outside CN Right-of-Way																												
BEFORE CULVERT	28-Aug-19	<0.012 (1)	<0.012 (1)	<0.012 (1)	<0.012 (1)	<0.012 (1)	<0.012 (1)	<0.012 (1)	<0.012 (1)	0.034	0.14	<0.016	<0.012 (1)	<0.012 (1)	<0.023 (1)	<0.0092 (1)	<0.012 (1)	<0.012 (1)	0.017 (1)	<0.012 (1)	<0.012 (1)	<0.012 (1)	0.017 (1)	0.029 (1)	<0.012 (1)	<0.023 (1)	<0.023	0.017
C-2136C*	24-Feb-20	0.019	0.033	0.078	0.024	0.051	0.009	0.036	0.035	0.41	0.86	0.058	<0.0050	<0.0050	<0.010	0.0092	<0.0050	0.047	0.051	<0.0050	0.0083	<0.0050	0.021	0.021	0.037	<0.010	0.038	0.37
C-2140B*	16-Oct-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.0050
C-2150C*	16-Oct-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0066	<0.0050	<0.010	<0.010	<0.0050
C-2600B*	25-Feb-20	<0.0050	<0.0050	0.017	<0.0050	0.011	<0.0050	<0.0050	<0.0050	0.14	0.16	0.008	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	0.0097	0.025	0.0084	0.021	0.0097	0.027	0.015	0.021	<0.010	0.067	0.074
C-6013	6-Mar-19	<0.0050	<0.0050	0.013	<0.0050	0.0067	<0.0050	0.0055	0.0059	0.095	0.13	0.008	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	0.0076	0.02	0.0067	0.009	<0.0050	0.013	0.22	0.015	<0.010	0.028	0.067
C-6013B	14-Aug-19	<0.011 (1)	<0.011 (1)	0.015 (1)	<0.011 (1)	<0.011 (1)	<0.011 (1)	<0.011 (1)	<0.011 (1)	0.044	0.18	<0.015	<0.011 (1)	<0.011 (1)	<0.021 (1)	<0.0084 (1)	<0.011 (1)	<0.011 (1)	0.017 (1)	<0.011 (1)	<0.011 (1)	<0.011 (1)	0.013 (1)	0.26 (1)	0.014 (1)	<0.021 (1)	0.014	0.031
C-6015B	14-Aug-19	<0.0050	<0.0050	0.014	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.031	0.13	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	0.018	<0.0050	<0.0050	<0.0050	<0.0050	0.25	0.013	<0.010	<0.0050	0.031
C-6035B	14-Aug-19	<0.0095 (1)	<0.0095 (1)	0.014 (1)	<0.0095 (1)	<0.0095 (1)	<0.0095 (1)	<0.0095 (1)	<0.0095 (1)	0.025	0.17	<0.014	<0.0095 (1)	<0.0095 (1)	<0.019 (1)	<0.0076 (1)	<0.0095 (1)	<0.0095 (1)	0.014 (1)	<0.0095 (1)	<0.0095 (1)	<0.0095 (1)	<0.0095 (1)	0.22 (1)	0.011 (1)	<0.019 (1)	<0.0095	0.025
C-6042	6-Mar-19	<0.0050	<0.0050	0.0054	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.011	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	0.0058	<0.0050	<0.0050	<0.0050	<0.0050	0.047	<0.0050	<0.010	<0.010	0.011
C-6042B	14-Aug-19	<0.0050	<0.0050	0.019	<0.0050	0.011	<0.0050	0.009	<0.0050	0.057	0.17	0.008	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	0.011	0.02	<0.0050	<0.0050	<0.0050	0.01	0.14	0.016	<0.010	0.01	0.047
S-079B*	16-Oct-19	<0.0050	<0.0050	0.0099	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.026	0.11	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	0.0074	0.0077	<0.0050	<0.0050	<0.0050	<0.0050	0.021	0.0087	<0.010	<0.010	0.026
SOUTH ARM1	16-Oct-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.053	<0.0050	<0.010	<0.010	<0.0050
SOUTH ARM2	16-Oct-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.12	<0.0050	<0.010	<0.010	<0.0050
SOUTH ARM3	16-Oct-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.034	<0.0050	<0.010	<0.010	<0.0050
DUP003 (duplicate of SOUTH ARM3)	16-Oct-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.049	<0.0050	<0.010	<0.010	<0.0050
SOUTH ARM4	16-Oct-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.1	<0.0050	<0.010	<0.010	<0.0050
WA-SED-101	13-Aug-19	<0.0050	<0.0050	0.016	<0.0050	0.0083	<0.0050	<0.0050	<0.0050	0.05	0.14	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	0.0095	0.017	<0.0050	<0.0050	<0.0050	0.01	0.024	0.014	<0.010	0.01	0.040
WA-SED-102B	25-Feb-20	<0.0050	<0.0050	0.0091	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.06	0.1	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	0.0094	<0.0050	0.013	0.0087	0.011	0.025	0.0082	<0.010	0.033	0.027
WA-SED-103B	25-Feb-20	<0.0050	<0.0050	0.013	<0.0050	0.011	<0.0050	<0.0050	<0.0050	0.091	0.13	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	0.0081	0.015	<0.0050	0.013	<0.0050	0.023	0.017	0.015	<0.010	0.037	0.054
DUP02 (duplicate of WA-SED-103B)	25-Feb-20	<0.0050	<0.0050	0.014	<0.0050	0.0077	<0.0050	0.0075	<0.0050	0.12	0.13	<0.0071	<0.0050	<0.0050	0.012	<0.0040	<0.0050	0.0097	0.015	0.0079	0.015	<0.0050	0.026	0.018	0.015	<0.010	0.06	0.06
WA-SED-104	13-Aug-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.014	<0.0050	<0.010	<0.0050	<0.0050
WA-SED-105C	25-Feb-20	0.0081	<0.0050	0.0140	<0.0050	0.0099	<0.0050	<0.0050	<0.0050	0.290	0.150	0.008	**0.020**	<0.0050	<0.010	0.0079	<0.0050	0.0085	0.038	0.015	**0.024**	**0.068**	**0.052**	0.012	0.030	<0.010	0.190	0.099
WA-SED-106B	25-Feb-20	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.034	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.013	<0.0050	<0.0050	0.021	0.034	<0.0050
WA-SED-107B	25-Feb-20	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.015	<0.0050	<0.010	<0.010	<0.0050
WA-SED-108B	16-Oct-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.0050
DUP002 (duplicate of WA-SED-108B)	16-Oct-19	<0.0050	<0.0050	0.0085	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.018	<0.0050	<0.010	<0.010	0.0085
WA-SED-109	13-Aug-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.019	<0.0050	<0.010	<0.0050	<0.0050
WA-SED-110B	24-Feb-20	<0.0050	<0.0050	0.017	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.047	0.15	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	0.009	0.017	<0.0050	<0.0050	<0.0050	<0.0050	0.02	0.014	<0.010	<0.010	0.047
WA-SED-111B	24-Feb-20	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.021	<0.0050	<0.010	<0.010	<0.0050
WA-SED-112B	24-Feb-20	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.016	<0.0050	<0.010	<0.010	<0.0050
WA-SED-113B	24-Feb-20	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.016	<0.0050	<0.010	<0.010	<0.0050
WA-SED-114B	24-Feb-20	<0.0050	<0.0050	0.015	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.130	0.13	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	0.01	0.021	0.011	0.014	<0.0050	**0.048**	0.012	0.018	<0.010	0.073	0.054
WA-SED-115B	24-Feb-20	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.087	<0.10	<0.0071	**0.009**	<0.0050	0.012	<0.0040	<0.0050	<0.0050	0.01	0.011	0.008	<0.0050	0.028	0.016	0.0093	<0.010	0.067	0.02
WA-SED-116	13-Aug-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050
WA-SED-117	13-Aug-19	<0.0050	<0.0050	0.014	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.022	0.13	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	0.012	<0.0050	<0.0050	<0.0050	<0.0050	0.025	0.0098	<0.010	<0.0050	0.022
WA-SED-118	13-Aug-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050
WA-SED-119	13-Aug-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0097	<0.0050	<0.010	<0.0050	<0.0050
WA-SED-120	15-Aug-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.021	<0.0050	<0.010	<0.0050	<0.0050
WA-SED-201	16-Oct-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0072	<0.0050	<0.010	<0.0050	<0.0050
WA-SED-202	16-Oct-19	0.015	0.021	0.05	0.016	0.028	<0.0050	0.022	0.021	0.20	0.55	0.034	<0.0050	<0.0050	<0.010	0.0075	<0.0050	0.029	0.046	0.0096	0.01	0.01	0.016	0.054	0.037	<0.010	0.053	0.15
WA-SED-203	16-Oct-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.01	<0.0050	<0.010	<0.0050	<0.0050
WA-SED-204	16-Oct-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.048	<0.0050	<0.010	<0.0050	<0.0050
WA-SED-205	16-Oct-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.13	<0.0050	<0.010	<0.0050	<0.0050
WA-SED-206	16-Oct-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.037	<0.0050	<0.010	<0.0050	<0.0050
WA-SED-207	22-Oct-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050
WA-SED-217	24-Feb-20	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.21	0.010	<0.010	<0.010	0.010
WA-SED-218	24-Feb-20	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.014	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.33	0.014	<0.010	<0.010	0.014
WA-SED-219	24-Feb-20	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.015	<0.0050	<0.010	<0.010	<0.0050
WA-SED-220	24-Feb-20	**0.044**	**0.047**	0.074	0.026	0.049	<0.0050	0.034	0.033	0.81	0.94	0.068	**0.011**	**0.012**	<0.010	0.033	0.0088	0.041	**0.15**	0.020	0.014	0.0089	**0.13**	0.024	**0.12**	<0.010	0.23	0.590
WA-SED-221	25-Feb-20	0.022	0.028	0.068	0.021	0.045	<0.0050	0.021	0.022	0.35	0.74	0.044	<0.0050	<0.0050	<0.010	0.0086	<0.0050	0.036	0.048	<0.0050	0.0098	<0.0050	0.02	0.018	0.038	<0.010	0.038	0.310
WA-SED-222	25-Feb-20	<0.0050	<0.0050	0.011	<0.0050	0.01	<0.0050	<0.0050	<0.0050	0.082	0.12	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	0.016	<0.0050	0.012	<0.0050	0.019	0.016	0.014	<0.010	0.031	0.051
WA-SED-223	25-Feb-20	<0.0050	<0.0050	0.0072	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.11	<0.10	<0.0071	<0.0050	<0.0050	0.015	<0.0040	<0.0050	<0.0050	0.010	0.010	0.016	0.0086	0.029	0.013	0.010	<0.010	0.079	0.028
WA-SED-224	25-Feb-20	<0.0050	<0.0050	0.011	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.12	0.11	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	0.012	<0.0050	0.016	0.015	0.019	0.016	0.011	0.033	0.083	0.034
DUP01 (duplicate of WA-SED-224)	25-Feb-20	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.048	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	0.0095	<0.0050	0.009	<0.0050	0.020	0.012	0.0092	<0.010	0.029	0.019
WA-SED-225	25-Feb-20	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.027	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	0.012	<0.0050	0.015	0.011	<0.0050	<0.010	0.027	<0.0050
South Berm Removal - Outside CN Right-of-Way																												
WA-SED-208	18-Feb-20	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0091	<0.0050	<0.010	<0.0050	<0.0050
WA-SED-209	18-Feb-20	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050
WA-SED-210	18-Feb-20	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.011	<0.0050	<0.010	<0.0050	<0.0050
WA-SED-211	18-Feb-20	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.07	<0.0050	<0.010	<0.0050	<0.0050
WA-SED-212	18-Feb-20	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.015	<0.0050	<0.010	<0.0050	<0.0050
WA-SED-213	18-Feb-20	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.015	<0.0050	<0.010	<0.0050	<0.0050
East Berm Removal - Outside CN Right-of-Way																												
WA-SED-214	20-Feb-20	0.024	0.025	0.067	0.022	0.042	<0.0050	0.028	0.032	0.30	0.74	0.043	<0.0050	<0.0050	<0.010	0.0098	0.0082 (2)	0.037	0.092	0.01	<0.0050	0.0085	0.022	0.049	**0.067**	<0.010	0.05	0.25
WA-SED-215	20-Feb-20	0.0095	0.011	0.032	0.0098	0.015	<0.0050	0.013	0.015	0.11	0.34	0.021	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	0.019	0.036	<0.0050	<0.0050	<0.0050	0.011	0.027	0.027	<0.010	0.011	0.099
WA-SED-216	20-Feb-20	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0074	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	0.0074	<0.0050	<0.0050	<0.0050	<0.0050	0.025	<0.0050	<0.010	<0.0050	0.0074

Notes:

1. Canadian Council of Ministers of the Environment (CCME) Sediment Quality Guidelines for the Protection of Aquatic Life, values for Freshwater (CCME 1999, updated 2001).

BOLD/HIGHLIGHTED - Exceeds the applicable guideline.

italic - indicates Recordable Detection Limit (RDL) is greater than the guideline.

* - indicates samples also presented in Table 3.

mg/kg - milligrams per kilogram.

n/a - not applicable.

< Indicates parameter was below laboratory equipment detection limit.

"-" Chemical not analyzed or criteria not defined.

(1) Detection limits raised due to high moisture content, sample contains => 50% moisture.

(2) Tentatively identified result and may be potentially biased high due to matrix interference

Table to be read in conjunction with accompanying report.

Table 25
Sediment Analytical Results - Polycyclic Aromatic Hydrocarbons
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Excavated / Resampled Locations																											
Outside CN Right-of-Way																											
C-2136*	6-Mar-19	0.12	0.11	0.2	0.067	0.17	0.017	0.068	0.078	2	**2.50**	0.18	0.0076	0.021	<0.010	0.031	0.026	0.1	0.49	0.013	<0.0050	<0.0050	**0.2**	0.026	0.35	<0.010	0.28	1.7
C-2136B*	16-Oct-19	0.019	0.011	0.021	0.0069	0.016	<0.0050	0.0080	0.0069	0.76	0.28	0.020	0.083	<0.0050	<0.010	0.014	<0.0050	0.011	0.098	0.054	0.051	**0.13**	**0.17**	0.018	0.071	<0.010	0.50	0.26
C-2140*	6-Mar-19	0.061	0.089	0.17	0.054	0.099	0.016	0.064	0.069	0.89	**2.0**	0.14	<0.0050	0.0091	<0.010	0.019	0.013	0.096	0.11	<0.0050	<0.0050	<0.0050	0.021	0.023	0.1	<0.010	0.05	0.84
C-2600*	10-Mar-19	0.018	0.025	0.072	0.025	0.071	<0.0050	0.024	0.024	0.9	0.79	0.042	0.012	0.0096	<0.010	0.014	0.0096	0.037	0.2	0.017	0.011	0.007	**0.23**	0.0082	**0.14**	<0.010	0.3	0.6
WA-SED-102	13-Aug-19	<0.0050	0.012	0.03	<0.0050	0.017	<0.0050	0.012	0.012	0.067	0.27	0.019	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	0.017	0.021	<0.0050	<0.0050	<0.0050	<0.0050	0.038	0.017	<0.010	<0.0050	0.067
WA-SED-102B	16-Oct-19	<0.0050	<0.0050	0.0075	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.024	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	0.0081	<0.0050	<0.0050	<0.0050	0.0079	0.031	<0.0050	<0.010	<0.010	0.016
WA-SED-103	13-Aug-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0094	<0.0050	<0.010	<0.0050	<0.0050
WA-SED-105	13-Aug-19	<0.0050	<0.0050	0.012	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.055	0.12	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	0.012	<0.0050	0.0088	<0.0050	0.022	0.0094	0.012	<0.010	0.031	0.024
WA-SED-105D (duplicate of WA-SED-105)	13-Aug-19	0.019	0.026	0.056	0.019	0.028	<0.0050	0.014	0.015	0.18	0.63	0.04	<0.0050	<0.0050	<0.010	0.0073	<0.0050	0.034	0.028	<0.0050	<0.0050	<0.0050	0.016	0.014	**0.058**	<0.010	0.023	0.16
WA-SED-105B	16-Oct-19	**0.058**	**0.047**	0.088	0.028	**0.10**	<0.0050	0.022	0.022	0.76	**1.1**	0.070	**0.010**	<0.0050	<0.010	0.029	0.011	0.046	**0.16**	0.0096	0.0086	<0.0050	**0.048**	0.018	**0.12**	<0.010	0.11	0.65
WA-SED-106	13-Aug-19	0.018	0.017	0.034	0.011	0.022	<0.0050	0.013	0.012	0.24	0.41	0.027	**0.016**	<0.0050	<0.010	0.011	<0.0050	0.02	0.031	0.013	**0.021**	0.025	0.039	0.012	0.031	<0.010	0.12	0.12
WA-SED-106B	16-Aug-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.033	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	0.0082	<0.0050	<0.0050	<0.0050	0.025	0.0093	<0.0050	<0.010	0.025	0.0082
WA-SED-107	13-Aug-19	**0.32**	**0.12**	0.18	0.057	**0.36**	**0.016**	0.048	0.032	6.3	**3.0**	0.2	**0.084**	<0.0050	0.033	**0.13**	0.062	0.12	**2.1**	**0.13**	<0.0050	<0.0050	**1.5**	0.037	**1.5**	<0.010	1.9	4.4
WA-SED-107B	16-Oct-19	<0.0050	<0.0050	0.0073	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.034	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	0.013	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.014	<0.010	<0.010	0.034
WA-SED-108	13-Aug-19	0.017	**0.036**	0.053	0.024	0.040	**0.014**	0.047	0.044	0.17	0.73	0.064	<0.0050	<0.0050	<0.010	0.0095	<0.0050	0.041	0.016	<0.0050	<0.0050	<0.0050	0.011	0.04	0.023	<0.010	0.02	0.15
WA-SED-110	13-Aug-19	0.0098	0.014	0.031	0.0098	0.017	<0.0050	0.012	0.013	0.15	0.35	0.024	<0.0050	<0.0050	<0.010	0.0071	<0.0050	0.019	0.035	<0.0050	<0.0050	0.0074	0.025	0.019	0.033	<0.010	0.039	0.11
WA-SED-110B	16-Oct-19	**0.041**	**0.058**	0.13	0.043	**0.081**	**0.012**	0.051	0.054	0.80	**1.5**	0.097	<0.0050	**0.010**	<0.010	0.016	0.012	0.073	**0.14**	<0.0050	<0.0050	0.0069	0.034	0.028	**0.11**	<0.010	0.067	0.73
WA-SED-111	13-Aug-19	0.022	0.03	0.073	0.026	0.056	**0.0085**	0.036	0.033	0.24	0.85	0.055	<0.0050	<0.0050	<0.010	0.013	<0.0050	0.043	0.054	<0.0050	<0.0050	<0.0050	0.017	0.016	0.043	<0.010	0.029	0.21
WA-SED-111B	16-Oct-19	0.014	0.016	0.033	0.011	0.021	<0.0050	0.014	0.014	0.22	0.39	0.026	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	0.017	0.046	<0.0050	<0.0050	<0.0050	0.017	0.0075	0.034	<0.010	0.017	0.21
WA-SED-112	13-Aug-19	0.011	0.016	0.03	0.011	0.029	<0.0050	0.015	0.014	0.18	0.36	0.025	**0.014**	<0.0050	<0.010	0.0097	<0.0050	0.021	0.024	0.014	0.0089	<0.0050	0.037	0.015	0.02	<0.010	0.084	0.1
WA-SED-112B	16-Oct-19	<0.0050	<0.0050	0.011	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.030	0.11	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	0.010	<0.0050	<0.0050	<0.0050	<0.0050	0.017	0.0096	<0.010	<0.010	0.030
WA-SED-113	13-Aug-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0084	<0.0050	<0.010	<0.0050	<0.0050
WA-SED-114	13-Aug-19	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.041	<0.10	<0.0071	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	<0.0050	0.0091	<0.0050	<0.0050	<0.0050	0.0096	0.014	0.023	<0.010	0.0096	0.032
WA-SED-115	13-Aug-19	0.012	<0.0050	0.013	<0.0050	0.025	<0.0050	<0.0050	<0.0050	0.12	0.17	0.008	<0.0050	<0.0050	<0.010	0.0074	<0.0050	<0.0050	0.02	<0.0050	0.0083	<0.0050	0.025	0.018	0.019	<0.010	0.041	0.077
WA-SED-115B	16-Oct-19	0.0098	<0.0050	0.020	<0.0050	0.017	<0.0050	<0.0050	<0.0050	0.17	0.20	0.0090	<0.0050	<0.0050	<0.010	<0.0040	<0.0050	0.012	0.043	0.0086	0.0078	<0.0050	0.031	0.021	0.036	<0.010	0.047	0.13

Notes:

1. Canadian Council of Ministers of the Environment (CCME) Sediment Quality Guidelines for the Protection of Aquatic Life, values for Freshwater (CCME 1999, updated 2001).

BOLD/HIGHLIGHTED - Exceeds the applicable guideline.

italic - indicates Recordable Detection Limit (RDL) is greater than the guideline.

* - indicates samples also presented in Table 3.

mg/kg - milligrams per kilogram.

n/a - not applicable.

< Indicates parameter was below laboratory equipment detection limit.

"-" Chemical not analyzed or criteria not defined.

(1) Detection limits raised due to high moisture content, sample contains => 50% moisture.

(2) Tentatively identified result and may be potentially biased high due to matrix interference

Table to be read in conjunction with accompanying report.

Table 26
Summary of Duplicate Soil Sample Quality Control Results
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample Location / Maxxam Job # / Maxxam Sample ID / Sample Collection Date	Units	Alert Limit	RDL	5X RDL	Are the results >5X RDL	MW19-1-3 B933922 VQ2137 May 3, 2019	DUP 1 B933922 VQ2138 May 3, 2019	RPD
Hydrocarbons								
Benzene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Toluene	mg/kg	>50%	0.050	0.25	no	<0.050	<0.050	n/c
Ethylbenzene	mg/kg	>50%	0.010	0.05	no	<0.010	<0.010	n/c
Xylenes (Total)	mg/kg	>50%	0.045	0.225	no	<0.045	<0.045	n/c
m & p-Xylene	mg/kg	>50%	0.040	0.2	no	<0.040	<0.040	n/c
o-Xylene	mg/kg	>50%	0.020	0.1	no	<0.020	<0.020	n/c
F1 (C_6-C_{10}) - BTEX	mg/kg	>50%	10	50	no	<10	<10	n/c
(C_6-C_{10})	mg/kg	>50%	10	50	no	<10	<10	n/c
F2 (C_{10}-C_{16})	mg/kg	>50%	10	50	no	<10	<10	n/c
F3 (C_{16}-C_{34})	mg/kg	>50%	50	250	no	<50	<50	n/c
F4 (C_{34}-C_{50})	mg/kg	>50%	50	250	no	<50	<50	n/c

Sample Location / Maxxam Job # / Maxxam Sample ID / Sample Collection Date	Units	Alert Limit	RDL	5X RDL	Are the results >5X RDL	MW19-3-5 B935305 VQ8571 May 6, 2019	DUP 2 B935305 VQ8572 May 6, 2019	RPD
Hydrocarbons								
Benzene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Toluene	mg/kg	>50%	0.050	0.25	no	<0.050	<0.050	n/c
Ethylbenzene	mg/kg	>50%	0.010	0.05	no	<0.010	<0.010	n/c
Xylenes (Total)	mg/kg	>50%	0.045	0.225	no	<0.045	<0.045	n/c
m & p-Xylene	mg/kg	>50%	0.040	0.2	no	<0.040	<0.040	n/c
o-Xylene	mg/kg	>50%	0.020	0.1	no	<0.020	<0.020	n/c
F1 (C_6-C_{10}) - BTEX	mg/kg	>50%	10	50	no	<10	<10	n/c
(C_6-C_{10})	mg/kg	>50%	10	50	no	<10	<10	n/c
F2 (C_{10}-C_{16})	mg/kg	>50%	10	50	no	<10	<10	n/c
F3 (C_{16}-C_{34})	mg/kg	>50%	50	250	no	<50	<50	n/c
F4 (C_{34}-C_{50})	mg/kg	>50%	50	250	no	<50	<50	n/c

Sample Location / Maxxam Job # / Maxxam Sample ID / Sample Collection Date	Units	Alert Limit	RDL	5X RDL	Are the results >5X RDL	MW19-6-2 B935305 VQ8575 May 6, 2019	DUP 3 B935305 VQ8576 May 6, 2019	RPD
Hydrocarbons								
Benzene	mg/kg	>50%	0.0050	0.025	no	0.0082	0.0062	n/c
Toluene	mg/kg	>50%	0.050	0.25	no	<0.050	<0.050	n/c
Ethylbenzene	mg/kg	>50%	0.010	0.05	no	<0.010	<0.010	n/c
Xylenes (Total)	mg/kg	>50%	0.045	0.225	no	<0.045	<0.045	n/c
m & p-Xylene	mg/kg	>50%	0.040	0.2	no	<0.040	<0.040	n/c
o-Xylene	mg/kg	>50%	0.020	0.1	no	<0.020	<0.020	n/c
F1 (C_6-C_{10}) - BTEX	mg/kg	>50%	10	50	no	<10	<10	n/c
(C_6-C_{10})	mg/kg	>50%	10	50	no	<10	<10	n/c
F2 (C_{10}-C_{16})	mg/kg	>50%	10	50	no	<10	<10	n/c
F3 (C_{16}-C_{34})	mg/kg	>50%	50	250	no	<50	<50	n/c
F4 (C_{34}-C_{50})	mg/kg	>50%	50	250	no	<50	<50	n/c

Notes:
mg/kg = Milligrams per kilogram; RDL = reportable detection limit; n/c = not applicable; > = more than; < = less than; n/a = not applicable; RPD = relative percent difference.
Table to be read in conjunction with accompanying report.

Table 26
Summary of Duplicate Soil Sample Quality Control Results
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample Location / Maxxam Job # / Maxxam Sample ID / Sample Collection Date	Units	Alert Limit	RDL	5X RDL	Are the results >5X RDL	C-9158B B942990 VU6785 June 2, 2019	DUP 4 B942990 VU6786 June 2, 2019	RPD
Hydrocarbons								
Benzene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Toluene	mg/kg	>50%	0.050	0.25	no	<0.050	<0.050	n/c
Ethylbenzene	mg/kg	>50%	0.010	0.05	no	<0.010	<0.010	n/c
Xylenes (Total)	mg/kg	>50%	0.045	0.225	no	<0.045	<0.045	n/c
m & p-Xylene	mg/kg	>50%	0.040	0.2	no	<0.040	<0.040	n/c
o-Xylene	mg/kg	>50%	0.020	0.1	no	<0.020	<0.020	n/c
F1 (C_6-C_{10}) - BTEX	mg/kg	>50%	10	50	no	<10	<10	n/c
(C_6-C_{10})	mg/kg	>50%	10	50	no	<10	<10	n/c
F2 (C_{10}-C_{16})	mg/kg	>50%	10	50	no	<10	<10	n/c
F3 (C_{16}-C_{34})	mg/kg	>50%	50	250	no	<50	<50	n/c
F4 (C_{34}-C_{50})	mg/kg	>50%	50	250	no	<50	<50	n/c
Salinity								
Anion Sum	meq/L	>40%	n/a	0	yes	6.2	9	37
Cation Sum	meq/L	>40%	n/a	0	yes	9.8	9.1	7
Cation/EC Ratio	N/A	>40%	0.1	0.5	yes	9.6	9.1	5
Ion Balance	N/A	>40%	0.01	0.05	yes	1.6	1	**46**
Calculated Calcium (Ca)	mg/kg	>40%	0.93	4.65	yes	26	30	14
Calculated Magnesium (Mg)	mg/kg	>40%	0.62	3.1	yes	11	14	24
Calculated Sodium (Na)	mg/kg	>40%	1.5	7.5	yes	84	65	26
Calculated Potassium (K)	mg/kg	>40%	0.8	4	yes	6.9	5.7	19
Calculated Chloride (Cl)	mg/kg	>40%	3.1	15.5	no	8.4	7.8	n/c
Calculated Sulphate (SO_4)	mg/kg	>40%	3.1	15.5	yes	170	260	**42**
Soluble Chloride (Cl)	mg/L	>40%	5	25	no	14	13	n/c
Soluble Conductivity	dS/m	>40%	0.02	0.1	yes	1	1	0
Soluble ($CaCl_2$) pH	pH	>40%	n/a	0	yes	7.97	7.69	4
Sodium Adsorption Ratio	N/A	>40%	0.1	0.5	yes	4.4	3.1	35
Soluble Calcium (Ca)	mg/L	>40%	1.5	7.5	yes	42	49	15
Soluble Magnesium (Mg)	mg/L	>40%	1	5	yes	18	23	24
Soluble Sodium (Na)	mg/L	>40%	2.5	12.5	yes	140	100	33
Soluble Potassium (K)	mg/L	>40%	1.3	6.5	yes	11	9.3	17
Saturation %	%	>40%	n/a	0	yes	62	62	0
Soluble Sulphate (SO_4)	mg/L	>40%	5	25	yes	280	420	40
Theoretical Gypsum Requirement	tonnes/ha	>40%	0.2	1	no	<0.20	<0.20	n/c

Notes:
mg/kg = Milligrams per kilogram; RDL = reportable detection limit; n/c = not applicable; > = more than; < = less than; n/a = not applicable; RPD = relative percent difference.
Table to be read in conjunction with accompanying report.

Table 26
Summary of Duplicate Soil Sample Quality Control Results
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample Location / Maxxam Job # / Maxxam Sample ID / Sample Collection Date	Units	Alert Limit	RDL	5X RDL	Are the results >5X RDL	EX1-8 B943075 VU7355 June 4, 2019	DUP 5 B943075 VU7364 June 4, 2019	RPD
Hydrocarbons								
Benzene	mg/kg	>50%	0.0050	0.025	yes	0.22	0.027	**156**
Toluene	mg/kg	>50%	0.050	0.25	no	0.49	<0.050	n/c
Ethylbenzene	mg/kg	>50%	0.010	0.05	no	0.064	<0.010	n/c
Xylenes (Total)	mg/kg	>50%	0.045	0.225	no	0.63	0.06	n/c
m & p-Xylene	mg/kg	>50%	0.040	0.2	no	0.48	0.06	n/c
o-Xylene	mg/kg	>50%	0.020	0.1	no	0.15	<0.020	n/c
F1 (C_6-C_{10}) - BTEX	mg/kg	>50%	10	50	no	18	13	n/c
(C_6-C_{10})	mg/kg	>50%	10	50	no	19	13	n/c
F2 (C_{10}-C_{16})	mg/kg	>50%	10	50	yes	92	190	**70**
F3 (C_{16}-C_{34})	mg/kg	>50%	50	250	no	230	540	n/c
F4 (C_{34}-C_{50})	mg/kg	>50%	50	250	no	79	220	n/c
Polycyclic Aromatics								
Acenaphthene	mg/kg	>50%	0.0050	0.025	no	0.017	0.044	n/c
Acenaphthylene	mg/kg	>50%	0.0050	0.025	no	<0.0050	0.0092	n/c
Acridine	mg/kg	>50%	0.010	0.05	no	0.032	0.074	n/c
Anthracene	mg/kg	>50%	0.0040	0.02	no	0.0091	0.021	n/c
Benzo(a)anthracene	mg/kg	>50%	0.0050	0.025	no	0.01	0.02	n/c
Benzo(b&j)fluoranthene	mg/kg	>50%	0.0050	0.025	no	0.023	0.028	n/c
Benzo(k)fluoranthene	mg/kg	>50%	0.0050	0.025	no	<0.0050	0.008	n/c
Benzo(g,h,i)perylene	mg/kg	>50%	0.0050	0.025	no	0.01	0.015	n/c
Benzo(c)phenanthrene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Benzo(a)pyrene	mg/kg	>50%	0.0050	0.025	no	0.0095	0.014	n/c
Benzo[e]pyrene	mg/kg	>50%	0.0050	0.025	no	0.013	0.02	n/c
Chrysene	mg/kg	>50%	0.0050	0.025	no	0.023	0.031	n/c
Dibenz(a,h)anthracene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Fluoranthene	mg/kg	>50%	0.0050	0.025	yes	0.031	0.054	**54**
Fluorene	mg/kg	>50%	0.0050	0.025	no	0.022	0.054	n/c
Indeno(1,2,3-cd)pyrene	mg/kg	>50%	0.0050	0.025	no	0.0091	0.012	n/c
2-Methylnaphthalene	mg/kg	>50%	0.0050	0.025	yes	0.079	0.15	**62**
Naphthalene	mg/kg	>50%	0.0050	0.025	yes	0.032	0.055	**53**
Phenanthrene	mg/kg	>50%	0.0050	0.025	yes	0.077	0.17	**75**
Perylene	mg/kg	>50%	0.0050	0.025	no	0.014	0.026	n/c
Pyrene	mg/kg	>50%	0.0050	0.025	yes	0.028	0.055	**65**
Quinoline	mg/kg	>50%	0.0050	0.025	no	0.017	0.034	n/c

Notes:
mg/kg = Milligrams per kilogram; RDL = reportable detection limit; n/c = not applicable; > = more than; < = less than; n/a = not applicable; RPD = relative percent difference.
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Table 26
Summary of Duplicate Soil Sample Quality Control Results
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample Location / Maxxam Job # / Maxxam Sample ID / Sample Collection Date	Units	Alert Limit	RDL	5X RDL	Are the results >5X RDL	EX1-4 B943075 VU73651 June 4, 2019	DUP 6 B943075 VU7365 June 4, 2019	RPD
Hydrocarbons								
Benzene	mg/kg	>50%	0.0050	0.025	yes	0.071	0.26	**114**
Toluene	mg/kg	>50%	0.050	0.25	no	<0.050	0.73	n/c
Ethylbenzene	mg/kg	>50%	0.010	0.05	no	<0.010	0.12	n/c
Xylenes (Total)	mg/kg	>50%	0.045	0.225	no	<0.045	1.4	n/c
m & p-Xylene	mg/kg	>50%	0.040	0.2	no	<0.040	1.1	n/c
o-Xylene	mg/kg	>50%	0.020	0.1	no	<0.020	0.3	n/c
F1 (C_6-C_{10}) - BTEX	mg/kg	>50%	10	50	no	<10	34	n/c
(C_6-C_{10})	mg/kg	>50%	10	50	no	<10	37	n/c
F2 (C_{10}-C_{16})	mg/kg	>50%	10	50	no	34	350	n/c
F3 (C_{16}-C_{34})	mg/kg	>50%	50	250	no	100	930	n/c
F4 (C_{34}-C_{50})	mg/kg	>50%	50	250	no	<50	370	n/c
Polycyclic Aromatics								
Index of Additive Cancer Risk(IACR)	mg/kg	>50%	0.1	0.5	no	0.016	0.093	n/c
Acenaphthene	mg/kg	>50%	0.005	0.025	no	<0.0050	0.016	n/c
B[a]P TPE Total Potency Equivalents	mg/kg	>50%	0.0071	0.0355	no	0.015	0.14	n/c
Acenaphthylene	mg/kg	>50%	0.005	0.025	no	0.0095	0.043	n/c
Acridine	mg/kg	>50%	0.01	0.05	no	0.0096	0.04	n/c
Anthracene	mg/kg	>50%	0.004	0.02	no	0.011	0.04	n/c
Benzo(a)anthracene	mg/kg	>50%	0.005	0.025	no	<0.0050	0.0099	n/c
Benzo(b&j)fluoranthene	mg/kg	>50%	0.005	0.025	no	0.01	0.024	n/c
Benzo(k)fluoranthene	mg/kg	>50%	0.005	0.025	no	<0.0050	0.0074	n/c
Benzo(g,h,i)perylene	mg/kg	>50%	0.005	0.025	no	<0.0050	0.025	n/c
Benzo(c)phenanthrene	mg/kg	>50%	0.005	0.025	no	0.0071	0.03	n/c
Benzo(a)pyrene	mg/kg	>50%	0.005	0.025	no	0.011	0.067	n/c
Benzo[e]pyrene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Chrysene	mg/kg	>50%	0.005	0.025	yes	0.031	0.13	**123**
Dibenz(a,h)anthracene	mg/kg	>50%	0.005	0.025	no	0.018	0.11	n/c
Fluoranthene	mg/kg	>50%	0.005	0.025	no	<0.0050	0.016	n/c
Fluorene	mg/kg	>50%	0.005	0.025	yes	0.037	0.33	**160**
Indeno(1,2,3-cd)pyrene	mg/kg	>50%	0.005	0.025	no	0.016	0.13	n/c
2-Methylnaphthalene	mg/kg	>50%	0.005	0.025	yes	0.054	0.31	**141**
Naphthalene	mg/kg	>50%	0.005	0.025	no	0.0095	0.043	n/c
Phenanthrene	mg/kg	>50%	0.005	0.025	yes	0.026	0.12	**129**
Perylene	mg/kg	>50%	0.005	0.025	no	<0.010	0.052	n/c
Pyrene	mg/kg	>50%	0.005	0.025	yes	0.16	1.2	**153**
Quinoline	mg/kg	>50%	0.01	0.05	yes	0.098	0.48	**132**

Notes:
mg/kg = Milligrams per kilogram; RDL = reportable detection limit; n/c = not applicable; > = more than; < = less than; n/a = not applicable; RPD = relative percent difference.
Table to be read in conjunction with accompanying report.

Table 26
Summary of Duplicate Soil Sample Quality Control Results
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample Location / Maxxam Job # / Maxxam Sample ID / Sample Collection Date	Units	Alert Limit	RDL	5X RDL	Are the results >5X RDL	EX2-1 B944478 VV6039 June 5, 2019	DUP 7 B944478 VV6060 June 5, 2019	RPD
Hydrocarbons								
Benzene	mg/kg	>50%	0.0050	0.025	yes	0.082	0.055	39
Toluene	mg/kg	>50%	0.050	0.25	no	0.37	0.17	n/c
Ethylbenzene	mg/kg	>50%	0.010	0.05	no	0.071	0.022	n/c
Xylenes (Total)	mg/kg	>50%	0.045	0.225	no	0.78	0.22	n/c
m & p-Xylene	mg/kg	>50%	0.040	0.2	no	0.61	0.17	n/c
o-Xylene	mg/kg	>50%	0.020	0.1	no	0.18	0.051	n/c
F1 (C_6-C_{10}) - BTEX	mg/kg	>50%	10	50	no	10	<10	n/c
(C_6-C_{10})	mg/kg	>50%	10	50	no	12	<10	n/c
F2 (C_{10}-C_{16})	mg/kg	>50%	10	50	no	<10	<10	n/c
F3 (C_{16}-C_{34})	mg/kg	>50%	50	250	no	<50	<50	n/c
F4 (C_{34}-C_{50})	mg/kg	>50%	50	250	no	<50	<50	n/c
Polycyclic Aromatics								
Acenaphthene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Acenaphthylene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Acridine	mg/kg	>50%	0.010	0.05	no	<0.010	<0.010	n/c
Anthracene	mg/kg	>50%	0.0040	0.02	no	<0.0040	<0.0040	n/c
Benzo(a)anthracene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Benzo(b&j)fluoranthene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Benzo(k)fluoranthene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Benzo(g,h,i)perylene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Benzo(c)phenanthrene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Benzo(a)pyrene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Benzo[e]pyrene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Chrysene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Dibenz(a,h)anthracene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Fluoranthene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Fluorene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Indeno(1,2,3-cd)pyrene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
2-Methylnaphthalene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Naphthalene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Phenanthrene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Perylene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Pyrene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Quinoline	mg/kg	>50%	0.0050	0.025	no	<0.010	<0.010	n/c

Notes:
mg/kg = Milligrams per kilogram; RDL = reportable detection limit; n/c = not applicable; > = more than; < = less than; n/a = not applicable; RPD = relative percent difference.
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Table 26
Summary of Duplicate Soil Sample Quality Control Results
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample Location / Maxxam Job # / Maxxam Sample ID / Sample Collection Date	Units	Alert Limit	RDL	5X RDL	Are the results >5X RDL	EX2-8 B944478 VV6046 June 5, 2019	DUP 8 B944478 VV6061 June 5, 2019	RPD
Hydrocarbons								
Benzene	mg/kg	>50%	0.0050	0.025	yes	0.06	0.076	24
Toluene	mg/kg	>50%	0.050	0.25	yes	0.29	0.38	27
Ethylbenzene	mg/kg	>50%	0.010	0.05	no	0.048	<0.010	n/c
Xylenes (Total)	mg/kg	>50%	0.045	0.225	yes	0.5	0.64	25
m & p-Xylene	mg/kg	>50%	0.040	0.2	yes	0.38	0.49	25
o-Xylene	mg/kg	>50%	0.020	0.1	yes	0.12	0.15	22
F1 (C_6-C_{10}) - BTEX	mg/kg	>50%	10	50	no	<10	11	n/c
(C_6-C_{10})	mg/kg	>50%	10	50	no	<10	12	n/c
F2 (C_{10}-C_{16})	mg/kg	>50%	10	50	no	23	48	n/c
F3 (C_{16}-C_{34})	mg/kg	>50%	50	250	no	73	150	n/c
F4 (C_{34}-C_{50})	mg/kg	>50%	50	250	no	<50	59	n/c
Polycyclic Aromatics								
Acenaphthene	mg/kg	>50%	0.0050	0.025	yes	0.052	0.15	**97**
Acenaphthylene	mg/kg	>50%	0.0050	0.025	no	0.012	0.024	n/c
Acridine	mg/kg	>50%	0.010	0.05	no	0.012	0.024	n/c
Anthracene	mg/kg	>50%	0.0040	0.02	yes	0.075	0.11	38
Benzo(a)anthracene	mg/kg	>50%	0.0050	0.025	yes	0.046	0.076	49
Benzo(b&j)fluoranthene	mg/kg	>50%	0.0050	0.025	yes	0.1	0.14	33
Benzo(k)fluoranthene	mg/kg	>50%	0.0050	0.025	yes	0.031	0.044	35
Benzo(g,h,i)perylene	mg/kg	>50%	0.0050	0.025	yes	0.041	0.069	**51**
Benzo(c)phenanthrene	mg/kg	>50%	0.0050	0.025	no	0.011	0.018	n/c
Benzo(a)pyrene	mg/kg	>50%	0.0050	0.025	yes	0.045	0.07	43
Benzo[e]pyrene	mg/kg	>50%	0.0050	0.025	yes	0.052	0.075	36
Chrysene	mg/kg	>50%	0.0050	0.025	yes	0.083	0.12	36
Dibenz(a,h)anthracene	mg/kg	>50%	0.0050	0.025	no	0.0085	0.012	n/c
Fluoranthene	mg/kg	>50%	0.0050	0.025	yes	0.18	0.27	40
Fluorene	mg/kg	>50%	0.0050	0.025	yes	0.045	0.1	**76**
Indeno(1,2,3-cd)pyrene	mg/kg	>50%	0.0050	0.025	yes	0.034	0.052	42
2-Methylnaphthalene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Naphthalene	mg/kg	>50%	0.0050	0.025	no	<0.0050	0.0099	n/c
Phenanthrene	mg/kg	>50%	0.0050	0.025	yes	0.13	0.25	**63**
Perylene	mg/kg	>50%	0.0050	0.025	no	0.012	0.024	n/c
Pyrene	mg/kg	>50%	0.0050	0.025	yes	0.13	0.21	47
Quinoline	mg/kg	>50%	0.0050	0.025	no	<0.010	<0.010	n/c

Notes:
mg/kg = Milligrams per kilogram; RDL = reportable detection limit; n/c = not applicable; > = more than; < = less than; n/a = not applicable; RPD = relative percent difference.
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Table 26
Summary of Duplicate Soil Sample Quality Control Results
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample Location / Maxxam Job # / Maxxam Sample ID / Sample Collection Date	Units	Alert Limit	RDL	5X RDL	Are the results >5X RDL	SLOT2-1 B945316 VW0862 June 6, 2019	DUP 9 B945316 VW0864 June 6, 2019	RPD
Hydrocarbons								
Benzene	mg/kg	>50%	0.0050	0.025	no	0.013	0.037	n/c
Toluene	mg/kg	>50%	0.050	0.25	no	<0.050	0.13	n/c
Ethylbenzene	mg/kg	>50%	0.010	0.05	no	<0.010	<0.010	n/c
Xylenes (Total)	mg/kg	>50%	0.045	0.225	no	<0.045	0.091	n/c
m & p-Xylene	mg/kg	>50%	0.040	0.2	no	<0.040	0.091	n/c
o-Xylene	mg/kg	>50%	0.020	0.1	no	<0.020	<0.020	n/c
F1 (C_6-C_{10}) - BTEX	mg/kg	>50%	10	50	no	<10	<10	n/c
(C_6-C_{10})	mg/kg	>50%	10	50	no	<10	<10	n/c
F2 (C_{10}-C_{16})	mg/kg	>50%	10	50	no	<10	<10	n/c
F3 (C_{16}-C_{34})	mg/kg	>50%	50	250	no	<50	<50	n/c
F4 (C_{34}-C_{50})	mg/kg	>50%	50	250	no	<50	<50	n/c
Polycyclic Aromatics								
Acenaphthene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Acenaphthylene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Acridine	mg/kg	>50%	0.010	0.05	no	<0.010	<0.010	n/c
Anthracene	mg/kg	>50%	0.0040	0.02	no	<0.0040	<0.0040	n/c
Benzo(a)anthracene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Benzo(b&j)fluoranthene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Benzo(k)fluoranthene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Benzo(g,h,i)perylene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Benzo(c)phenanthrene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Benzo(a)pyrene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Benzo[e]pyrene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Chrysene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Dibenz(a,h)anthracene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Fluoranthene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Fluorene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Indeno(1,2,3-cd)pyrene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
2-Methylnaphthalene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Naphthalene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Phenanthrene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Perylene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Pyrene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Quinoline	mg/kg	>50%	0.0050	0.025	no	<0.010	<0.010	n/c

Notes:
mg/kg = Milligrams per kilogram; RDL = reportable detection limit; n/c = not applicable; > = more than; < = less than; n/a = not applicable; RPD = relative percent difference.
Table to be read in conjunction with accompanying report.

Table 26
Summary of Duplicate Soil Sample Quality Control Results
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample Location / Maxxam Job # / Maxxam Sample ID / Sample Collection Date	Units	Alert Limit	RDL	5X RDL	Are the results >5X RDL	19-H6-001 B945316 VW0879 June 9, 2019	DUP 10 B945316 VW0922 June 9, 2019	RPD
Polycyclic Aromatics								
Acenaphthene	mg/kg	>50%	0.0050	0.025	no	<0.0050	0.0088	n/c
Acenaphthylene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Acridine	mg/kg	>50%	0.010	0.05	no	<0.010	<0.010	n/c
Anthracene	mg/kg	>50%	0.0040	0.02	no	<0.0040	0.012	n/c
Benzo(a)anthracene	mg/kg	>50%	0.0050	0.025	no	<0.0050	0.016	n/c
Benzo(b&j)fluoranthene	mg/kg	>50%	0.0050	0.025	no	<0.0050	0.02	n/c
Benzo(k)fluoranthene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Benzo(g,h,i)perylene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Benzo(c)phenanthrene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Benzo(a)pyrene	mg/kg	>50%	0.0050	0.025	no	<0.0050	0.0086	n/c
Benzo[e]pyrene	mg/kg	>50%	0.0050	0.025	no	<0.0050	0.01	n/c
Chrysene	mg/kg	>50%	0.0050	0.025	no	0.0068	0.021	n/c
Dibenz(a,h)anthracene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Fluoranthene	mg/kg	>50%	0.0050	0.025	yes	0.026	0.074	**96**
Fluorene	mg/kg	>50%	0.0050	0.025	no	<0.0050	0.015	n/c
Indeno(1,2,3-cd)pyrene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
2-Methylnaphthalene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Naphthalene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Phenanthrene	mg/kg	>50%	0.0050	0.025	no	0.014	0.052	n/c
Perylene	mg/kg	>50%	0.0050	0.025	no	<0.0050	0.007	n/c
Pyrene	mg/kg	>50%	0.0050	0.025	no	0.019	0.056	n/c
Quinoline	mg/kg	>50%	0.0050	0.025	no	<0.010	<0.010	n/c

Sample Location / Maxxam Job # / Maxxam Sample ID / Sample Collection Date	Units	Alert Limit	RDL	5X RDL	Are the results >5X RDL	19-H9-001 B945316 VW0885 June 9, 2019	DUP 11 B945316 VW0923 June 9, 2019	RPD
Polycyclic Aromatics								
Acenaphthene	mg/kg	>50%	0.0050	0.025	no	0.0085	0.0075	n/c
Acenaphthylene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Acridine	mg/kg	>50%	0.010	0.05	no	<0.010	<0.010	n/c
Anthracene	mg/kg	>50%	0.0040	0.02	no	0.0065	<0.0040	n/c
Benzo(a)anthracene	mg/kg	>50%	0.0050	0.025	no	0.0067	<0.0050	n/c
Benzo(b&j)fluoranthene	mg/kg	>50%	0.0050	0.025	no	0.0076	<0.0050	n/c
Benzo(k)fluoranthene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Benzo(g,h,i)perylene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Benzo(c)phenanthrene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Benzo(a)pyrene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Benzo[e]pyrene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Chrysene	mg/kg	>50%	0.0050	0.025	no	0.0071	<0.0050	n/c
Dibenz(a,h)anthracene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Fluoranthene	mg/kg	>50%	0.0050	0.025	no	0.024	0.0097	n/c
Fluorene	mg/kg	>50%	0.0050	0.025	no	0.0073	<0.0050	n/c
Indeno(1,2,3-cd)pyrene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
2-Methylnaphthalene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Naphthalene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Phenanthrene	mg/kg	>50%	0.0050	0.025	no	0.034	0.018	n/c
Perylene	mg/kg	>50%	0.0050	0.025	no	0.0083	<0.0050	n/c
Pyrene	mg/kg	>50%	0.0050	0.025	no	0.018	0.0082	n/c
Quinoline	mg/kg	>50%	0.0050	0.025	no	<0.010	<0.010	n/c

Notes:
mg/kg = Milligrams per kilogram; RDL = reportable detection limit; n/c = not applicable; > = more than; < = less than; n/a = not applicable; RPD = relative percent difference.
Table to be read in conjunction with accompanying report.

Table 26
Summary of Duplicate Soil Sample Quality Control Results
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample Location / Maxxam Job # / Maxxam Sample ID / Sample Collection Date	Units	Alert Limit	RDL	5X RDL	Are the results >5X RDL	19-BG2-001 VW0913 June 9, 2019	DUP 12 B945316 VW0924 June 9, 2019	RPD
Polycyclic Aromatics								
Acenaphthene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Acenaphthylene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Acridine	mg/kg	>50%	0.010	0.05	no	<0.010	<0.010	n/c
Anthracene	mg/kg	>50%	0.0040	0.02	no	<0.0040	<0.0040	n/c
Benzo(a)anthracene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Benzo(b&j)fluoranthene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Benzo(k)fluoranthene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Benzo(g,h,i)perylene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Benzo(c)phenanthrene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Benzo(a)pyrene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Benzo[e]pyrene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Chrysene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Dibenz(a,h)anthracene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Fluoranthene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Fluorene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Indeno(1,2,3-cd)pyrene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
2-Methylnaphthalene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Naphthalene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Phenanthrene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Perylene	mg/kg	>50%	0.0050	0.025	no	0.016	0.019	n/c
Pyrene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Quinoline	mg/kg	>50%	0.0050	0.025	no	<0.010	<0.010	n/c

Sample Location / Maxxam Job # / Maxxam Sample ID / Sample Collection Date	Units	Alert Limit	RDL	5X RDL	Are the results >5X RDL	19-BG10-001 VW0921 June 9, 2019	DUP 13 B945316 VW0925 June 9, 2019	RPD
Polycyclic Aromatics								
Acenaphthene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Acenaphthylene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Acridine	mg/kg	>50%	0.010	0.05	no	<0.010	<0.010	n/c
Anthracene	mg/kg	>50%	0.0040	0.02	no	<0.0040	<0.0040	n/c
Benzo(a)anthracene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Benzo(b&j)fluoranthene	mg/kg	>50%	0.0050	0.025	no	0.0078	<0.0050	n/c
Benzo(k)fluoranthene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Benzo(g,h,i)perylene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Benzo(c)phenanthrene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Benzo(a)pyrene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Benzo[e]pyrene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Chrysene	mg/kg	>50%	0.0050	0.025	no	0.0065	<0.0050	n/c
Dibenz(a,h)anthracene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Fluoranthene	mg/kg	>50%	0.0050	0.025	no	0.0075	<0.0050	n/c
Fluorene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Indeno(1,2,3-cd)pyrene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
2-Methylnaphthalene	mg/kg	>50%	0.0050	0.025	no	0.011	0.0065	n/c
Naphthalene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Phenanthrene	mg/kg	>50%	0.0050	0.025	no	0.012	0.007	n/c
Perylene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Pyrene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Quinoline	mg/kg	>50%	0.0050	0.025	no	<0.010	<0.010	n/c

Notes:
mg/kg = Milligrams per kilogram; RDL = reportable detection limit; n/c = not applicable; > = more than; < = less than; n/a = not applicable; RPD = relative percent difference.
Table to be read in conjunction with accompanying report.

Table 26
Summary of Duplicate Soil Sample Quality Control Results
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample Location / Maxxam Job # / Maxxam Sample ID / Sample Collection Date	Units	Alert Limit	RDL	5X RDL	Are the results >5X RDL	CELL2-2 B945316 VW0930 June 9, 2019	DUP 14 B945316 VW0933 June 9, 2019	RPD
Hydrocarbons								
Benzene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Toluene	mg/kg	>50%	0.050	0.25	no	<0.050	<0.050	n/c
Ethylbenzene	mg/kg	>50%	0.010	0.05	no	<0.010	<0.010	n/c
Xylenes (Total)	mg/kg	>50%	0.045	0.225	no	<0.045	<0.045	n/c
m & p-Xylene	mg/kg	>50%	0.040	0.2	no	<0.040	<0.040	n/c
o-Xylene	mg/kg	>50%	0.020	0.1	no	<0.020	<0.020	n/c
F1 (C_6-C_{10}) - BTEX	mg/kg	>50%	10	50	no	<10	<10	n/c
(C_6-C_{10})	mg/kg	>50%	10	50	no	<10	<10	n/c
F2 (C_{10}-C_{16})	mg/kg	>50%	10	50	no	<10	<10	n/c
F3 (C_{16}-C_{34})	mg/kg	>50%	50	250	no	<50	<50	n/c
F4 (C_{34}-C_{50})	mg/kg	>50%	50	250	no	<50	<50	n/c
Polycyclic Aromatics								
Acenaphthene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Acenaphthylene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Acridine	mg/kg	>50%	0.010	0.05	no	<0.010	<0.010	n/c
Anthracene	mg/kg	>50%	0.0040	0.02	no	<0.0040	<0.0040	n/c
Benzo(a)anthracene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Benzo(b&j)fluoranthene	mg/kg	>50%	0.0050	0.025	no	0.0088	0.01	n/c
Benzo(k)fluoranthene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Benzo(g,h,i)perylene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Benzo(c)phenanthrene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Benzo(a)pyrene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Benzo[e]pyrene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Chrysene	mg/kg	>50%	0.0050	0.025	no	0.008	<0.0050	n/c
Dibenz(a,h)anthracene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Fluoranthene	mg/kg	>50%	0.0050	0.025	no	0.0098	0.012	n/c
Fluorene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Indeno(1,2,3-cd)pyrene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
2-Methylnaphthalene	mg/kg	>50%	0.0050	0.025	no	0.028	0.02	n/c
Naphthalene	mg/kg	>50%	0.0050	0.025	no	0.019	0.011	n/c
Phenanthrene	mg/kg	>50%	0.0050	0.025	no	0.022	0.023	n/c
Perylene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Pyrene	mg/kg	>50%	0.0050	0.025	no	0.0072	0.0082	n/c
Quinoline	mg/kg	>50%	0.0050	0.025	no	<0.010	<0.010	n/c

Notes:
mg/kg = Milligrams per kilogram; RDL = reportable detection limit; n/c = not applicable; > = more than; < = less than; n/a = not applicable; RPD = relative percent difference.
Table to be read in conjunction with accompanying report.

Table 26
Summary of Duplicate Soil Sample Quality Control Results
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample Location / Maxxam Job # / Maxxam Sample ID / Sample Collection Date	Units	Alert Limit	RDL	5X RDL	Are the results >5X RDL	DB-011 B91599 VH9192 March 2, 2019	S-3006 B91599 VH9193 March 2, 2019	RPD
Hydrocarbons								
Benzene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Toluene	mg/kg	>50%	0.050	0.25	no	<0.050	<0.050	n/c
Ethylbenzene	mg/kg	>50%	0.010	0.05	no	<0.010	<0.010	n/c
Xylenes (Total)	mg/kg	>50%	0.045	0.225	no	<0.040	<0.040	n/c
m & p-Xylene	mg/kg	>50%	0.040	0.2	no	<0.020	<0.020	n/c
o-Xylene	mg/kg	>50%	0.020	0.1	no	<0.045	<0.045	n/c
F1 (C_6-C_{10}) - BTEX	mg/kg	>50%	10	50	no	<10	<10	n/c
(C_6-C_{10})	mg/kg	>50%	10	50	no	<10	<10	n/c
F2 (C_{10}-C_{16})	mg/kg	>50%	10	50	no	<10	<10	n/c
F3 (C_{16}-C_{34})	mg/kg	>50%	50	250	no	<50	<50	n/c
F4 (C_{34}-C_{50})	mg/kg	>50%	50	250	no	<50	<50	n/c

Sample Location / Maxxam Job # / Maxxam Sample ID / Sample Collection Date	Units	Alert Limit	RDL	5X RDL	Are the results >5X RDL	S-335F B915240 VH5939 March 2, 2019	DUPE 3006 B915240 VH5940 March 2, 2019	RPD
Hydrocarbons								
Benzene	mg/kg	>50%	0.0050	0.025	no	<10	<10	n/c
Toluene	mg/kg	>50%	0.050	0.25	no	<10	<10	n/c
Ethylbenzene	mg/kg	>50%	0.010	0.05	no	<10	<10	n/c
Xylenes (Total)	mg/kg	>50%	0.045	0.225	no	0.14	0.065	n/c
m & p-Xylene	mg/kg	>50%	0.040	0.2	no	<10	<10	n/c
o-Xylene	mg/kg	>50%	0.020	0.1	no	<10	<10	n/c
F1 (C_6-C_{10}) - BTEX	mg/kg	>50%	10	50	no	<10	<10	n/c
(C_6-C_{10})	mg/kg	>50%	10	50	no	<10	<10	n/c
F2 (C_{10}-C_{16})	mg/kg	>50%	10	50	no	31	15	n/c
F3 (C_{16}-C_{34})	mg/kg	>50%	50	250	no	120	77	n/c
F4 (C_{34}-C_{50})	mg/kg	>50%	50	250	no	<50	<50	n/c

Sample Location / Maxxam Job # / Maxxam Sample ID / Sample Collection Date	Units	Alert Limit	RDL	5X RDL	Are the results >5X RDL	TP-14 B915240 VH5943 March 2, 2019	DUPE 3007 B915240 VH5945 March 2, 2019	RPD
Hydrocarbons								
F2 (C_{10}-C_{16})	mg/kg	>50%	10	50	yes	2100	2600	21
F3 (C_{16}-C_{34})	mg/kg	>50%	50	250	yes	5700	6800	18
F4 (C_{34}-C_{50})	mg/kg	>50%	50	250	yes	2400	2900	19

Sample Location / Maxxam Job # / Maxxam Sample ID / Sample Collection Date	Units	Alert Limit	RDL	5X RDL	Are the results >5X RDL	C-2061-B B916440 VI2921 March 6, 2019	DUP-3011 B916440 VI2929 March 6, 2019	RPD
Hydrocarbons								
Benzene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Toluene	mg/kg	>50%	0.050	0.25	no	<0.050	<0.050	n/c
Ethylbenzene	mg/kg	>50%	0.010	0.05	no	<0.010	<0.010	n/c
Xylenes (Total)	mg/kg	>50%	0.045	0.225	no	<0.045	<0.045	n/c
m & p-Xylene	mg/kg	>50%	0.040	0.2	no	<0.040	<0.040	n/c
o-Xylene	mg/kg	>50%	0.020	0.1	no	<0.020	<0.020	n/c
F1 (C_6-C_{10}) - BTEX	mg/kg	>50%	10	50	no	<10	<10	n/c
(C_6-C_{10})	mg/kg	>50%	10	50	no	<10	<10	n/c
F2 (C_{10}-C_{16})	mg/kg	>50%	10	50	no	<10	<10	n/c
F3 (C_{16}-C_{34})	mg/kg	>50%	50	250	no	<50	<50	n/c
F4 (C_{34}-C_{50})	mg/kg	>50%	50	250	no	<50	<50	n/c

Notes:
mg/kg = Milligrams per kilogram; RDL = reportable detection limit; n/c = not applicable; > = more than; < = less than; n/a = not applicable; RPD = relative percent difference.
Table to be read in conjunction with accompanying report.

Table 26
Summary of Duplicate Soil Sample Quality Control Results
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample Location / Maxxam Job # / Maxxam Sample ID / Sample Collection Date	Units	Alert Limit	RDL	5X RDL	Are the results >5X RDL	C-2138 / B916440 / VI1067 / March 6, 2019	DUPE-3010 / B916440 / VI1064 / March 6, 2019	RPD
Hydrocarbons								
Benzene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Toluene	mg/kg	>50%	0.050	0.25	no	<0.050	<0.050	n/c
Ethylbenzene	mg/kg	>50%	0.010	0.05	no	<0.010	<0.010	n/c
Xylenes (Total)	mg/kg	>50%	0.045	0.225	no	<0.045	<0.045	n/c
m & p-Xylene	mg/kg	>50%	0.040	0.2	no	<0.040	<0.040	n/c
o-Xylene	mg/kg	>50%	0.020	0.1	no	<0.020	<0.020	n/c
F1 (C_6-C_{10}) - BTEX	mg/kg	>50%	10	50	no	<10	<10	n/c
(C_6-C_{10})	mg/kg	>50%	10	50	no	<10	<10	n/c
F2 (C_{10}-C_{16})	mg/kg	>50%	10	50	no	13	11	n/c
F3 (C_{16}-C_{34})	mg/kg	>50%	50	250	no	92	110	n/c
F4 (C_{34}-C_{50})	mg/kg	>50%	50	250	no	<50	<50	n/c
Sample Location / Maxxam Job # / Maxxam Sample ID / Sample Collection Date	**Units**	**Alert Limit**	**RDL**	**5X RDL**	**Are the results >5X RDL**	**C-2191 / B916834 / VI2965 / March 6, 2019**	**DUP-3012 / B916834 / VI2956 / March 6, 2019**	**RPD**
Hydrocarbons								
Benzene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Toluene	mg/kg	>50%	0.050	0.25	no	<0.050	<0.050	n/c
Ethylbenzene	mg/kg	>50%	0.010	0.05	no	<0.010	<0.010	n/c
Xylenes (Total)	mg/kg	>50%	0.045	0.225	no	<0.045	<0.045	n/c
m & p-Xylene	mg/kg	>50%	0.040	0.2	no	<0.040	<0.040	n/c
o-Xylene	mg/kg	>50%	0.020	0.1	no	<0.020	<0.020	n/c
F1 (C_6-C_{10}) - BTEX	mg/kg	>50%	10	50	no	<10	<10	n/c
(C_6-C_{10})	mg/kg	>50%	10	50	no	<10	<10	n/c
F2 (C_{10}-C_{16})	mg/kg	>50%	10	50	no	<10	<10	n/c
F3 (C_{16}-C_{34})	mg/kg	>50%	50	250	no	<50	<50	n/c
F4 (C_{34}-C_{50})	mg/kg	>50%	50	250	no	<50	<50	n/c

Sample Location / Maxxam Job # / Maxxam Sample ID / Sample Collection Date	Units	Alert Limit	RDL	5X RDL	Are the results >5X RDL	C-2308 / B917096 / VI4196 / March 7, 2019	DUP-3015 / B917096 / VI4197 / March 7, 2019	RPD
Hydrocarbons								
Benzene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Toluene	mg/kg	>50%	0.050	0.25	no	<0.050	<0.050	n/c
Ethylbenzene	mg/kg	>50%	0.010	0.05	no	<0.010	<0.010	n/c
Xylenes (Total)	mg/kg	>50%	0.045	0.225	no	<0.045	<0.045	n/c
m & p-Xylene	mg/kg	>50%	0.040	0.2	no	<0.040	<0.040	n/c
o-Xylene	mg/kg	>50%	0.020	0.1	no	<0.020	<0.020	n/c
F1 (C_6-C_{10}) - BTEX	mg/kg	>50%	10	50	no	<10	<10	n/c
(C_6-C_{10})	mg/kg	>50%	10	50	no	<10	<10	n/c
F2 (C_{10}-C_{16})	mg/kg	>50%	10	50	no	<10	<10	n/c
F3 (C_{16}-C_{34})	mg/kg	>50%	50	250	no	<50	<50	n/c
F4 (C_{34}-C_{50})	mg/kg	>50%	50	250	no	<50	<50	n/c

Notes:
mg/kg = Milligrams per kilogram; RDL = reportable detection limit; n/c = not applicable; > = more than; < = less than; n/a = not applicable; RPD = relative percent difference.
Table to be read in conjunction with accompanying report.

Table 26
Summary of Duplicate Soil Sample Quality Control Results
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample Location / Maxxam Job # / Maxxam Sample ID / Sample Collection Date	Units	Alert Limit	RDL	5X RDL	Are the results >5X RDL	C-9158 B919116 VJ3924 March 13, 2019	DUPE-3024 B919116 VJ3926 March 13, 2019	RPD
Hydrocarbons								
Benzene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Toluene	mg/kg	>50%	0.050	0.25	no	<0.050	<0.050	n/c
Ethylbenzene	mg/kg	>50%	0.010	0.05	no	<0.010	<0.010	n/c
Xylenes (Total)	mg/kg	>50%	0.045	0.225	no	<0.045	<0.045	n/c
m & p-Xylene	mg/kg	>50%	0.040	0.2	no	<0.040	<0.040	n/c
o-Xylene	mg/kg	>50%	0.020	0.1	no	<0.020	<0.020	n/c
F1 (C_6-C_{10}) - BTEX	mg/kg	>50%	10	50	no	<10	<10	n/c
(C_6-C_{10})	mg/kg	>50%	10	50	no	<10	<10	n/c
F2 (C_{10}-C_{16})	mg/kg	>50%	10	50	yes	250	290	15
F3 (C_{16}-C_{34})	mg/kg	>50%	50	250	yes	850	1100	26
F4 (C_{34}-C_{50})	mg/kg	>50%	50	250	yes	350	460	27

Sample Location / Maxxam Job # / Maxxam Sample ID / Sample Collection Date	Units	Alert Limit	RDL	5X RDL	Are the results >5X RDL	C-9408 B919584 VJ6617 March 17, 2019	DUPE-3033 B919584 VJ6642 March 17, 2019	RPD
Hydrocarbons								
Benzene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Toluene	mg/kg	>50%	0.050	0.25	no	<0.050	<0.050	n/c
Ethylbenzene	mg/kg	>50%	0.010	0.05	no	<0.010	<0.010	n/c
Xylenes (Total)	mg/kg	>50%	0.045	0.225	no	<0.045	<0.045	n/c
m & p-Xylene	mg/kg	>50%	0.040	0.2	no	<0.040	<0.040	n/c
o-Xylene	mg/kg	>50%	0.020	0.1	no	<0.020	<0.020	n/c
F1 (C_6-C_{10}) - BTEX	mg/kg	>50%	10	50	no	<10	<10	n/c
(C_6-C_{10})	mg/kg	>50%	10	50	no	<10	<10	n/c
F2 (C_{10}-C_{16})	mg/kg	>50%	10	50	no	<10	<10	n/c
F3 (C_{16}-C_{34})	mg/kg	>50%	50	250	no	<50	<50	n/c
F4 (C_{34}-C_{50})	mg/kg	>50%	50	250	no	<50	<50	n/c

Notes:
mg/kg = Milligrams per kilogram; RDL = reportable detection limit; n/c = not applicable; > = more than; < = less than; n/a = not applicable; RPD = relative percent difference.
Table to be read in conjunction with accompanying report.

Table 26
Summary of Duplicate Soil Sample Quality Control Results
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample Location / Maxxam Job # / Maxxam Sample ID / Sample Collection Date	Units	Alert Limit	RDL	5X RDL	Are the results >5X RDL	S-094 B914820 VH3846 February 27, 2019	S-3001 B914820 VH3850 February 27, 2019	RPD
Hydrocarbons								
Benzene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Toluene	mg/kg	>50%	0.050	0.25	no	<0.050	<0.050	n/c
Ethylbenzene	mg/kg	>50%	0.010	0.05	no	<0.010	<0.010	n/c
Xylenes (Total)	mg/kg	>50%	0.045	0.225	no	<0.045	<0.045	n/c
m & p-Xylene	mg/kg	>50%	0.040	0.2	no	<0.040	<0.040	n/c
o-Xylene	mg/kg	>50%	0.020	0.1	no	<0.020	<0.020	n/c
F1 (C_6-C_{10}) - BTEX	mg/kg	>50%	10	50	no	<10	<10	n/c
(C_6-C_{10})	mg/kg	>50%	10	50	no	<10	<10	n/c
F2 (C_{10}-C_{16})	mg/kg	>50%	10	50	no	<10	<10	n/c
F3 (C_{16}-C_{34})	mg/kg	>50%	50	250	no	<50	<50	n/c
F4 (C_{34}-C_{50})	mg/kg	>50%	50	250	no	<50	<50	n/c
Polycyclic Aromatics								
Acenaphthene	mg/kg	>50%	0.0050	0.025	no	<0.0050	0.083	n/c
Acenaphthylene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Acridine	mg/kg	>50%	0.010	0.05	no	<0.010	<0.010	n/c
Anthracene	mg/kg	>50%	0.0040	0.02	no	<0.0040	0.067	n/c
Benzo(a)anthracene	mg/kg	>50%	0.0050	0.025	no	<0.0050	0.027	n/c
Benzo(b&j)fluoranthene	mg/kg	>50%	0.0050	0.025	no	<0.0050	0.021	n/c
Benzo(k)fluoranthene	mg/kg	>50%	0.0050	0.025	no	<0.0050	0.0072	n/c
Benzo(g,h,i)perylene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Benzo(c)phenanthrene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Benzo(a)pyrene	mg/kg	>50%	0.0050	0.025	no	<0.0050	0.011	n/c
Benzo[e]pyrene	mg/kg	>50%	0.0050	0.025	no	<0.0050	0.011	n/c
Chrysene	mg/kg	>50%	0.0050	0.025	no	<0.0050	0.033	n/c
Dibenz(a,h)anthracene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Fluoranthene	mg/kg	>50%	0.0050	0.025	no	<0.0050	0.15	n/c
Fluorene	mg/kg	>50%	0.0050	0.025	no	<0.0050	0.082	n/c
Indeno(1,2,3-cd)pyrene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
2-Methylnaphthalene	mg/kg	>50%	0.0050	0.025	no	<0.0050	0.063	n/c
Naphthalene	mg/kg	>50%	0.0050	0.025	no	0.0073	0.087	n/c
Phenanthrene	mg/kg	>50%	0.0050	0.025	no	<0.0050	0.27	n/c
Perylene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Pyrene	mg/kg	>50%	0.0050	0.025	no	<0.0050	0.1	n/c
Quinoline	mg/kg	>50%	0.0050	0.025	no	<0.010	0.011	n/c

Notes:
mg/kg = Milligrams per kilogram; RDL = reportable detection limit; n/c = not applicable; > = more than; < = less than; n/a = not applicable; RPD = relative percent difference.
Table to be read in conjunction with accompanying report.

Table 26
Summary of Duplicate Soil Sample Quality Control Results
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample Location / Maxxam Job # / Maxxam Sample ID / Sample Collection Date	Units	Alert Limit	RDL	5X RDL	Are the results >5X RDL	S-141 B915232 VH5900 February 28, 2019	S-3002 B915232 VH5901 February 28, 2019	RPD
Hydrocarbons								
Benzene	mg/kg	>50%	0.0050	0.025	yes	0.097	0.052	**60**
Toluene	mg/kg	>50%	0.050	0.25	no	0.29	0.14	n/c
Ethylbenzene	mg/kg	>50%	0.010	0.05	no	0.065	0.016	n/c
Xylenes (Total)	mg/kg	>50%	0.045	0.225	no	0.56	0.12	n/c
m & p-Xylene	mg/kg	>50%	0.040	0.2	no	0.17	0.038	n/c
o-Xylene	mg/kg	>50%	0.020	0.1	yes	0.73	0.16	**128**
F1 (C_6-C_{10}) - BTEX	mg/kg	>50%	10	50	no	20	<10	n/c
(C_6-C_{10})	mg/kg	>50%	10	50	no	21	<10	n/c
F2 (C_{10}-C_{16})	mg/kg	>50%	10	50	no	10	<10	n/c
F3 (C_{16}-C_{34})	mg/kg	>50%	50	250	no	58	<50	n/c
F4 (C_{34}-C_{50})	mg/kg	>50%	50	250	no	<50	<50	n/c

Sample Location / Maxxam Job # / Maxxam Sample ID / Sample Collection Date	Units	Alert Limit	RDL	5X RDL	Are the results >5X RDL	S-104A B91232 VH5887 February 28, 2019	S-3003 B91232 VH5902 February 28, 2019	RPD
Hydrocarbons								
Benzene	mg/kg	>50%	0.0050	0.025	no	0.022	0.019	n/c
Toluene	mg/kg	>50%	0.050	0.25	no	<0.050	<0.050	n/c
Ethylbenzene	mg/kg	>50%	0.010	0.05	no	<0.010	<0.010	n/c
Xylenes (Total)	mg/kg	>50%	0.045	0.225	no	<0.040	<0.040	n/c
m & p-Xylene	mg/kg	>50%	0.040	0.2	no	<0.020	<0.020	n/c
o-Xylene	mg/kg	>50%	0.020	0.1	no	<0.045	<0.045	n/c
F1 (C_6-C_{10}) - BTEX	mg/kg	>50%	10	50	no	<10	<10	n/c
(C_6-C_{10})	mg/kg	>50%	10	50	no	<10	<10	n/c
F2 (C_{10}-C_{16})	mg/kg	>50%	10	50	no	21	<10	n/c
F3 (C_{16}-C_{34})	mg/kg	>50%	50	250	no	110	<50	n/c
F4 (C_{34}-C_{50})	mg/kg	>50%	50	250	no	<50	<50	n/c

Sample Location / Maxxam Job # / Maxxam Sample ID / Sample Collection Date	Units	Alert Limit	RDL	5X RDL	Are the results >5X RDL	S-220W B915234 VH5921 March 1, 2019	S-3005 B915234 VH5923 March 1, 2019	RPD
Hydrocarbons								
Benzene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Toluene	mg/kg	>50%	0.050	0.25	no	<0.050	<0.050	n/c
Ethylbenzene	mg/kg	>50%	0.010	0.05	no	<0.010	<0.010	n/c
Xylenes (Total)	mg/kg	>50%	0.045	0.225	no	<0.040	<0.040	n/c
m & p-Xylene	mg/kg	>50%	0.040	0.2	no	<0.020	<0.020	n/c
o-Xylene	mg/kg	>50%	0.020	0.1	no	<0.045	<0.045	n/c
F1 (C_6-C_{10}) - BTEX	mg/kg	>50%	10	50	no	<10	<10	n/c
(C_6-C_{10})	mg/kg	>50%	10	50	no	<10	<10	n/c
F2 (C_{10}-C_{16})	mg/kg	>50%	10	50	no	<10	<10	n/c
F3 (C_{16}-C_{34})	mg/kg	>50%	50	250	no	<50	<50	n/c
F4 (C_{34}-C_{50})	mg/kg	>50%	50	250	no	<50	<50	n/c

Notes:
mg/kg = Milligrams per kilogram; RDL = reportable detection limit; n/c = not applicable; > = more than; < = less than; n/a = not applicable; RPD = relative percent difference.
Table to be read in conjunction with accompanying report.

Table 26
Summary of Duplicate Soil Sample Quality Control Results
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample Location / Maxxam Job # / Maxxam Sample ID / Sample Collection Date	Units	Alert Limit	RDL	5X RDL	Are the results >5X RDL	C-2025-B B915992 VH9182 March 5, 2019	S-3009 B915992 VH9188 March 5, 2019	RPD
Hydrocarbons								
Benzene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Toluene	mg/kg	>50%	0.050	0.25	no	<0.050	<0.050	n/c
Ethylbenzene	mg/kg	>50%	0.010	0.05	no	<0.010	<0.010	n/c
Xylenes (Total)	mg/kg	>50%	0.045	0.225	no	<0.040	<0.040	n/c
m & p-Xylene	mg/kg	>50%	0.040	0.2	no	<0.020	<0.020	n/c
o-Xylene	mg/kg	>50%	0.020	0.1	no	<0.045	<0.045	n/c
F1 (C_6-C_{10}) - BTEX	mg/kg	>50%	10	50	no	<10	<10	n/c
(C_6-C_{10})	mg/kg	>50%	10	50	no	<10	<10	n/c
F2 (C_{10}-C_{16})	mg/kg	>50%	10	50	no	<10	<10	n/c
F3 (C_{16}-C_{34})	mg/kg	>50%	50	250	no	<50	<50	n/c
F4 (C_{34}-C_{50})	mg/kg	>50%	50	250	no	<50	<50	n/c

Sample Location / Maxxam Job # / Maxxam Sample ID / Sample Collection Date	Units	Alert Limit	RDL	5X RDL	Are the results >5X RDL	S-109 B91232 VH5888 February 28, 2019	S-3004 B91232 VH5903 February 28, 2019	RPD
Hydrocarbons								
Benzene	mg/kg	>50%	0.0050	0.025	yes	0.27	0.21	25
Toluene	mg/kg	>50%	0.050	0.25	yes	0.72	0.57	23
Ethylbenzene	mg/kg	>50%	0.010	0.05	yes	0.1	0.092	8
Xylenes (Total)	mg/kg	>50%	0.045	0.225	yes	0.93	0.79	16
m & p-Xylene	mg/kg	>50%	0.040	0.2	yes	0.29	0.26	11
o-Xylene	mg/kg	>50%	0.020	0.1	yes	1.2	1.1	9
F1 (C_6-C_{10}) - BTEX	mg/kg	>50%	10	50	no	16	10	n/c
(C_6-C_{10})	mg/kg	>50%	10	50	no	18	12	n/c
F2 (C_{10}-C_{16})	mg/kg	>50%	10	50	no	29	12	n/c
F3 (C_{16}-C_{34})	mg/kg	>50%	50	250	no	110	56	n/c
F4 (C_{34}-C_{50})	mg/kg	>50%	50	250	no	<50	<50	n/c

Sample Location / Maxxam Job # / Maxxam Sample ID / Sample Collection Date	Units	Alert Limit	RDL	5X RDL	Are the results >5X RDL	S-141-B B916834 VI2954 March 7, 2019	DUP-3014 B916834 VI2955 March 7, 2019	RPD
Hydrocarbons								
Benzene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Toluene	mg/kg	>50%	0.050	0.25	no	<0.050	<0.050	n/c
Ethylbenzene	mg/kg	>50%	0.010	0.05	no	<0.010	<0.010	n/c
Xylenes (Total)	mg/kg	>50%	0.045	0.225	no	<0.045	<0.045	n/c
m & p-Xylene	mg/kg	>50%	0.040	0.2	no	<0.040	<0.040	n/c
o-Xylene	mg/kg	>50%	0.020	0.1	no	<0.020	<0.020	n/c
F1 (C_6-C_{10}) - BTEX	mg/kg	>50%	10	50	no	<10	<10	n/c
(C_6-C_{10})	mg/kg	>50%	10	50	no	<10	<10	n/c
F2 (C_{10}-C_{16})	mg/kg	>50%	10	50	no	<10	<10	n/c
F3 (C_{16}-C_{34})	mg/kg	>50%	50	250	no	62	76	n/c
F4 (C_{34}-C_{50})	mg/kg	>50%	50	250	no	<50	<50	n/c

Notes:
mg/kg = Milligrams per kilogram; RDL = reportable detection limit; n/c = not applicable; > = more than; < = less than; n/a = not applicable; RPD = relative percent difference.
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Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample Location / Maxxam Job # / Maxxam Sample ID / Sample Collection Date	Units	Alert Limit	RDL	5X RDL	Are the results >5X RDL	C-2519W-B B917096 VI4222 March 8, 2019	DUP-3017 B917096 VI4224 March 8, 2019	RPD
Hydrocarbons								
Benzene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Toluene	mg/kg	>50%	0.050	0.25	no	<0.050	<0.050	n/c
Ethylbenzene	mg/kg	>50%	0.010	0.05	no	<0.010	<0.010	n/c
Xylenes (Total)	mg/kg	>50%	0.045	0.225	no	<0.045	<0.045	n/c
m & p-Xylene	mg/kg	>50%	0.040	0.2	no	<0.040	<0.040	n/c
o-Xylene	mg/kg	>50%	0.020	0.1	no	<0.020	<0.020	n/c
F1 (C_6-C_{10}) - BTEX	mg/kg	>50%	10	50	no	<10	<10	n/c
(C_6-C_{10})	mg/kg	>50%	10	50	no	<10	<10	n/c
F2 (C_{10}-C_{16})	mg/kg	>50%	10	50	no	<10	<10	n/c
F3 (C_{16}-C_{34})	mg/kg	>50%	50	250	no	62	<50	n/c
F4 (C_{34}-C_{50})	mg/kg	>50%	50	250	no	<50	<50	n/c

Sample Location / Maxxam Job # / Maxxam Sample ID / Sample Collection Date	Units	Alert Limit	RDL	5X RDL	Are the results >5X RDL	C-2424 B917096 VI4212 March 8, 2019	DUP3016 B917096 VI4213 March 8, 2019	RPD
Hydrocarbons								
Benzene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Toluene	mg/kg	>50%	0.050	0.25	no	<0.050	<0.050	n/c
Ethylbenzene	mg/kg	>50%	0.010	0.05	no	<0.010	<0.010	n/c
Xylenes (Total)	mg/kg	>50%	0.045	0.225	no	<0.045	<0.045	n/c
m & p-Xylene	mg/kg	>50%	0.040	0.2	no	<0.040	<0.040	n/c
o-Xylene	mg/kg	>50%	0.020	0.1	no	<0.020	<0.020	n/c
F1 (C_6-C_{10}) - BTEX	mg/kg	>50%	10	50	no	<10	<10	n/c
(C_6-C_{10})	mg/kg	>50%	10	50	no	<10	<10	n/c
F2 (C_{10}-C_{16})	mg/kg	>50%	10	50	no	<10	<10	n/c
F3 (C_{16}-C_{34})	mg/kg	>50%	50	250	no	<50	<50	n/c
F4 (C_{34}-C_{50})	mg/kg	>50%	50	250	no	<50	<50	n/c

Sample Location / Maxxam Job # / Maxxam Sample ID / Sample Collection Date	Units	Alert Limit	RDL	5X RDL	Are the results >5X RDL	C-5017 B917264 VI5059 March 10, 2019	DUP-3019 B917264 VI5061 March 10, 2019	RPD
Hydrocarbons								
Benzene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Toluene	mg/kg	>50%	0.050	0.25	no	<0.050	<0.050	n/c
Ethylbenzene	mg/kg	>50%	0.010	0.05	no	<0.010	<0.010	n/c
Xylenes (Total)	mg/kg	>50%	0.045	0.225	no	<0.045	<0.045	n/c
m & p-Xylene	mg/kg	>50%	0.040	0.2	no	<0.040	<0.040	n/c
o-Xylene	mg/kg	>50%	0.020	0.1	no	<0.020	<0.020	n/c
F1 (C_6-C_{10}) - BTEX	mg/kg	>50%	10	50	no	<10	<10	n/c
(C_6-C_{10})	mg/kg	>50%	10	50	no	<10	<10	n/c
F2 (C_{10}-C_{16})	mg/kg	>50%	10	50	no	<10	<10	n/c
F3 (C_{16}-C_{34})	mg/kg	>50%	50	250	no	<50	<50	n/c
F4 (C_{34}-C_{50})	mg/kg	>50%	50	250	no	<50	<50	n/c

Notes:
mg/kg = Milligrams per kilogram; RDL = reportable detection limit; n/c = not applicable; > = more than; < = less than; n/a = not applicable; RPD = relative percent difference.
Table to be read in conjunction with accompanying report.

Table 26
Summary of Duplicate Soil Sample Quality Control Results
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample Location / Maxxam Job # / Maxxam Sample ID / Sample Collection Date	Units	Alert Limit	RDL	5X RDL	Are the results >5X RDL	C-5058W B917958 VI8271 March 11, 2019	DUPE-3020 B917958 VI8273 March 11, 2019	RPD
Hydrocarbons								
Benzene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Toluene	mg/kg	>50%	0.050	0.25	no	<0.050	<0.050	n/c
Ethylbenzene	mg/kg	>50%	0.010	0.05	no	<0.010	<0.010	n/c
Xylenes (Total)	mg/kg	>50%	0.045	0.225	no	<0.045	<0.045	n/c
m & p-Xylene	mg/kg	>50%	0.040	0.2	no	<0.040	<0.040	n/c
o-Xylene	mg/kg	>50%	0.020	0.1	no	<0.020	<0.020	n/c
F1 (C_6-C_{10}) - BTEX	mg/kg	>50%	10	50	no	<10	<10	n/c
(C_6-C_{10})	mg/kg	>50%	10	50	no	<10	<10	n/c
F2 (C_{10}-C_{16})	mg/kg	>50%	10	50	no	<10	<10	n/c
F3 (C_{16}-C_{34})	mg/kg	>50%	50	250	no	<50	<50	n/c
F4 (C_{34}-C_{50})	mg/kg	>50%	50	250	no	<50	<50	n/c

Sample Location / Maxxam Job # / Maxxam Sample ID / Sample Collection Date	Units	Alert Limit	RDL	5X RDL	Are the results >5X RDL	C-6064 B916817 VI2876 March 6, 2019	DUP 6998 B916817 VI2887 March 6, 2019	RPD
Hydrocarbons								
Benzene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Toluene	mg/kg	>50%	0.050	0.25	no	<0.050	<0.050	n/c
Ethylbenzene	mg/kg	>50%	0.010	0.05	no	<0.010	<0.010	n/c
Xylenes (Total)	mg/kg	>50%	0.045	0.225	no	<0.045	<0.045	n/c
m & p-Xylene	mg/kg	>50%	0.040	0.2	no	<0.040	<0.040	n/c
o-Xylene	mg/kg	>50%	0.020	0.1	no	<0.020	<0.020	n/c
F1 (C_6-C_{10}) - BTEX	mg/kg	>50%	10	50	no	<10	<10	n/c
(C_6-C_{10})	mg/kg	>50%	10	50	no	<10	<10	n/c
F2 (C_{10}-C_{16})	mg/kg	>50%	10	50	no	<10	<10	n/c
F3 (C_{16}-C_{34})	mg/kg	>50%	50	250	no	<50	<50	n/c
F4 (C_{34}-C_{50})	mg/kg	>50%	50	250	no	<50	<50	n/c

Sample Location / Maxxam Job # / Maxxam Sample ID / Sample Collection Date	Units	Alert Limit	RDL	5X RDL	Are the results >5X RDL	C-6045 B916817 VI2872 March 6, 2019	DUP 6999 B916817 VI2881 March 6, 2019	RPD
Hydrocarbons								
Benzene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Toluene	mg/kg	>50%	0.050	0.25	no	<0.050	<0.050	n/c
Ethylbenzene	mg/kg	>50%	0.010	0.05	no	<0.010	<0.010	n/c
Xylenes (Total)	mg/kg	>50%	0.045	0.225	no	<0.045	<0.045	n/c
m & p-Xylene	mg/kg	>50%	0.040	0.2	no	<0.040	<0.040	n/c
o-Xylene	mg/kg	>50%	0.020	0.1	no	<0.020	<0.020	n/c
F1 (C_6-C_{10}) - BTEX	mg/kg	>50%	10	50	no	<10	<10	n/c
(C_6-C_{10})	mg/kg	>50%	10	50	no	<10	<10	n/c
F2 (C_{10}-C_{16})	mg/kg	>50%	10	50	no	<10	<10	n/c
F3 (C_{16}-C_{34})	mg/kg	>50%	50	250	no	<50	<50	n/c
F4 (C_{34}-C_{50})	mg/kg	>50%	50	250	no	<50	<50	n/c

Notes:
mg/kg = Milligrams per kilogram; RDL = reportable detection limit; n/c = not applicable; > = more than; < = less than; n/a = not applicable; RPD = relative percent difference.
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Table 26
Summary of Duplicate Soil Sample Quality Control Results
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample Location / Maxxam Job # / Maxxam Sample ID / Sample Collection Date	Units	Alert Limit	RDL	5X RDL	Are the results >5X RDL	C-6200 B917177 VI4772 March 9, 2019	DUPE-3018 B917177 VI4778 March 9, 2019	RPD
Hydrocarbons								
Benzene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Toluene	mg/kg	>50%	0.050	0.25	no	<0.050	<0.050	n/c
Ethylbenzene	mg/kg	>50%	0.010	0.05	no	<0.010	<0.010	n/c
Xylenes (Total)	mg/kg	>50%	0.045	0.225	no	<0.045	<0.045	n/c
m & p-Xylene	mg/kg	>50%	0.040	0.2	no	<0.040	<0.040	n/c
o-Xylene	mg/kg	>50%	0.020	0.1	no	<0.020	<0.020	n/c
F1 (C_6-C_{10}) - BTEX	mg/kg	>50%	10	50	no	<10	<10	n/c
(C_6-C_{10})	mg/kg	>50%	10	50	no	<10	<10	n/c
F2 (C_{10}-C_{16})	mg/kg	>50%	10	50	no	<10	<10	n/c
F3 (C_{16}-C_{34})	mg/kg	>50%	50	250	no	110	110	n/c
F4 (C_{34}-C_{50})	mg/kg	>50%	50	250	no	<50	<50	n/c

Sample Location / Maxxam Job # / Maxxam Sample ID / Sample Collection Date	Units	Alert Limit	RDL	5X RDL	Are the results >5X RDL	C-9158 B914820 VH3848 February 27, 2019	S-3000 B914820 VH3849 February 27, 2019	RPD
Hydrocarbons								
Benzene	mg/kg	>50%	0.0050	0.025	yes	0.12	0.13	8
Toluene	mg/kg	>50%	0.050	0.25	yes	0.27	0.26	4
Ethylbenzene	mg/kg	>50%	0.010	0.05	no	0.03	0.027	n/c
Xylenes (Total)	mg/kg	>50%	0.045	0.225	yes	0.3	0.27	11
m & p-Xylene	mg/kg	>50%	0.040	0.2	yes	0.23	0.21	9
o-Xylene	mg/kg	>50%	0.020	0.1	no	0.07	0.063	n/c
F1 (C_6-C_{10}) - BTEX	mg/kg	>50%	10	50	no	<10	<10	n/c
(C_6-C_{10})	mg/kg	>50%	10	50	no	<10	<10	n/c
F2 (C_{10}-C_{16})	mg/kg	>50%	10	50	no	<10	<10	n/c
F3 (C_{16}-C_{34})	mg/kg	>50%	50	250	no	<50	<50	n/c
F4 (C_{34}-C_{50})	mg/kg	>50%	50	250	no	<50	<50	n/c

Sample Location / Maxxam Job # / Maxxam Sample ID / Sample Collection Date	Units	Alert Limit	RDL	5X RDL	Are the results >5X RDL	C-7206 B917958 VI8322 March 11, 2019	DUPE-3022 B917958 VI8323 March 11, 2019	RPD
Hydrocarbons								
Benzene	mg/kg	>50%	0.0050	0.025	yes	0.13	0.12	8
Toluene	mg/kg	>50%	0.050	0.25	no	0.16	0.13	n/c
Ethylbenzene	mg/kg	>50%	0.010	0.05	no	0.013	<0.010	n/c
Xylenes (Total)	mg/kg	>50%	0.045	0.225	no	0.13	0.1	n/c
m & p-Xylene	mg/kg	>50%	0.040	0.2	no	0.098	0.08	n/c
o-Xylene	mg/kg	>50%	0.020	0.1	no	0.036	0.024	n/c
F1 (C_6-C_{10}) - BTEX	mg/kg	>50%	10	50	no	<10	<10	n/c
(C_6-C_{10})	mg/kg	>50%	10	50	no	<10	<10	n/c
F2 (C_{10}-C_{16})	mg/kg	>50%	10	50	yes	64	68	6
F3 (C_{16}-C_{34})	mg/kg	>50%	50	250	yes	380	460	19
F4 (C_{34}-C_{50})	mg/kg	>50%	50	250	no	150	180	n/c

Notes:
mg/kg = Milligrams per kilogram; RDL = reportable detection limit; n/c = not applicable; > = more than; < = less than; n/a = not applicable; RPD = relative percent difference.
Table to be read in conjunction with accompanying report.

Table 26
Summary of Duplicate Soil Sample Quality Control Results
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample Location / Maxxam Job # / Maxxam Sample ID / Sample Collection Date	Units	Alert Limit	RDL	5X RDL	Are the results >5X RDL	C-7220 B917958 VI8284 March 11, 2019	DUPE-3021 B917958 VI8287 March 11, 2019	RPD
Hydrocarbons								
Benzene	mg/kg	>50%	0.0050	0.025	no	<0.0050	0.028	n/c
Toluene	mg/kg	>50%	0.050	0.25	no	<0.050	0.25	n/c
Ethylbenzene	mg/kg	>50%	0.010	0.05	no	<0.010	0.071	n/c
Xylenes (Total)	mg/kg	>50%	0.045	0.225	no	<0.045	0.89	n/c
m & p-Xylene	mg/kg	>50%	0.040	0.2	no	<0.040	0.66	n/c
o-Xylene	mg/kg	>50%	0.020	0.1	no	<0.020	0.23	n/c
F1 (C_6-C_{10}) - BTEX	mg/kg	>50%	10	50	no	<10	<10	n/c
(C_6-C_{10})	mg/kg	>50%	10	50	no	<10	<10	n/c
F2 (C_{10}-C_{16})	mg/kg	>50%	10	50	no	<10	<10	n/c
F3 (C_{16}-C_{34})	mg/kg	>50%	50	250	no	88	<50	n/c
F4 (C_{34}-C_{50})	mg/kg	>50%	50	250	no	<50	<50	n/c

Sample Location / Maxxam Job # / Maxxam Sample ID / Sample Collection Date	Units	Alert Limit	RDL	5X RDL	Are the results >5X RDL	C-8080 B919208 VJ4641 March 16, 2019	DUPE-3031 B919208 VJ4664 March 16, 2019	RPD
Hydrocarbons								
Benzene	mg/kg	>50%	0.0050	0.025	no	0.016	0.01	n/c
Toluene	mg/kg	>50%	0.050	0.25	no	0.11	<0.050	n/c
Ethylbenzene	mg/kg	>50%	0.010	0.05	no	0.054	<0.010	n/c
Xylenes (Total)	mg/kg	>50%	0.045	0.225	no	0.67	0.16	n/c
m & p-Xylene	mg/kg	>50%	0.040	0.2	no	0.5	0.12	n/c
o-Xylene	mg/kg	>50%	0.020	0.1	no	0.17	0.043	n/c
F1 (C_6-C_{10}) - BTEX	mg/kg	>50%	10	50	no	<10	<10	n/c
(C_6-C_{10})	mg/kg	>50%	10	50	no	<10	<10	n/c
F2 (C_{10}-C_{16})	mg/kg	>50%	10	50	no	28	31	n/c
F3 (C_{16}-C_{34})	mg/kg	>50%	50	250	no	120	160	n/c
F4 (C_{34}-C_{50})	mg/kg	>50%	50	250	no	<50	54	n/c

Sample Location / Maxxam Job # / Maxxam Sample ID / Sample Collection Date	Units	Alert Limit	RDL	5X RDL	Are the results >5X RDL	C-9030 B919584 VJ6605 March 18, 2019	DUPE-3034 B919584 VJ6603 March 18, 2019	RPD
Hydrocarbons								
Benzene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Toluene	mg/kg	>50%	0.050	0.25	no	<0.050	<0.050	n/c
Ethylbenzene	mg/kg	>50%	0.010	0.05	no	<0.010	<0.010	n/c
Xylenes (Total)	mg/kg	>50%	0.045	0.225	no	<0.045	<0.045	n/c
m & p-Xylene	mg/kg	>50%	0.040	0.2	no	<0.040	<0.040	n/c
o-Xylene	mg/kg	>50%	0.020	0.1	no	<0.020	<0.020	n/c
F1 (C_6-C_{10}) - BTEX	mg/kg	>50%	10	50	no	<10	<10	n/c
(C_6-C_{10})	mg/kg	>50%	10	50	no	<10	<10	n/c
F2 (C_{10}-C_{16})	mg/kg	>50%	10	50	no	<10	<10	n/c
F3 (C_{16}-C_{34})	mg/kg	>50%	50	250	no	<50	<50	n/c
F4 (C_{34}-C_{50})	mg/kg	>50%	50	250	no	<50	<50	n/c

Notes:
mg/kg = Milligrams per kilogram; RDL = reportable detection limit; n/c = not applicable; > = more than; < = less than; n/a = not applicable; RPD = relative percent difference.
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Table 26
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Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample Location / Maxxam Job # / Maxxam Sample ID / Sample Collection Date	Units	Alert Limit	RDL	5X RDL	Are the results >5X RDL	C-9041 B919584 VJ6609 March 18, 2019	DUPE-3035 B919584 VJ6604 March 18, 2019	RPD
Hydrocarbons								
Benzene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Toluene	mg/kg	>50%	0.050	0.25	no	<0.050	<0.050	n/c
Ethylbenzene	mg/kg	>50%	0.010	0.05	no	<0.010	<0.010	n/c
Xylenes (Total)	mg/kg	>50%	0.045	0.225	no	<0.045	<0.045	n/c
m & p-Xylene	mg/kg	>50%	0.040	0.2	no	<0.040	<0.040	n/c
o-Xylene	mg/kg	>50%	0.020	0.1	no	<0.020	<0.020	n/c
F1 (C_6-C_{10}) - BTEX	mg/kg	>50%	10	50	no	<10	<10	n/c
(C_6-C_{10})	mg/kg	>50%	10	50	no	<10	<10	n/c
F2 (C_{10}-C_{16})	mg/kg	>50%	10	50	no	<10	<10	n/c
F3 (C_{16}-C_{34})	mg/kg	>50%	50	250	no	<50	<50	n/c
F4 (C_{34}-C_{50})	mg/kg	>50%	50	250	no	<50	<50	n/c

Sample Location / Maxxam Job # / Maxxam Sample ID / Sample Collection Date	Units	Alert Limit	RDL	5X RDL	Are the results >5X RDL	C-9045 B919116 VJ3898 March 12, 2019	DUPE-3026 B919116 VJ3936 March 12, 2019	RPD
Hydrocarbons								
Benzene	mg/kg	>50%	0.0050	0.025	no	0.017	<0.0050	n/c
Toluene	mg/kg	>50%	0.050	0.25	no	<0.050	<0.050	n/c
Ethylbenzene	mg/kg	>50%	0.010	0.05	no	<0.010	<0.010	n/c
Xylenes (Total)	mg/kg	>50%	0.045	0.225	no	0.1	<0.045	n/c
m & p-Xylene	mg/kg	>50%	0.040	0.2	no	0.1	<0.040	n/c
o-Xylene	mg/kg	>50%	0.020	0.1	no	<0.020	<0.020	n/c
F1 (C_6-C_{10}) - BTEX	mg/kg	>50%	10	50	no	<10	<10	n/c
(C_6-C_{10})	mg/kg	>50%	10	50	no	<10	<10	n/c
F2 (C_{10}-C_{16})	mg/kg	>50%	10	50	no	29	16	n/c
F3 (C_{16}-C_{34})	mg/kg	>50%	50	250	no	240	140	n/c
F4 (C_{34}-C_{50})	mg/kg	>50%	50	250	no	75	<50	n/c

Sample Location / Maxxam Job # / Maxxam Sample ID / Sample Collection Date	Units	Alert Limit	RDL	5X RDL	Are the results >5X RDL	C-9086 B919116 VJ3917 March 12, 2019	DUPE-3025 B919116 VJ3935 March 12, 2019	RPD
Hydrocarbons								
Benzene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Toluene	mg/kg	>50%	0.050	0.25	no	<0.050	<0.050	n/c
Ethylbenzene	mg/kg	>50%	0.010	0.05	no	<0.010	0.017	n/c
Xylenes (Total)	mg/kg	>50%	0.045	0.225	no	<0.045	0.21	n/c
m & p-Xylene	mg/kg	>50%	0.040	0.2	no	<0.040	0.16	n/c
o-Xylene	mg/kg	>50%	0.020	0.1	no	<0.020	0.048	n/c
F1 (C_6-C_{10}) - BTEX	mg/kg	>50%	10	50	no	<10	10	n/c
(C_6-C_{10})	mg/kg	>50%	10	50	no	<10	10	n/c
F2 (C_{10}-C_{16})	mg/kg	>50%	10	50	no	26	35	n/c
F3 (C_{16}-C_{34})	mg/kg	>50%	50	250	no	250	270	n/c
F4 (C_{34}-C_{50})	mg/kg	>50%	50	250	no	77	93	n/c

Notes:
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Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample Location / Maxxam Job # / Maxxam Sample ID / Sample Collection Date	Units	Alert Limit	RDL	5X RDL	Are the results >5X RDL	C-9212 B919103 VJ3829 March 14, 2019	DUPE-3027 B919103 VJ3831 March 14, 2019	RPD
Hydrocarbons								
Benzene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Toluene	mg/kg	>50%	0.050	0.25	no	<0.050	<0.050	n/c
Ethylbenzene	mg/kg	>50%	0.010	0.05	no	<0.010	<0.010	n/c
Xylenes (Total)	mg/kg	>50%	0.045	0.225	no	<0.045	<0.045	n/c
m & p-Xylene	mg/kg	>50%	0.040	0.2	no	<0.040	<0.040	n/c
o-Xylene	mg/kg	>50%	0.020	0.1	no	<0.020	<0.020	n/c
F1 (C_6-C_{10}) - BTEX	mg/kg	>50%	10	50	no	<10	<10	n/c
(C_6-C_{10})	mg/kg	>50%	10	50	no	<10	<10	n/c
F2 (C_{10}-C_{16})	mg/kg	>50%	10	50	no	<10	<10	n/c
F3 (C_{16}-C_{34})	mg/kg	>50%	50	250	no	98	80	n/c
F4 (C_{34}-C_{50})	mg/kg	>50%	50	250	no	<50	<50	n/c

Sample Location / Maxxam Job # / Maxxam Sample ID / Sample Collection Date	Units	Alert Limit	RDL	5X RDL	Are the results >5X RDL	C-9239 B919103 VJ3837 March 14, 2019	DUPE-3028 B919103 VJ3841 March 14, 2019	RPD
Hydrocarbons								
Benzene	mg/kg	>50%	0.0050	0.025	no	0.012	0.013	n/c
Toluene	mg/kg	>50%	0.050	0.25	no	<0.050	<0.050	n/c
Ethylbenzene	mg/kg	>50%	0.010	0.05	no	<0.010	<0.010	n/c
Xylenes (Total)	mg/kg	>50%	0.045	0.225	no	<0.045	<0.045	n/c
m & p-Xylene	mg/kg	>50%	0.040	0.2	no	<0.040	<0.040	n/c
o-Xylene	mg/kg	>50%	0.020	0.1	no	<0.020	<0.020	n/c
F1 (C_6-C_{10}) - BTEX	mg/kg	>50%	10	50	no	<10	<10	n/c
(C_6-C_{10})	mg/kg	>50%	10	50	no	<10	<10	n/c
F2 (C_{10}-C_{16})	mg/kg	>50%	10	50	no	94	48	n/c
F3 (C_{16}-C_{34})	mg/kg	>50%	50	250	yes	610	310	**65**
F4 (C_{34}-C_{50})	mg/kg	>50%	50	250	no	250	120	n/c

Sample Location / Maxxam Job # / Maxxam Sample ID / Sample Collection Date	Units	Alert Limit	RDL	5X RDL	Are the results >5X RDL	C-8074 B919204 VJ4618 March 15, 2019	DUPE-3029 B919204 VJ4624 March 15, 2019	RPD
Hydrocarbons								
Benzene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Toluene	mg/kg	>50%	0.050	0.25	no	<0.050	<0.050	n/c
Ethylbenzene	mg/kg	>50%	0.010	0.05	no	0.016	0.012	n/c
Xylenes (Total)	mg/kg	>50%	0.045	0.225	no	0.14	0.11	n/c
m & p-Xylene	mg/kg	>50%	0.040	0.2	no	0.046	0.034	n/c
o-Xylene	mg/kg	>50%	0.020	0.1	yes	0.18	0.14	25
F1 (C_6-C_{10}) - BTEX	mg/kg	>50%	10	50	no	<10	<10	n/c
(C_6-C_{10})	mg/kg	>50%	10	50	no	<10	<10	n/c
F2 (C_{10}-C_{16})	mg/kg	>50%	10	50	yes	140	110	24
F3 (C_{16}-C_{34})	mg/kg	>50%	50	250	yes	620	530	16
F4 (C_{34}-C_{50})	mg/kg	>50%	50	250	no	230	210	n/c

Notes:
mg/kg = Milligrams per kilogram; RDL = reportable detection limit; n/c = not applicable; > = more than; < = less than; n/a = not applicable; RPD = relative percent difference.
Table to be read in conjunction with accompanying report.

Table 26
Summary of Duplicate Soil Sample Quality Control Results
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample Location / Maxxam Job # / Maxxam Sample ID / Sample Collection Date	Units	Alert Limit	RDL	5X RDL	Are the results >5X RDL	C-9306 B919208 VJ4653 March 16, 2019	DUPE-3030 B919208 VJ4663 March 16, 2019	RPD
Hydrocarbons								
Benzene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Toluene	mg/kg	>50%	0.050	0.25	no	0.11	<0.050	n/c
Ethylbenzene	mg/kg	>50%	0.010	0.05	no	<0.010	<0.010	n/c
Xylenes (Total)	mg/kg	>50%	0.045	0.225	no	<0.045	<0.045	n/c
m & p-Xylene	mg/kg	>50%	0.040	0.2	no	<0.040	<0.040	n/c
o-Xylene	mg/kg	>50%	0.020	0.1	no	<0.020	<0.020	n/c
F1 (C_6-C_{10}) - BTEX	mg/kg	>50%	10	50	no	<10	<10	n/c
(C_6-C_{10})	mg/kg	>50%	10	50	no	<10	<10	n/c
F2 (C_{10}-C_{16})	mg/kg	>50%	10	50	no	<10	<10	n/c
F3 (C_{16}-C_{34})	mg/kg	>50%	50	250	no	68	73	n/c
F4 (C_{34}-C_{50})	mg/kg	>50%	50	250	no	<50	<50	n/c

Sample Location / Maxxam Job # / Maxxam Sample ID / Sample Collection Date	Units	Alert Limit	RDL	5X RDL	Are the results >5X RDL	C-9365 B919208 VJ4671 March 17, 2019	DUPE-3032 B919208 VJ4676 March 17, 2019	RPD
Hydrocarbons								
Benzene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Toluene	mg/kg	>50%	0.050	0.25	no	<0.050	<0.050	n/c
Ethylbenzene	mg/kg	>50%	0.010	0.05	no	<0.010	<0.010	n/c
Xylenes (Total)	mg/kg	>50%	0.045	0.225	no	<0.045	<0.045	n/c
m & p-Xylene	mg/kg	>50%	0.040	0.2	no	<0.040	<0.040	n/c
o-Xylene	mg/kg	>50%	0.020	0.1	no	<0.020	<0.020	n/c
F1 (C_6-C_{10}) - BTEX	mg/kg	>50%	10	50	no	<10	<10	n/c
(C_6-C_{10})	mg/kg	>50%	10	50	no	<10	<10	n/c
F2 (C_{10}-C_{16})	mg/kg	>50%	10	50	no	17	<10	n/c
F3 (C_{16}-C_{34})	mg/kg	>50%	50	250	no	100	<50	n/c
F4 (C_{34}-C_{50})	mg/kg	>50%	50	250	no	<50	<50	n/c

Sample Location / Maxxam Job # / Maxxam Sample ID / Sample Collection Date	Units	Alert Limit	RDL	5X RDL	Are the results >5X RDL	DB-018 B916834 VI2962 March 6, 2019	DUP-3013 B916834 VI2957 March 6, 2019	RPD
Hydrocarbons								
Benzene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Toluene	mg/kg	>50%	0.050	0.25	no	<0.050	<0.050	n/c
Ethylbenzene	mg/kg	>50%	0.010	0.05	no	<0.010	<0.010	n/c
Xylenes (Total)	mg/kg	>50%	0.045	0.225	no	<0.045	<0.045	n/c
m & p-Xylene	mg/kg	>50%	0.040	0.2	no	<0.040	<0.040	n/c
o-Xylene	mg/kg	>50%	0.020	0.1	no	<0.020	<0.020	n/c
F1 (C_6-C_{10}) - BTEX	mg/kg	>50%	10	50	no	<10	<10	n/c
(C_6-C_{10})	mg/kg	>50%	10	50	no	<10	<10	n/c
F2 (C_{10}-C_{16})	mg/kg	>50%	10	50	no	<10	<10	n/c
F3 (C_{16}-C_{34})	mg/kg	>50%	50	250	no	<50	<50	n/c
F4 (C_{34}-C_{50})	mg/kg	>50%	50	250	no	<50	<50	n/c

Notes:
mg/kg = Milligrams per kilogram; RDL = reportable detection limit; n/c = not applicable; > = more than; < = less than; n/a = not applicable; RPD = relative percent difference.
Table to be read in conjunction with accompanying report.

Table 26
Summary of Duplicate Soil Sample Quality Control Results
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample Location / Maxxam Job # / Maxxam Sample ID / Sample Collection Date	Units	Alert Limit	RDL	5X RDL	Are the results >5X RDL	N-009 B914824 VH3860 February 26, 2019	N-1000 B914824 VH3869 February 26, 2019	RPD
Hydrocarbons								
Benzene	mg/kg	>50%	0.0050	0.025	no	0.0096	0.012	n/c
Toluene	mg/kg	>50%	0.050	0.25	no	0.065	0.078	n/c
Ethylbenzene	mg/kg	>50%	0.010	0.05	no	0.012	0.014	n/c
Xylenes (Total)	mg/kg	>50%	0.045	0.225	no	0.1	0.078	n/c
m & p-Xylene	mg/kg	>50%	0.040	0.2	no	0.079	0.078	n/c
o-Xylene	mg/kg	>50%	0.020	0.1	no	0.023	<0.020	n/c
F1 (C_6-C_{10}) - BTEX	mg/kg	>50%	10	50	no	<10	<10	n/c
(C_6-C_{10})	mg/kg	>50%	10	50	no	<10	<10	n/c
F2 (C_{10}-C_{16})	mg/kg	>50%	10	50	no	49	14	n/c
F3 (C_{16}-C_{34})	mg/kg	>50%	50	250	no	240	100	n/c
F4 (C_{34}-C_{50})	mg/kg	>50%	50	250	no	97	<50	n/c
Polycyclic Aromatics								
Acenaphthene	mg/kg	>50%	0.0050	0.025	no	0.012	0.016	n/c
Acenaphthylene	mg/kg	>50%	0.0050	0.025	no	0.013	0.12	n/c
Acridine	mg/kg	>50%	0.010	0.05	no	0.013	0.017	n/c
Anthracene	mg/kg	>50%	0.0040	0.02	yes	0.028	0.2	**151**
Benzo(a)anthracene	mg/kg	>50%	0.0050	0.025	no	0.025	0.4	n/c
Benzo(b&j)fluoranthene	mg/kg	>50%	0.0050	0.025	yes	0.077	0.65	**158**
Benzo(k)fluoranthene	mg/kg	>50%	0.0050	0.025	no	0.023	0.2	n/c
Benzo(g,h,i)perylene	mg/kg	>50%	0.0050	0.025	yes	0.085	0.24	**95**
Benzo(c)phenanthrene	mg/kg	>50%	0.0050	0.025	no	0.0061	0.064	n/c
Benzo(a)pyrene	mg/kg	>50%	0.0050	0.025	yes	0.034	0.37	**166**
Benzo[e]pyrene	mg/kg	>50%	0.0050	0.025	yes	0.067	0.42	**145**
Chrysene	mg/kg	>50%	0.0050	0.025	yes	0.05	0.36	**151**
Dibenz(a,h)anthracene	mg/kg	>50%	0.0050	0.025	no	0.011	0.064	n/c
Fluoranthene	mg/kg	>50%	0.0050	0.025	yes	0.066	0.22	**108**
Fluorene	mg/kg	>50%	0.0050	0.025	no	0.014	0.029	n/c
Indeno(1,2,3-cd)pyrene	mg/kg	>50%	0.0050	0.025	yes	0.048	0.2	**123**
2-Methylnaphthalene	mg/kg	>50%	0.0050	0.025	yes	0.035	0.042	18
Naphthalene	mg/kg	>50%	0.0050	0.025	no	0.022	0.031	n/c
Phenanthrene	mg/kg	>50%	0.0050	0.025	yes	0.053	0.077	37
Perylene	mg/kg	>50%	0.0050	0.025	no	0.012	0.1	n/c
Pyrene	mg/kg	>50%	0.0050	0.025	yes	0.057	0.26	**128**
Quinoline	mg/kg	>50%	0.0050	0.025	no	<0.010	<0.010	n/c

Notes:
mg/kg = Milligrams per kilogram; RDL = reportable detection limit; n/c = not applicable; > = more than; < = less than; n/a = not applicable; RPD = relative percent difference.
Table to be read in conjunction with accompanying report.

Table 26
Summary of Duplicate Soil Sample Quality Control Results
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample Location / Maxxam Job # / Maxxam Sample ID / Sample Collection Date	Units	Alert Limit	RDL	5X RDL	Are the results >5X RDL	C-1013F B915614 VH7508 March 3, 2019	C-3008 B915614 VH7517 March 3, 2019	RPD
Hydrocarbons								
Benzene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Toluene	mg/kg	>50%	0.050	0.25	no	<0.050	<0.050	n/c
Ethylbenzene	mg/kg	>50%	0.010	0.05	no	<0.010	<0.010	n/c
Xylenes (Total)	mg/kg	>50%	0.045	0.225	no	<0.045	<0.045	n/c
m & p-Xylene	mg/kg	>50%	0.040	0.2	no	<0.040	<0.040	n/c
o-Xylene	mg/kg	>50%	0.020	0.1	no	<0.020	<0.020	n/c
F1 (C_6-C_{10}) - BTEX	mg/kg	>50%	10	50	no	<10	<10	n/c
(C_6-C_{10})	mg/kg	>50%	10	50	no	<10	<10	n/c
F2 (C_{10}-C_{16})	mg/kg	>50%	10	50	no	16	<10	n/c
F3 (C_{16}-C_{34})	mg/kg	>50%	50	250	no	53	<50	n/c
F4 (C_{34}-C_{50})	mg/kg	>50%	50	250	no	<50	<50	n/c

Sample Location / Maxxam Job # / Maxxam Sample ID / Sample Collection Date	Units	Alert Limit	RDL	5X RDL	Are the results >5X RDL	C-8007 B918702 VJ1690 March 12, 2019	DUPE-3023 B918702 VJ1699 March 12, 2019	RPD
Hydrocarbons								
Benzene	mg/kg	>50%	0.0050	0.025	no	0.012	<0.0050	n/c
Toluene	mg/kg	>50%	0.050	0.25	no	<0.050	<0.050	n/c
Ethylbenzene	mg/kg	>50%	0.010	0.05	no	0.021	0.017	n/c
Xylenes (Total)	mg/kg	>50%	0.045	0.225	no	0.19	0.24	n/c
m & p-Xylene	mg/kg	>50%	0.040	0.2	no	0.14	0.18	n/c
o-Xylene	mg/kg	>50%	0.020	0.1	no	0.047	0.058	n/c
F1 (C_6-C_{10}) - BTEX	mg/kg	>50%	10	50	no	<10	<10	n/c
(C_6-C_{10})	mg/kg	>50%	10	50	no	<10	<10	n/c
F2 (C_{10}-C_{16})	mg/kg	>50%	10	50	yes	71	130	**59**
F3 (C_{16}-C_{34})	mg/kg	>50%	50	250	yes	440	670	41
F4 (C_{34}-C_{50})	mg/kg	>50%	50	250	no	160	250	n/c

Notes:
mg/kg = Milligrams per kilogram; RDL = reportable detection limit; n/c = not applicable; > = more than; < = less than; n/a = not applicable; RPD = relative percent difference.
Table to be read in conjunction with accompanying report.

Table 26
Summary of Duplicate Soil Sample Quality Control Results
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample Location / Maxxam Job # / Maxxam Sample ID / Sample Collection Date	Units	Alert Limit	RDL	5X RDL	Are the results >5X RDL	S019A B914418 VH2061 February 27, 2019	DUP100 B914418 VH2052 February 27, 2019	RPD
Hydrocarbons								
Benzene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Toluene	mg/kg	>50%	0.050	0.25	no	<0.050	<0.050	n/c
Ethylbenzene	mg/kg	>50%	0.010	0.05	no	<0.010	<0.010	n/c
Xylenes (Total)	mg/kg	>50%	0.045	0.225	no	<0.045	<0.045	n/c
m & p-Xylene	mg/kg	>50%	0.040	0.2	no	<0.040	<0.040	n/c
o-Xylene	mg/kg	>50%	0.020	0.1	no	<0.020	<0.020	n/c
F1 (C_6-C_{10}) - BTEX	mg/kg	>50%	10	50	no	<10	<10	n/c
(C_6-C_{10})	mg/kg	>50%	10	50	no	<10	<10	n/c
F2 (C_{10}-C_{16})	mg/kg	>50%	10	50	no	<10	<10	n/c
F3 (C_{16}-C_{34})	mg/kg	>50%	50	250	no	<50	<50	n/c
F4 (C_{34}-C_{50})	mg/kg	>50%	50	250	no	<50	<50	n/c
Polycyclic Aromatics								
Acenaphthene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Acenaphthylene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Acridine	mg/kg	>50%	0.010	0.05	no	<0.010	<0.010	n/c
Anthracene	mg/kg	>50%	0.0040	0.02	no	<0.0040	<0.0040	n/c
Benzo(a)anthracene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Benzo(b&j)fluoranthene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Benzo(k)fluoranthene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Benzo(g,h,i)perylene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Benzo(c)phenanthrene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Benzo(a)pyrene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Benzo[e]pyrene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Chrysene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Dibenz(a,h)anthracene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Fluoranthene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Fluorene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Indeno(1,2,3-cd)pyrene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
2-Methylnaphthalene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Naphthalene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Phenanthrene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Perylene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Pyrene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Quinoline	mg/kg	>50%	0.0050	0.025	no	<0.010	<0.010	n/c

Notes:
mg/kg = Milligrams per kilogram; RDL = reportable detection limit; n/c = not applicable; > = more than; < = less than; n/a = not applicable; RPD = relative percent difference.
Table to be read in conjunction with accompanying report.

Table 26
Summary of Duplicate Soil Sample Quality Control Results
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample Location / Maxxam Job # / Maxxam Sample ID / Sample Collection Date	Units	Alert Limit	RDL	5X RDL	Are the results >5X RDL	S047C B914418 VH2055 February 27, 2019	DUP101 B914418 VH2056 February 27, 2019	RPD
Hydrocarbons								
Benzene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Toluene	mg/kg	>50%	0.050	0.25	no	<0.050	<0.050	n/c
Ethylbenzene	mg/kg	>50%	0.010	0.05	no	<0.010	<0.010	n/c
Xylenes (Total)	mg/kg	>50%	0.045	0.225	no	<0.045	<0.045	n/c
m & p-Xylene	mg/kg	>50%	0.040	0.2	no	<0.040	<0.040	n/c
o-Xylene	mg/kg	>50%	0.020	0.1	no	<0.020	<0.020	n/c
F1 (C_6-C_{10}) - BTEX	mg/kg	>50%	10	50	no	<10	<10	n/c
(C_6-C_{10})	mg/kg	>50%	10	50	no	<10	<10	n/c
F2 (C_{10}-C_{16})	mg/kg	>50%	10	50	no	<10	<10	n/c
F3 (C_{16}-C_{34})	mg/kg	>50%	50	250	no	<50	<50	n/c
F4 (C_{34}-C_{50})	mg/kg	>50%	50	250	no	<50	<50	n/c
Polycyclic Aromatics								
Acenaphthene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Acenaphthylene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Acridine	mg/kg	>50%	0.010	0.05	no	<0.010	<0.010	n/c
Anthracene	mg/kg	>50%	0.0040	0.02	no	<0.0040	<0.0040	n/c
Benzo(a)anthracene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Benzo(b&j)fluoranthene	mg/kg	>50%	0.0050	0.025	no	<0.0050	0.018	n/c
Benzo(k)fluoranthene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Benzo(g,h,i)perylene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Benzo(c)phenanthrene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Benzo(a)pyrene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Benzo[e]pyrene	mg/kg	>50%	0.0050	0.025	no	<0.0050	0.0087	n/c
Chrysene	mg/kg	>50%	0.0050	0.025	no	<0.0050	0.009	n/c
Dibenz(a,h)anthracene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Fluoranthene	mg/kg	>50%	0.0050	0.025	no	<0.0050	0.018	n/c
Fluorene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Indeno(1,2,3-cd)pyrene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
2-Methylnaphthalene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Naphthalene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Phenanthrene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Perylene	mg/kg	>50%	0.0050	0.025	yes	0.033	0.025	28
Pyrene	mg/kg	>50%	0.0050	0.025	no	<0.0050	0.014	n/c
Quinoline	mg/kg	>50%	0.0050	0.025	no	<0.010	<0.010	n/c

Notes:
mg/kg = Milligrams per kilogram; RDL = reportable detection limit; n/c = not applicable; > = more than; < = less than; n/a = not applicable; RPD = relative percent difference.
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Table 26
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Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample Location / Maxxam Job # / Maxxam Sample ID / Sample Collection Date	Units	Alert Limit	RDL	5X RDL	Are the results >5X RDL	WA-SED-105 B969083 WI2307 August 13, 2019	WA-SED-105D B969083 WI2313 August 13, 2019	RPD
Hydrocarbons								
Benzene	mg/kg	>50%	0.0050	0.025	no	0.014	<0.0050	n/c
Toluene	mg/kg	>50%	0.050	0.25	no	<0.050	<0.050	n/c
Ethylbenzene	mg/kg	>50%	0.010	0.05	no	<0.010	<0.010	n/c
Xylenes (Total)	mg/kg	>50%	0.045	0.225	no	<0.045	<0.045	n/c
m & p-Xylene	mg/kg	>50%	0.040	0.2	no	<0.040	<0.040	n/c
o-Xylene	mg/kg	>50%	0.020	0.1	no	<0.020	<0.020	n/c
F1 (C_6-C_{10}) - BTEX	mg/kg	>50%	10	50	no	<10	<10	n/c
(C_6-C_{10})	mg/kg	>50%	10	50	no	<10	<10	n/c
F2 (C_{10}-C_{16})	mg/kg	>50%	10	50	no	27	21	n/c
F3 (C_{16}-C_{34})	mg/kg	>50%	50	250	no	100	69	n/c
F4 (C_{34}-C_{50})	mg/kg	>50%	50	250	no	<50	<50	n/c
Polycyclic Aromatics								
Acenaphthene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Acenaphthylene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Acridine	mg/kg	>50%	0.010	0.05	no	<0.010	<0.010	n/c
Anthracene	mg/kg	>50%	0.0040	0.02	no	<0.0040	0.0073	n/c
Benzo(a)anthracene	mg/kg	>50%	0.0050	0.025	no	<0.0050	0.019	n/c
Benzo(b&j)fluoranthene	mg/kg	>50%	0.0050	0.025	no	0.012	0.056	n/c
Benzo(k)fluoranthene	mg/kg	>50%	0.0050	0.025	no	<0.0050	0.019	n/c
Benzo(g,h,i)perylene	mg/kg	>50%	0.0050	0.025	no	<0.0050	0.014	n/c
Benzo(c)phenanthrene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Benzo(a)pyrene	mg/kg	>50%	0.0050	0.025	no	<0.0050	0.026	n/c
Benzo[e]pyrene	mg/kg	>50%	0.0050	0.025	no	<0.0050	0.034	n/c
Chrysene	mg/kg	>50%	0.0050	0.025	no	<0.0050	0.028	n/c
Dibenz(a,h)anthracene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Fluoranthene	mg/kg	>50%	0.0050	0.025	no	0.012	0.028	n/c
Fluorene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Indeno(1,2,3-cd)pyrene	mg/kg	>50%	0.0050	0.025	no	<0.0050	0.015	n/c
2-Methylnaphthalene	mg/kg	>50%	0.0050	0.025	no	0.0088	<0.0050	n/c
Naphthalene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Phenanthrene	mg/kg	>50%	0.0050	0.025	no	0.022	0.016	n/c
Perylene	mg/kg	>50%	0.0050	0.025	no	0.0094	0.014	n/c
Pyrene	mg/kg	>50%	0.0050	0.025	no	0.012	0.058	n/c
Quinoline	mg/kg	>50%	0.0050	0.025	no	<0.010	<0.010	n/c

Notes:
mg/kg = Milligrams per kilogram; RDL = reportable detection limit; n/c = not applicable; > = more than; < = less than; n/a = not applicable; RPD = relative percent difference.
Table to be read in conjunction with accompanying report.

Table 26
Summary of Duplicate Soil Sample Quality Control Results
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample Location / Maxxam Job # / Maxxam Sample ID / Sample Collection Date	Units	Alert Limit	RDL	5X RDL	Are the results >5X RDL	WA-SOIL-205 B969101 WI2399 August 14, 2019	DUP001 B969101 WI2404 August 14, 2019	RPD
Hydrocarbons								
Benzene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Toluene	mg/kg	>50%	0.050	0.25	no	<0.050	<0.050	n/c
Ethylbenzene	mg/kg	>50%	0.010	0.05	no	<0.010	<0.010	n/c
Xylenes (Total)	mg/kg	>50%	0.045	0.225	no	<0.045	<0.045	n/c
m & p-Xylene	mg/kg	>50%	0.040	0.2	no	<0.040	<0.040	n/c
o-Xylene	mg/kg	>50%	0.020	0.1	no	<0.020	<0.020	n/c
F1 (C_6-C_{10}) - BTEX	mg/kg	>50%	10	50	no	<10	<10	n/c
(C_6-C_{10})	mg/kg	>50%	10	50	no	<10	<10	n/c
F2 (C_{10}-C_{16})	mg/kg	>50%	10	50	no	<10	<10	n/c
F3 (C_{16}-C_{34})	mg/kg	>50%	50	250	no	<50	<50	n/c
F4 (C_{34}-C_{50})	mg/kg	>50%	50	250	no	<50	<50	n/c
Polycyclic Aromatics								
Acenaphthene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Acenaphthylene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Acridine	mg/kg	>50%	0.010	0.05	no	<0.010	<0.010	n/c
Anthracene	mg/kg	>50%	0.0040	0.02	no	<0.0040	<0.0040	n/c
Benzo(a)anthracene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Benzo(b&j)fluoranthene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Benzo(k)fluoranthene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Benzo(g,h,i)perylene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Benzo(c)phenanthrene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Benzo(a)pyrene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Benzo[e]pyrene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Chrysene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Dibenz(a,h)anthracene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Fluoranthene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Fluorene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Indeno(1,2,3-cd)pyrene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
2-Methylnaphthalene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Naphthalene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Phenanthrene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Perylene	mg/kg	>50%	0.0050	0.025	no	0.0084	0.0086	n/c
Pyrene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Quinoline	mg/kg	>50%	0.0050	0.025	no	<0.010	<0.010	n/c

Notes:
mg/kg = Milligrams per kilogram; RDL = reportable detection limit; n/c = not applicable; > = more than; < = less than; n/a = not applicable; RPD = relative percent difference.
Table to be read in conjunction with accompanying report.

Table 26
Summary of Duplicate Soil Sample Quality Control Results
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample Location / Maxxam Job # / Maxxam Sample ID / Sample Collection Date	Units	Alert Limit	RDL	5X RDL	Are the results >5X RDL	WA-SED-108B B989833 WS9081 October 16, 2019	DUP002 WS9093 October 16, 2019	RPD
Polycyclic Aromatics								
Index of Additive Cancer Risk(IACR)	mg/kg	>50%	0.1	0.5	no	<0.10	<0.10	n/c
Acenaphthene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
B[a]P TPE Total Potency Equivalents	mg/kg	>50%	0.0071	0.0355	no	<0.0071	<0.0071	n/c
Acenaphthylene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Acridine	mg/kg	>50%	0.01	0.05	no	<0.010	<0.010	n/c
Anthracene	mg/kg	>50%	0.004	0.02	no	<0.0040	<0.0040	n/c
Benzo(a)anthracene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Benzo(b&j)fluoranthene	mg/kg	>50%	0.005	0.025	no	<0.0050	0.0085	n/c
Benzo(k)fluoranthene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Benzo(g,h,i)perylene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Benzo(c)phenanthrene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Benzo(a)pyrene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Benzo(e)pyrene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Chrysene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Dibenz(a,h)anthracene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Fluoranthene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Fluorene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Indeno(1,2,3-cd)pyrene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
2-Methylnaphthalene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Naphthalene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Phenanthrene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Perylene	mg/kg	>50%	0.005	0.025	no	<0.0050	0.018	n/c
Pyrene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Quinoline	mg/kg	>50%	0.01	0.05	no	<0.010	<0.010	n/c
Low Molecular Weight PAH`s	mg/kg	>50%	0.01	0.05	no	<0.010	<0.010	n/c
High Molecular Weight PAH`s	mg/kg	>50%	0.005	0.025	no	<0.0050	0.0085	n/c
Total PAH	mg/kg	>50%	0.01	0.05	no	<0.010	<0.010	n/c

Sample Location / Maxxam Job # / Maxxam Sample ID / Sample Collection Date	Units	Alert Limit	RDL	5X RDL	Are the results >5X RDL	SOUTH ARM3 B989833 WS9090 October 16, 2019	DUP003 WS9094 October 16, 2019	RPD
Polycyclic Aromatics								
Index of Additive Cancer Risk(IACR)	mg/kg	>50%	0.1	0.5	no	<0.10	<0.10	n/c
Acenaphthene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
B[a]P TPE Total Potency Equivalents	mg/kg	>50%	0.0071	0.0355	no	<0.0071	<0.0071	n/c
Acenaphthylene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Acridine	mg/kg	>50%	0.01	0.05	no	<0.010	<0.010	n/c
Anthracene	mg/kg	>50%	0.004	0.02	no	<0.0040	<0.0040	n/c
Benzo(a)anthracene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Benzo(b&j)fluoranthene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Benzo(k)fluoranthene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Benzo(g,h,i)perylene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Benzo(c)phenanthrene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Benzo(a)pyrene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Benzo(e)pyrene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Chrysene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Dibenz(a,h)anthracene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Fluoranthene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Fluorene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Indeno(1,2,3-cd)pyrene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
2-Methylnaphthalene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Naphthalene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Phenanthrene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Perylene	mg/kg	>50%	0.005	0.025	yes	0.034	0.049	36
Pyrene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Quinoline	mg/kg	>50%	0.01	0.05	no	<0.010	<0.010	n/c
Low Molecular Weight PAH`s	mg/kg	>50%	0.01	0.05	no	<0.010	<0.010	n/c
High Molecular Weight PAH`s	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Total PAH	mg/kg	>50%	0.01	0.05	no	<0.010	<0.010	n/c

Notes:
mg/kg = Milligrams per kilogram; RDL = reportable detection limit; n/c = not applicable; > = more than; < = less than; n/a = not applicable; RPD = relative percent difference.
Table to be read in conjunction with accompanying report.

Table 26
Summary of Duplicate Soil Sample Quality Control Results
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample Location / Maxxam Job # / Maxxam Sample ID / Sample Collection Date	Units	Alert Limit	RDL	5X RDL	Are the results >5X RDL	S-314WB B989833 WS9092 October 16, 2019	DUP15 B989833 WS9095 October 16, 2019	RPD
Polycyclic Aromatics								
Index of Additive Cancer Risk(IACR)	mg/kg	>50%	0.1	0.5	no	<0.10	<0.10	n/c
Acenaphthene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
B[a]P TPE Total Potency Equivalents	mg/kg	>50%	0.0071	0.0355	no	<0.0071	<0.0071	n/c
Acenaphthylene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Acridine	mg/kg	>50%	0.01	0.05	no	<0.010	<0.010	n/c
Anthracene	mg/kg	>50%	0.004	0.02	no	<0.0040	<0.0040	n/c
Benzo(a)anthracene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Benzo(b&j)fluoranthene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Benzo(k)fluoranthene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Benzo(g,h,i)perylene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Benzo(c)phenanthrene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Benzo(a)pyrene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Benzo(e)pyrene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Chrysene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Dibenz(a,h)anthracene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Fluoranthene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Fluorene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Indeno(1,2,3-cd)pyrene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
2-Methylnaphthalene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Naphthalene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Phenanthrene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Perylene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Pyrene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Quinoline	mg/kg	>50%	0.01	0.05	no	<0.010	<0.010	n/c
Low Molecular Weight PAH`s	mg/kg	>50%	0.01	0.05	no	<0.010	<0.010	n/c
High Molecular Weight PAH`s	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Total PAH	mg/kg	>50%	0.01	0.05	no	<0.010	<0.010	n/c

Sample Location / Maxxam Job # / Maxxam Sample ID / Sample Collection Date	Units	Alert Limit	RDL	5X RDL	Are the results >5X RDL	C-2180B B989833 WS9066 October 16, 2019	DUP16 B989833 WS9096 October 16, 2019	RPD
Polycyclic Aromatics								
Index of Additive Cancer Risk(IACR)	mg/kg	>50%	0.1	0.5	no	<0.10	<0.10	n/c
Acenaphthene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
B[a]P TPE Total Potency Equivalents	mg/kg	>50%	0.0071	0.0355	no	<0.0071	<0.0071	n/c
Acenaphthylene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Acridine	mg/kg	>50%	0.01	0.05	no	<0.010	<0.010	n/c
Anthracene	mg/kg	>50%	0.004	0.02	no	<0.0040	<0.0040	n/c
Benzo(a)anthracene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Benzo(b&j)fluoranthene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Benzo(k)fluoranthene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Benzo(g,h,i)perylene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Benzo(c)phenanthrene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Benzo(a)pyrene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Benzo(e)pyrene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Chrysene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Dibenz(a,h)anthracene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Fluoranthene	mg/kg	>50%	0.005	0.025	no	0.011	0.0076	n/c
Fluorene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Indeno(1,2,3-cd)pyrene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
2-Methylnaphthalene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Naphthalene	mg/kg	>50%	0.005	0.025	no	<0.0050	0.0092	n/c
Phenanthrene	mg/kg	>50%	0.005	0.025	no	0.013	0.013	n/c
Perylene	mg/kg	>50%	0.005	0.025	no	0.011	0.0084	n/c
Pyrene	mg/kg	>50%	0.005	0.025	no	0.0083	<0.0050	n/c
Quinoline	mg/kg	>50%	0.01	0.05	no	<0.010	<0.010	n/c
Low Molecular Weight PAH`s	mg/kg	>50%	0.01	0.05	no	0.013	0.023	n/c
High Molecular Weight PAH`s	mg/kg	>50%	0.005	0.025	no	0.019	0.0076	n/c
Total PAH	mg/kg	>50%	0.01	0.05	no	0.031	0.03	n/c

Notes:
mg/kg = Milligrams per kilogram; RDL = reportable detection limit; n/c = not applicable; > = more than; < = less than; n/a = not applicable; RPD = relative percent difference.
Table to be read in conjunction with accompanying report.

Table 26
Summary of Duplicate Soil Sample Quality Control Results
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample Location / Maxxam Job # / Maxxam Sample ID / Sample Collection Date	Units	Alert Limit	RDL	5X RDL	Are the results >5X RDL	MW19-10-4 B9A5239 XB7115 December 4, 2019	DUP100 B9A5239 XB7116 December 4, 2019	RPD
Hydrocarbons								
Benzene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Toluene	mg/kg	>50%	0.050	0.25	no	<0.050	<0.050	n/c
Ethylbenzene	mg/kg	>50%	0.010	0.05	no	<0.010	<0.010	n/c
Xylenes (Total)	mg/kg	>50%	0.045	0.225	no	<0.045	<0.045	n/c
m & p-Xylene	mg/kg	>50%	0.040	0.2	no	<0.040	<0.040	n/c
o-Xylene	mg/kg	>50%	0.020	0.1	no	<0.020	<0.020	n/c
F1 (C_6-C_{10}) - BTEX	mg/kg	>50%	10	50	no	<10	<10	n/c
(C_6-C_{10})	mg/kg	>50%	10	50	no	<10	<10	n/c
F2 (C_{10}-C_{16})	mg/kg	>50%	10	50	no	<10	<10	n/c
F3 (C_{16}-C_{34})	mg/kg	>50%	50	250	no	<50	<50	n/c
F4 (C_{34}-C_{50})	mg/kg	>50%	50	250	no	<50	<50	n/c
Polycyclic Aromatics								
Acenaphthene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Acenaphthylene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Acridine	mg/kg	>50%	0.01	0.05	no	<0.010	<0.010	n/c
Anthracene	mg/kg	>50%	0.004	0.02	no	<0.0040	<0.0040	n/c
Benzo(a)anthracene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Benzo(b&j)fluoranthene	mg/kg	>50%	0.005	0.025	no	0.0066	<0.0050	n/c
Benzo(k)fluoranthene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Benzo(g,h,i)perylene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Benzo(c)phenanthrene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Benzo(a)pyrene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Benzo(e)pyrene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Chrysene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Dibenz(a,h)anthracene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Fluoranthene	mg/kg	>50%	0.005	0.025	no	0.0071	<0.0050	n/c
Fluorene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Indeno(1,2,3-cd)pyrene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
2-Methylnaphthalene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Naphthalene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Phenanthrene	mg/kg	>50%	0.005	0.025	no	0.0083	<0.0050	n/c
Perylene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Pyrene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Quinoline	mg/kg	>50%	0.01	0.05	no	<0.010	<0.010	n/c

Notes:
mg/kg = Milligrams per kilogram; RDL = reportable detection limit; n/c = not applicable; > = more than; < = less than; n/a = not applicable; RPD = relative percent difference.
Table to be read in conjunction with accompanying report.

Table 26
Summary of Duplicate Soil Sample Quality Control Results
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample Location	Units	Alert Limit	RDL	5X RDL	Are the results >5X RDL	MW19-12-3	DUP101	RPD
Maxxam Job #						B9A5239		
Maxxam Sample ID						XB7122	XB7123	
Sample Collection Date						December 4, 2019	December 4, 2019	
Hydrocarbons								
Benzene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Toluene	mg/kg	>50%	0.050	0.25	no	<0.050	<0.050	n/c
Ethylbenzene	mg/kg	>50%	0.010	0.05	no	<0.010	<0.010	n/c
Xylenes (Total)	mg/kg	>50%	0.045	0.225	no	<0.045	<0.045	n/c
m & p-Xylene	mg/kg	>50%	0.040	0.2	no	<0.040	<0.040	n/c
o-Xylene	mg/kg	>50%	0.020	0.1	no	<0.020	<0.020	n/c
F1 (C_6-C_{10}) - BTEX	mg/kg	>50%	10	50	no	<10	<10	n/c
(C_6-C_{10})	mg/kg	>50%	10	50	no	<10	<10	n/c
F2 (C_{10}-C_{16})	mg/kg	>50%	10	50	no	18	15	n/c
F3 (C_{16}-C_{34})	mg/kg	>50%	50	250	no	62	53	n/c
F4 (C_{34}-C_{50})	mg/kg	>50%	50	250	no	<50	<50	n/c
Polycyclic Aromatics								
Acenaphthene	mg/kg	>50%	0.005	0.025	no	0.008	<0.0050	n/c
Acenaphthylene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Acridine	mg/kg	>50%	0.01	0.05	no	<0.010	<0.010	n/c
Anthracene	mg/kg	>50%	0.004	0.02	no	<0.0040	<0.0040	n/c
Benzo(a)anthracene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Benzo(b&j)fluoranthene	mg/kg	>50%	0.005	0.025	no	0.01	0.018	n/c
Benzo(k)fluoranthene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Benzo(g,h,i)perylene	mg/kg	>50%	0.005	0.025	no	<0.0050	0.011	n/c
Benzo(c)phenanthrene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Benzo(a)pyrene	mg/kg	>50%	0.005	0.025	no	<0.0050	0.0085	n/c
Benzo(e)pyrene	mg/kg	>50%	0.005	0.025	no	<0.0050	0.013	n/c
Chrysene	mg/kg	>50%	0.005	0.025	no	<0.0050	0.0095	n/c
Dibenz(a,h)anthracene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Fluoranthene	mg/kg	>50%	0.005	0.025	no	0.013	0.018	n/c
Fluorene	mg/kg	>50%	0.005	0.025	no	0.0076	<0.0050	n/c
Indeno(1,2,3-cd)pyrene	mg/kg	>50%	0.005	0.025	no	<0.0050	0.01	n/c
2-Methylnaphthalene	mg/kg	>50%	0.005	0.025	no	0.014	0.01	n/c
Naphthalene	mg/kg	>50%	0.005	0.025	no	0.007	<0.0050	n/c
Phenanthrene	mg/kg	>50%	0.005	0.025	no	0.027	0.021	n/c
Perylene	mg/kg	>50%	0.005	0.025	no	<0.0050	0.0089	n/c
Pyrene	mg/kg	>50%	0.005	0.025	no	0.011	0.015	n/c
Quinoline	mg/kg	>50%	0.01	0.05	no	<0.010	<0.010	n/c

Notes:
mg/kg = Milligrams per kilogram; RDL = reportable detection limit; n/c = not applicable; > = more than; < = less than; n/a = not applicable; RPD = relative percent difference.
Table to be read in conjunction with accompanying report.

Table 26
Summary of Duplicate Soil Sample Quality Control Results
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample Location / Maxxam Job # / Maxxam Sample ID / Sample Collection Date	Units	Alert Limit	RDL	5X RDL	Are the results >5X RDL	MW19-13-3 B9A5239 XB7126 December 4, 2019	DUP102 B9A5239 XB7128 December 4, 2019	RPD
Hydrocarbons								
Benzene	mg/kg	>50%	0.0050	0.025	yes	0.41	0.46	11
Toluene	mg/kg	>50%	0.050	0.25	no	<0.050	<0.050	n/c
Ethylbenzene	mg/kg	>50%	0.010	0.05	yes	0.088	0.12	31
Xylenes (Total)	mg/kg	>50%	0.045	0.225	yes	0.59	0.76	25
m & p-Xylene	mg/kg	>50%	0.040	0.2	yes	0.51	0.66	26
o-Xylene	mg/kg	>50%	0.020	0.1	no	0.08	0.1	n/c
F1 (C_6-C_{10}) - BTEX	mg/kg	>50%	10	50	no	32	43	n/c
(C_6-C_{10})	mg/kg	>50%	10	50	no	33	44	n/c
F2 (C_{10}-C_{16})	mg/kg	>50%	10	50	no	42	41	n/c
F3 (C_{16}-C_{34})	mg/kg	>50%	50	250	no	130	140	n/c
F4 (C_{34}-C_{50})	mg/kg	>50%	50	250	no	<50	<50	n/c
Polycyclic Aromatics								
Acenaphthene	mg/kg	>50%	0.005	0.025	no	0.008	0.0071	n/c
Acenaphthylene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Acridine	mg/kg	>50%	0.01	0.05	no	0.015	0.012	n/c
Anthracene	mg/kg	>50%	0.004	0.02	no	<0.0040	<0.0040	n/c
Benzo(a)anthracene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Benzo(b&j)fluoranthene	mg/kg	>50%	0.005	0.025	no	0.0082	0.015	n/c
Benzo(k)fluoranthene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Benzo(g,h,i)perylene	mg/kg	>50%	0.005	0.025	no	<0.0050	0.0067	n/c
Benzo(c)phenanthrene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Benzo(a)pyrene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Benzo(e)pyrene	mg/kg	>50%	0.005	0.025	no	<0.0050	0.0092	n/c
Chrysene	mg/kg	>50%	0.005	0.025	no	0.0068	<0.0050	n/c
Dibenz(a,h)anthracene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Fluoranthene	mg/kg	>50%	0.005	0.025	no	0.012	0.0089	n/c
Fluorene	mg/kg	>50%	0.005	0.025	no	0.0094	0.0077	n/c
Indeno(1,2,3-cd)pyrene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
2-Methylnaphthalene	mg/kg	>50%	0.005	0.025	yes	0.035	0.028	22
Naphthalene	mg/kg	>50%	0.005	0.025	no	0.013	0.012	n/c
Phenanthrene	mg/kg	>50%	0.005	0.025	yes	0.03	0.025	18
Perylene	mg/kg	>50%	0.005	0.025	no	0.011	0.012	n/c
Pyrene	mg/kg	>50%	0.005	0.025	no	0.011	0.0096	n/c
Quinoline	mg/kg	>50%	0.01	0.05	no	<0.010	<0.010	n/c

Notes:
mg/kg = Milligrams per kilogram; RDL = reportable detection limit; n/c = not applicable; > = more than; < = less than; n/a = not applicable; RPD = relative percent difference.
Table to be read in conjunction with accompanying report.

Table 26
Summary of Duplicate Soil Sample Quality Control Results
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample Location / Maxxam Job # / Maxxam Sample ID / Sample Collection Date	Units	Alert Limit	RDL	5X RDL	Are the results >5X RDL	MW19-16-4 B9A5239 XB7136 December 5, 2019	DUP103 B9A5239 XB7137 December 5, 2019	RPD
Hydrocarbons								
Benzene	mg/kg	>50%	0.0050	0.025	yes	0.17	1.1	**146**
Toluene	mg/kg	>50%	0.050	0.25	yes	0.53	0.29	**59**
Ethylbenzene	mg/kg	>50%	0.010	0.05	yes	0.059	0.33	**139**
Xylenes (Total)	mg/kg	>50%	0.045	0.225	yes	0.29	1.6	**139**
m & p-Xylene	mg/kg	>50%	0.040	0.2	yes	0.24	1.4	**141**
o-Xylene	mg/kg	>50%	0.020	0.1	no	0.057	0.16	n/c
F1 (C_6-C_{10}) - BTEX	mg/kg	>50%	10	50	no	17	81	n/c
(C_6-C_{10})	mg/kg	>50%	10	50	no	18	84	n/c
F2 (C_{10}-C_{16})	mg/kg	>50%	10	50	no	40	120	n/c
F3 (C_{16}-C_{34})	mg/kg	>50%	50	250	no	160	350	n/c
F4 (C_{34}-C_{50})	mg/kg	>50%	50	250	no	53	130	n/c
Polycyclic Aromatics								
Acenaphthene	mg/kg	>50%	0.005	0.025	yes	0.21	0.037	**140**
Acenaphthylene	mg/kg	>50%	0.005	0.025	no	0.053	0.013	n/c
Acridine	mg/kg	>50%	0.01	0.05	no	0.024	0.043	n/c
Anthracene	mg/kg	>50%	0.004	0.02	yes	0.088	0.02	**126**
Benzo(a)anthracene	mg/kg	>50%	0.005	0.025	yes	0.12	0.047	**87**
Benzo(b&j)fluoranthene	mg/kg	>50%	0.005	0.025	yes	0.35	0.12	**98**
Benzo(k)fluoranthene	mg/kg	>50%	0.005	0.025	yes	0.13	0.043	**101**
Benzo(g,h,i)perylene	mg/kg	>50%	0.005	0.025	yes	0.14	0.046	**101**
Benzo(c)phenanthrene	mg/kg	>50%	0.005	0.025	no	0.044	0.011	n/c
Benzo(a)pyrene	mg/kg	>50%	0.005	0.025	yes	0.16	0.061	**90**
Benzo(e)pyrene	mg/kg	>50%	0.005	0.025	yes	0.19	0.071	**91**
Chrysene	mg/kg	>50%	0.005	0.025	yes	0.25	0.076	**107**
Dibenz(a,h)anthracene	mg/kg	>50%	0.005	0.025	no	0.033	0.013	n/c
Fluoranthene	mg/kg	>50%	0.005	0.025	yes	0.73	0.12	**144**
Fluorene	mg/kg	>50%	0.005	0.025	yes	0.18	0.034	**136**
Indeno(1,2,3-cd)pyrene	mg/kg	>50%	0.005	0.025	yes	0.15	0.046	**106**
2-Methylnaphthalene	mg/kg	>50%	0.005	0.025	yes	0.092	0.14	41
Naphthalene	mg/kg	>50%	0.005	0.025	yes	0.087	0.059	38
Phenanthrene	mg/kg	>50%	0.005	0.025	yes	0.95	0.15	**145**
Perylene	mg/kg	>50%	0.005	0.025	yes	0.037	0.032	14
Pyrene	mg/kg	>50%	0.005	0.025	yes	0.51	0.094	**138**
Quinoline	mg/kg	>50%	0.01	0.05	no	<0.010	<0.010	n/c

Notes:
mg/kg = Milligrams per kilogram; RDL = reportable detection limit; n/c = not applicable; > = more than; < = less than; n/a = not applicable; RPD = relative percent difference.
Table to be read in conjunction with accompanying report.

Table 26
Summary of Duplicate Soil Sample Quality Control Results
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample Location / Maxxam Job # / Maxxam Sample ID / Sample Collection Date	Units	Alert Limit	RDL	5X RDL	Are the results >5X RDL	BH19-100-6 B9A5239 XB7148 December 5, 2019	DUP104 B9A5239 XB7149 December 5, 2019	RPD
Hydrocarbons								
Benzene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Toluene	mg/kg	>50%	0.050	0.25	no	<0.050	<0.050	n/c
Ethylbenzene	mg/kg	>50%	0.010	0.05	no	<0.010	<0.010	n/c
Xylenes (Total)	mg/kg	>50%	0.045	0.225	no	<0.045	<0.045	n/c
m & p-Xylene	mg/kg	>50%	0.040	0.2	no	<0.040	<0.040	n/c
o-Xylene	mg/kg	>50%	0.020	0.1	no	<0.020	<0.020	n/c
F1 (C_6-C_{10}) - BTEX	mg/kg	>50%	10	50	no	<10	<10	n/c
(C_6-C_{10})	mg/kg	>50%	10	50	no	<10	<10	n/c
F2 (C_{10}-C_{16})	mg/kg	>50%	10	50	no	<10	<10	n/c
F3 (C_{16}-C_{34})	mg/kg	>50%	50	250	no	<50	<50	n/c
F4 (C_{34}-C_{50})	mg/kg	>50%	50	250	no	<50	<50	n/c
Polycyclic Aromatics								
Acenaphthene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Acenaphthylene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Acridine	mg/kg	>50%	0.01	0.05	no	<0.010	<0.010	n/c
Anthracene	mg/kg	>50%	0.004	0.02	no	<0.0040	<0.0040	n/c
Benzo(a)anthracene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Benzo(b&j)fluoranthene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Benzo(k)fluoranthene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Benzo(g,h,i)perylene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Benzo(c)phenanthrene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Benzo(a)pyrene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Benzo(e)pyrene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Chrysene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Dibenz(a,h)anthracene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Fluoranthene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Fluorene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Indeno(1,2,3-cd)pyrene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
2-Methylnaphthalene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Naphthalene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Phenanthrene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Perylene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Pyrene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Quinoline	mg/kg	>50%	0.01	0.05	no	<0.010	<0.010	n/c

Notes:
mg/kg = Milligrams per kilogram; RDL = reportable detection limit; n/c = not applicable; > = more than; < = less than; n/a = not applicable; RPD = relative percent difference.
Table to be read in conjunction with accompanying report.

Table 26
Summary of Duplicate Soil Sample Quality Control Results
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample Location / Maxxam Job # / Maxxam Sample ID / Sample Collection Date	Units	Alert Limit	RDL	5X RDL	Are the results >5X RDL	BH19-120-3 B9A5239 XB7154 December 5, 2019	DUP105 B9A5239 XB7155 December 5, 2019	RPD
Hydrocarbons								
Benzene	mg/kg	>50%	0.0050	0.025	yes	0.4	0.34	16
Toluene	mg/kg	>50%	0.050	0.25	no	<0.050	<0.050	n/c
Ethylbenzene	mg/kg	>50%	0.010	0.05	yes	0.056	0.068	19
Xylenes (Total)	mg/kg	>50%	0.045	0.225	no	0.2	0.33	n/c
m & p-Xylene	mg/kg	>50%	0.040	0.2	no	0.2	0.29	n/c
o-Xylene	mg/kg	>50%	0.020	0.1	no	<0.020	0.037	n/c
F1 (C_6-C_{10}) - BTEX	mg/kg	>50%	10	50	no	18	19	n/c
(C_6-C_{10})	mg/kg	>50%	10	50	no	19	20	n/c
F2 (C_{10}-C_{16})	mg/kg	>50%	10	50	no	28	43	n/c
F3 (C_{16}-C_{34})	mg/kg	>50%	50	250	no	95	120	n/c
F4 (C_{34}-C_{50})	mg/kg	>50%	50	250	no	<50	<50	n/c
Polycyclic Aromatics								
Acenaphthene	mg/kg	>50%	0.005	0.025	yes	0.089	0.027	**107**
Acenaphthylene	mg/kg	>50%	0.005	0.025	no	0.0087	<0.0050	n/c
Acridine	mg/kg	>50%	0.01	0.05	no	0.014	0.017	n/c
Anthracene	mg/kg	>50%	0.004	0.02	no	0.15	0.014	n/c
Benzo(a)anthracene	mg/kg	>50%	0.005	0.025	no	0.39	0.0079	n/c
Benzo(b&j)fluoranthene	mg/kg	>50%	0.005	0.025	no	0.41	0.016	n/c
Benzo(k)fluoranthene	mg/kg	>50%	0.005	0.025	no	0.16	<0.0050	n/c
Benzo(g,h,i)perylene	mg/kg	>50%	0.005	0.025	no	0.13	0.0063	n/c
Benzo(c)phenanthrene	mg/kg	>50%	0.005	0.025	no	0.052	<0.0050	n/c
Benzo(a)pyrene	mg/kg	>50%	0.005	0.025	no	0.27	<0.0050	n/c
Benzo(e)pyrene	mg/kg	>50%	0.005	0.025	no	0.19	0.009	n/c
Chrysene	mg/kg	>50%	0.005	0.025	no	0.42	0.011	n/c
Dibenz(a,h)anthracene	mg/kg	>50%	0.005	0.025	no	0.041	<0.0050	n/c
Fluoranthene	mg/kg	>50%	0.005	0.025	yes	0.86	0.039	**183**
Fluorene	mg/kg	>50%	0.005	0.025	yes	0.1	0.028	**113**
Indeno(1,2,3-cd)pyrene	mg/kg	>50%	0.005	0.025	no	0.15	0.0063	n/c
2-Methylnaphthalene	mg/kg	>50%	0.005	0.025	yes	0.041	0.055	29
Naphthalene	mg/kg	>50%	0.005	0.025	yes	0.046	0.089	**64**
Phenanthrene	mg/kg	>50%	0.005	0.025	yes	0.37	0.065	**140**
Perylene	mg/kg	>50%	0.005	0.025	no	0.071	0.018	n/c
Pyrene	mg/kg	>50%	0.005	0.025	yes	0.85	0.032	**185**
Quinoline	mg/kg	>50%	0.01	0.05	no	<0.010	<0.010	n/c

Notes:
mg/kg = Milligrams per kilogram; RDL = reportable detection limit; n/c = not applicable; > = more than; < = less than; n/a = not applicable; RPD = relative percent difference.
Table to be read in conjunction with accompanying report.

Table 26
Summary of Duplicate Soil Sample Quality Control Results
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample Location / Maxxam Job # / Maxxam Sample ID / Sample Collection Date	Units	Alert Limit	RDL	5X RDL	Are the results >5X RDL	MW19-17-A B9A5239 XB7139 December 5, 2019	DUP106 B9A5239 XB7160 December 5, 2019	RPD
Hydrocarbons								
Benzene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Toluene	mg/kg	>50%	0.050	0.25	no	<0.050	<0.050	n/c
Ethylbenzene	mg/kg	>50%	0.010	0.05	no	<0.010	<0.010	n/c
Xylenes (Total)	mg/kg	>50%	0.045	0.225	no	<0.045	<0.045	n/c
m & p-Xylene	mg/kg	>50%	0.040	0.2	no	<0.040	<0.040	n/c
o-Xylene	mg/kg	>50%	0.020	0.1	no	<0.020	<0.020	n/c
F1 (C_6-C_{10}) - BTEX	mg/kg	>50%	10	50	no	<10	<10	n/c
(C_6-C_{10})	mg/kg	>50%	10	50	no	<10	<10	n/c
F2 (C_{10}-C_{16})	mg/kg	>50%	10	50	no	<10	<10	n/c
F3 (C_{16}-C_{34})	mg/kg	>50%	50	250	no	<50	<50	n/c
F4 (C_{34}-C_{50})	mg/kg	>50%	50	250	no	<50	<50	n/c
Polycyclic Aromatics								
Acenaphthene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Acenaphthylene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Acridine	mg/kg	>50%	0.01	0.05	no	<0.010	<0.010	n/c
Anthracene	mg/kg	>50%	0.004	0.02	no	<0.0040	<0.0040	n/c
Benzo(a)anthracene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Benzo(b&j)fluoranthene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Benzo(k)fluoranthene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Benzo(g,h,i)perylene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Benzo(c)phenanthrene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Benzo(a)pyrene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Benzo(e)pyrene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Chrysene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Dibenz(a,h)anthracene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Fluoranthene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Fluorene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Indeno(1,2,3-cd)pyrene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
2-Methylnaphthalene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Naphthalene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Phenanthrene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Perylene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Pyrene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Quinoline	mg/kg	>50%	0.01	0.05	no	<0.010	<0.010	n/c

Notes:
mg/kg = Milligrams per kilogram; RDL = reportable detection limit; n/c = not applicable; > = more than; < = less than; n/a = not applicable; RPD = relative percent difference.
Table to be read in conjunction with accompanying report.

Table 26
Summary of Duplicate Soil Sample Quality Control Results
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample Location	Units	Alert Limit	RDL	5X RDL	Are the results >5X RDL	WA-SED-224	DUP01	RPD
Maxxam Job #						C015220		
Maxxam Sample ID						XM1412	XM1298	
Sample Collection Date						February 25, 2020	February 25, 2020	
Hydrocarbons								
Benzene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Toluene	mg/kg	>50%	0.050	0.25	no	<0.050	<0.050	n/c
Ethylbenzene	mg/kg	>50%	0.010	0.05	no	<0.010	<0.010	n/c
Xylenes (Total)	mg/kg	>50%	0.045	0.225	no	<0.090	<0.092	n/c
m & p-Xylene	mg/kg	>50%	0.040	0.2	no	<0.045	<0.046	n/c
o-Xylene	mg/kg	>50%	0.020	0.1	no	<23	<23	n/c
F1 (C_6-C_{10}) - BTEX	mg/kg	>50%	10	50	no	<23	<23	n/c
(C_6-C_{10})	mg/kg	>50%	10	50	no	<23	<23	n/c
F2 (C_{10}-C_{16})	mg/kg	>50%	10	50	no	22	35	n/c
F3 (C_{16}-C_{34})	mg/kg	>50%	50	250	no	130	190	n/c
F4 (C_{34}-C_{50})	mg/kg	>50%	50	250	no	<50	70	n/c
Polycyclic Aromatics								
Acenaphthene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Acenaphthylene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Acridine	mg/kg	>50%	0.01	0.05	no	<0.010	<0.010	n/c
Anthracene	mg/kg	>50%	0.004	0.02	no	<0.0040	<0.0040	n/c
Benzo(a)anthracene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Benzo(b&j)fluoranthene	mg/kg	>50%	0.005	0.025	no	0.011	<0.0050	n/c
Benzo(k)fluoranthene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Benzo(g,h,i)perylene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Benzo(c)phenanthrene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Benzo(a)pyrene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Benzo(e)pyrene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Chrysene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Dibenz(a,h)anthracene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Fluoranthene	mg/kg	>50%	0.005	0.025	no	0.012	0.0095	n/c
Fluorene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Indeno(1,2,3-cd)pyrene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
2-Methylnaphthalene	mg/kg	>50%	0.005	0.025	no	0.016	0.009	n/c
Naphthalene	mg/kg	>50%	0.005	0.025	no	0.015	<0.0050	n/c
Phenanthrene	mg/kg	>50%	0.005	0.025	no	0.019	0.02	n/c
Perylene	mg/kg	>50%	0.005	0.025	no	0.016	0.012	n/c
Pyrene	mg/kg	>50%	0.005	0.025	no	0.011	0.0092	n/c
Quinoline	mg/kg	>50%	0.01	0.05	no	0.033	<0.010	n/c

Notes:
mg/kg = Milligrams per kilogram; RDL = reportable detection limit; n/c = not applicable; > = more than; < = less than; n/a = not applicable; RPD = relative percent difference.
Table to be read in conjunction with accompanying report.

Table 26
Summary of Duplicate Soil Sample Quality Control Results
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample Location / Maxxam Job # / Maxxam Sample ID / Sample Collection Date	Units	Alert Limit	RDL	5X RDL	Are the results >5X RDL	WA-SED-103B C015220 XM1301 February 25, 2020	DUP02 C015220 XM1302 February 25, 2020	RPD
Hydrocarbons								
Benzene	mg/kg	>50%	0.0050	0.025	no	<0.0050	<0.0050	n/c
Toluene	mg/kg	>50%	0.050	0.25	no	<0.050	<0.050	n/c
Ethylbenzene	mg/kg	>50%	0.010	0.05	no	<0.010	<0.010	n/c
Xylenes (Total)	mg/kg	>50%	0.045	0.225	no	<0.040	<0.040	n/c
m & p-Xylene	mg/kg	>50%	0.040	0.2	no	<0.020	<0.020	n/c
o-Xylene	mg/kg	>50%	0.020	0.1	no	<10	<10	n/c
F1 (C_6-C_{10}) - BTEX	mg/kg	>50%	10	50	no	<10	<10	n/c
(C_6-C_{10})	mg/kg	>50%	10	50	no	<10	<10	n/c
F2 (C_{10}-C_{16})	mg/kg	>50%	10	50	no	26	25	n/c
F3 (C_{16}-C_{34})	mg/kg	>50%	50	250	no	130	140	n/c
F4 (C_{34}-C_{50})	mg/kg	>50%	50	250	no	<50	<50	n/c
Polycyclic Aromatics								
Acenaphthene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Acenaphthylene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Acridine	mg/kg	>50%	0.01	0.05	no	<0.010	0.012	n/c
Anthracene	mg/kg	>50%	0.004	0.02	no	<0.0040	<0.0040	n/c
Benzo(a)anthracene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Benzo(b&j)fluoranthene	mg/kg	>50%	0.005	0.025	no	0.013	0.014	n/c
Benzo(k)fluoranthene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Benzo(g,h,i)perylene	mg/kg	>50%	0.005	0.025	no	<0.0050	0.0075	n/c
Benzo(c)phenanthrene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Benzo(a)pyrene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Benzo(e)pyrene	mg/kg	>50%	0.005	0.025	no	0.0081	0.0097	n/c
Chrysene	mg/kg	>50%	0.005	0.025	no	0.011	0.0077	n/c
Dibenz(a,h)anthracene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Fluoranthene	mg/kg	>50%	0.005	0.025	no	0.015	0.015	n/c
Fluorene	mg/kg	>50%	0.005	0.025	no	<0.0050	0.0079	n/c
Indeno(1,2,3-cd)pyrene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
2-Methylnaphthalene	mg/kg	>50%	0.005	0.025	no	0.013	0.015	n/c
Naphthalene	mg/kg	>50%	0.005	0.025	no	<0.0050	<0.0050	n/c
Phenanthrene	mg/kg	>50%	0.005	0.025	no	0.023	0.026	n/c
Perylene	mg/kg	>50%	0.005	0.025	no	0.017	0.018	n/c
Pyrene	mg/kg	>50%	0.005	0.025	no	0.015	0.015	n/c
Quinoline	mg/kg	>50%	0.01	0.05	no	<0.010	<0.010	n/c

Notes:
mg/kg = Milligrams per kilogram; RDL = reportable detection limit; n/c = not applicable; > = more than; < = less than; n/a = not applicable; RPD = relative percent difference.
Table to be read in conjunction with accompanying report.

Table 27
Summary of Duplicate Surface Water and Groundwater Sample Quality Control Results
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample ID	Units	Alert Limit	RDL	5X RDL	Are the results >5X RDL	MW19-3	DUP1	RPD
Maxxam Job #						B942990		
Maxxam Sample ID						VU6787	VU6789	
Sample Collection Date						June 3, 2019	June 3, 2019	
Hydrocarbons								
Benzene	ug/L	>30%	0.4000	2	no	<0.40	<0.40	n/c
Toluene	ug/L	>30%	0.400	2	no	<0.40	<0.40	n/c
Ethylbenzene	ug/L	>30%	0.400	2	no	<0.40	<0.40	n/c
m & p-Xylene	ug/L	>30%	0.800	4	no	<0.80	<0.80	n/c
o-Xylene	ug/L	>30%	0.400	2	no	<0.40	<0.40	n/c
Xylenes (Total)	ug/L	>30%	0.890	4.45	no	<0.89	<0.89	n/c
F1 (C6-C10) - BTEX	ug/L	>30%	100	500	no	<100	<100	n/c
F1 (C6-C10)	ug/L	>30%	100	500	no	<100	<100	n/c
F2 (C10-C16 Hydrocarbons)	mg/L	>30%	0.1	0.5	no	<0.10	<0.10	n/c
F3 (C16-C34 Hydrocarbons)	mg/L	>30%	0.1	0.5	no	<0.10	<0.10	n/c
F4 (C34-C50 Hydrocarbons)	mg/L	>30%	0.2	1	no	<0.20	<0.20	n/c
Polycyclic Aromatics								
Low Molecular Weight PAH`s	ug/L	>30%	0.2000	1	no	<0.20	<0.20	n/c
High Molecular Weight PAH`s	ug/L	>30%	0.0500	0.25	no	<0.050	<0.050	n/c
Total PAH	ug/L	>30%	0.200	1	no	<0.20	<0.20	n/c
B[a]P TPE Total Potency Equivalents	ug/L	>30%	0.0100	0.05	no	<0.010	<0.010	n/c
Acenaphthene	ug/L	>30%	0.1000	0.5	no	<0.10	<0.10	n/c
Acenaphthylene	ug/L	>30%	0.1000	0.5	no	<0.10	<0.10	n/c
Acridine	ug/L	>30%	0.0400	0.2	no	<0.040	<0.040	n/c
Anthracene	ug/L	>30%	0.0100	0.05	no	<0.010	<0.010	n/c
Benzo(a)anthracene	ug/L	>30%	0.0085	0.0425	no	<0.0085	<0.0085	n/c
Benzo(b&j)fluoranthene	ug/L	>30%	0.0085	0.0425	no	<0.0085	<0.0085	n/c
Benzo(k)fluoranthene	ug/L	>30%	0.0085	0.0425	no	<0.0085	<0.0085	n/c
Benzo(g,h,i)perylene	ug/L	>30%	0.0085	0.0425	no	<0.0085	<0.0085	n/c
Benzo(c)phenanthrene	ug/L	>30%	0.0500	0.25	no	<0.050	<0.050	n/c
Benzo(a)pyrene	ug/L	>30%	0.0075	0.0375	no	<0.0075	<0.0075	n/c
Benzo[e]pyrene	ug/L	>30%	0.0500	0.25	no	<0.050	<0.050	n/c
Chrysene	ug/L	>30%	0.0085	0.0425	no	<0.0085	<0.0085	n/c
Dibenz(a,h)anthracene	ug/L	>30%	0.0075	0.0375	no	<0.0075	<0.0075	n/c
Fluoranthene	ug/L	>30%	0.0100	0.05	no	<0.010	0.016	n/c
Fluorene	ug/L	>30%	0.0500	0.25	no	<0.050	<0.050	n/c
Indeno(1,2,3-cd)pyrene	ug/L	>30%	0.0085	0.0425	no	<0.0085	<0.0085	n/c
2-Methylnaphthalene	ug/L	>30%	0.1000	0.5	no	<0.10	<0.10	n/c
Naphthalene	ug/L	>30%	0.100	0.5	no	<0.10	0.12	n/c
Phenanthrene	ug/L	>30%	0.0500	0.25	no	<0.050	<0.050	n/c
Perylene	ug/L	>30%	0.0500	0.25	no	<0.050	<0.050	n/c
Pyrene	ug/L	>30%	0.0200	0.1	no	<0.020	<0.020	n/c
Quinoline	ug/L	>30%	0.2000	1	no	<0.20	<0.20	n/c

Notes:
ug/L = Microgram per litre; mg/L = Milligrams per litre; RDL = reportable detection limit; n/c = not applicable; > = more than; < = less than; RPD = relative percent difference.
Table to be read in conjunction with accompanying report.

Table 27
Summary of Duplicate Surface Water and Groundwater Sample Quality Control Results
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample Location	Units	Alert Limit	RDL	5X RDL	Are the results >5X RDL	MW19-4	DUP2	RPD
Maxxam Job #						B952195		
Maxxam Sample ID						VZ7822	VZ7825	
Sample Collection Date						June 26, 2019	June 26, 2019	
Hydrocarbons								
Benzene	ug/L	>30%	0.4000	2	no	<0.40	<0.40	n/c
Toluene	ug/L	>30%	0.400	2	no	<0.40	<0.40	n/c
Ethylbenzene	ug/L	>30%	0.400	2	no	<0.40	<0.40	n/c
m & p-Xylene	ug/L	>30%	0.800	4	no	<0.80	<0.80	n/c
o-Xylene	ug/L	>30%	0.400	2	no	<0.40	<0.40	n/c
Xylenes (Total)	ug/L	>30%	0.890	4.45	no	<0.89	<0.89	n/c
F1 (C6-C10) - BTEX	ug/L	>30%	100	500	no	<100	<100	n/c
F1 (C6-C10)	ug/L	>30%	100	500	no	<100	<100	n/c
F2 (C10-C16 Hydrocarbons)	mg/L	>30%	0.1	0.5	no	<0.10	<0.10	n/c
F3 (C16-C34 Hydrocarbons)	mg/L	>30%	0.1	0.5	no	<0.10	<0.10	n/c
F4 (C34-C50 Hydrocarbons)	mg/L	>30%	0.2	1	no	<0.20	<0.20	n/c
Polycyclic Aromatics								
B[a]P TPE Total Potency Equivalents	ug/L	>30%	0.01	0.05	no	<0.010	<0.010	n/c
Acenaphthene	ug/L	>30%	0.1	0.5	no	<0.10	<0.10	n/c
Acenaphthylene	ug/L	>30%	0.1	0.5	no	<0.10	<0.10	n/c
Acridine	ug/L	>30%	0.04	0.2	no	<0.040	<0.040	n/c
Anthracene	ug/L	>30%	0.01	0.05	no	<0.010	<0.010	n/c
Benzo(a)anthracene	ug/L	>30%	0.0085	0.0425	no	<0.0085	<0.0085	n/c
Benzo(b&j)fluoranthene	ug/L	>30%	0.0085	0.0425	no	<0.0085	<0.0085	n/c
Benzo(k)fluoranthene	ug/L	>30%	0.0085	0.0425	no	<0.0085	<0.0085	n/c
Benzo(g,h,i)perylene	ug/L	>30%	0.0085	0.0425	no	<0.0085	<0.0085	n/c
Benzo(c)phenanthrene	ug/L	>30%	0.05	0.25	no	<0.050	<0.050	n/c
Benzo(a)pyrene	ug/L	>30%	0.0075	0.0375	no	<0.0075	<0.0075	n/c
Benzo[e]pyrene	ug/L	>30%	0.05	0.25	no	<0.050	<0.050	n/c
Chrysene	ug/L	>30%	0.0085	0.0425	no	<0.0085	<0.0085	n/c
Dibenz(a,h)anthracene	ug/L	>30%	0.0075	0.0375	no	<0.0075	<0.0075	n/c
Fluoranthene	ug/L	>30%	0.01	0.05	no	<0.010	<0.010	n/c
Fluorene	ug/L	>30%	0.05	0.25	no	<0.050	<0.050	n/c
Indeno(1,2,3-cd)pyrene	ug/L	>30%	0.0085	0.0425	no	<0.0085	<0.0085	n/c
1-Methylnaphthalene	ug/L	>30%	0.1	0.5	no	<0.10	<0.10	n/c
2-Methylnaphthalene	ug/L	>30%	0.1	0.5	no	<0.10	<0.10	n/c
Naphthalene	ug/L	>30%	0.1	0.5	no	<0.10	<0.10	n/c
Phenanthrene	ug/L	>30%	0.05	0.25	no	<0.050	<0.050	n/c
Perylene	ug/L	>30%	0.05	0.25	no	<0.050	<0.050	n/c
Pyrene	ug/L	>30%	0.02	0.1	no	<0.020	<0.020	n/c
Quinoline	ug/L	>30%	0.2	1	no	<0.20	<0.20	n/c

Notes:
ug/L = Microgram per litre; mg/L = Milligrams per litre; RDL = reportable detection limit; n/c = not applicable; > = more than; < = less than; RPD = relative percent difference.
Table to be read in conjunction with accompanying report.

Table 27
Summary of Duplicate Surface Water and Groundwater Sample Quality Control Results
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample Location / Maxxam Job # / Maxxam Sample ID / Sample Collection Date	Units	Alert Limit	RDL	5X RDL	Are the results >5X RDL	MW19-6 B961310 WE4629 July 24, 2019	DUP3 WE4630 July 24, 2019	RPD
Hydrocarbons								
Benzene	ug/L	>30%	0.4000	2	yes	860	860	0
Toluene	ug/L	>30%	0.400	2	yes	6	6	0
Ethylbenzene	ug/L	>30%	0.400	2	yes	25	25	0
m & p-Xylene	ug/L	>30%	0.800	4	yes	290	290	0
o-Xylene	ug/L	>30%	0.400	2	yes	78	77	1
Xylenes (Total)	ug/L	>30%	0.890	4.45	yes	370	370	0
F1 (C6-C10) - BTEX	ug/L	>30%	100	500	yes	1100	910	19
F1 (C6-C10)	ug/L	>30%	100	500	yes	2300	2200	4
F2 (C10-C16 Hydrocarbons)	mg/L	>30%	0.1	0.5	no	0.13	0.12	n/c
F3 (C16-C34 Hydrocarbons)	mg/L	>30%	0.1	0.5	no	<0.10	<0.10	n/c
F4 (C34-C50 Hydrocarbons)	mg/L	>30%	0.2	1	no	<0.20	<0.20	n/c
Polycyclic Aromatics								
B[a]P TPE Total Potency Equivalents	ug/L	>30%	0.01	0.05	no	0.01	0.011	n/c
Acenaphthene	ug/L	>30%	0.1	0.5	no	<0.10	<0.10	n/c
Acenaphthylene	ug/L	>30%	0.1	0.5	no	<0.10	<0.10	n/c
Acridine	ug/L	>30%	0.04	0.2	no	<0.040	<0.040	n/c
Anthracene	ug/L	>30%	0.01	0.05	no	0.015	0.016	n/c
Benzo(a)anthracene	ug/L	>30%	0.0085	0.0425	no	<0.0085	<0.0085	n/c
Benzo(b&j)fluoranthene	ug/L	>30%	0.0085	0.0425	no	0.01	0.019	n/c
Benzo(k)fluoranthene	ug/L	>30%	0.0085	0.0425	no	<0.0085	<0.0085	n/c
Benzo(g,h,i)perylene	ug/L	>30%	0.0085	0.0425	no	<0.0085	<0.0085	n/c
Benzo(c)phenanthrene	ug/L	>30%	0.05	0.25	no	<0.050	<0.050	n/c
Benzo(a)pyrene	ug/L	>30%	0.0075	0.0375	no	<0.0075	<0.0075	n/c
Benzo(e)pyrene	ug/L	>30%	0.05	0.25	no	<0.050	<0.050	n/c
Chrysene	ug/L	>30%	0.0085	0.0425	no	0.014	0.015	n/c
Dibenz(a,h)anthracene	ug/L	>30%	0.0075	0.0375	no	<0.0075	<0.0075	n/c
Fluoranthene	ug/L	>30%	0.01	0.05	no	0.032	0.062	n/c
Fluorene	ug/L	>30%	0.05	0.25	no	<0.050	<0.050	n/c
Indeno(1,2,3-cd)pyrene	ug/L	>30%	0.0085	0.0425	no	<0.0085	<0.0085	n/c
2-Methylnaphthalene	ug/L	>30%	0.1	0.5	no	<0.10	<0.10	n/c
Naphthalene	ug/L	>30%	0.1	0.5	yes	0.73	0.67	9
Phenanthrene	ug/L	>30%	0.05	0.25	no	<0.050	<0.050	n/c
Perylene	ug/L	>30%	0.05	0.25	no	<0.050	<0.050	n/c
Pyrene	ug/L	>30%	0.02	0.1	no	0.029	0.05	n/c
Quinoline	ug/L	>30%	0.2	1	no	<0.20	<0.20	n/c

Notes:
ug/L = Microgram per litre; mg/L = Milligrams per litre; RDL = reportable detection limit; n/c = not applicable; > = more than; < = less than; RPD = relative percent difference.
Table to be read in conjunction with accompanying report.

Table 27
Summary of Duplicate Surface Water and Groundwater Sample Quality Control Results
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample Location / Maxxam Job # / Maxxam Sample ID / Sample Collection Date	Units	Alert Limit	RDL	5X RDL	Are the results >5X RDL	TH-10 B960929 WE2585 July 24, 2019	DUP4 B960929 WE2589 July 24, 2019	RPD
Hydrocarbons								
Benzene	ug/L	>30%	0.4000	2	no	<0.40	<0.40	n/c
Toluene	ug/L	>30%	0.400	2	no	<0.40	<0.40	n/c
Ethylbenzene	ug/L	>30%	0.400	2	no	<0.40	<0.40	n/c
m & p-Xylene	ug/L	>30%	0.800	4	no	<0.80	<0.80	n/c
o-Xylene	ug/L	>30%	0.400	2	no	<0.40	<0.40	n/c
Xylenes (Total)	ug/L	>30%	0.890	4.45	no	<0.89	<0.89	n/c
F1 (C6-C10) - BTEX	ug/L	>30%	100	500	no	<100	<100	n/c
F1 (C6-C10)	ug/L	>30%	100	500	no	<100	<100	n/c
F2 (C10-C16 Hydrocarbons)	mg/L	>30%	0.1	0.5	no	<0.10	<0.10	n/c
F3 (C16-C34 Hydrocarbons)	mg/L	>30%	0.1	0.5	no	<0.10	<0.10	n/c
F4 (C34-C50 Hydrocarbons)	mg/L	>30%	0.2	1	no	<0.20	<0.20	n/c
Polycyclic Aromatics								
B[a]P TPE Total Potency Equivalents	ug/L	>30%	0.01	0.05	no	<0.010	<0.010	n/c
Acenaphthene	ug/L	>30%	0.1	0.5	no	<0.10	<0.10	n/c
Acenaphthylene	ug/L	>30%	0.1	0.5	no	<0.10	<0.10	n/c
Acridine	ug/L	>30%	0.04	0.2	no	<0.040	<0.040	n/c
Anthracene	ug/L	>30%	0.01	0.05	no	<0.010	<0.010	n/c
Benzo(a)anthracene	ug/L	>30%	0.0085	0.0425	no	<0.0085	<0.0085	n/c
Benzo(b&j)fluoranthene	ug/L	>30%	0.0085	0.0425	no	<0.0085	<0.0085	n/c
Benzo(k)fluoranthene	ug/L	>30%	0.0085	0.0425	no	<0.0085	<0.0085	n/c
Benzo(g,h,i)perylene	ug/L	>30%	0.0085	0.0425	no	<0.0085	<0.0085	n/c
Benzo(c)phenanthrene	ug/L	>30%	0.05	0.25	no	<0.050	<0.050	n/c
Benzo(a)pyrene	ug/L	>30%	0.0075	0.0375	no	<0.0075	<0.0075	n/c
Benzo(e)pyrene	ug/L	>30%	0.05	0.25	no	<0.050	<0.050	n/c
Chrysene	ug/L	>30%	0.0085	0.0425	no	<0.0085	<0.0085	n/c
Dibenz(a,h)anthracene	ug/L	>30%	0.0075	0.0375	no	<0.0075	<0.0075	n/c
Fluoranthene	ug/L	>30%	0.01	0.05	no	<0.010	<0.010	n/c
Fluorene	ug/L	>30%	0.05	0.25	no	<0.050	<0.050	n/c
Indeno(1,2,3-cd)pyrene	ug/L	>30%	0.0085	0.0425	no	<0.0085	<0.0085	n/c
2-Methylnaphthalene	ug/L	>30%	0.1	0.5	no	<0.10	<0.10	n/c
Naphthalene	ug/L	>30%	0.1	0.5	no	<0.10	<0.10	n/c
Phenanthrene	ug/L	>30%	0.05	0.25	no	<0.050	<0.050	n/c
Perylene	ug/L	>30%	0.05	0.25	no	<0.050	<0.050	n/c
Pyrene	ug/L	>30%	0.02	0.1	no	<0.020	<0.020	n/c
Quinoline	ug/L	>30%	0.2	1	no	<0.20	<0.20	n/c

Notes:
ug/L = Microgram per litre; mg/L = Milligrams per litre; RDL = reportable detection limit; n/c = not applicable; > = more than; < = less than; RPD = relative percent difference.
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Table 27
Summary of Duplicate Surface Water and Groundwater Sample Quality Control Results
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample Location / Maxxam Job # / Maxxam Sample ID / Sample Collection Date	Units	Alert Limit	RDL	5X RDL	Are the results >5X RDL	TH-6 B960929 WE2587 July 24, 2019	DUP5 B960929 WE2590 July 24, 2019	RPD
Hydrocarbons								
Benzene	ug/L	>30%	0.4000	2	no	<0.40	<0.40	n/c
Toluene	ug/L	>30%	0.400	2	no	<0.40	<0.40	n/c
Ethylbenzene	ug/L	>30%	0.400	2	no	<0.40	<0.40	n/c
m & p-Xylene	ug/L	>30%	0.800	4	no	<0.80	<0.80	n/c
o-Xylene	ug/L	>30%	0.400	2	no	<0.40	<0.40	n/c
Xylenes (Total)	ug/L	>30%	0.890	4.45	no	<0.89	<0.89	n/c
F1 (C6-C10) - BTEX	ug/L	>30%	100	500	no	<100	<100	n/c
F1 (C6-C10)	ug/L	>30%	100	500	no	<100	<100	n/c
F2 (C10-C16 Hydrocarbons)	mg/L	>30%	0.1	0.5	no	<0.10	<0.10	n/c
F3 (C16-C34 Hydrocarbons)	mg/L	>30%	0.1	0.5	no	<0.10	<0.10	n/c
F4 (C34-C50 Hydrocarbons)	mg/L	>30%	0.2	1	no	<0.20	<0.20	n/c
Polycyclic Aromatics								
B[a]P TPE Total Potency Equivalents	ug/L	>30%	0.01	0.05	no	<0.010	<0.010	n/c
Acenaphthene	ug/L	>30%	0.1	0.5	no	<0.10	<0.10	n/c
Acenaphthylene	ug/L	>30%	0.1	0.5	no	<0.10	<0.10	n/c
Acridine	ug/L	>30%	0.04	0.2	no	<0.040	<0.040	n/c
Anthracene	ug/L	>30%	0.01	0.05	no	<0.010	<0.010	n/c
Benzo(a)anthracene	ug/L	>30%	0.0085	0.0425	no	<0.0085	<0.0085	n/c
Benzo(b&j)fluoranthene	ug/L	>30%	0.0085	0.0425	no	<0.0085	<0.0085	n/c
Benzo(k)fluoranthene	ug/L	>30%	0.0085	0.0425	no	<0.0085	<0.0085	n/c
Benzo(g,h,i)perylene	ug/L	>30%	0.0085	0.0425	no	<0.0085	<0.0085	n/c
Benzo(c)phenanthrene	ug/L	>30%	0.05	0.25	no	<0.050	<0.050	n/c
Benzo(a)pyrene	ug/L	>30%	0.0075	0.0375	no	<0.0075	<0.0075	n/c
Benzo(e)pyrene	ug/L	>30%	0.05	0.25	no	<0.050	<0.050	n/c
Chrysene	ug/L	>30%	0.0085	0.0425	no	<0.0085	<0.0085	n/c
Dibenz(a,h)anthracene	ug/L	>30%	0.0075	0.0375	no	<0.0075	<0.0075	n/c
Fluoranthene	ug/L	>30%	0.01	0.05	no	<0.010	<0.010	n/c
Fluorene	ug/L	>30%	0.05	0.25	no	<0.050	<0.050	n/c
Indeno(1,2,3-cd)pyrene	ug/L	>30%	0.0085	0.0425	no	<0.0085	<0.0085	n/c
2-Methylnaphthalene	ug/L	>30%	0.1	0.5	no	<0.10	<0.10	n/c
Naphthalene	ug/L	>30%	0.1	0.5	no	<0.10	<0.10	n/c
Phenanthrene	ug/L	>30%	0.05	0.25	no	<0.050	<0.050	n/c
Perylene	ug/L	>30%	0.05	0.25	no	<0.050	<0.050	n/c
Pyrene	ug/L	>30%	0.02	0.1	no	<0.020	<0.020	n/c
Quinoline	ug/L	>30%	0.2	1	no	<0.20	<0.20	n/c

Notes:
ug/L = Microgram per litre; mg/L = Milligrams per litre; RDL = reportable detection limit; n/c = not applicable; > = more than; < = less than; RPD = relative percent difference.
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Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample Location / Maxxam Job # / Maxxam Sample ID / Sample Collection Date	Units	Alert Limit	RDL	5X RDL	Are the results >5X RDL	MW19-6 B968379 WH9179 August 14, 2019	DUP4 B968379 WH9181 August 14, 2019	RPD
Hydrocarbons								
Benzene	ug/L	>30%	0.4000	2	yes	410	440	7
Toluene	ug/L	>30%	0.400	2	no	1.5	1.5	n/c
Ethylbenzene	ug/L	>30%	0.400	2	yes	2.3	2.2	4
m & p-Xylene	ug/L	>30%	0.800	4	yes	12	12	0
o-Xylene	ug/L	>30%	0.400	2	yes	36	37	3
Xylenes (Total)	ug/L	>30%	0.890	4.45	yes	48	49	2
F1 (C6-C10) - BTEX	ug/L	>30%	100	500	yes	540	560	4
F1 (C6-C10)	ug/L	>30%	100	500	yes	1000	1000	0
F2 (C10-C16 Hydrocarbons)	mg/L	>30%	0.1	0.5	no	<0.10	<0.10	n/c
F3 (C16-C34 Hydrocarbons)	mg/L	>30%	0.1	0.5	no	<0.10	<0.10	n/c
F4 (C34-C50 Hydrocarbons)	mg/L	>30%	0.2	1	no	<0.20	<0.20	n/c
Polycyclic Aromatics								
B[a]P TPE Total Potency Equivalents	ug/L	>30%	0.01	0.05	no	<0.010	<0.010	n/c
Acenaphthene	ug/L	>30%	0.1	0.5	no	<0.10	<0.10	n/c
Acenaphthylene	ug/L	>30%	0.1	0.5	no	<0.10	<0.10	n/c
Acridine	ug/L	>30%	0.04	0.2	no	<0.040	<0.040	n/c
Anthracene	ug/L	>30%	0.01	0.05	no	0.014	0.011	n/c
Benzo(a)anthracene	ug/L	>30%	0.0085	0.0425	no	<0.0085	<0.0085	n/c
Benzo(b&j)fluoranthene	ug/L	>30%	0.0085	0.0425	no	<0.0085	<0.0085	n/c
Benzo(k)fluoranthene	ug/L	>30%	0.0085	0.0425	no	<0.0085	<0.0085	n/c
Benzo(g,h,i)perylene	ug/L	>30%	0.0085	0.0425	no	<0.0085	<0.0085	n/c
Benzo(c)phenanthrene	ug/L	>30%	0.05	0.25	no	<0.050	<0.050	n/c
Benzo(a)pyrene	ug/L	>30%	0.0075	0.0375	no	<0.0075	<0.0075	n/c
Benzo(e)pyrene	ug/L	>30%	0.05	0.25	no	<0.050	<0.050	n/c
Chrysene	ug/L	>30%	0.0085	0.0425	no	<0.0085	<0.0085	n/c
Dibenz(a,h)anthracene	ug/L	>30%	0.0075	0.0375	no	<0.0075	<0.0075	n/c
Fluoranthene	ug/L	>30%	0.01	0.05	no	0.018	0.016	n/c
Fluorene	ug/L	>30%	0.05	0.25	no	<0.050	<0.050	n/c
Indeno(1,2,3-cd)pyrene	ug/L	>30%	0.0085	0.0425	no	<0.0085	<0.0085	n/c
2-Methylnaphthalene	ug/L	>30%	0.1	0.5	no	<0.10	<0.10	n/c
Naphthalene	ug/L	>30%	0.1	0.5	no	0.37	0.36	n/c
Phenanthrene	ug/L	>30%	0.05	0.25	no	<0.050	<0.050	n/c
Perylene	ug/L	>30%	0.05	0.25	no	<0.050	<0.050	n/c
Pyrene	ug/L	>30%	0.02	0.1	no	<0.020	<0.020	n/c
Quinoline	ug/L	>30%	0.2	1	no	<0.20	<0.20	n/c

Notes:
ug/L = Microgram per litre; mg/L = Milligrams per litre; RDL = reportable detection limit; n/c = not applicable; > = more than; < = less than; RPD = relative percent difference.
Table to be read in conjunction with accompanying report.

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Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample Location / Maxxam Job # / Maxxam Sample ID / Sample Collection Date	Units	Alert Limit	RDL	5X RDL	Are the results >5X RDL	MW19-6 B970063 WI7301 August 21, 2019	DUP5 B970063 WI7302 August 21, 2019	RPD
Hydrocarbons								
Benzene	ug/L	>30%	0.4000	2	yes	260	370	**35**
Toluene	ug/L	>30%	0.400	2	no	1	1.3	n/c
Ethylbenzene	ug/L	>30%	0.400	2	no	0.54	0.85	n/c
m & p-Xylene	ug/L	>30%	0.800	4	no	3.3	4.3	n/c
o-Xylene	ug/L	>30%	0.400	2	yes	28	37	28
Xylenes (Total)	ug/L	>30%	0.890	4.45	yes	31	42	30
F1 (C6-C10) - BTEX	ug/L	>30%	100	500	no	460	330	n/c
F1 (C6-C10)	ug/L	>30%	100	500	yes	750	750	0
F2 (C10-C16 Hydrocarbons)	mg/L	>30%	0.1	0.5	no	<0.10	<0.10	n/c
F3 (C16-C34 Hydrocarbons)	mg/L	>30%	0.1	0.5	no	<0.10	<0.10	n/c
F4 (C34-C50 Hydrocarbons)	mg/L	>30%	0.2	1	no	<0.20	<0.20	n/c
Polycyclic Aromatics								
B[a]P TPE Total Potency Equivalents	ug/L	>30%	0.01	0.05	no	<0.010	<0.010	n/c
Acenaphthene	ug/L	>30%	0.1	0.5	no	<0.10	<0.10	n/c
Acenaphthylene	ug/L	>30%	0.1	0.5	no	<0.10	<0.10	n/c
Acridine	ug/L	>30%	0.04	0.2	no	<0.040	<0.040	n/c
Anthracene	ug/L	>30%	0.01	0.05	no	0.012	0.013	n/c
Benzo(a)anthracene	ug/L	>30%	0.0085	0.0425	no	<0.0085	<0.0085	n/c
Benzo(b&j)fluoranthene	ug/L	>30%	0.0085	0.0425	no	<0.0085	<0.0085	n/c
Benzo(k)fluoranthene	ug/L	>30%	0.0085	0.0425	no	<0.0085	<0.0085	n/c
Benzo(g,h,i)perylene	ug/L	>30%	0.0085	0.0425	no	<0.0085	<0.0085	n/c
Benzo(c)phenanthrene	ug/L	>30%	0.05	0.25	no	<0.050	<0.050	n/c
Benzo(a)pyrene	ug/L	>30%	0.0075	0.0375	no	<0.0075	<0.0075	n/c
Benzo(e)pyrene	ug/L	>30%	0.05	0.25	no	<0.050	<0.050	n/c
Chrysene	ug/L	>30%	0.0085	0.0425	no	<0.0085	<0.0085	n/c
Dibenz(a,h)anthracene	ug/L	>30%	0.0075	0.0375	no	<0.0075	<0.0075	n/c
Fluoranthene	ug/L	>30%	0.01	0.05	no	0.015	0.015	n/c
Fluorene	ug/L	>30%	0.05	0.25	no	<0.050	<0.050	n/c
Indeno(1,2,3-cd)pyrene	ug/L	>30%	0.0085	0.0425	no	<0.0085	<0.0085	n/c
2-Methylnaphthalene	ug/L	>30%	0.1	0.5	no	<0.10	<0.10	n/c
Naphthalene	ug/L	>30%	0.1	0.5	no	0.18	0.3	n/c
Phenanthrene	ug/L	>30%	0.05	0.25	no	<0.050	<0.050	n/c
Perylene	ug/L	>30%	0.05	0.25	no	<0.050	<0.050	n/c
Pyrene	ug/L	>30%	0.02	0.1	no	<0.020	<0.020	n/c
Quinoline	ug/L	>30%	0.2	1	no	<0.20	<0.20	n/c

Notes:
ug/L = Microgram per litre; mg/L = Milligrams per litre; RDL = reportable detection limit; n/c = not applicable; > = more than; < = less than; RPD = relative percent difference.
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Summary of Duplicate Surface Water and Groundwater Sample Quality Control Results
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample Location / Maxxam Job # / Maxxam Sample ID / Sample Collection Date	Units	Alert Limit	RDL	5X RDL	Are the results >5X RDL	TH-1 B970437 WI9037 August 21, 2019	DUP6 B970437 WI9155 August 21, 2019	RPD
Hydrocarbons								
Benzene	ug/L	>30%	0.4000	2	no	<0.40	<0.40	n/c
Toluene	ug/L	>30%	0.400	2	no	<0.40	<0.40	n/c
Ethylbenzene	ug/L	>30%	0.400	2	no	<0.40	<0.40	n/c
m & p-Xylene	ug/L	>30%	0.800	4	no	<0.80	<0.80	n/c
o-Xylene	ug/L	>30%	0.400	2	no	<0.40	<0.40	n/c
Xylenes (Total)	ug/L	>30%	0.890	4.45	no	<0.89	<0.89	n/c
F1 (C6-C10) - BTEX	ug/L	>30%	100	500	no	<100	<100	n/c
F1 (C6-C10)	ug/L	>30%	100	500	no	<100	<100	n/c
F2 (C10-C16 Hydrocarbons)	mg/L	>30%	0.1	0.5	no	<0.10	<0.10	n/c
F3 (C16-C34 Hydrocarbons)	mg/L	>30%	0.1	0.5	no	<0.10	<0.10	n/c
F4 (C34-C50 Hydrocarbons)	mg/L	>30%	0.2	1	no	<0.20	<0.20	n/c
Polycyclic Aromatics								
B[a]P TPE Total Potency Equivalents	ug/L	>30%	0.01	0.05	no	<0.010	<0.010	n/c
Acenaphthene	ug/L	>30%	0.1	0.5	no	<0.10	<0.10	n/c
Acenaphthylene	ug/L	>30%	0.1	0.5	no	<0.10	<0.10	n/c
Acridine	ug/L	>30%	0.04	0.2	no	<0.040	<0.040	n/c
Anthracene	ug/L	>30%	0.01	0.05	no	<0.010	<0.010	n/c
Benzo(a)anthracene	ug/L	>30%	0.0085	0.0425	no	<0.0085	<0.0085	n/c
Benzo(b&j)fluoranthene	ug/L	>30%	0.0085	0.0425	no	<0.0085	<0.0085	n/c
Benzo(k)fluoranthene	ug/L	>30%	0.0085	0.0425	no	<0.0085	<0.0085	n/c
Benzo(g,h,i)perylene	ug/L	>30%	0.0085	0.0425	no	<0.0085	<0.0085	n/c
Benzo(c)phenanthrene	ug/L	>30%	0.05	0.25	no	<0.050	<0.050	n/c
Benzo(a)pyrene	ug/L	>30%	0.0075	0.0375	no	<0.0075	<0.0075	n/c
Benzo(e)pyrene	ug/L	>30%	0.05	0.25	no	<0.050	<0.050	n/c
Chrysene	ug/L	>30%	0.0085	0.0425	no	<0.0085	<0.0085	n/c
Dibenz(a,h)anthracene	ug/L	>30%	0.0075	0.0375	no	<0.0075	<0.0075	n/c
Fluoranthene	ug/L	>30%	0.01	0.05	no	<0.010	<0.010	n/c
Fluorene	ug/L	>30%	0.05	0.25	no	<0.050	<0.050	n/c
Indeno(1,2,3-cd)pyrene	ug/L	>30%	0.0085	0.0425	no	<0.0085	<0.0085	n/c
2-Methylnaphthalene	ug/L	>30%	0.1	0.5	no	<0.10	<0.10	n/c
Naphthalene	ug/L	>30%	0.1	0.5	no	<0.10	<0.10	n/c
Phenanthrene	ug/L	>30%	0.05	0.25	no	<0.050	<0.050	n/c
Perylene	ug/L	>30%	0.05	0.25	no	<0.050	<0.050	n/c
Pyrene	ug/L	>30%	0.02	0.1	no	<0.020	<0.020	n/c
Quinoline	ug/L	>30%	0.2	1	no	<0.20	<0.20	n/c

Notes:
ug/L = Microgram per litre; mg/L = Milligrams per litre; RDL = reportable detection limit; n/c = not applicable; > = more than; < = less than; RPD = relative percent difference.
Table to be read in conjunction with accompanying report.

Table 27
Summary of Duplicate Surface Water and Groundwater Sample Quality Control Results
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample Location / Maxxam Job # / Maxxam Sample ID / Sample Collection Date	Units	Alert Limit	RDL	5X RDL	Are the results >5X RDL	TH-20 B970437 WI9153 August 21, 2019	DUP7 B970437 WI9156 August 21, 2019	RPD
Hydrocarbons								
Benzene	ug/L	>30%	0.4000	2	no	<0.40	<0.40	n/c
Toluene	ug/L	>30%	0.400	2	no	<0.40	<0.40	n/c
Ethylbenzene	ug/L	>30%	0.400	2	no	<0.40	<0.40	n/c
m & p-Xylene	ug/L	>30%	0.800	4	no	<0.80	<0.80	n/c
o-Xylene	ug/L	>30%	0.400	2	no	<0.40	<0.40	n/c
Xylenes (Total)	ug/L	>30%	0.890	4.45	no	<0.89	<0.89	n/c
F1 (C6-C10) - BTEX	ug/L	>30%	100	500	no	<100	<100	n/c
F1 (C6-C10)	ug/L	>30%	100	500	no	<100	<100	n/c
F2 (C10-C16 Hydrocarbons)	mg/L	>30%	0.1	0.5	no	<0.10	<0.10	n/c
F3 (C16-C34 Hydrocarbons)	mg/L	>30%	0.1	0.5	no	<0.10	<0.10	n/c
F4 (C34-C50 Hydrocarbons)	mg/L	>30%	0.2	1	no	<0.20	<0.20	n/c
Polycyclic Aromatics								
B[a]P TPE Total Potency Equivalents	ug/L	>30%	0.01	0.05	no	<0.010	<0.010	n/c
Acenaphthene	ug/L	>30%	0.1	0.5	no	<0.10	<0.10	n/c
Acenaphthylene	ug/L	>30%	0.1	0.5	no	<0.10	<0.10	n/c
Acridine	ug/L	>30%	0.04	0.2	no	<0.040	<0.040	n/c
Anthracene	ug/L	>30%	0.01	0.05	no	<0.010	<0.010	n/c
Benzo(a)anthracene	ug/L	>30%	0.0085	0.0425	no	<0.0085	<0.0085	n/c
Benzo(b&j)fluoranthene	ug/L	>30%	0.0085	0.0425	no	<0.0085	<0.0085	n/c
Benzo(k)fluoranthene	ug/L	>30%	0.0085	0.0425	no	<0.0085	<0.0085	n/c
Benzo(g,h,i)perylene	ug/L	>30%	0.0085	0.0425	no	<0.0085	<0.0085	n/c
Benzo(c)phenanthrene	ug/L	>30%	0.05	0.25	no	<0.050	<0.050	n/c
Benzo(a)pyrene	ug/L	>30%	0.0075	0.0375	no	<0.0075	<0.0075	n/c
Benzo(e)pyrene	ug/L	>30%	0.05	0.25	no	<0.050	<0.050	n/c
Chrysene	ug/L	>30%	0.0085	0.0425	no	<0.0085	<0.0085	n/c
Dibenz(a,h)anthracene	ug/L	>30%	0.0075	0.0375	no	<0.0075	<0.0075	n/c
Fluoranthene	ug/L	>30%	0.01	0.05	no	<0.010	<0.010	n/c
Fluorene	ug/L	>30%	0.05	0.25	no	<0.050	<0.050	n/c
Indeno(1,2,3-cd)pyrene	ug/L	>30%	0.0085	0.0425	no	<0.0085	<0.0085	n/c
2-Methylnaphthalene	ug/L	>30%	0.1	0.5	no	<0.10	<0.10	n/c
Naphthalene	ug/L	>30%	0.1	0.5	no	<0.10	<0.10	n/c
Phenanthrene	ug/L	>30%	0.05	0.25	no	<0.050	<0.050	n/c
Perylene	ug/L	>30%	0.05	0.25	no	<0.050	<0.050	n/c
Pyrene	ug/L	>30%	0.02	0.1	no	<0.020	<0.020	n/c
Quinoline	ug/L	>30%	0.2	1	no	<0.20	<0.20	n/c

Notes:
ug/L = Microgram per litre; mg/L = Milligrams per litre; RDL = reportable detection limit; n/c = not applicable; > = more than; < = less than; RPD = relative percent difference.
Table to be read in conjunction with accompanying report.

Summary of Duplicate Surface Water and Groundwater Sample Quality Control Results
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample Location / Maxxam Job # / Maxxam Sample ID / Sample Collection Date	Units	Alert Limit	RDL	5X RDL	Are the results >5X RDL	TH-18 B979549 WN4981 September 18, 2019	DUP8 B979549 WN4983 September 18, 2019	RPD
Hydrocarbons								
Benzene	ug/L	>30%	0.4000	2	no	<0.40	<0.40	n/c
Toluene	ug/L	>30%	0.400	2	no	<0.40	<0.40	n/c
Ethylbenzene	ug/L	>30%	0.400	2	no	<0.40	<0.40	n/c
m & p-Xylene	ug/L	>30%	0.800	4	no	<0.80	<0.80	n/c
o-Xylene	ug/L	>30%	0.400	2	no	<0.40	<0.40	n/c
Xylenes (Total)	ug/L	>30%	0.890	4.45	no	<0.89	<0.89	n/c
F1 (C6-C10) - BTEX	ug/L	>30%	100	500	no	<100	<100	n/c
F1 (C6-C10)	ug/L	>30%	100	500	no	<100	<100	n/c
F2 (C10-C16 Hydrocarbons)	mg/L	>30%	0.1	0.5	no	<0.10	<0.10	n/c
F3 (C16-C34 Hydrocarbons)	mg/L	>30%	0.1	0.5	no	<0.10	<0.10	n/c
F4 (C34-C50 Hydrocarbons)	mg/L	>30%	0.2	1	no	<0.20	<0.20	n/c
Polycyclic Aromatics								
B[a]P TPE Total Potency Equivalents	ug/L	>30%	0.01	0.05	no	<0.010	<0.010	n/c
Acenaphthene	ug/L	>30%	0.1	0.5	no	<0.10	<0.10	n/c
Acenaphthylene	ug/L	>30%	0.1	0.5	no	<0.10	<0.10	n/c
Acridine	ug/L	>30%	0.04	0.2	no	<0.040	<0.040	n/c
Anthracene	ug/L	>30%	0.01	0.05	no	<0.010	<0.010	n/c
Benzo(a)anthracene	ug/L	>30%	0.0085	0.0425	no	<0.0085	<0.0085	n/c
Benzo(b&j)fluoranthene	ug/L	>30%	0.0085	0.0425	no	<0.0085	<0.0085	n/c
Benzo(k)fluoranthene	ug/L	>30%	0.0085	0.0425	no	<0.0085	<0.0085	n/c
Benzo(g,h,i)perylene	ug/L	>30%	0.0085	0.0425	no	<0.0085	<0.0085	n/c
Benzo(c)phenanthrene	ug/L	>30%	0.05	0.25	no	<0.050	<0.050	n/c
Benzo(a)pyrene	ug/L	>30%	0.0075	0.0375	no	<0.0075	<0.0075	n/c
Benzo(e)pyrene	ug/L	>30%	0.05	0.25	no	<0.050	<0.050	n/c
Chrysene	ug/L	>30%	0.0085	0.0425	no	<0.0085	<0.0085	n/c
Dibenz(a,h)anthracene	ug/L	>30%	0.0075	0.0375	no	<0.0075	<0.0075	n/c
Fluoranthene	ug/L	>30%	0.01	0.05	no	<0.010	<0.010	n/c
Fluorene	ug/L	>30%	0.05	0.25	no	<0.050	<0.050	n/c
Indeno(1,2,3-cd)pyrene	ug/L	>30%	0.0085	0.0425	no	<0.0085	<0.0085	n/c
2-Methylnaphthalene	ug/L	>30%	0.1	0.5	no	<0.10	<0.10	n/c
Naphthalene	ug/L	>30%	0.1	0.5	no	<0.10	<0.10	n/c
Phenanthrene	ug/L	>30%	0.05	0.25	no	<0.050	<0.050	n/c
Perylene	ug/L	>30%	0.05	0.25	no	<0.050	<0.050	n/c
Pyrene	ug/L	>30%	0.02	0.1	no	<0.020	<0.020	n/c
Quinoline	ug/L	>30%	0.2	1	no	<0.20	<0.20	n/c

Notes:
ug/L = Microgram per litre; mg/L = Milligrams per litre; RDL = reportable detection limit; n/c = not applicable; > = more than; < = less than; RPD = relative percent difference.
Table to be read in conjunction with accompanying report.

Summary of Duplicate Surface Water and Groundwater Sample Quality Control Results
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample Location / Maxxam Job # / Maxxam Sample ID / Sample Collection Date	Units	Alert Limit	RDL	5X RDL	Are the results >5X RDL	MW19-6 B979549 WI7301 September 18, 2019	DUP6 B979549 WI7302 September 18, 2019	RPD
Hydrocarbons								
Benzene	ug/L	>30%	0.4000	2	yes	360	310	15
Toluene	ug/L	>30%	0.400	2	no	0.57	0.47	n/c
Ethylbenzene	ug/L	>30%	0.400	2	no	<0.40	<0.40	n/c
m & p-Xylene	ug/L	>30%	0.800	4	no	1.5	1.9	n/c
o-Xylene	ug/L	>30%	0.400	2	yes	7.5	5.5	**31**
Xylenes (Total)	ug/L	>30%	0.890	4.45	yes	9	7.4	20
F1 (C6-C10) - BTEX	ug/L	>30%	100	500	no	310	210	n/c
F1 (C6-C10)	ug/L	>30%	100	500	yes	690	530	26
F2 (C10-C16 Hydrocarbons)	mg/L	>30%	0.1	0.5	no	<0.10	0.1	n/c
F3 (C16-C34 Hydrocarbons)	mg/L	>30%	0.1	0.5	no	<0.10	<0.10	n/c
F4 (C34-C50 Hydrocarbons)	mg/L	>30%	0.2	1	no	<0.20	<0.20	n/c
Polycyclic Aromatics								
B[a]P TPE Total Potency Equivalents	ug/L	>30%	0.01	0.05	no	<0.010	<0.010	n/c
Acenaphthene	ug/L	>30%	0.1	0.5	no	<0.10	<0.10	n/c
Acenaphthylene	ug/L	>30%	0.1	0.5	no	<0.10	<0.10	n/c
Acridine	ug/L	>30%	0.04	0.2	no	<0.040	<0.040	n/c
Anthracene	ug/L	>30%	0.01	0.05	no	<0.010	<0.010	n/c
Benzo(a)anthracene	ug/L	>30%	0.0085	0.0425	no	<0.0085	<0.0085	n/c
Benzo(b&j)fluoranthene	ug/L	>30%	0.0085	0.0425	no	<0.0085	<0.0085	n/c
Benzo(k)fluoranthene	ug/L	>30%	0.0085	0.0425	no	<0.0085	<0.0085	n/c
Benzo(g,h,i)perylene	ug/L	>30%	0.0085	0.0425	no	<0.0085	<0.0085	n/c
Benzo(c)phenanthrene	ug/L	>30%	0.05	0.25	no	<0.050	<0.050	n/c
Benzo(a)pyrene	ug/L	>30%	0.0075	0.0375	no	<0.0075	<0.0075	n/c
Benzo(e)pyrene	ug/L	>30%	0.05	0.25	no	<0.050	<0.050	n/c
Chrysene	ug/L	>30%	0.0085	0.0425	no	<0.0085	<0.0085	n/c
Dibenz(a,h)anthracene	ug/L	>30%	0.0075	0.0375	no	<0.0075	<0.0075	n/c
Fluoranthene	ug/L	>30%	0.01	0.05	no	0.022	0.019	n/c
Fluorene	ug/L	>30%	0.05	0.25	no	<0.050	<0.050	n/c
Indeno(1,2,3-cd)pyrene	ug/L	>30%	0.0085	0.0425	no	<0.0085	<0.0085	n/c
2-Methylnaphthalene	ug/L	>30%	0.1	0.5	no	<0.10	<0.10	n/c
Naphthalene	ug/L	>30%	0.1	0.5	no	0.27	0.19	n/c
Phenanthrene	ug/L	>30%	0.05	0.25	no	<0.050	<0.050	n/c
Perylene	ug/L	>30%	0.05	0.25	no	<0.050	<0.050	n/c
Pyrene	ug/L	>30%	0.02	0.1	no	0.021	<0.020	n/c
Quinoline	ug/L	>30%	0.2	1	no	<0.20	<0.20	n/c

Notes:
ug/L = Microgram per litre; mg/L = Milligrams per litre; RDL = reportable detection limit; n/c = not applicable; > = more than; < = less than; RPD = relative percent difference.
Table to be read in conjunction with accompanying report.

Table 27
Summary of Duplicate Surface Water and Groundwater Sample Quality Control Results
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample Location / Maxxam Job # / Maxxam Sample ID / Sample Collection Date	Units	Alert Limit	RDL	5X RDL	Are the results >5X RDL	MW19-6 B989822 WS8979 October 16, 2019	DUP7 WS8980 October 16, 2019	RPD
Hydrocarbons								
Benzene	ug/L	>30%	0.4000	2	yes	630	690	9
Toluene	ug/L	>30%	0.400	2	no	<0.40	<0.40	n/c
Ethylbenzene	ug/L	>30%	0.400	2	no	<0.40	<0.40	n/c
m & p-Xylene	ug/L	>30%	0.800	4	no	<0.80	<0.80	n/c
o-Xylene	ug/L	>30%	0.400	2	no	1.3	1.5	n/c
Xylenes (Total)	ug/L	>30%	0.890	4.45	no	1.3	1.5	n/c
F1 (C6-C10) - BTEX	ug/L	>30%	100	500	no	170	200	n/c
F1 (C6-C10)	ug/L	>30%	100	500	yes	800	900	12
F2 (C10-C16 Hydrocarbons)	mg/L	>30%	0.1	0.5	no	<0.10	<0.10	n/c
F3 (C16-C34 Hydrocarbons)	mg/L	>30%	0.1	0.5	no	<0.10	<0.10	n/c
F4 (C34-C50 Hydrocarbons)	mg/L	>30%	0.2	1	no	<0.20	<0.20	n/c
Polycyclic Aromatics								
B[a]P TPE Total Potency Equivalents	ug/L	>30%	0.01	0.05	no	<0.010	0.01	n/c
Acenaphthene	ug/L	>30%	0.1	0.5	no	<0.10	<0.10	n/c
Acenaphthylene	ug/L	>30%	0.1	0.5	no	<0.10	<0.10	n/c
Acridine	ug/L	>30%	0.04	0.2	no	<0.040	<0.040	n/c
Anthracene	ug/L	>30%	0.01	0.05	no	<0.010	<0.010	n/c
Benzo(a)anthracene	ug/L	>30%	0.0085	0.0425	no	<0.0085	<0.0085	n/c
Benzo(b&j)fluoranthene	ug/L	>30%	0.0085	0.0425	no	<0.0085	0.01	n/c
Benzo(k)fluoranthene	ug/L	>30%	0.0085	0.0425	no	<0.0085	<0.0085	n/c
Benzo(g,h,i)perylene	ug/L	>30%	0.0085	0.0425	no	<0.0085	<0.0085	n/c
Benzo(c)phenanthrene	ug/L	>30%	0.05	0.25	no	<0.050	<0.050	n/c
Benzo(a)pyrene	ug/L	>30%	0.0075	0.0375	no	<0.0075	<0.0075	n/c
Benzo(e)pyrene	ug/L	>30%	0.05	0.25	no	<0.050	<0.050	n/c
Chrysene	ug/L	>30%	0.0085	0.0425	no	<0.0085	<0.0085	n/c
Dibenz(a,h)anthracene	ug/L	>30%	0.0075	0.0375	no	<0.0075	<0.0075	n/c
Fluoranthene	ug/L	>30%	0.01	0.05	no	0.02	0.019	n/c
Fluorene	ug/L	>30%	0.05	0.25	no	<0.050	<0.050	n/c
Indeno(1,2,3-cd)pyrene	ug/L	>30%	0.0085	0.0425	no	<0.0085	<0.0085	n/c
2-Methylnaphthalene	ug/L	>30%	0.1	0.5	no	<0.10	<0.10	n/c
Naphthalene	ug/L	>30%	0.1	0.5	no	0.18	0.22	n/c
Phenanthrene	ug/L	>30%	0.05	0.25	no	<0.050	<0.050	n/c
Perylene	ug/L	>30%	0.05	0.25	no	<0.050	<0.050	n/c
Pyrene	ug/L	>30%	0.02	0.1	no	<0.020	<0.020	n/c
Quinoline	ug/L	>30%	0.2	1	no	<0.20	<0.20	n/c

Notes:
ug/L = Microgram per litre; mg/L = Milligrams per litre; RDL = reportable detection limit; n/c = not applicable; > = more than; < = less than; RPD = relative percent difference.
Table to be read in conjunction with accompanying report.

Summary of Duplicate Surface Water and Groundwater Sample Quality Control Results
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample Location / Maxxam Job # / Maxxam Sample ID / Sample Collection Date	Units	Alert Limit	RDL	5X RDL	Are the results >5X RDL	TH-18 B989931 WS8979 October 17, 2019	DUP9 B989931 WS8980 October 17, 2019	RPD
Hydrocarbons								
Benzene	ug/L	>30%	0.4000	2	no	<0.40	<0.40	n/c
Toluene	ug/L	>30%	0.400	2	no	<0.40	<0.40	n/c
Ethylbenzene	ug/L	>30%	0.400	2	no	<0.40	<0.40	n/c
m & p-Xylene	ug/L	>30%	0.800	4	no	<0.80	<0.80	n/c
o-Xylene	ug/L	>30%	0.400	2	no	<0.40	<0.40	n/c
Xylenes (Total)	ug/L	>30%	0.890	4.45	no	<0.89	<0.89	n/c
F1 (C6-C10) - BTEX	ug/L	>30%	100	500	no	<100	<100	n/c
F1 (C6-C10)	ug/L	>30%	100	500	no	<100	<100	n/c
F2 (C10-C16 Hydrocarbons)	mg/L	>30%	0.1	0.5	no	<0.10	<0.10	n/c
F3 (C16-C34 Hydrocarbons)	mg/L	>30%	0.1	0.5	no	<0.10	<0.10	n/c
F4 (C34-C50 Hydrocarbons)	mg/L	>30%	0.2	1	no	<0.20	<0.20	n/c
Polycyclic Aromatics								
B[a]P TPE Total Potency Equivalents	ug/L	>30%	0.01	0.05	no	<0.010	<0.010	n/c
Acenaphthene	ug/L	>30%	0.1	0.5	no	<0.10	<0.10	n/c
Acenaphthylene	ug/L	>30%	0.1	0.5	no	<0.10	<0.10	n/c
Acridine	ug/L	>30%	0.04	0.2	no	<0.040	<0.040	n/c
Anthracene	ug/L	>30%	0.01	0.05	no	<0.010	<0.010	n/c
Benzo(a)anthracene	ug/L	>30%	0.0085	0.0425	no	<0.0085	<0.0085	n/c
Benzo(b&j)fluoranthene	ug/L	>30%	0.0085	0.0425	no	<0.0085	<0.0085	n/c
Benzo(k)fluoranthene	ug/L	>30%	0.0085	0.0425	no	<0.0085	<0.0085	n/c
Benzo(g,h,i)perylene	ug/L	>30%	0.0085	0.0425	no	<0.0085	<0.0085	n/c
Benzo(c)phenanthrene	ug/L	>30%	0.05	0.25	no	<0.050	<0.050	n/c
Benzo(a)pyrene	ug/L	>30%	0.0075	0.0375	no	<0.0075	<0.0075	n/c
Benzo(e)pyrene	ug/L	>30%	0.05	0.25	no	<0.050	<0.050	n/c
Chrysene	ug/L	>30%	0.0085	0.0425	no	<0.0085	<0.0085	n/c
Dibenz(a,h)anthracene	ug/L	>30%	0.0075	0.0375	no	<0.0075	<0.0075	n/c
Fluoranthene	ug/L	>30%	0.01	0.05	no	<0.010	<0.010	n/c
Fluorene	ug/L	>30%	0.05	0.25	no	<0.050	<0.050	n/c
Indeno(1,2,3-cd)pyrene	ug/L	>30%	0.0085	0.0425	no	<0.0085	<0.0085	n/c
2-Methylnaphthalene	ug/L	>30%	0.1	0.5	no	<0.10	<0.10	n/c
Naphthalene	ug/L	>30%	0.1	0.5	no	<0.10	<0.10	n/c
Phenanthrene	ug/L	>30%	0.05	0.25	no	<0.050	<0.050	n/c
Perylene	ug/L	>30%	0.05	0.25	no	<0.050	<0.050	n/c
Pyrene	ug/L	>30%	0.02	0.1	no	<0.020	<0.020	n/c
Quinoline	ug/L	>30%	0.2	1	no	<0.20	<0.20	n/c

Notes:
ug/L = Microgram per litre; mg/L = Milligrams per litre; RDL = reportable detection limit; n/c = not applicable; > = more than; < = less than; RPD = relative percent difference.
Table to be read in conjunction with accompanying report.

Summary of Duplicate Surface Water and Groundwater Sample Quality Control Results
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample Location / Maxxam Job # / Maxxam Sample ID / Sample Collection Date	Units	Alert Limit	RDL	5X RDL	Are the results >5X RDL	MW19-6 B994223 WV4302 October 30, 2019	DUP8 B994223 WV4303 October 30, 2019	RPD
Hydrocarbons								
Benzene	ug/L	>30%	0.4000	2	yes	560	830	39
Toluene	ug/L	>30%	0.400	2	no	<0.40	<0.40	n/c
Ethylbenzene	ug/L	>30%	0.400	2	no	<0.40	<0.40	n/c
m & p-Xylene	ug/L	>30%	0.800	4	no	0.98	<0.80	n/c
o-Xylene	ug/L	>30%	0.400	2	no	<0.40	<0.40	n/c
Xylenes (Total)	ug/L	>30%	0.890	4.45	no	0.98	<0.89	n/c
F1 (C6-C10) - BTEX	ug/L	>30%	100	500	no	<100	140	n/c
F1 (C6-C10)	ug/L	>30%	100	500	yes	590	980	50
F2 (C10-C16 Hydrocarbons)	mg/L	>30%	0.1	0.5	no	<0.10	<0.10	n/c
F3 (C16-C34 Hydrocarbons)	mg/L	>30%	0.1	0.5	no	0.12	<0.10	n/c
F4 (C34-C50 Hydrocarbons)	mg/L	>30%	0.2	1	no	<0.20	<0.20	n/c
Polycyclic Aromatics								
B[a]P TPE Total Potency Equivalents	ug/L	>30%	0.01	0.05	no	<0.010	<0.010	n/c
Acenaphthene	ug/L	>30%	0.1	0.5	no	<0.10	<0.10	n/c
Acenaphthylene	ug/L	>30%	0.1	0.5	no	<0.10	<0.10	n/c
Acridine	ug/L	>30%	0.04	0.2	no	<0.040	<0.040	n/c
Anthracene	ug/L	>30%	0.01	0.05	no	<0.010	<0.010	n/c
Benzo(a)anthracene	ug/L	>30%	0.0085	0.0425	no	<0.0085	<0.0085	n/c
Benzo(b&j)fluoranthene	ug/L	>30%	0.0085	0.0425	no	<0.0085	<0.0085	n/c
Benzo(k)fluoranthene	ug/L	>30%	0.0085	0.0425	no	<0.0085	<0.0085	n/c
Benzo(g,h,i)perylene	ug/L	>30%	0.0085	0.0425	no	<0.0085	<0.0085	n/c
Benzo(c)phenanthrene	ug/L	>30%	0.05	0.25	no	<0.050	<0.050	n/c
Benzo(a)pyrene	ug/L	>30%	0.0075	0.0375	no	<0.0075	<0.0075	n/c
Benzo(e)pyrene	ug/L	>30%	0.05	0.25	no	<0.050	<0.050	n/c
Chrysene	ug/L	>30%	0.0085	0.0425	no	<0.0085	<0.0085	n/c
Dibenz(a,h)anthracene	ug/L	>30%	0.0075	0.0375	no	<0.0075	<0.0075	n/c
Fluoranthene	ug/L	>30%	0.01	0.05	no	0.02	0.018	n/c
Fluorene	ug/L	>30%	0.05	0.25	no	<0.050	<0.050	n/c
Indeno(1,2,3-cd)pyrene	ug/L	>30%	0.0085	0.0425	no	<0.0085	<0.0085	n/c
2-Methylnaphthalene	ug/L	>30%	0.1	0.5	no	<0.10	<0.10	n/c
Naphthalene	ug/L	>30%	0.1	0.5	no	0.11	0.14	n/c
Phenanthrene	ug/L	>30%	0.05	0.25	no	<0.050	<0.050	n/c
Perylene	ug/L	>30%	0.05	0.25	no	<0.050	<0.050	n/c
Pyrene	ug/L	>30%	0.02	0.1	no	0.02	<0.020	n/c
Quinoline	ug/L	>30%	0.2	1	no	<0.20	<0.20	n/c

Notes:
ug/L = Microgram per litre; mg/L = Milligrams per litre; RDL = reportable detection limit; n/c = not applicable; > = more than; < = less than; RPD = relative percent difference.
Table to be read in conjunction with accompanying report.

Summary of Duplicate Surface Water and Groundwater Sample Quality Control Results
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample Location	Units	Alert Limit	RDL	5X RDL	Are the results >5X RDL	MW19-6	DUP9	RPD
Maxxam Job #						B998311		
Maxxam Sample ID						WY0357	WY0358	
Sample Collection Date						November 13, 2019	November 13, 2019	
Hydrocarbons								
Benzene	ug/L	>30%	0.4000	2	yes	1200	1300	8
Toluene	ug/L	>30%	0.400	2	no	<0.40	<0.40	n/c
Ethylbenzene	ug/L	>30%	0.400	2	no	<0.40	<0.40	n/c
m & p-Xylene	ug/L	>30%	0.800	4	no	0.98	<0.80	n/c
o-Xylene	ug/L	>30%	0.400	2	no	<0.40	<0.40	n/c
Xylenes (Total)	ug/L	>30%	0.890	4.45	no	0.98	<0.89	n/c
F1 (C6-C10) - BTEX	ug/L	>30%	100	500	no	<100	140	n/c
F1 (C6-C10)	ug/L	>30%	100	500	yes	1300	1100	17
F2 (C10-C16 Hydrocarbons)	mg/L	>30%	0.1	0.5	no	<0.10	<0.10	n/c
F3 (C16-C34 Hydrocarbons)	mg/L	>30%	0.1	0.5	no	<0.10	<0.10	n/c
F4 (C34-C50 Hydrocarbons)	mg/L	>30%	0.2	1	no	<0.20	<0.20	n/c
Polycyclic Aromatics								
B[a]P TPE Total Potency Equivalents	ug/L	>30%	0.01	0.05	no	0.011	<0.010	n/c
Acenaphthene	ug/L	>30%	0.1	0.5	no	<0.10	<0.10	n/c
Acenaphthylene	ug/L	>30%	0.1	0.5	no	<0.10	<0.10	n/c
Acridine	ug/L	>30%	0.04	0.2	no	<0.040	<0.040	n/c
Anthracene	ug/L	>30%	0.01	0.05	no	<0.010	<0.010	n/c
Benzo(a)anthracene	ug/L	>30%	0.0085	0.0425	no	0.019 (1)	<0.0085	n/c
Benzo(b&j)fluoranthene	ug/L	>30%	0.0085	0.0425	no	<0.0085	<0.0085	n/c
Benzo(k)fluoranthene	ug/L	>30%	0.0085	0.0425	no	<0.0085	<0.0085	n/c
Benzo(g,h,i)perylene	ug/L	>30%	0.0085	0.0425	no	<0.0085	<0.0085	n/c
Benzo(c)phenanthrene	ug/L	>30%	0.05	0.25	no	<0.050	<0.050	n/c
Benzo(a)pyrene	ug/L	>30%	0.0075	0.0375	no	<0.0075	<0.0075	n/c
Benzo(e)pyrene	ug/L	>30%	0.05	0.25	no	<0.050	<0.050	n/c
Chrysene	ug/L	>30%	0.0085	0.0425	no	<0.0085	<0.0085	n/c
Dibenz(a,h)anthracene	ug/L	>30%	0.0075	0.0375	no	<0.0075	<0.0075	n/c
Fluoranthene	ug/L	>30%	0.01	0.05	no	0.027	0.017	n/c
Fluorene	ug/L	>30%	0.05	0.25	no	<0.050	<0.050	n/c
Indeno(1,2,3-cd)pyrene	ug/L	>30%	0.0085	0.0425	no	<0.0085	<0.0085	n/c
1-Methylnaphthalene	ug/L	>30%	0.1	0.5	no	<0.10	<0.10	n/c
2-Methylnaphthalene	ug/L	>30%	0.1	0.5	no	<0.10	<0.10	n/c
Naphthalene	ug/L	>30%	0.1	0.5	no	0.14	0.15	n/c
Phenanthrene	ug/L	>30%	0.05	0.25	no	<0.050	<0.050	n/c
Perylene	ug/L	>30%	0.05	0.25	no	<0.050	<0.050	n/c
Pyrene	ug/L	>30%	0.02	0.1	no	0.027	<0.020	n/c
Quinoline	ug/L	>30%	0.2	1	no	<0.20	<0.20	n/c

Notes:
ug/L = Microgram per litre; mg/L = Milligrams per litre; RDL = reportable detection limit; n/c = not applicable; > = more than; < = less than; RPD = relative percent difference.
Table to be read in conjunction with accompanying report.

Summary of Duplicate Surface Water and Groundwater Sample Quality Control Results
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample Location / Maxxam Job # / Maxxam Sample ID / Sample Collection Date	Units	Alert Limit	RDL	5X RDL	Are the results >5X RDL	MW19-6 B9A2669 XA4158 November 27, 2019	DUP10 B9A2669 XA4159 November 27, 2019	RPD
Hydrocarbons								
Benzene	ug/L	>30%	0.4000	2	yes	870	940	8
Toluene	ug/L	>30%	0.400	2	no	<0.40	<0.40	n/c
Ethylbenzene	ug/L	>30%	0.400	2	no	<0.40	<0.40	n/c
m & p-Xylene	ug/L	>30%	0.800	4	no	<0.80	<0.80	n/c
o-Xylene	ug/L	>30%	0.400	2	no	<0.40	<0.40	n/c
Xylenes (Total)	ug/L	>30%	0.890	4.45	no	<0.89	<0.89	n/c
F1 (C6-C10) - BTEX	ug/L	>30%	100	500	no	<100	130	n/c
F1 (C6-C10)	ug/L	>30%	100	500	yes	770	1100	35
F2 (C10-C16 Hydrocarbons)	mg/L	>30%	0.1	0.5	no	<0.10	<0.10	n/c
F3 (C16-C34 Hydrocarbons)	mg/L	>30%	0.1	0.5	no	<0.10	<0.10	n/c
F4 (C34-C50 Hydrocarbons)	mg/L	>30%	0.2	1	no	<0.20	<0.20	n/c
Polycyclic Aromatics								
B[a]P TPE Total Potency Equivalents	ug/L	>30%	0.01	0.05	no	<0.010	0.01	n/c
Acenaphthene	ug/L	>30%	0.1	0.5	no	<0.10	<0.10	n/c
Acenaphthylene	ug/L	>30%	0.1	0.5	no	<0.10	<0.10	n/c
Acridine	ug/L	>30%	0.04	0.2	no	<0.040	<0.040	n/c
Anthracene	ug/L	>30%	0.01	0.05	no	<0.010	<0.010	n/c
Benzo(a)anthracene	ug/L	>30%	0.0085	0.0425	no	<0.0085	<0.0085	n/c
Benzo(b&j)fluoranthene	ug/L	>30%	0.0085	0.0425	no	<0.0085	0.0085	n/c
Benzo(k)fluoranthene	ug/L	>30%	0.0085	0.0425	no	<0.0085	<0.0085	n/c
Benzo(g,h,i)perylene	ug/L	>30%	0.0085	0.0425	no	<0.0085	<0.0085	n/c
Benzo(c)phenanthrene	ug/L	>30%	0.05	0.25	no	<0.050	<0.050	n/c
Benzo(a)pyrene	ug/L	>30%	0.0075	0.0375	no	<0.0075	<0.0075	n/c
Benzo(e)pyrene	ug/L	>30%	0.05	0.25	no	<0.050	<0.050	n/c
Chrysene	ug/L	>30%	0.0085	0.0425	no	<0.0085	<0.0085	n/c
Dibenz(a,h)anthracene	ug/L	>30%	0.0075	0.0375	no	<0.0075	<0.0075	n/c
Fluoranthene	ug/L	>30%	0.01	0.05	no	0.018	0.023	n/c
Fluorene	ug/L	>30%	0.05	0.25	no	<0.050	<0.050	n/c
Indeno(1,2,3-cd)pyrene	ug/L	>30%	0.0085	0.0425	no	<0.0085	<0.0085	n/c
1-Methylnaphthalene	ug/L	>30%	0.1	0.5	no	<0.10	<0.10	n/c
2-Methylnaphthalene	ug/L	>30%	0.1	0.5	no	<0.10	<0.10	n/c
Naphthalene	ug/L	>30%	0.1	0.5	no	<0.10	0.12	n/c
Phenanthrene	ug/L	>30%	0.05	0.25	no	<0.050	<0.050	n/c
Perylene	ug/L	>30%	0.05	0.25	no	<0.050	<0.050	n/c
Pyrene	ug/L	>30%	0.02	0.1	no	<0.020	<0.020	n/c
Quinoline	ug/L	>30%	0.2	1	no	<0.20	<0.20	n/c

Notes:
ug/L = Microgram per litre; mg/L = Milligrams per litre; RDL = reportable detection limit; n/c = not applicable; > = more than; < = less than; RPD = relative percent difference.
Table to be read in conjunction with accompanying report.

Summary of Duplicate Surface Water and Groundwater Sample Quality Control Results
Mile Point 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

Sample Location / Maxxam Job # / Maxxam Sample ID / Sample Collection Date	Units	Alert Limit	RDL	5X RDL	Are the results >5X RDL	MW19-6 B9A6913 XC6291 December 11, 2019	DUP11 B9A6913 XC6292 December 11, 2019	RPD
Hydrocarbons								
Benzene	ug/L	>30%	0.4000	2	yes	1100	1200	9
Toluene	ug/L	>30%	0.400	2	no	<0.40	<0.40	n/c
Ethylbenzene	ug/L	>30%	0.400	2	no	<0.40	<0.40	n/c
m & p-Xylene	ug/L	>30%	0.800	4	no	<0.80	<0.80	n/c
o-Xylene	ug/L	>30%	0.400	2	no	<0.40	<0.40	n/c
Xylenes (Total)	ug/L	>30%	0.890	4.45	no	<0.89	<0.89	n/c
F1 (C6-C10) - BTEX	ug/L	>30%	100	500	no	<100	<100	n/c
F1 (C6-C10)	ug/L	>30%	100	500	yes	1200	1100	9
F2 (C10-C16 Hydrocarbons)	mg/L	>30%	0.1	0.5	no	<0.10	<0.10	n/c
F3 (C16-C34 Hydrocarbons)	mg/L	>30%	0.1	0.5	no	<0.10	<0.10	n/c
F4 (C34-C50 Hydrocarbons)	mg/L	>30%	0.2	1	no	<0.20	<0.20	n/c
Polycyclic Aromatics								
B[a]P TPE Total Potency Equivalents	ug/L	>30%	0.01	0.05	no	<0.010	0.01	n/c
Acenaphthene	ug/L	>30%	0.1	0.5	no	<0.10	<0.10	n/c
Acenaphthylene	ug/L	>30%	0.1	0.5	no	<0.10	<0.10	n/c
Acridine	ug/L	>30%	0.04	0.2	no	<0.040	<0.040	n/c
Anthracene	ug/L	>30%	0.01	0.05	no	<0.010	<0.010	n/c
Benzo(a)anthracene	ug/L	>30%	0.0085	0.0425	no	<0.0085	<0.0085	n/c
Benzo(b&j)fluoranthene	ug/L	>30%	0.0085	0.0425	no	<0.0085	<0.0085	n/c
Benzo(k)fluoranthene	ug/L	>30%	0.0085	0.0425	no	<0.0085	0.0093	n/c
Benzo(g,h,i)perylene	ug/L	>30%	0.0085	0.0425	no	<0.0085	<0.0085	n/c
Benzo(c)phenanthrene	ug/L	>30%	0.05	0.25	no	<0.050	<0.050	n/c
Benzo(a)pyrene	ug/L	>30%	0.0075	0.0375	no	<0.0075	<0.0075	n/c
Benzo(e)pyrene	ug/L	>30%	0.05	0.25	no	<0.050	<0.050	n/c
Chrysene	ug/L	>30%	0.0085	0.0425	no	<0.0085	<0.0085	n/c
Dibenz(a,h)anthracene	ug/L	>30%	0.0075	0.0375	no	<0.0075	<0.0075	n/c
Fluoranthene	ug/L	>30%	0.01	0.05	no	0.017	0.019	n/c
Fluorene	ug/L	>30%	0.05	0.25	no	<0.050	<0.050	n/c
Indeno(1,2,3-cd)pyrene	ug/L	>30%	0.0085	0.0425	no	<0.0085	<0.0085	n/c
2-Methylnaphthalene	ug/L	>30%	0.1	0.5	no	<0.10	<0.10	n/c
Naphthalene	ug/L	>30%	0.1	0.5	no	0.11	0.11	n/c
Phenanthrene	ug/L	>30%	0.05	0.25	no	<0.050	<0.050	n/c
Perylene	ug/L	>30%	0.05	0.25	no	<0.050	<0.050	n/c
Pyrene	ug/L	>30%	0.02	0.1	no	<0.020	0.021	n/c
Quinoline	ug/L	>30%	0.2	1	no	<0.20	<0.20	n/c

Notes:
ug/L = Microgram per litre; mg/L = Milligrams per litre; RDL = reportable detection limit; n/c = not applicable; > = more than; < = less than; RPD = relative percent difference.
Table to be read in conjunction with accompanying report.

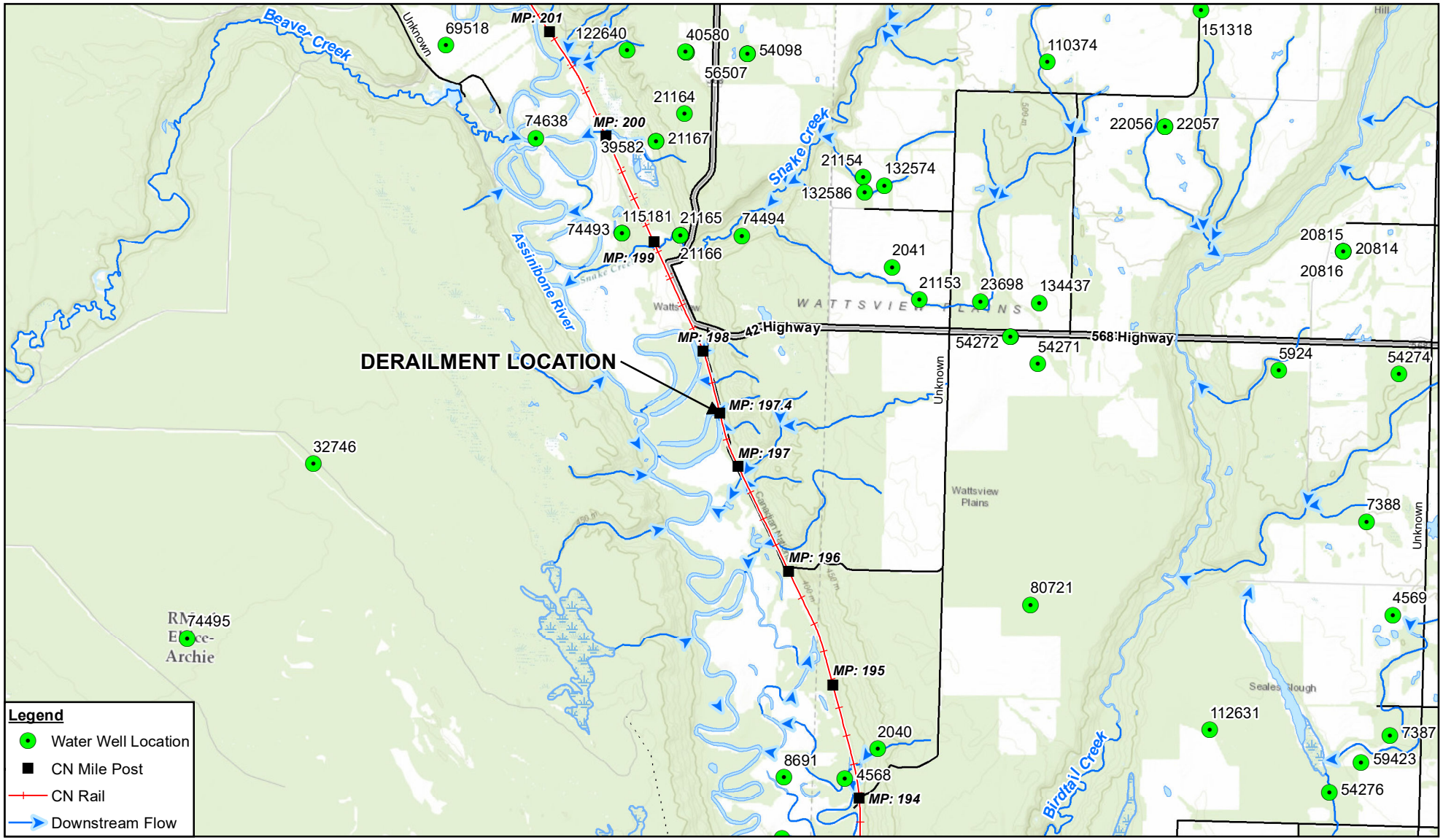
FIGURES

Appendix A

Aerial Imagery

Appendix B

Water Well Records



Source: CanVec Edition 1.1 © Department of Natural Resources Canada, all rights reserved. National Road Network 2.0 GeoBase. ESRI Base Data, 2008.
Imagery: © Google (2019); UARCD.

0 500 1,000 1,500
Meters

Coordinate System:
NAD 1983 UTM Zone 14N

CANADIAN NATIONAL RAILWAY DERAILMENT
RIVERS SUBDIVISION - MILE POINT 199
ELLICE, MANITOBA

11186702-00
Apr 6, 2020

WATER WELLS

APPENDIX B

GIS File: Q:\GIS\PROJECTS\11186000s\11186702\Layouts\ESA002\11186702_ESA002_GIS025.mxd

Appendix C

Borehole Logs

HDR Inc.
639 5th Avenue SW,
Suite 1510
Calgary, Alberta, Canada,
T2P 0M9

WELL NUMBER BH19-1

CLIENT Canadian National Railway
PROJECT NAME CN MP 197.4 Rivers
PROJECT NUMBER 10161797
PROJECT LOCATION CN MP 197.4 Rivers, Southeast of St. Lazare, MB
DATE STARTED 05/01/19 **COMPLETED** 05/01/19
GROUND ELEVATION 392.51 m **HOLE SIZE** 0.102 m
DRILLING CONTRACTOR Paddock Drilling
GROUND WATER LEVEL:
DRILLING METHOD Hollow Stem Auger
AFTER DRILLING ---
LOGGED BY J. Zemek **CHECKED BY** L. Waldner
NOTES 9, Sunny
DRILLING ANGLE (degrees from horizontal): -45

DEPTH (m)	SAMPLE TYPE/ NUMBER	RECOVERY %	HEADSPACE (ppm)	ANALYTICAL TESTS	GRAPHIC LOG	STRATIGRAPHIC MATERIAL DESCRIPTION	MONITORING WELL DIAGRAM
	SS 1	40	0			(Cl) Silty Clay, some gravel and sand, light brown, cohesive, firm, material estimated to be close to the plastic limit, slight hydrocarbon odour	
2	SS 2	90	0				
						2.74 / 390.57	
	SS 3	90	155	BTEX F1-F4, Grain Size		(SP) Sand, trace gravel, light brown, non-cohesive, very loose, moist, hydrocarbon odour, - Black in colour at 3.2 mbgs	
4	SS 5	90	11000	Grain Size		- Trace wood at 3.7 mbgs	
						3.96 / 389.71	
	SS 4	90	25	BTEX F1-F4		(Cl) Silty Clay, trace gravel and sand, trace coal clasts, light brown, cohesive, firm, material estimated to be close to the plastic limit	BENTONITE
	SS 6	90	0				
						5.18 / 388.85	
	SS 7	90	0			(CH) Clay, trace gravel and sand, trace woody debris, grey, cohesive, stiff, material estimated to be close to the plastic limit	
6	SS 8	90	0			- Trace oxidation staining and white mottling at 6.4 mbgs	
	SS 9	90	0				
8	SS 10	90	0				
	SS 11	90	0			- Trace rootlets at 8.5 mbgs	
						9.14 / 386.04	

Bottom of hole at 9.14 m.

Northing: 5581273
Easting: 342079

ppm - parts per million
mbgs - metres below ground surface

BTEX - Benzene, Toluene, Ethylbenzene, Xylene
PAH - Polycyclic Aromatic Hydrocarbons

DO - Drive Open
SS - Split Spoon
NR - No Recovery

GENERAL BH/TP/WELL MODIFIED SM DEC2019BHLOGS.GPJ GINT STD CANADA.GDT 06/24/20

HDR Inc.
639 5th Avenue SW,
Suite 1510
Calgary, Alberta, Canada,
T2P 0M9

WELL NUMBER BH19-2

CLIENT Canadian National Railway
PROJECT NAME CN MP 197.4 Rivers
PROJECT NUMBER 10161797
PROJECT LOCATION CN MP 197.4 Rivers, Southeast of St. Lazare, MB
DATE STARTED 05/01/19 **COMPLETED** 05/01/19
GROUND ELEVATION 392.83 m **HOLE SIZE** 0.102 m
DRILLING CONTRACTOR Paddock Drilling
GROUND WATER LEVEL:
DRILLING METHOD Hollow Stem Auger
AFTER DRILLING ---
LOGGED BY J. Zemek **CHECKED BY** L. Waldner
NOTES 13, Sunny
DRILLING ANGLE (degrees from horizontal): -45

DEPTH (m)	SAMPLE TYPE/ NUMBER	RECOVERY %	HEADSPACE (ppm)	ANALYTICAL TESTS	GRAPHIC LOG	STRATIGRAPHIC MATERIAL DESCRIPTION	MONITORING WELL DIAGRAM
	SS 1	40	0			(CI) Silty Clay, some gravel, trace sand, light brown with white mottling, cohesive, firm, material estimated to be close to the plastic limit	
2	SS 2	90	0			- Trace oxidation staining at 1.5 mbgs	
	SS 3	90	0				
	SS 4	90	0				
4	SS 5	90	0				BENTONITE
	SS 6	90	0				
	SS 7	90	0				
6	SS 8	90	0				
	SS 9	90	0			7.62 387.44	
8	SS 10	90	0			(CH) Clay, trace gravel and oxidation staining, grey with light brown mottling, cohesive, stiff, material estimated to be close to the plastic limit	
	SS 11	90	0	BTEX F1-F4		9.14 386.36	

Bottom of hole at 9.14 m.

Northing: 5581291
Easting: 342073

ppm - parts per million
mbgs - metres below ground surface

BTEX - Benzene, Toluene, Ethylbenzene, Xylene
PAH - Polycyclic Aromatic Hydrocarbons

DO - Drive Open
SS - Split Spoon
NR - No Recovery

GENERAL BH/TP/WELL MODIFIED SM DEC2019BHLOGS.GPJ GINT STD CANADA.GDT 06/24/20

HDR Inc.
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WELL NUMBER BH19-3

CLIENT Canadian National Railway
PROJECT NAME CN MP 197.4 Rivers
PROJECT NUMBER 10161797
PROJECT LOCATION CN MP 197.4 Rivers, Southeast of St. Lazare, MB
DATE STARTED 05/02/19 **COMPLETED** 05/02/19
GROUND ELEVATION 392.19 m **HOLE SIZE** 0.102 m
DRILLING CONTRACTOR Paddock Drilling
GROUND WATER LEVEL:
DRILLING METHOD Hollow Stem Auger
AFTER DRILLING ---
LOGGED BY J. Zemek **CHECKED BY** L. Waldner
NOTES 16, Sunny
DRILLING ANGLE (degrees from horizontal): -45

DEPTH (m)	SAMPLE TYPE/ NUMBER	RECOVERY %	HEADSPACE (ppm)	ANALYTICAL TESTS	GRAPHIC LOG	STRATIGRAPHIC MATERIAL DESCRIPTION	MONITORING WELL DIAGRAM
						(Cl) Silty Clay, some gravel and sand, light brown, cohesive, firm, material estimated to be close to the plastic limit	
						0.91 / 391.54	
	SS 1	20	0			(SP) Sand, trace gravel, light brown, non-cohesive, loose, moist	
2	SS 2	20	0				
						3.05 / 390.03	
	SS 3	25	0			Coal, trace sand and gravel	
4						4.57 / 388.96	← BENTONITE
	SS 4	100	0			(Cl) Silty Clay, trace gravel, trace coal, trace oxidation staining, light brown, cohesive, stiff, material estimated to be close to the plastic limit	
	SS 5	100	0				
6							
	SS 5.5	20	0	BTEX F1-F4			
	SS 6	20	0	PAH			
	POLE					- Creosote staining and odour at 6.7 mbgs. - Timber encountered at 6.7 mbgs. Soil mixed with timber on solid stem auger until 7.6 mbgs.	
8							
	SS 7	90	0	BTEX F1-F4, PAH			
	SS 8	90	0			- Black organics (rootlets) at 8.2 mbgs	
						8.84 / 385.94	

Bottom of hole at 8.84 m.

Northing: 5581254
Easting: 342079

ppm - parts per million
mbgs - metres below ground surface

BTEX - Benzene, Toluene, Ethylbenzene, Xylene
PAH - Polycyclic Aromatic Hydrocarbons

DO - Drive Open
SS - Split Spoon
NR - No Recovery

GENERAL BH/TP/WELL MODIFIED SM DEC2019BHLOGS.GPJ GINT STD CANADA.GDT 06/24/20

HDR Inc.
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WELL NUMBER BH19-4

CLIENT Canadian National Railway
PROJECT NAME CN MP 197.4 Rivers
PROJECT NUMBER 10161797
PROJECT LOCATION CN MP 197.4 Rivers, Southeast of St. Lazare, MB
DATE STARTED 05/02/19 **COMPLETED** 05/02/19
GROUND ELEVATION 392.2 m **HOLE SIZE** 0.102 m
DRILLING CONTRACTOR Paddock Drilling
GROUND WATER LEVEL:
DRILLING METHOD Hollow Stem Auger
AFTER DRILLING ---
LOGGED BY J. Zemek **CHECKED BY** L.Waldner
NOTES 16, Sunny
DRILLING ANGLE (degrees from horizontal): -45

DEPTH (m)	SAMPLE TYPE/ NUMBER	RECOVERY %	HEADSPACE (ppm)	ANALYTICAL TESTS	GRAPHIC LOG	STRATIGRAPHIC MATERIAL DESCRIPTION	MONITORING WELL DIAGRAM
1	SS 1	40	0			(Cl) Silty Clay, some sand and gravel, light brown, cohesive, firm, material estimated to be close to the plastic limit	
						1.37 / 391.23	
2	SS 2	75	0			(SP) Sand, trace gravel and cobbles, light brown, non-cohesive loose, moist	
3	SS 3	75	0			- Cobble at 2.7 mbgs	BENTONITE
4	SS 4	20	0	BTEX F1-F4		4.57 / 388.97	

Bottom of hole at 4.57 m.

Northing: 5581237
Easting: 342084

ppm - parts per million
mbgs - metres below ground surface

BTEX - Benzene, Toluene, Ethylbenzene, Xylene
PAH - Polycyclic Aromatic Hydrocarbons

DO - Drive Open
SS - Split Spoon
NR - No Recovery

GENERAL BH/TP/WELL MODIFIED SM DEC2019BHLOGS.GPJ GINT STD CANADA.GDT 06/24/20

HDR Inc.
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WELL NUMBER BH19-5

CLIENT Canadian National Railway
PROJECT NAME CN MP 197.4 Rivers
PROJECT NUMBER 10161797
PROJECT LOCATION CN MP 197.4 Rivers, Southeast of St. Lazare, MB
DATE STARTED 05/03/19 **COMPLETED** 05/03/19
GROUND ELEVATION 389.84 m **HOLE SIZE** 0.102 m
DRILLING CONTRACTOR Paddock Drilling
GROUND WATER LEVEL:
DRILLING METHOD Hollow Stem Auger
AFTER DRILLING ---
LOGGED BY J. Zemek **CHECKED BY** L. Waldner
NOTES 13, Sunny
DRILLING ANGLE (degrees from horizontal): -90

DEPTH (m)	SAMPLE TYPE/ NUMBER	RECOVERY %	HEADSPACE (ppm)	GRAPHIC LOG	STRATIGRAPHIC MATERIAL DESCRIPTION	MONITORING WELL DIAGRAM
0.5	SS 1	90	0		(Cl) Silty Clay, some sand and gravel, some oxidation staining, cohesive, firm, material estimated to be close to the plastic limit	
1.0	SS 2	90	0			
1.5					- Cobble at 1.5 mbgs	BENTONITE
					1.83 388.01	
2.0	SS 3	60	0		(SP) Sand, some gravel, light brown, non-cohesive, loose, moist.	
2.5						
3.0					3.05 386.79	

Bottom of hole at 3.05 m.

Northing: 5581202
Easting: 342094

ppm - parts per million
mbgs - metres below ground surface

BTEX - Benzene, Toluene, Ethylbenzene, Xylene
PAH - Polycyclic Aromatic Hydrocarbons

DO - Drive Open
SS - Split Spoon
NR - No Recovery

GENERAL BH/TP/WELL MODIFIED SM DEC2019BHLOGS.GPJ GINT STD CANADA.GDT 06/24/20

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WELL NUMBER BH19-6

CLIENT Canadian National Railway
PROJECT NAME CN MP 197.4 Rivers
PROJECT NUMBER 10161797
PROJECT LOCATION CN MP 197.4 Rivers, Southeast of St. Lazare, MB
DATE STARTED 05/03/19 **COMPLETED** 05/03/19
GROUND ELEVATION 390.34 m **HOLE SIZE** 0.102 m
DRILLING CONTRACTOR Paddock Drilling
GROUND WATER LEVEL:
DRILLING METHOD Hollow Stem Auger
AFTER DRILLING ---
LOGGED BY J. Zemek **CHECKED BY** L. Waldner
NOTES 13, Sunny
DRILLING ANGLE (degrees from horizontal): -90

DEPTH (m)	SAMPLE TYPE/ NUMBER	RECOVERY %	HEADSPACE (ppm)	ANALYTICAL TESTS	GRAPHIC LOG	STRATIGRAPHIC MATERIAL DESCRIPTION	MONITORING WELL DIAGRAM
0.5	SS 1	90	0			(Cl) Silty Clay, trace gravel and sand, light brown, cohesive, stiff, material estimated to be close to the plastic limit	
1.0	SS 2	90	0			- Frozen at 1.2 mbgs	
1.5							BENTONITE
2.0	SS 3	90	0				
2.5	SS 4	90	0	BTEX F1-F4		2.44 387.90 (SP) Sand, trace gravel, light brown, non-cohesive, loose, moist	
3.0						3.05 387.29	

Bottom of hole at 3.05 m.

Northing: 5580914
Easting: 342159

ppm - parts per million
mbgs - metres below ground surface

BTEX - Benzene, Toluene, Ethylbenzene, Xylene
PAH - Polycyclic Aromatic Hydrocarbons

DO - Drive Open
SS - Split Spoon
NR - No Recovery

GENERAL BH/TP/WELL MODIFIED SM DEC2019BHLOGS.GPJ GINT STD CANADA.GDT 06/24/20

HDR Inc.
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WELL NUMBER BH19-7

CLIENT Canadian National Railway
PROJECT NAME CN MP 197.4 Rivers
PROJECT NUMBER 10161797
PROJECT LOCATION CN MP 197.4 Rivers, Southeast of St. Lazare, MB
DATE STARTED 05/04/19 **COMPLETED** 05/04/19
GROUND ELEVATION 390.5 m **HOLE SIZE** 0.102 m
DRILLING CONTRACTOR Paddock Drilling
GROUND WATER LEVEL:
DRILLING METHOD Hollow Stem Auger
AFTER DRILLING ---
LOGGED BY J. Zemek **CHECKED BY** L. Waldner
NOTES 5, Windy
DRILLING ANGLE (degrees from horizontal): -90

DEPTH (m)	SAMPLE TYPE/ NUMBER	RECOVERY %	HEADSPACE (ppm)	ANALYTICAL TESTS	GRAPHIC LOG	STRATIGRAPHIC MATERIAL DESCRIPTION	MONITORING WELL DIAGRAM
						(Cl) Silty Clay, trace sand and gravel, trace oxidation staining increasing with depth, light brown, cohesive, stiff, material estimated to be close to the plastic limit	
						- 10 cm sand seam at 0.3 mbgs	
0.5	SS N/A	100					
							BENTONITE
1.0			0				
	SS 1	100		BTEX F1-F4			
	SS 2	100	0	BTEX F1-F4			
						1.37 389.13	

Bottom of hole at 1.37 m.

Northing: 5581190
Easting: 342089

ppm - parts per million
mbgs - metres below ground surface

BTEX - Benzene, Toluene, Ethylbenzene, Xylene
PAH - Polycyclic Aromatic Hydrocarbons

DO - Drive Open
SS - Split Spoon
NR - No Recovery

GENERAL BH/TP/WELL MODIFIED SM DEC2019BHLOGS.GPJ GINT STD CANADA.GDT 06/24/20

HDR Inc.
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WELL NUMBER BH19-8

CLIENT Canadian National Railway
PROJECT NAME CN MP 197.4 Rivers
PROJECT NUMBER 10161797
PROJECT LOCATION CN MP 197.4 Rivers, Southeast of St. Lazare, MB
DATE STARTED 05/04/19 **COMPLETED** 05/04/19
GROUND ELEVATION 390.87 m **HOLE SIZE** 0.102 m
DRILLING CONTRACTOR Paddock Drilling
GROUND WATER LEVEL:
DRILLING METHOD Hollow Stem Auger
AFTER DRILLING ---
LOGGED BY J. Zemek **CHECKED BY** L. Waldner
NOTES 5, Windy
DRILLING ANGLE (degrees from horizontal): -45

DEPTH (m)	SAMPLE TYPE/ NUMBER	RECOVERY %	HEADSPACE (ppm)	ANALYTICAL TESTS	GRAPHIC LOG	STRATIGRAPHIC MATERIAL DESCRIPTION		MONITORING WELL DIAGRAM
			0			0.31 (CI) Silty Clay, some gravel, oxidation staining, grey	390.65	
1	SS 1	20				(SP) Sand, some gravel, light brown, non-cohesive, loose, moist		
			0					
2								
	SS 2	15						
3								
			0					
4	SS 3	50		BTEX F1-F4		3.96	388.07	BENTONITE
						(CH) Clay, some silt, trace sand, inclusions of coal and wood, grey, cohesive, stiff		
5								
	SS	10						
6						6.10	386.56	
	SS 4	100	0	BTEX F1-F4		6.40 (SP) Sand lens, uniformly graded, light brown, wet	386.34	
						(CH) Clay, some silt, grey, cohesive, stiff, moist		
7						7.62	385.48	

Bottom of hole at 7.62 m.

Northing: 5581213
Easting: 342090

ppm - parts per million
mbgs - metres below ground surface

BTEX - Benzene, Toluene, Ethylbenzene, Xylene
PAH - Polycyclic Aromatic Hydrocarbons

DO - Drive Open
SS - Split Spoon
NR - No Recovery

GENERAL BH/TP/WELL MODIFIED SM DEC2019BHLOGS.GPJ GINT STD CANADA.GDT 06/24/20

HDR Inc.
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WELL NUMBER BH19-9

CLIENT Canadian National Railway
PROJECT NAME CN MP 197.4 Rivers
PROJECT NUMBER 10161797
PROJECT LOCATION CN MP 197.4 Rivers, Southeast of St. Lazare, MB
DATE STARTED 05/04/19 **COMPLETED** 05/04/19
GROUND ELEVATION 391.74 m **HOLE SIZE** 0.102 m
DRILLING CONTRACTOR Paddock Drilling
GROUND WATER LEVEL:
DRILLING METHOD Hollow Stem Auger
AFTER DRILLING ---
LOGGED BY J. Zemek **CHECKED BY** L. Waldner
NOTES 8, Windy
DRILLING ANGLE (degrees from horizontal): -45

DEPTH (m)	SAMPLE TYPE/ NUMBER	RECOVERY %	HEADSPACE (ppm)	ANALYTICAL TESTS	GRAPHIC LOG	STRATIGRAPHIC MATERIAL DESCRIPTION	MONITORING WELL DIAGRAM
0.5	SS	0				(Cl) Silty Clay, trace sand and gravel, grey brown, moist, cohesive	
						0.61 — 391.31	
1.0			0			(SP) Sand, trace fine gravel, light brown, moist, non-cohesive	
1.5	SS 1	20					
2.0							BENTONITE
2.5			0				
3.0	SS 2	40		BTEX F1-F4			
3.5						3.66 — 389.15	

Bottom of hole at 3.66 m.

Northing: 5581228
Easting: 342086

ppm - parts per million
mbgs - metres below ground surface

BTEX - Benzene, Toluene, Ethylbenzene, Xylene
PAH - Polycyclic Aromatic Hydrocarbons

DO - Drive Open
SS - Split Spoon
NR - No Recovery

GENERAL BH/TP/WELL MODIFIED SM DEC2019BHLOGS.GPJ GINT STD CANADA.GDT 06/24/20

HDR Inc.
639 5th Avenue SW,
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WELL NUMBER BH19-10

CLIENT Canadian National Railway
PROJECT NAME CN MP 197.4 Rivers
PROJECT NUMBER 10161797
PROJECT LOCATION CN MP 197.4 Rivers, Southeast of St. Lazare, MB
DATE STARTED 05/04/19 **COMPLETED** 05/04/19
GROUND ELEVATION 392.15 m **HOLE SIZE** 0.102 m
DRILLING CONTRACTOR Paddock Drilling
GROUND WATER LEVEL:
DRILLING METHOD Hollow Stem Auger
AFTER DRILLING ---
LOGGED BY J. Zemek **CHECKED BY** L. Waldner
NOTES 8, Windy
DRILLING ANGLE (degrees from horizontal): -45

DEPTH (m)	SAMPLE TYPE/ NUMBER	RECOVERY %	HEADSPACE (ppm)	ANALYTICAL TESTS	GRAPHIC LOG	STRATIGRAPHIC MATERIAL DESCRIPTION	MONITORING WELL DIAGRAM
			0			(Cl) Silty Clay, trace sand and gravel, grey-brown, moist, firm, cohesive	
						0.31 391.93	
0.5	SS 1	15				(SP) Sand (medium to coarse grained), trace fine gravel, light brown, moist non cohesive,	
1.0							
1.5							
2.0							BENTONITE
2.5	SS 2	20	0				
3.0			0				
3.5	SS 3	20		BTEX F1-F4			
						3.96 389.35	

Bottom of hole at 3.96 m.

Northing: 5581229
Easting: 342086

ppm - parts per million
mbgs - metres below ground surface

BTEX - Benzene, Toluene, Ethylbenzene, Xylene
PAH - Polycyclic Aromatic Hydrocarbons

DO - Drive Open
SS - Split Spoon
NR - No Recovery

GENERAL BH/TP/WELL MODIFIED SM DEC2019BHLOGS.GPJ GINT STD CANADA.GDT 06/24/20

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WELL NUMBER BH19-11

CLIENT Canadian National Railway
PROJECT NAME CN MP 197.4 Rivers
PROJECT NUMBER 10161797
PROJECT LOCATION CN MP 197.4 Rivers, Southeast of St. Lazare, MB
DATE STARTED 05/05/19 **COMPLETED** 05/05/19
GROUND ELEVATION 393.03 m **HOLE SIZE** 0.102 m
DRILLING CONTRACTOR Paddock Drilling
GROUND WATER LEVEL:
DRILLING METHOD Hollow Stem Auger
AFTER DRILLING ---
LOGGED BY J. Zemek **CHECKED BY** L. Waldner
NOTES 0, Sunny
DRILLING ANGLE (degrees from horizontal): -90

DEPTH (m)	SAMPLE TYPE/ NUMBER	RECOVERY %	HEADSPACE (ppm)	ANALYTICAL TESTS	GRAPHIC LOG	STRATIGRAPHIC MATERIAL DESCRIPTION	MONITORING WELL DIAGRAM
						(Cl) Silty Clay, trace sand and gravel, light brown, cohesive, firm, material estimated to be close to the plastic limit	
	NR	6				0.61 392.42	
1						(SP) Sand, some gravel, light brown, non-cohesive, loose, moist	
	SS 1	5	0				
2	NR	6					
						- Increased gravel content at 2.4 mbgs	
3	SS 2	5	0				
							BENTONITE
4							
	SS 3	10	0				
5	SS 4	50	0			5.18 387.85	
	SS 5	50	0	BTEX F1-F4		(CH) Clay, trace rootlets, grey, cohesive, stiff, material estimated to be close to the plastic limit	
6						- Trace timber at 6.1 mbgs, very stiff - Refusal at 6.2 mbgs due to contact with a buried trestle	
						6.25 386.78	

Bottom of hole at 6.25 m.

Northing: 5581211
Easting: 342096

ppm - parts per million
mbgs - metres below ground surface

BTEX - Benzene, Toluene, Ethylbenzene, Xylene
PAH - Polycyclic Aromatic Hydrocarbons

DO - Drive Open
SS - Split Spoon
NR - No Recovery

GENERAL BH/TP/WELL MODIFIED SM DEC2019BHLOGS.GPJ GINT STD CANADA.GDT 06/24/20

HDR Inc.
639 5th Avenue SW,
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Calgary, Alberta, Canada,
T2P 0M9

WELL NUMBER BH19-12

CLIENT Canadian National Railway
PROJECT NAME CN MP 197.4 Rivers
PROJECT NUMBER 10161797
PROJECT LOCATION CN MP 197.4 Rivers, Southeast of St. Lazare, MB
DATE STARTED 05/05/19 **COMPLETED** 05/05/19
GROUND ELEVATION 393.03 m **HOLE SIZE** 0.102 m
DRILLING CONTRACTOR Paddock Drilling
GROUND WATER LEVEL:
DRILLING METHOD Hollow Stem Auger
AFTER DRILLING ---
LOGGED BY J. Zemek **CHECKED BY** L. Waldner
NOTES 8, Sunny
DRILLING ANGLE (degrees from horizontal): -45

DEPTH (m)	SAMPLE TYPE/ NUMBER	RECOVERY %	HEADSPACE (ppm)	ANALYTICAL TESTS	GRAPHIC LOG	STRATIGRAPHIC MATERIAL DESCRIPTION	MONITORING WELL DIAGRAM
	SS 1	90	0			(Cl) Silty Clay, trace sand, some gravel, trace oxidation staining, light brown with white mottling, cohesive, firm, material estimated to be close to the plastic limit	
	SS 2	90	0				
2	SS 3	100	0				
	SS 4	100	0			- Increased oxidation staining at 2.4 mbgs - Very stiff at 2.7 mbgs	
	SS 5	100	0			3.66 390.44	
4	SS 6	100	0			(CH) Clay, trace oxidation staining, grey, cohesive, stiff to very stiff, material estimated to be close to the plastic limit	BENTONITE
	SS 7	100	0				
6	SS 8	100	0				
	SS 9	100	0				
	SS 10	100	0				
8	SS 11	100	0				
	SS 12	100	0	BTEX F1-F4		9.14 386.56	

Bottom of hole at 9.14 m.

Northing: 5581326
Easting: 342059

ppm - parts per million
mbgs - metres below ground surface

BTEX - Benzene, Toluene, Ethylbenzene, Xylene
PAH - Polycyclic Aromatic Hydrocarbons

DO - Drive Open
SS - Split Spoon
NR - No Recovery

GENERAL BH/TP/WELL MODIFIED SM DEC2019BHLOGS.GPJ GINT STD CANADA.GDT 06/24/20

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WELL NUMBER BH19-13

CLIENT Canadian National Railway
PROJECT NAME CN MP 197.4 Rivers
PROJECT NUMBER 10161797
PROJECT LOCATION CN MP 197.4 Rivers, Southeast of St. Lazare, MB
DATE STARTED 05/06/19 **COMPLETED** 05/06/19
GROUND ELEVATION 390.74 m **HOLE SIZE** 0.102 m
DRILLING CONTRACTOR Paddock Drilling
GROUND WATER LEVEL:
DRILLING METHOD Hollow Stem Auger
AFTER DRILLING ---
LOGGED BY J. Zemek **CHECKED BY** L. Waldner
NOTES 9, Sunny
DRILLING ANGLE (degrees from horizontal): -90

DEPTH (m)	SAMPLE TYPE/ NUMBER	RECOVERY %	HEADSPACE (ppm)	ANALYTICAL TESTS	GRAPHIC LOG	STRATIGRAPHIC MATERIAL DESCRIPTION	MONITORING WELL DIAGRAM
	NR	0				(CI) Silty Clay, some sand and gravel, some rootlets, light brown, cohesive, firm, material estimated to be close to the plastic limit	
						0.61 / 390.13	
						(SP) Sand, trace gravel, light brown, non-cohesive, loose, moist	
1	SS 1	20	0				
2	SS 2	10	0				
						- Cobble at 2.1 mbgs	BENTONITE
3	SS 3	50	0				
						3.05 / 387.69	
	SS 5	100	0	BTEX F1-F4		(CH) Clay (till), grey, cohesive, stiff, material estimated to be close to the plastic limit	
4						4.57 / 386.17	

Bottom of hole at 4.57 m.

Northing: 5581208
Easting: 342129

ppm - parts per million
mbgs - metres below ground surface

BTEX - Benzene, Toluene, Ethylbenzene, Xylene
PAH - Polycyclic Aromatic Hydrocarbons

DO - Drive Open
SS - Split Spoon
NR - No Recovery

GENERAL BH/TP/WELL MODIFIED SM DEC2019BHLOGS.GPJ GINT STD CANADA.GDT 06/24/20

HDR Inc.
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T2P 0M9

WELL NUMBER BH19-14

CLIENT Canadian National Railway
PROJECT NAME CN MP 197.4 Rivers
PROJECT NUMBER 10161797
PROJECT LOCATION CN MP 197.4 Rivers, Southeast of St. Lazare, MB
DATE STARTED 05/07/19 **COMPLETED** 05/07/19
GROUND ELEVATION 393.83 m **HOLE SIZE** 0.102 m
DRILLING CONTRACTOR Paddock Drilling
GROUND WATER LEVEL:
DRILLING METHOD Hollow Stem Auger
AFTER DRILLING ---
LOGGED BY J. Zemek **CHECKED BY** L. Waldner
NOTES 2, Sunny
DRILLING ANGLE (degrees from horizontal): -90

DEPTH (m)	SAMPLE TYPE/ NUMBER	RECOVERY %	HEADSPACE (ppm)	ANALYTICAL TESTS	GRAPHIC LOG	STRATIGRAPHIC MATERIAL DESCRIPTION	MONITORING WELL DIAGRAM
0.5	SS 1	25	0			(SP) Sand and Gravel, trace cobbles, light brown, non-cohesive, loose, dry 0.46 393.37	
1.0	SS 2	25	0			(Cl) Silty Clay, some gravel, trace sand, trace oxidation staining, light brown with white mottling, firm, material estimated to be close to the plastic limit	
1.5							
2.0	SS 3	100	0				BENTONITE
2.5							
3.0						3.05 390.78	
						(CH) Clay, trace oxidation staining, grey, cohesive, stiff, material estimated to be close to the plastic limit 3.35 390.48	
3.5	SS 4	100	0	BTEX F1-F4		Silty Peat, trace rootlets, black, soft, cohesive, material estimated to be close to the plastic limit	
						3.96 389.87	

Bottom of hole at 3.96 m.

Northing: 5581282
Easting: 342101

ppm - parts per million
mbgs - metres below ground surface

BTEX - Benzene, Toluene, Ethylbenzene, Xylene
PAH - Polycyclic Aromatic Hydrocarbons

DO - Drive Open
SS - Split Spoon
NR - No Recovery

GENERAL BH/TP/WELL MODIFIED SM DEC2019BHLOGS.GPJ GINT STD CANADA.GDT 06/24/20

HDR Inc.
639 5th Avenue SW,
Suite 1510
Calgary, Alberta, Canada,
T2P 0M9

WELL NUMBER BH19-15

CLIENT Canadian National Railway
PROJECT NAME CN MP 197.4 Rivers
PROJECT NUMBER 10161797
PROJECT LOCATION CN MP 197.4 Rivers, Southeast of St. Lazare, MB
DATE STARTED 05/07/19 **COMPLETED** 05/07/19
GROUND ELEVATION 394.27 m **HOLE SIZE** 0.102 m
DRILLING CONTRACTOR Paddock Drilling
GROUND WATER LEVEL:
DRILLING METHOD Hollow Stem Auger
AFTER DRILLING ---
LOGGED BY J. Zemek **CHECKED BY** L. Waldner
NOTES 5, Sunny
DRILLING ANGLE (degrees from horizontal): -90

DEPTH (m)	SAMPLE TYPE/ NUMBER	RECOVERY %	HEADSPACE (ppm)	ANALYTICAL TESTS	GRAPHIC LOG	STRATIGRAPHIC MATERIAL DESCRIPTION	MONITORING WELL DIAGRAM
	SS D	11	0	BTEX F1-F4, PAH		(SP) Sand and Gravel, light brown, non-cohesive, loose, dry	
1	SS 1	10	0				
2	SS 2	20	0				BENTONITE
3	SS 3	20	0			3.35 390.92 Coal and potential ash, black, non-cohesive, loose, moist	
4	SS 4	20	10	BTEX F1-F4		4.27 390.00 (SP) Sand, light brown, non-cohesive, loose, moist 4.57 389.70	

Bottom of hole at 4.57 m.

Northing: 5581260
Easting: 342109

ppm - parts per million
mbgs - metres below ground surface

BTEX - Benzene, Toluene, Ethylbenzene, Xylene
PAH - Polycyclic Aromatic Hydrocarbons

DO - Drive Open
SS - Split Spoon
NR - No Recovery

GENERAL BH/TP/WELL MODIFIED SM DEC2019BHLOGS.GPJ GINT STD CANADA.GDT 06/24/20

HDR Inc.
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Calgary, Alberta, Canada,
T2P 0M9

WELL NUMBER BH19-16

CLIENT Canadian National Railway
PROJECT NAME CN MP 197.4 Rivers
PROJECT NUMBER 10161797
PROJECT LOCATION CN MP 197.4 Rivers, Southeast of St. Lazare, MB
DATE STARTED 05/07/19 **COMPLETED** 05/07/19
GROUND ELEVATION 394.45 m **HOLE SIZE** 0.102 m
DRILLING CONTRACTOR Paddock Drilling
GROUND WATER LEVEL:
DRILLING METHOD Hollow Stem Auger
AFTER DRILLING ---
LOGGED BY J. Zemek **CHECKED BY** L. Waldner
NOTES 16, Sunny
DRILLING ANGLE (degrees from horizontal): -90

DEPTH (m)	SAMPLE TYPE/ NUMBER	RECOVERY %	HEADSPACE (ppm)	ANALYTICAL TESTS	GRAPHIC LOG	STRATIGRAPHIC MATERIAL DESCRIPTION	MONITORING WELL DIAGRAM
0.0	SS E	40	90	BTEX F1-F4, PAH		(SP) Sand and Poorly-Graded Gravel, light brown, non-cohesive, loose, moist	
0.5							
1.0							
1.5	SS 2	40	10				BENTONITE
2.0							
2.13							392.32
2.5	SS 3	100	0			(Cl) Silty Clay, trace sand and gravel, oxidation staining, light brown, cohesive, firm, material estimated to be close to the plastic limit	
3.0							
3.05							391.40

Bottom of hole at 3.05 m.

Northing: 5581274
Easting: 342086

ppm - parts per million
mbgs - metres below ground surface

BTEX - Benzene, Toluene, Ethylbenzene, Xylene
PAH - Polycyclic Aromatic Hydrocarbons

DO - Drive Open
SS - Split Spoon
NR - No Recovery

GENERAL BH/TP/WELL MODIFIED SM DEC2019BHLOGS.GPJ GINT STD CANADA.GDT 06/24/20

HDR Inc.
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WELL NUMBER BH19-17

CLIENT Canadian National Railway
PROJECT NAME CN MP 197.4 Rivers
PROJECT NUMBER 10161797
PROJECT LOCATION CN MP 197.4 Rivers, Southeast of St. Lazare, MB
DATE STARTED 05/07/19 **COMPLETED** 05/07/19
GROUND ELEVATION 394.8 m **HOLE SIZE** 0.102 m
DRILLING CONTRACTOR Paddock Drilling
GROUND WATER LEVEL:
DRILLING METHOD Hollow Stem Auger
AFTER DRILLING ---
LOGGED BY J. Zemek **CHECKED BY** L. Waldner
NOTES 16, Sunny
DRILLING ANGLE (degrees from horizontal): -90

DEPTH (m)	SAMPLE TYPE/ NUMBER	RECOVERY %	HEADSPACE (ppm)	ANALYTICAL TESTS	GRAPHIC LOG	STRATIGRAPHIC MATERIAL DESCRIPTION	MONITORING WELL DIAGRAM
0						(SP) Sand and Poorly-Graded Gravel, light brown, non-cohesive, loose, moist	
0.5							
1.0							
1.5	SS 1	10	7000				
	SS F	10	11000	BTEX F1-F4, PAH		- Black staining and hydrocarbon odour at 1.5 mbgs	BENTONITE
2.0							
2.5							
3.0							
	SS 2	10	0	BTEX F1-F4		3.20 (391.60) (CH) Clay, grey, cohesive, stiff, material estimated to be close to the plastic limit 3.35 (391.45)	

Bottom of hole at 3.35 m.

Northing: 5581276
Easting: 342087

ppm - parts per million
mbgs - metres below ground surface

BTEX - Benzene, Toluene, Ethylbenzene, Xylene
PAH - Polycyclic Aromatic Hydrocarbons

DO - Drive Open
SS - Split Spoon
NR - No Recovery

GENERAL BH/TP/WELL MODIFIED SM DEC2019BHLOGS.GPJ GINT STD CANADA.GDT 06/24/20

HDR Inc.
639 5th Avenue SW,
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T2P 0M9

WELL NUMBER BH19-18

CLIENT Canadian National Railway
PROJECT NAME CN MP 197.4 Rivers
PROJECT NUMBER 10161797
PROJECT LOCATION CN MP 197.4 Rivers, Southeast of St. Lazare, MB
DATE STARTED 05/07/19 **COMPLETED** 05/07/19
GROUND ELEVATION 394.87 m **HOLE SIZE** 0.102 m
DRILLING CONTRACTOR Paddock Drilling
GROUND WATER LEVEL:
DRILLING METHOD Hollow Stem Auger
AFTER DRILLING ---
LOGGED BY J. Zemek **CHECKED BY** L. Waldner
NOTES 16, Sunny
DRILLING ANGLE (degrees from horizontal): -90

DEPTH (m)	SAMPLE TYPE/ NUMBER	RECOVERY %	HEADSPACE (ppm)	ANALYTICAL TESTS	GRAPHIC LOG	STRATIGRAPHIC MATERIAL DESCRIPTION	MONITORING WELL DIAGRAM
0.5	SS 1	25	20			(SP) Sand and Poorly-Graded Gravel, light brown, non-cohesive, loose, moist	
1.0							
1.5	SS G	25	11000	BTEX F1-F4, PAH		- Black staining and hydrocarbon odour at 1.2 mbgs	
						1.52 393.35 (CI) Silty Clay, trace gravel, light brown, oxidation staining, stiff, cohesive, material estimated to be close to the plastic limit	BENTONITE
2.0	SS 3	100	40	BTEX F1-F4			
2.5							
3.0	SS 4	100	0			3.05 391.82	

Bottom of hole at 3.05 m.

Northing: 5581286
Easting: 342084

ppm - parts per million
mbgs - metres below ground surface

BTEX - Benzene, Toluene, Ethylbenzene, Xylene
PAH - Polycyclic Aromatic Hydrocarbons

DO - Drive Open
SS - Split Spoon
NR - No Recovery

GENERAL BH/TP/WELL MODIFIED SM DEC2019BHLOGS.GPJ GINT STD CANADA.GDT 06/24/20

HDR Inc.
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WELL NUMBER MW19-1

CLIENT Canadian National Railway
PROJECT NAME CN MP 197.4 Rivers
PROJECT NUMBER 10161797
PROJECT LOCATION CN MP 197.4 Rivers, Southeast of St. Lazare, MB
DATE STARTED 05/03/19 **COMPLETED** 05/03/19
GROUND ELEVATION 389.36 m **HOLE SIZE** 0.102 m
DRILLING CONTRACTOR Paddock Drilling
GROUND WATER LEVEL:
DRILLING METHOD Hollow Stem Auger
AFTER DRILLING ---
LOGGED BY J. Zemek **CHECKED BY** L. Waldner
NOTES 16, Sunny
DRILLING ANGLE (degrees from horizontal): -90

DEPTH (m)	SAMPLE TYPE/ NUMBER	RECOVERY %	HEADSPACE (ppm)	ANALYTICAL TESTS	GRAPHIC LOG	STRATIGRAPHIC MATERIAL DESCRIPTION	MONITORING WELL DIAGRAM
							ABOVE GROUND PROTECTIVE CASING
1	SS 1	90	0			(CI) Silty Clay, trace sand and gravel, light brown, cohesive, firm, material estimated to be close to the plastic limit	10/20 SAND; BENTONITE; 50.8 mm Ø PVC RISER
						1.22 / 388.14	
2	SS 2	90	0			(SP) Sand, lightbrown, non-cohesive, loose, moist	
	SS 3	90	0	BTEX F1-F4, Grain Size		2.44 / 386.92	10/20 SAND; 0.010 SLOT PVC SCREEN, 50.8 mm Ø
3	SS 4	90	0			(CH) Clay, trace gravel, oxidation staining, organics, rootlets, grey, cohesive, stiff, material estimated to be close to the plastic limit, frozen	
	SS 5	100	0				Monitoring Well Installed to 3.4 mbgs
4	SS 6	100	0			4.57 / 384.79	BENTONITE

Bottom of hole at 4.57 m.

Northing: 5581197
Easting: 342088

ppm - parts per million
mbgs - metres below ground surface

BTEX - Benzene, Toluene, Ethylbenzene, Xylene
PAH - Polycyclic Aromatic Hydrocarbons

DO - Drive Open
SS - Split Spoon
NR - No Recovery

GENERAL BH/TP/WELL MODIFIED SM DEC2019BHLOGS.GPJ GINT STD CANADA.GDT 06/24/20

HDR Inc.
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WELL NUMBER MW19-2

CLIENT Canadian National Railway
PROJECT NAME CN MP 197.4 Rivers
PROJECT NUMBER 10161797
PROJECT LOCATION CN MP 197.4 Rivers, Southeast of St. Lazare, MB
DATE STARTED 05/05/19 **COMPLETED** 05/05/19
GROUND ELEVATION 390.75 m **HOLE SIZE** 0.102 m
DRILLING CONTRACTOR Paddock Drilling
GROUND WATER LEVEL:
DRILLING METHOD Hollow Stem Auger
AFTER DRILLING ---
LOGGED BY J. Zemek **CHECKED BY** L. Waldner
NOTES 5, Cloudy
DRILLING ANGLE (degrees from horizontal): -90

DEPTH (m)	SAMPLE TYPE/ NUMBER	RECOVERY %	HEADSPACE (ppm)	ANALYTICAL TESTS	GRAPHIC LOG	STRATIGRAPHIC MATERIAL DESCRIPTION	MONITORING WELL DIAGRAM
1	SS 1	50	0			(Cl) Silty Clay, some sand and gravel, light brown, cohesive, material estimated to be close to the plastic limit	ABOVE GROUND PROTECTIVE CASING; 10/20 SAND; 50.8 mm Ø PVC RISER; BENTONITE
2	SS 2	10	0			- 10 cm thick sand and gravel seam at 1.2 mbgs	
3	SS 3	80	0			2.74 / 388.01 (SP) Sand and Gravel, light brown, non-cohesive, loose, moist	10/20 SAND; 0.010 SLOT PVC SCREEN, 50.8 mm Ø
4	SS 4	80	0	BTEX, F1-F4		3.96 / 386.79 (CH) Clay, grey, cohesive, stiff, material estimated to be close to the plastic limit 4.57 / 386.18	Monitoring Well Installed to 4.6 mbgs

Bottom of hole at 4.57 m.

Northing: 5581206
Easting: 342080

ppm - parts per million
mbgs - metres below ground surface

BTEX - Benzene, Toluene, Ethylbenzene, Xylene
PAH - Polycyclic Aromatic Hydrocarbons

DO - Drive Open
SS - Split Spoon
NR - No Recovery

GENERAL BH/TP/WELL MODIFIED SM DEC2019BHLOGS.GPJ GINT STD CANADA.GDT 06/24/20

HDR Inc.
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WELL NUMBER MW19-3

CLIENT Canadian National Railway
PROJECT NAME CN MP 197.4 Rivers
PROJECT NUMBER 10161797
PROJECT LOCATION CN MP 197.4 Rivers, Southeast of St. Lazare, MB
DATE STARTED 05/06/19 **COMPLETED** 05/06/19
GROUND ELEVATION 390.66 m **HOLE SIZE** 0.102 m
DRILLING CONTRACTOR Paddock Drilling
GROUND WATER LEVEL:
DRILLING METHOD Hollow Stem Auger
AFTER DRILLING ---
LOGGED BY J. Zemek **CHECKED BY** L. Waldner
NOTES -1, Sunny
DRILLING ANGLE (degrees from horizontal): -90

DEPTH (m)	SAMPLE TYPE/ NUMBER	RECOVERY %	HEADSPACE (ppm)	ANALYTICAL TESTS	GRAPHIC LOG	STRATIGRAPHIC MATERIAL DESCRIPTION
0	SS 1	100	0			(CH) Clay, trace gravel, rootlets, grey, cohesive, firm, material estimated to be close to the plastic limit
1	SS 2	100	0			
2	SS 3	100	0			- Gravel and Sand seam with black organics at 2.4 mbgs
3	SS 4	100	0			
4	SS 5	100	0	BTEX, F1-F4		
						4.57

MONITORING WELL DIAGRAM
- ABOVE GROUND PROTECTIVE CASING
- 10/20 SAND
- 50.8 mm Ø PVC RISER
- BENTONITE
- 10/20 SAND
- 0.010 SLOT PVC SCREEN, 50.8 mm Ø
- Monitoring Well Installed to 4.6 mbgs

386.09

Bottom of hole at 4.57 m.

Northing: 5581236.8
Easting: 342082.55

ppm - parts per million
mbgs - metres below ground surface

BTEX - Benzene, Toluene, Ethylbenzene, Xylene
PAH - Polycyclic Aromatic Hydrocarbons

DO - Drive Open
SS - Split Spoon
NR - No Recovery

GENERAL BH/TP/WELL MODIFIED SM DEC2019BHLOGS.GPJ GINT STD CANADA.GDT 06/24/20

HDR Inc.
639 5th Avenue SW,
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Calgary, Alberta, Canada,
T2P 0M9

WELL NUMBER MW19-4

CLIENT Canadian National Railway
PROJECT NAME CN MP 197.4 Rivers
PROJECT NUMBER 10161797
PROJECT LOCATION CN MP 197.4 Rivers, Southeast of St. Lazare, MB
DATE STARTED 05/06/19 **COMPLETED** 05/06/19
GROUND ELEVATION 391.46 m **HOLE SIZE** 0.102 m
DRILLING CONTRACTOR Paddock Drilling
GROUND WATER LEVEL:
DRILLING METHOD Hollow Stem Auger
AFTER DRILLING ---
LOGGED BY J. Zemek **CHECKED BY** L. Waldner
NOTES 5, Cloudy
DRILLING ANGLE (degrees from horizontal): -90

DEPTH (m)	SAMPLE TYPE/ NUMBER	RECOVERY %	HEADSPACE (ppm)	ANALYTICAL TESTS	GRAPHIC LOG	STRATIGRAPHIC MATERIAL DESCRIPTION	MONITORING WELL DIAGRAM
						(Cl) Silty Clay, some gravel and sand, light brown and white mottling, cohesive, firm, material estimated to be close to the plastic limit	ABOVE GROUND PROTECTIVE CASING; 10/20 SAND
	SS 1	75	0			- 10 cm fine sand and gravel seam at 0.3 mbgs	50.8 mm Ø PVC RISER; BENTONITE
1							
	SS 2	75	0				
	SS 3	100	0			- 2 cm silt and sand seam with black organics, wet, at 1.7 mbgs	
2							
	SS 4	100	0				10/20 SAND; 0.010 SLOT PVC SCREEN, 50.8 mm Ø
3							
	SS 5	100	0			- Some oxidation staining at 3.1 mbgs	
4							
	SS 6	100	0	BTEX, F1-F4			Monitoring Well Installed to 4.1 mbgs
						4.57	386.89 BENTONITE

Bottom of hole at 4.57 m.

Northing: 5581276
Easting: 342076

ppm - parts per million
mbgs - metres below ground surface

BTEX - Benzene, Toluene, Ethylbenzene, Xylene
PAH - Polycyclic Aromatic Hydrocarbons

DO - Drive Open
SS - Split Spoon
NR - No Recovery

GENERAL BH/TP/WELL MODIFIED SM DEC2019BHLOGS.GPJ GINT STD CANADA.GDT 06/24/20

HDR Inc.
639 5th Avenue SW,
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T2P 0M9

WELL NUMBER MW19-5

CLIENT Canadian National Railway
PROJECT NAME CN MP 197.4 Rivers
PROJECT NUMBER 10161797
PROJECT LOCATION CN MP 197.4 Rivers, Southeast of St. Lazare, MB
DATE STARTED 05/06/19 **COMPLETED** 05/06/19
GROUND ELEVATION 391.68 m **HOLE SIZE** 0.102 m
DRILLING CONTRACTOR Paddock Drilling
GROUND WATER LEVEL:
DRILLING METHOD Hollow Stem Auger
AFTER DRILLING ---
LOGGED BY J. Zemek **CHECKED BY** L. Waldner
NOTES 5, Overcast
DRILLING ANGLE (degrees from horizontal): -90

DEPTH (m)	SAMPLE TYPE/ NUMBER	RECOVERY %	HEADSPACE (ppm)	ANALYTICAL TESTS	GRAPHIC LOG	STRATIGRAPHIC MATERIAL DESCRIPTION	MONITORING WELL DIAGRAM
							ABOVE GROUND PROTECTIVE CASING
						(CH) Clay, trace gravel, grey, cohesive, stiff, material estimated to be close to the plastic limit	10/20 SAND
	SS 1	100	0				
1							
	SS 2	100	0				BENTONITE 50.8 mm Ø PVC RISER
2	SS 3	100	0				
3	SS 4	100	0			- White mottling at 2.7 mbgs	
	SS 5	100	0				
4							
	SS 6	100	0	BTEX, F1-F4			10/20 SAND
							0.010 SLOT PVC SCREEN, 50.8 mm Ø
5	SS 7	100	0				
6	SS 8	100	0			6.10	385.58 Monitoring Well Installed to 6.1 mbgs

Bottom of hole at 6.10 m.

Northing: 5581320
Easting: 342056

ppm - parts per million
mbgs - metres below ground surface

BTEX - Benzene, Toluene, Ethylbenzene, Xylene
PAH - Polycyclic Aromatic Hydrocarbons

DO - Drive Open
SS - Split Spoon
NR - No Recovery

GENERAL BH/TP/WELL MODIFIED SM DEC2019BHLOGS.GPJ GINT STD CANADA.GDT 06/24/20

HDR Inc.
639 5th Avenue SW,
Suite 1510
Calgary, Alberta, Canada,
T2P 0M9

WELL NUMBER MW19-6

CLIENT Canadian National Railway
PROJECT NAME CN MP 197.4 Rivers
PROJECT NUMBER 10161797
PROJECT LOCATION CN MP 197.4 Rivers, Southeast of St. Lazare, MB
DATE STARTED 05/06/19 **COMPLETED** 05/06/19
GROUND ELEVATION 390.78 m **HOLE SIZE** 0.102 m
DRILLING CONTRACTOR Paddock Drilling
GROUND WATER LEVEL:
DRILLING METHOD Hollow Stem Auger
AFTER DRILLING ---
LOGGED BY J. Zemek **CHECKED BY** L. Waldner
NOTES 9, Sunny
DRILLING ANGLE (degrees from horizontal): -90

DEPTH (m)	SAMPLE TYPE/ NUMBER	RECOVERY %	HEADSPACE (ppm)	ANALYTICAL TESTS	GRAPHIC LOG	STRATIGRAPHIC MATERIAL DESCRIPTION	MONITORING WELL DIAGRAM
						(CI) Silty Clay, some sand and gravel, rootlets, light brown, cohesive, firm, material estimated to be close to the plastic limit	ABOVE GROUND PROTECTIVE CASING; 10/20 SAND; 50.8 mm Ø PVC RISER; BENTONITE
						0.91 / 389.87	
1	SS 1	30	0			(SP) Sand and Gravel, light brown, non-cohesive, loose, moist	
2							10/20 SAND; 0.010 SLOT PVC SCREEN, 50.8 mm Ø
3	SS 2	40	0	BTEX, F1-F4		- Wet at 3.0 mbgs	
						3.05 / 387.73	
						(CH) Clay, some black organic material, grey, cohesive, stiff, material estimated to be close to the plastic limit	
	SS 3	100	0				Monitoring Well Installed to 3.4 mbgs
4	SS 4	100	0				BENTONITE

Bottom of hole at 4.57 m.

Northing: 5581209
Easting: 342126

ppm - parts per million
mbgs - metres below ground surface

BTEX - Benzene, Toluene, Ethylbenzene, Xylene
PAH - Polycyclic Aromatic Hydrocarbons

DO - Drive Open
SS - Split Spoon
NR - No Recovery

GENERAL BH/TP/WELL MODIFIED SM DEC2019BHLOGS.GPJ GINT STD CANADA.GDT 06/24/20

HDR Inc.
639 5th Avenue SW,
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Calgary, Alberta, Canada,
T2P 0M9

WELL NUMBER MW19-7

CLIENT Canadian National Railway
PROJECT NAME CN MP 197.4 Rivers
PROJECT NUMBER 10161797
PROJECT LOCATION CN MP 197.4 Rivers, Southeast of St. Lazare, MB
DATE STARTED 12/04/19 **COMPLETED** 12/04/19
GROUND ELEVATION 391.182 m **HOLE SIZE** 0.102 m
DRILLING CONTRACTOR Earth Drilling
GROUND WATER LEVEL:
DRILLING METHOD Sonic
AFTER DRILLING ---
LOGGED BY J. Zemek **CHECKED BY** L. Waldner
TOP OF CASING ELEVATION (m): 392.131
NOTES -3, Clear
DRILLING ANGLE (degrees from horizontal): -90

DEPTH (m)	SAMPLE TYPE/ NUMBER	RECOVERY %	HEADSPACE (ppm)	ANALYTICAL TESTS
	DO 1	100	0	
1	DO 2	100	0	
2	DO 3	100	0	
3	DO 4	100	0	BTEX, F1-F4, PAH
	DO 5	100	0	BTEX, F1-F4, PAH
4				
	DO 6	100	0	
5	DO 7	100	0	
6	DO 8	100	0	BTEX, F1-F4, PAH

GRAPHIC LOG

STRATIGRAPHIC MATERIAL DESCRIPTION

0.10 Gravel — 391.08

(CL) Silty Clay, some sand and gravel; firm/frozen; light brown; slight hydrocarbon odour at 0.6 m, material estimated to be close to the plastic limit

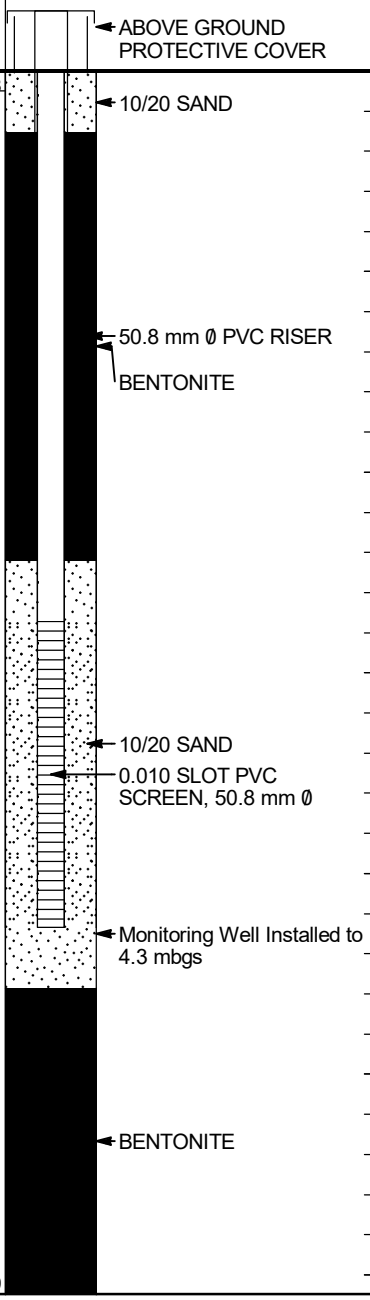
- No hydrocarbon odour, trace organics at 1.2 mbgs

- Silty gravelly sand seam (5 cm), wet at 3.7 mbgs

- Stiff at 4.6 mbgs

6.10 — 385.09

MONITORING WELL DIAGRAM



Bottom of hole at 6.10 m.

Northing: 5581165.421
Easting: 342134.786

ppm - parts per million
mbgs - metres below ground surface

BTEX - Benzene, Toluene, Ethylbenzene, Xylene
PAH - Polycyclic Aromatic Hydrocarbons

DO - Drive Open
SS - Split Spoon
NR - No Recovery

GENERAL BH/TP/WELL MODIFIED SM DEC2019BHLOGS.GPJ GINT STD CANADA.GDT 06/24/20

HDR Inc.
639 5th Avenue SW,
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T2P 0M9

WELL NUMBER MW19-8

CLIENT Canadian National Railway
PROJECT NAME CN MP 197.4 Rivers
PROJECT NUMBER 10161797
PROJECT LOCATION CN MP 197.4 Rivers, Southeast of St. Lazare, MB
DATE STARTED 12/04/19 **COMPLETED** 12/04/19
GROUND ELEVATION 392.465 m **HOLE SIZE** 0.102 m
DRILLING CONTRACTOR Earth Drilling
GROUND WATER LEVEL:
DRILLING METHOD Sonic
AFTER DRILLING ---
LOGGED BY J. Zemek **CHECKED BY** L. Waldner
TOP OF CASING ELEVATION (m): 393.437
NOTES -3, Clear
DRILLING ANGLE (degrees from horizontal): -90

DEPTH (m)	SAMPLE TYPE/ NUMBER	RECOVERY %	HEADSPACE (ppm)	ANALYTICAL TESTS	GRAPHIC LOG	STRATIGRAPHIC MATERIAL DESCRIPTION	MONITORING WELL DIAGRAM
							ABOVE GROUND PROTECTIVE CASING
						0.10 Gravel 392.37	10/20 SAND
1						(SP) Sand and Gravel, loose, light brown, dry	
	DO 1	100	0			1.37 391.09	
	DO 3	100	0			(CL) Silty Clay, trace sand, and gravel, trace organics, light brown, frozen, material estimated to be close to the plastic limit	BENTONITE
2							50.8 mm Ø PVC SOLID PIPE
	DO 4	100	30				
3						- Sandy gravel seam, 3 cm, frozen	
	DO 5	100	5	BTEX, F1-F4, PAH, Grain Size			
4							10/20 SAND
	DO 6	100	0	BTEX, F1-F4, PAH		- Sand and gravel seam, 3 cm, wet	50.8 mm Ø PVC 0.010 SLOTTED PIPE
	DO 7	100	0				
5							Monitoring Well Installed to 4.9 mbgs
	DO 8	100	0	BTEX, F1-F4, PAH			
6						6.10 386.37	BENTONITE

Bottom of hole at 6.10 m.

Northing: 5581154.678
Easting: 342129.672

ppm - parts per million
mbgs - metres below ground surface

BTEX - Benzene, Toluene, Ethylbenzene, Xylene
PAH - Polycyclic Aromatic Hydrocarbons

DO - Drive Open
SS - Split Spoon
NR - No Recovery

GENERAL BH/TP/WELL MODIFIED SM DEC2019BHLOGS.GPJ GINT STD CANADA.GDT 06/24/20

HDR Inc.
639 5th Avenue SW,
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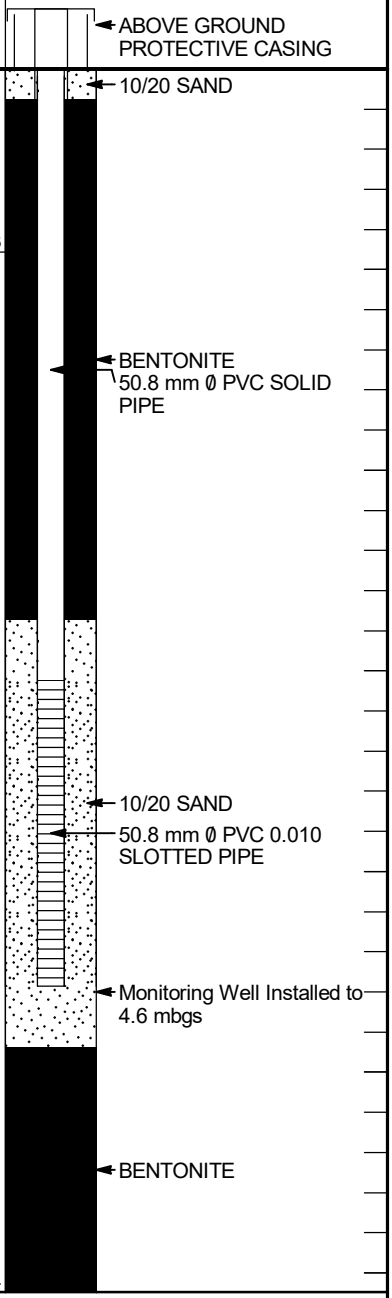
Calgary, Alberta, Canada,
T2P 0M9

WELL NUMBER MW19-9

CLIENT Canadian National Railway
PROJECT NAME CN MP 197.4 Rivers
PROJECT NUMBER 10161797
PROJECT LOCATION CN MP 197.4 Rivers, Southeast of St. Lazare, MB
DATE STARTED 12/04/19 **COMPLETED** 12/04/19
GROUND ELEVATION 387.84 m **HOLE SIZE** 0.102 m
DRILLING CONTRACTOR Earth Drilling
GROUND WATER LEVEL:
DRILLING METHOD Solid Stem Auger
AFTER DRILLING ---
LOGGED BY J. Zemek **CHECKED BY** L. Waldner
NOTES -3, Cloudy
DRILLING ANGLE (degrees from horizontal): -90

DEPTH (m)	SAMPLE TYPE/ NUMBER	RECOVERY %	HEADSPACE (ppm)	ANALYTICAL TESTS	GRAPHIC LOG	STRATIGRAPHIC MATERIAL DESCRIPTION
	DO 1	100	0			(CI) Silty Clay, trace sand, trace organics, light brown, frozen, material estimated to be close to the plastic limit
1	DO 2	100	0			0.91 / 386.93 (CH) Clay, trace sand, grey, firm, material estimated to be close to the plastic limit
2	DO 3	100	0			
3	DO 3.5	100	0			
	DO 4	100	0	BTEX, F1-F4, PAH		
4	DO 5	100	0	BTEX, F1-F4, PAH		- Wet silt seam at 4 mbgs
	DO 6	100	0			
5	DO 7	100	0	BTEX, F1-F4, PAH		
6	DO 8	100	0			6.10 / 381.74

MONITORING WELL DIAGRAM



Bottom of hole at 6.10 m.

Northing: 5581140
Easting: 342092

ppm - parts per million
mbgs - metres below ground surface

BTEX - Benzene, Toluene, Ethylbenzene, Xylene
PAH - Polycyclic Aromatic Hydrocarbons

DO - Drive Open
SS - Split Spoon
NR - No Recovery

GENERAL BH/TP/WELL MODIFIED SM DEC2019BHLOGS.GPJ GINT STD CANADA.GDT 06/24/20

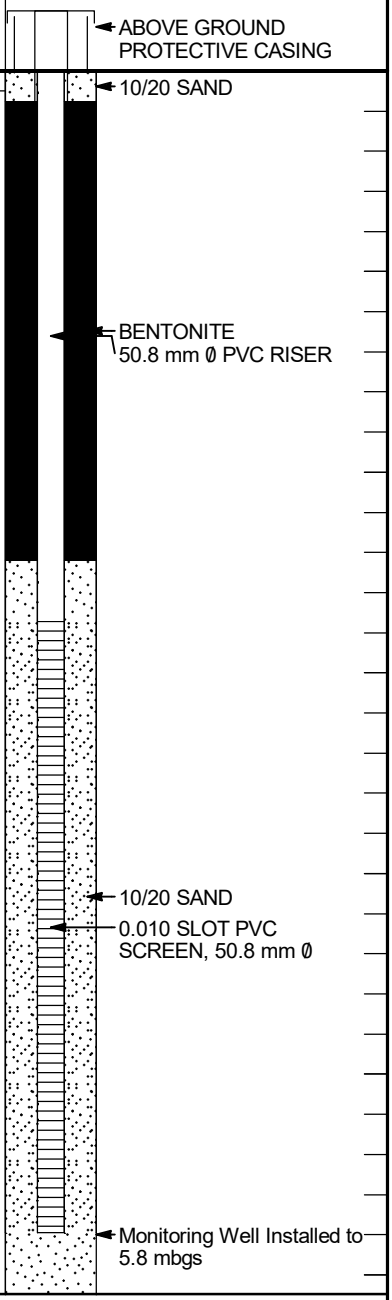
HDR Inc.
639 5th Avenue SW,
Suite 1510
Calgary, Alberta, Canada,
T2P 0M9

WELL NUMBER MW19-10

CLIENT Canadian National Railway
PROJECT NAME CN MP 197.4 Rivers
PROJECT NUMBER 10161797
PROJECT LOCATION CN MP 197.4 Rivers, Southeast of St. Lazare, MB
DATE STARTED 12/04/19 **COMPLETED** 12/04/19
GROUND ELEVATION 390.708 m **HOLE SIZE** 0.102 m
DRILLING CONTRACTOR Earth Drilling
GROUND WATER LEVEL:
DRILLING METHOD Sonic
AFTER DRILLING ---
LOGGED BY J. Zemek **CHECKED BY** L. Waldner
TOP OF CASING ELEVATION (m): 391.69
NOTES -3, Cloudy
DRILLING ANGLE (degrees from horizontal): -90

DEPTH (m)	SAMPLE TYPE/ NUMBER	RECOVERY %	HEADSPACE (ppm)	ANALYTICAL TESTS	GRAPHIC LOG	STRATIGRAPHIC MATERIAL DESCRIPTION
0.10						Gravel (390.61)
1	NR	0				(CL) Silt clay, some gravel and sand, trace organics, light brown, firm, material estimated to be close to the plastic limit
2		30	0			
3	DO 3	30	0			
	DO 4	100	0	BTEX, F1-F4, PAH		- Stiff, root at 3.048 m
4	DO 4.5	100	0			
	DO 5	100	0			- Black organics at 4.267 m
5	DO 6	100	0			
6	DO 7	100	0	BTEX, F1-F4, PAH		
6.10						(384.61)

MONITORING WELL DIAGRAM



Bottom of hole at 6.10 m.

Northing: 5581168.326
Easting: 342103.62

ppm - parts per million
mbgs - metres below ground surface

BTEX - Benzene, Toluene, Ethylbenzene, Xylene
PAH - Polycyclic Aromatic Hydrocarbons

DO - Drive Open
SS - Split Spoon
NR - No Recovery

GENERAL BH/TP/WELL MODIFIED SM DEC2019BHLOGS.GPJ GINT STD CANADA.GDT 06/24/20

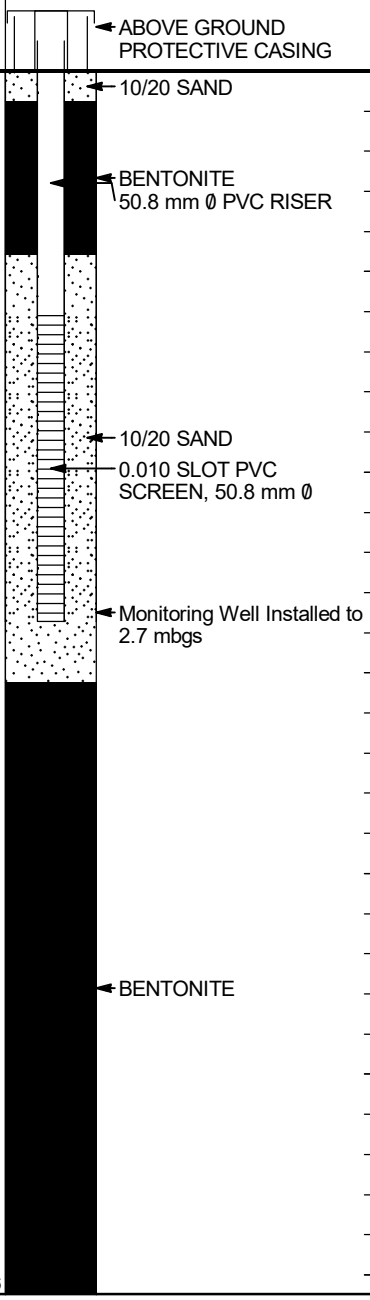
HDR Inc.
639 5th Avenue SW,
Suite 1510
Calgary, Alberta, Canada,
T2P 0M9

WELL NUMBER MW19-11

CLIENT Canadian National Railway
PROJECT NAME CN MP 197.4 Rivers
PROJECT NUMBER 10161797
PROJECT LOCATION CN MP 197.4 Rivers, Southeast of St. Lazare, MB
DATE STARTED 12/04/19 **COMPLETED** 12/04/19
GROUND ELEVATION 388.351 m **HOLE SIZE** 0.102 m
DRILLING CONTRACTOR Earth Drilling
GROUND WATER LEVEL:
DRILLING METHOD Sonic
AFTER DRILLING ---
LOGGED BY J. Zemek **CHECKED BY** L. Waldner
TOP OF CASING ELEVATION (m): 389.246
NOTES -3, Cloudy
DRILLING ANGLE (degrees from horizontal): -90

DEPTH (m)	SAMPLE TYPE/ NUMBER	RECOVERY %	HEADSPACE (ppm)	ANALYTICAL TESTS	GRAPHIC LOG	STRATIGRAPHIC MATERIAL DESCRIPTION
	DO 1	100	0			(CL) Silty clay, trace sand, light brown, cohesive, firm, material estimated to be close to the plastic limit
1	DO 2	100	0	BTEX, F1-F4, PAH		
	DO 3	100	0	BTEX, F1-F4, PAH		
2						- Wet silt seam at 1.8 mbgs, 3 cm
	DO 4	100	0			
3	DO 5	100	0	BTEX, F1-F4, PAH		- Stiff at 3.0 mbgs
4	DO 6	100	0			
						- Firm at 4.6 mbgs
5	DO 7	100	0			
6	DO 8	100	0			6.10

MONITORING WELL DIAGRAM



Bottom of hole at 6.10 m.

Northing: 5581219.88
Easting: 342074.86

ppm - parts per million
mbgs - metres below ground surface

BTEX - Benzene, Toluene, Ethylbenzene, Xylene
PAH - Polycyclic Aromatic Hydrocarbons

DO - Drive Open
SS - Split Spoon
NR - No Recovery

GENERAL BH/TP/WELL MODIFIED SM DEC2019BHLOGS.GPJ GINT STD CANADA.GDT 06/24/20

HDR Inc.
639 5th Avenue SW,
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Calgary, Alberta, Canada,
T2P 0M9

WELL NUMBER MW19-12

CLIENT Canadian National Railway
PROJECT NAME CN MP 197.4 Rivers
PROJECT NUMBER 10161797
PROJECT LOCATION CN MP 197.4 Rivers, Southeast of St. Lazare, MB
DATE STARTED 12/04/19 **COMPLETED** 12/04/19
GROUND ELEVATION 388.342 m **HOLE SIZE** 0.102 m
DRILLING CONTRACTOR Earth Drilling
GROUND WATER LEVEL:
DRILLING METHOD Sonic
AFTER DRILLING ---
LOGGED BY J. Zemek **CHECKED BY** L. Waldner
TOP OF CASING ELEVATION (m): 389.245
NOTES -3, Cloudy
DRILLING ANGLE (degrees from horizontal): -90

DEPTH (m)	SAMPLE TYPE/ NUMBER	RECOVERY %	HEADSPACE (ppm)	ANALYTICAL TESTS	GRAPHIC LOG	STRATIGRAPHIC MATERIAL DESCRIPTION	MONITORING WELL DIAGRAM
	DO 1	100	0			(CL) Silty clay, trace sand and gravel and organic material, light brown, cohesive, stiff, material estimated to be close to the plastic limit	ABOVE GROUND PROTECTIVE CASING; 10/20 SAND; BENTONITE
1							
	DO 2	100	0	BTEX, F1-F4, PAH			50.8 mm Ø PVC RISER
						1.83 / 386.51	
2	DO 3	100	0	BTEX, F1-F4, PAH, Grain Size		(ML) - Wet silt from 1.8 to 2.4 mbgs	10/20 SAND; 0.010 SLOT PVC SCREEN, 50.8 mm Ø
						2.44 / 385.90	
	DO 4	100	0			(CL) Silty clay, as above	
3							Monitoring Well installed to 3.0 mbgs
	DO 5	100	0	BTEX, F1-F4		- Firm at 3.0 mbgs	
	DO 6	100	0				
4							BENTONITE
	DO 7	100	0			4.57 / 383.77	

Bottom of hole at 4.57 m.

Northing: 5581234.962
Easting: 342071.47

ppm - parts per million
mbgs - metres below ground surface

BTEX - Benzene, Toluene, Ethylbenzene, Xylene
PAH - Polycyclic Aromatic Hydrocarbons

DO - Drive Open
SS - Split Spoon
NR - No Recovery

GENERAL BH/TP/WELL MODIFIED SM DEC2019BHLOGS.GPJ GINT STD CANADA.GDT 06/24/20

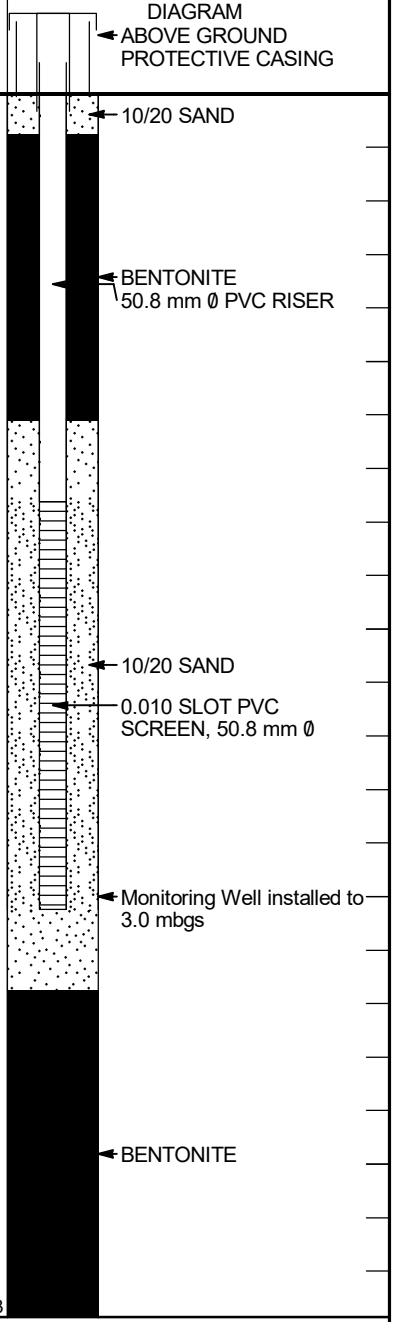
HDR Inc.
639 5th Avenue SW,
Suite 1510
Calgary, Alberta, Canada,
T2P 0M9

WELL NUMBER MW19-13

CLIENT Canadian National Railway
PROJECT NAME CN MP 197.4 Rivers
PROJECT NUMBER 10161797
PROJECT LOCATION CN MP 197.4 Rivers, Southeast of St. Lazare, MB
DATE STARTED 12/04/19 **COMPLETED** 12/04/19
GROUND ELEVATION 388.402 m **HOLE SIZE** 0.102 m
DRILLING CONTRACTOR Earth Drilling
GROUND WATER LEVEL:
DRILLING METHOD Sonic
AFTER DRILLING ---
LOGGED BY J. Zemek **CHECKED BY** L. Waldner
TOP OF CASING ELEVATION (m): 389.277
NOTES -3, Cloudy
DRILLING ANGLE (degrees from horizontal): -90

DEPTH (m)	SAMPLE TYPE/ NUMBER	RECOVERY %	HEADSPACE (ppm)	ANALYTICAL TESTS	GRAPHIC LOG	STRATIGRAPHIC MATERIAL DESCRIPTION
	DO 1	100	0			(CL) Silty clay, trace sand and gravel, light brown, cohesive, still, material estimated to be close to the plastic limit
1						
	DO 2	100	0	BTEX, F1-F4, PAH		
2	DO 3	100	0	BTEX, F1-F4, PAH		- Silt, wet, soft, at 1.83 mbgs
	DO 4	100	0			
3						
	DO 5	100	0			
4						
	DO 6	100	0	BTEX, F1-F4, PAH		
						4.57

MONITORING WELL DIAGRAM



Bottom of hole at 4.57 m.

Northing: 5581251.954
Easting: 342067.551

ppm - parts per million
mbgs - metres below ground surface

BTEX - Benzene, Toluene, Ethylbenzene, Xylene
PAH - Polycyclic Aromatic Hydrocarbons

DO - Drive Open
SS - Split Spoon
NR - No Recovery

GENERAL BH/TP/WELL MODIFIED SM DEC2019BHLOGS.GPJ GINT STD CANADA.GDT 06/24/20

HDR Inc.
639 5th Avenue SW,
Suite 1510
Calgary, Alberta, Canada,
T2P 0M9

WELL NUMBER MW19-14

CLIENT Canadian National Railway
PROJECT NAME CN MP 197.4 Rivers
PROJECT NUMBER 10161797
PROJECT LOCATION CN MP 197.4 Rivers, Southeast of St. Lazare, MB
DATE STARTED 12/04/19 **COMPLETED** 12/04/19
GROUND ELEVATION 389.343 m **HOLE SIZE** 0.102 m
DRILLING CONTRACTOR Earth Drilling
GROUND WATER LEVEL:
DRILLING METHOD Sonic
AFTER DRILLING ---
LOGGED BY J. Zemek **CHECKED BY** L. Waldner
TOP OF CASING ELEVATION (m): 390.325
NOTES -2, Cloudy
DRILLING ANGLE (degrees from horizontal): -90

DEPTH (m)	SAMPLE TYPE/ NUMBER	RECOVERY %	HEADSPACE (ppm)	ANALYTICAL TESTS
	DO 1	100	0	
1	DO 2	100	0	
	DO 3	100	0	
2				
	DO 4	100	0	
3				
	DO 5	100	0	
4				
	DO 6	100	0	
	DO 7	100	0	BTEX, F1-F4, PAH
5				
	DO 8	100	0	BTEX, F1-F4, PAH, Grain Size
6				
	DO 9	100	0	
7				
	DO 10	100	0	BTEX, F1-F4, PAH

GRAPHIC LOG

STRATIGRAPHIC MATERIAL DESCRIPTION

0.10 Grass — 389.24

(CL) Silty clay, some sand and gravel, frozen, light brown, cohesive, very stiff

- Firm at 1.5 mbgs

- Stiff at 3.0 mbgs

- Silt seam (1 cm), wet at 5.8 mbgs

- Very stiff at 6.4 mbgs

7.62 — 381.72

MONITORING WELL DIAGRAM

- ABOVE GROUND PROTECTIVE CASING
- 10/20 SAND
- BENTONITE
- 50.8 mm Ø PVC RISER
- 10/20 SAND
- 0.010 SLOT PVC SCREEN, 50.8 mm Ø
- Monitoring Well Installed to 7.3 mbgs

Bottom of hole at 7.62 m.

Northing: 5581304.157
Easting: 342027.896

ppm - parts per million
mbgs - metres below ground surface

BTEX - Benzene, Toluene, Ethylbenzene, Xylene
PAH - Polycyclic Aromatic Hydrocarbons

DO - Drive Open
SS - Split Spoon
NR - No Recovery

GENERAL BH/TP/WELL MODIFIED SM DEC2019BHLOGS.GPJ GINT STD CANADA.GDT 06/24/20

HDR Inc.
639 5th Avenue SW,
Suite 1510
Calgary, Alberta, Canada,
T2P 0M9

WELL NUMBER MW19-15

CLIENT Canadian National Railway
PROJECT NAME CN MP 197.4 Rivers
PROJECT NUMBER 10161797
PROJECT LOCATION CN MP 197.4 Rivers, Southeast of St. Lazare, MB
DATE STARTED 12/05/19 **COMPLETED** 12/05/19
GROUND ELEVATION 391.936 m **HOLE SIZE** 0.102 m
DRILLING CONTRACTOR Earth Drilling
GROUND WATER LEVEL:
DRILLING METHOD Sonic
AFTER DRILLING ---
LOGGED BY J. Zemek **CHECKED BY** L. Waldner
TOP OF CASING ELEVATION (m): 393.165
NOTES -5, Snow
DRILLING ANGLE (degrees from horizontal): -90

DEPTH (m)	SAMPLE TYPE/ NUMBER	RECOVERY %	HEADSPACE (ppm)	ANALYTICAL TESTS	GRAPHIC LOG	STRATIGRAPHIC MATERIAL DESCRIPTION	MONITORING WELL DIAGRAM
							ABOVE GROUND PROTECTIVE CASING
			0			0.10 Gravel 391.84 (GP) Sand and gravel, trace cobbles, light brown, non-cohesive, loose, moist	10/20 SAND
1	DO 1	50					
							BENTONITE 50.8 mm Ø PVC RISER
	DO 2	50	0			1.52 390.41	
2	DO 3	100	0	BTEX, F1-F4, PAH		(CL) Silty clay, trace sand and gravel, light brown with white mottling, cohesive, material estimated to be close to the plastic limit	
						- Silt pocket, wet, at 2.4 mbgs,	
3	DO 4	100	55	BTEX, F1-F4, PAH		- Black staining and hydrocarbon odour, trace organics at 2.7 mbgs	10/20 SAND 0.010 SLOT PVC SCREEN, 50.8 mm Ø
	DO 5	100	70			- Grey staining and hydrocarbon odour at 3.0 mbgs	
4							Monitoring Well installed to 3.7 mbgs
	DO 6	100	0	BTEX, F1-F4, PAH		- Stiff at 4.0 mbgs	
						- Very stiff at 4.6 mbgs	
5	DO 7	100	0				BENTONITE
	DO 8	100	0				
6						6.10 385.84	

Bottom of hole at 6.10 m.

Northing: 5581257.698
Easting: 342107.603

ppm - parts per million
mbgs - metres below ground surface

BTEX - Benzene, Toluene, Ethylbenzene, Xylene
PAH - Polycyclic Aromatic Hydrocarbons

DO - Drive Open
SS - Split Spoon
NR - No Recovery

GENERAL BH/TP/WELL MODIFIED SM DEC2019BHLOGS.GPJ GINT STD CANADA.GDT 06/24/20

HDR Inc.
639 5th Avenue SW,
Suite 1510
Calgary, Alberta, Canada,
T2P 0M9

WELL NUMBER MW19-16

CLIENT Canadian National Railway
PROJECT NAME CN MP 197.4 Rivers
PROJECT NUMBER 10161797
PROJECT LOCATION CN MP 197.4 Rivers, Southeast of St. Lazare, MB
DATE STARTED 12/05/19 **COMPLETED** 12/05/19
GROUND ELEVATION 391.372 m **HOLE SIZE** 0.102 m
DRILLING CONTRACTOR Earth Drilling
GROUND WATER LEVEL:
DRILLING METHOD Sonic
AFTER DRILLING ---
LOGGED BY J. Zemek **CHECKED BY** L. Waldner
TOP OF CASING ELEVATION (m): 392.473
NOTES -5, Snow
DRILLING ANGLE (degrees from horizontal): -90

DEPTH (m)	SAMPLE TYPE/ NUMBER	RECOVERY %	HEADSPACE (ppm)	ANALYTICAL TESTS	GRAPHIC LOG	STRATIGRAPHIC MATERIAL DESCRIPTION	MONITORING WELL DIAGRAM
						0.10 Gravel 391.27	ABOVE GROUND PROTECTIVE CASING; 10/20 SAND
	DO 1	50	0			(GP) Sand and gravel, light brown, non-cohesive, loose, moist	
1	DO 2	50	0				BENTONITE; 50.8 mm Ø PVC RISER
						1.52 389.85	
						(CL) Silty clay, trace sand and gravel, oxidation staining, light brown with white mottling, cohesive, firm, material estimated to be close to the plastic limit	
2	DO 3	100	0	BTEX, F1-F4, PAH			
	DO 4	100	10	BTEX, F1-F4, PAH		- Sandy, gravelly, silt seam (10 cm), wet, at 2.7 mbgs	10/20 SAND; 0.010 SLOT PVC SCREEN, 50.8 mm Ø
3	DO 5	100	15			- Black organics and slight hydrocarbon odour at 3.0 mbgs	Monitoring Well installed to 3.7 mbgs
4	DO 6	100	0	BTEX, F1-F4, PAH		- Very stiff at 4.0 mbgs	BENTONITE
						4.57 386.80	

Bottom of hole at 4.57 m.

Northing: 5581235.901
Easting: 342114.622

ppm - parts per million
mbgs - metres below ground surface

BTEX - Benzene, Toluene, Ethylbenzene, Xylene
PAH - Polycyclic Aromatic Hydrocarbons

DO - Drive Open
SS - Split Spoon
NR - No Recovery

GENERAL BH/TP/WELL MODIFIED SM DEC2019BHLOGS.GPJ GINT STD CANADA.GDT 06/24/20

HDR Inc.
639 5th Avenue SW,
Suite 1510
Calgary, Alberta, Canada,
T2P 0M9

WELL NUMBER MW19-17

CLIENT Canadian National Railway
PROJECT NAME CN MP 197.4 Rivers
PROJECT NUMBER 10161797
PROJECT LOCATION CN MP 197.4 Rivers, Southeast of St. Lazare, MB
DATE STARTED 12/05/19 **COMPLETED** 12/05/19
GROUND ELEVATION 396.989 m **HOLE SIZE** 0.102 m
DRILLING CONTRACTOR Earth Drilling
GROUND WATER LEVEL:
DRILLING METHOD Sonic
AFTER DRILLING ---
LOGGED BY J. Zemek **CHECKED BY** L. Waldner
TOP OF CASING ELEVATION (m): 397.848
NOTES -5, Overcast
DRILLING ANGLE (degrees from horizontal): -90

DEPTH (m)	SAMPLE TYPE/ NUMBER	RECOVERY %	HEADSPACE (ppm)	ANALYTICAL TESTS	GRAPHIC LOG	STRATIGRAPHIC MATERIAL DESCRIPTION	MONITORING WELL DIAGRAM
						0.10 Grass (396.89)	ABOVE GROUND PROTECTIVE CASING; 10/20 SAND
1	DO A	100	0	BTEX, F1-F4, PAH		(CL) Silty clay (till), some sand and gravel, white mottling, oxidation staining, cohesive, stiff, moist	BENTONITE; 50.8 mm Ø PVC RISER
2						- Very stiff at 1.5 mbgs	
3	DO B	100	0	BTEX, F1-F4, PAH		- Hard at 2.4 mbgs	
						3.05 (393.94) (CH) Clay, olive grey, cohesive, hard, moist	10/20 SAND; 0.010 SLOT PVC SCREEN, 50.8 mm Ø
4	DO C	100	0	BTEX, F1-F4, PAH			
5							Monitoring Well installed to 4.6 mbgs
6	DO D	100	0	BTEX, F1-F4, PAH			BENTONITE
7						7.62 (389.37)	

Bottom of hole at 7.62 m.

Northing: 5581297.895
Easting: 342138.523

ppm - parts per million
mbgs - metres below ground surface

BTEX - Benzene, Toluene, Ethylbenzene, Xylene
PAH - Polycyclic Aromatic Hydrocarbons

DO - Drive Open
SS - Split Spoon
NR - No Recovery

GENERAL BH/TP/WELL MODIFIED SM DEC2019BHLOGS.GPJ GINT STD CANADA.GDT 06/24/20

HDR Inc.
639 5th Avenue SW,
Suite 1510
Calgary, Alberta, Canada,
T2P 0M9

WELL NUMBER MW19-18

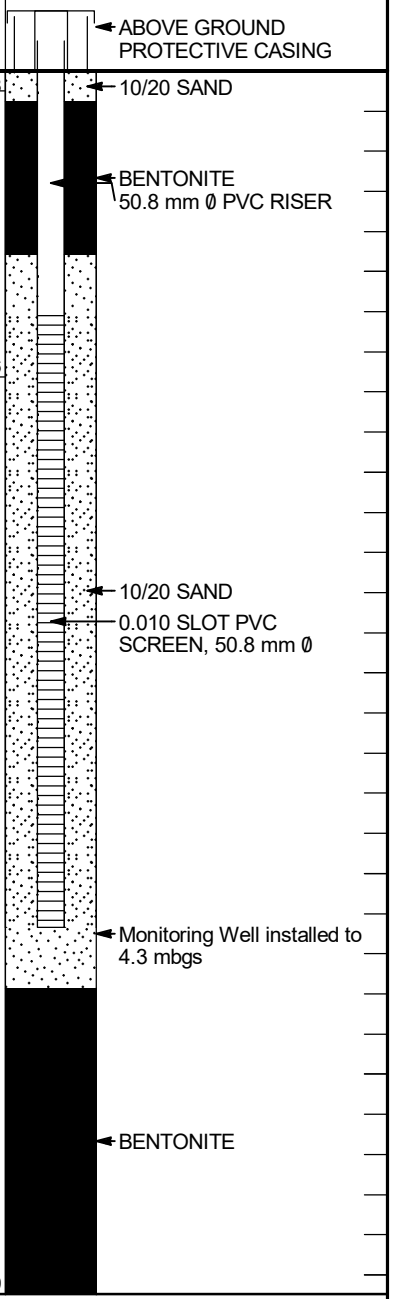
CLIENT Canadian National Railway
PROJECT NAME CN MP 197.4 Rivers
PROJECT NUMBER 10161797
PROJECT LOCATION CN MP 197.4 Rivers, Southeast of St. Lazare, MB
DATE STARTED 12/05/19 **COMPLETED** 12/05/19
GROUND ELEVATION 393.183 m **HOLE SIZE** 0.102 m
DRILLING CONTRACTOR Earth Drilling
GROUND WATER LEVEL:
DRILLING METHOD Sonic
AFTER DRILLING ---
LOGGED BY J. Zemek **CHECKED BY** L. Waldner
TOP OF CASING ELEVATION (m): 394.126
NOTES -5, Overcast
DRILLING ANGLE (degrees from horizontal): -90

DEPTH (m)	SAMPLE TYPE/ NUMBER	RECOVERY %	HEADSPACE (ppm)	ANALYTICAL TESTS
0				
1	DO A	100	0	BTEX F1-F4, PAH
2	DO B	100	0	BTEX F1-F4, PAH
3				
4				
5	DO C	100	0	BTEX F1-F4, PAH
6				

GRAPHIC LOG / STRATIGRAPHIC MATERIAL DESCRIPTION

- 0.10 (393.08) Grass
- (CL) Silty clay (till), trace sand and gravel, some oxidation staining, light brown, cohesive, firm, material estimated to be close to the plastic limit
- - Cobble and trace wet silt at 1.2 mbgs
- 1.52 (391.66)
- (CH) Clay (till), olive grey, hard, cohesive, material estimated to be close to the plastic limit
- 6.10 (387.09)

MONITORING WELL DIAGRAM



Bottom of hole at 6.10 m.

Northing: 5581187.155
Easting: 342167.294

ppm - parts per million
mbgs - metres below ground surface

BTEX - Benzene, Toluene, Ethylbenzene, Xylene
PAH - Polycyclic Aromatic Hydrocarbons

DO - Drive Open
SS - Split Spoon
NR - No Recovery

GENERAL BH/TP/WELL MODIFIED SM DEC2019BHLOGS.GPJ GINT STD CANADA.GDT 06/24/20

HDR Inc.
639 5th Avenue SW,
Suite 1510
Calgary, Alberta, Canada,
T2P 0M9

WELL NUMBER BH19-100

CLIENT Canadian National Railway
PROJECT NAME CN MP 197.4 Rivers
PROJECT NUMBER 10161797
PROJECT LOCATION CN MP 197.4 Rivers, Southeast of St. Lazare, MB
DATE STARTED 12/05/19 **COMPLETED** 12/05/19
GROUND ELEVATION 391.806 m **HOLE SIZE** 0.102 m
DRILLING CONTRACTOR Earth Drilling
GROUND WATER LEVEL:
DRILLING METHOD Sonic
AFTER DRILLING ---
LOGGED BY J. Zemek **CHECKED BY** L. Waldner
NOTES -6, Sunny
DRILLING ANGLE (degrees from horizontal): -90

DEPTH (m)	SAMPLE TYPE/ NUMBER	RECOVERY %	HEADSPACE (ppm)	ANALYTICAL TESTS	GRAPHIC LOG	STRATIGRAPHIC MATERIAL DESCRIPTION	MONITORING WELL DIAGRAM
						Gravel	
	DO 1	100	0			0.31 391.50	
						(CI) Silty clay, trace sand and gravel, oxidation staining, white mottling, firm, cohesive, material estimated to be close to the plastic limit	
1	DO 2	100	0				
	DO 3	100	0	BTEX, F1-F4, PAH			
2						- Silt, wet at 1.8 mbgs	
	DO 3.5	100	0				BENTONITE
	DO 4	100	0	BTEX, F1-F4, PAH			
3	DO 5	100					
4	DO 6	100	0	BTEX, F1-F4, PAH		- Silt, cobble, wet at 4.0 mbgs	
						4.57 387.23	

Bottom of hole at 4.57 m.

Northing: 5581260.646
Easting: 342109.193

ppm - parts per million
mbgs - metres below ground surface

BTEX - Benzene, Toluene, Ethylbenzene, Xylene
PAH - Polycyclic Aromatic Hydrocarbons

DO - Drive Open
SS - Split Spoon
NR - No Recovery

GENERAL BH/TP/WELL MODIFIED SM DEC2019BHLOGS.GPJ GINT STD CANADA.GDT 06/24/20

HDR Inc.
639 5th Avenue SW,
Suite 1510
Calgary, Alberta, Canada,
T2P 0M9

WELL NUMBER BH19-110

CLIENT Canadian National Railway
PROJECT NAME CN MP 197.4 Rivers
PROJECT NUMBER 10161797
PROJECT LOCATION CN MP 197.4 Rivers, Southeast of St. Lazare, MB
DATE STARTED 12/05/19 **COMPLETED** 12/05/19
GROUND ELEVATION 391.861 m **HOLE SIZE** 0.102 m
DRILLING CONTRACTOR Earth Drilling
GROUND WATER LEVEL:
DRILLING METHOD Sonic
AFTER DRILLING ---
LOGGED BY J. Zemek **CHECKED BY** L. Waldner
NOTES -5, Sunny
DRILLING ANGLE (degrees from horizontal): -90

DEPTH (m)	SAMPLE TYPE/ NUMBER	RECOVERY %	HEADSPACE (ppm)	ANALYTICAL TESTS	GRAPHIC LOG	STRATIGRAPHIC MATERIAL DESCRIPTION	MONITORING WELL DIAGRAM
						0.10 Gravel 391.76 - Sample lost	
1						1.52 390.34	
	DO 3	100	0	BTEX, F1-F4, PAH		(CL) Silty clay, trace sand and gravel, trace oxidation staining, light brown with white mottling, cohesive, material estimated to be close to the plastic limit	
2							BENTONITE
	DO 4	100	0	BTEX, F1-F4, PAH			
3	DO 5	100	0				
	DO 6	100	0	BTEX, F1-F4, PAH			
4						4.57 387.29	

Bottom of hole at 4.57 m.

Northing: 5581254.964
Easting: 342111.971

ppm - parts per million
mbgs - metres below ground surface

BTEX - Benzene, Toluene, Ethylbenzene, Xylene
PAH - Polycyclic Aromatic Hydrocarbons

DO - Drive Open
SS - Split Spoon
NR - No Recovery

GENERAL BH/TP/WELL MODIFIED SM DEC2019BHLOGS.GPJ GINT STD CANADA.GDT 06/24/20

HDR Inc.
639 5th Avenue SW,
Suite 1510
Calgary, Alberta, Canada,
T2P 0M9

WELL NUMBER BH19-120

CLIENT Canadian National Railway
PROJECT NAME CN MP 197.4 Rivers
PROJECT NUMBER 10161797
PROJECT LOCATION CN MP 197.4 Rivers, Southeast of St. Lazare, MB
DATE STARTED 12/05/19 **COMPLETED** 12/05/19
GROUND ELEVATION 391.254 m **HOLE SIZE** 0.102 m
DRILLING CONTRACTOR Earth Drilling
GROUND WATER LEVEL:
DRILLING METHOD Sonic
AFTER DRILLING ---
LOGGED BY J. Zemek **CHECKED BY** L. Waldner
NOTES -5, Sunny
DRILLING ANGLE (degrees from horizontal): -90

DEPTH (m)	SAMPLE TYPE/ NUMBER	RECOVERY %	HEADSPACE (ppm)	ANALYTICAL TESTS	GRAPHIC LOG	STRATIGRAPHIC MATERIAL DESCRIPTION	MONITORING WELL DIAGRAM
						0.10 Gravel 391.15	
	DO 1	100	0			(CL) Silty clay, trace sand and gravel, light brown, cohesive, stiff, material estimated to be close to the plastic limit	
1	DO 2	100	20	BTEX, F1-F4, PAH			
	DO 3	100	25	BTEX, F1-F4, PAH			
2						- Silt, hydrocarbon odour, wet at 1.8 mbgs	BENTONITE
	DO 4	100	0	BTEX, F1-F4, PAH			
3						- Hard at 3.0 mbgs	
	DO 5	100	0				
4	DO 6	100	0				
						4.57 386.68	

Bottom of hole at 4.57 m.

Northing: 5581238.518
Easting: 342115.114

ppm - parts per million
mbgs - metres below ground surface

BTEX - Benzene, Toluene, Ethylbenzene, Xylene
PAH - Polycyclic Aromatic Hydrocarbons

DO - Drive Open
SS - Split Spoon
NR - No Recovery

GENERAL BH/TP/WELL MODIFIED SM DEC2019BHLOGS.GPJ GINT STD CANADA.GDT 06/24/20

HDR Inc.
639 5th Avenue SW,
Suite 1510
Calgary, Alberta, Canada,
T2P 0M9

WELL NUMBER BH19-130

CLIENT Canadian National Railway
PROJECT NAME CN MP 197.4 Rivers
PROJECT NUMBER 10161797
PROJECT LOCATION CN MP 197.4 Rivers, Southeast of St. Lazare, MB
DATE STARTED 12/05/19 **COMPLETED** 12/05/19
GROUND ELEVATION 391.094 m **HOLE SIZE** 0.102 m
DRILLING CONTRACTOR Earth Drilling
GROUND WATER LEVEL:
DRILLING METHOD Sonic
AFTER DRILLING ---
LOGGED BY J. Zemek **CHECKED BY** L. Waldner
NOTES -6, Sunny
DRILLING ANGLE (degrees from horizontal): -90

DEPTH (m)	SAMPLE TYPE/ NUMBER	RECOVERY %	HEADSPACE (ppm)	ANALYTICAL TESTS	GRAPHIC LOG	STRATIGRAPHIC MATERIAL DESCRIPTION	MONITORING WELL DIAGRAM
	DO 1	10	0			0.10 Gravel 390.99 (CL) Silty clay, trace sand and gravel, oxidation staining, light brown, cohesive, stiff, material estimated to be close to the plastic limit	
1	DO 2	10	0				
	DO 3	100	0	BTEX, F1-F4, PAH			
2							BENTONITE
	DO 4	100	0	BTEX, F1-F4, PAH			
3							
	DO 5	100	0				
4	DO 6	100	0	BTEX, F1-F4, PAH		4.57 386.52	

Bottom of hole at 4.57 m.

Northing: 5581232.558
Easting: 342117.352

ppm - parts per million
mbgs - metres below ground surface

BTEX - Benzene, Toluene, Ethylbenzene, Xylene
PAH - Polycyclic Aromatic Hydrocarbons

DO - Drive Open
SS - Split Spoon
NR - No Recovery

GENERAL BH/TP/WELL MODIFIED SM DEC2019BHLOGS.GPJ GINT STD CANADA.GDT 06/24/20

Appendix D

Cold Lake Dilbit Blend Safety Data Sheet

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Identifier: COLD LAKE DILBIT BLEND (CLB)
Chemical Description: A naturally occurring mixture of paraffins, naphthalenes, aromatic hydrocarbons and small amounts of sulphur and nitrogen compounds mixed with condensate
Product Use: Process stream, fuels and lubricants production
Manufacturer/Supplier: CENOVUS ENERGY INC.
500 Centre Street SE, PO Box 766
Calgary, AB T2P 0M5
Prepared By: Cenovus Energy Inc. Health and Safety
Phone Number: 1-403-766-2000
Emergency Telephone: Cenovus 1-877-458-8080, CANUTEC 1-613-996-6666 (Canada), CHEMTREC 1-800-424-9300

2. HAZARDS IDENTIFICATION

Hazard Classification:

Flammable Liquids – Category 1
Acute Toxicity – Inhalation – Category 2
Skin Irritation – Category 2
Eye Irritation – Category 2A
Reproductive Toxicity – Category 2
Germ Cell Mutagenicity – Category 2
Carcinogenicity – Category 1
Specific Target Organ Toxicity Single Exposure – Category 3
Specific Target Organ Toxicity Repeat Exposure – Category 2
Aquatic Toxicant – Category 3

Emergency Overview: Danger. Extremely flammable liquid and vapour. Harmful if swallowed or inhaled. May cause respiratory and mild skin irritation. May cause serious eye irritation. May cause drowsiness or dizziness. May cause damage to organs (liver, kidneys, blood, nervous system and skin) through prolonged or repeated exposure. The benzene component of this material may cause cancer and is suspected of causing genetic effects. Harmful to aquatic life.
Sulfur compounds in this material may decompose to release hydrogen sulfide gas which may accumulate to potentially lethal concentrations in enclosed air spaces.

Prevention: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep container tightly closed. Keep cool.
Keep away from heat, sparks, open flames and hot surfaces. No smoking.
Take precautionary measures against static discharge. Ground/bond container and receiving equipment. Use explosion-proof equipment and non-sparking tools where conditions may generate an explosive atmosphere.
Wash exposed skin thoroughly after handling. Do not eat, drink or smoke when using this product. Do not breathe vapours. Use only outdoors or in a well-ventilated area.
Wear personal protective equipment appropriate for the task: gloves, eyewear, and clothing. In case of inadequate ventilation wear respiratory protection.
Avoid release to the environment.

Response: IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a poison center or a doctor if you feel unwell.
IF exposed (benzene) or concerned: Get medical advice/attention.
IF IN EYES: Rinse caustiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists get medical advice/attention.
IF ON SKIN (or hair): Take off contaminated clothing immediately. Rinse skin with water/shower. Wash with plenty of soap and water. If skin irritation occurs, get medical advice/attention.
In case of fire: Use water spray, fog or fire-fighting foam to extinguish.

Storage: Store locked up, in a cool, well-ventilated place. Keep container tightly closed.

Disposal: Dispose of contents/container in accordance with local/regional/national/international regulations.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Ingredients	CAS Number	Approximate Concentration (%)
Crude Oil, Petroleum	8002-05-9	100
Which contains:		
Bitumen	8052-42-4	50 - 90
Hydrcarbon Diluent	64741-47-5	10 – 50
Benzene	71-43-2	0.03-0.3
Hydrogen Sulfide[1]	7783-06-04	<0.01

[1] Hydrogen Sulfide in the vapour phase may contain higher concentrations.

4. FIRST-AID MEASURES

Inhalation: Remove person to fresh air. If person is not breathing, give artificial respiration. If necessary, give additional oxygen once breathing is restored if trained to do so. Get prompt medical attention.

Eye Contact: Remove contact lenses if present and easily done. Flush eyes with large amounts of lukewarm water for 15 minutes, lifting upper and lower lids at intervals. Seek medical attention if irritation, redness or swelling occurs.

Skin Contact: Remove contaminated clothing. Wash affected skin thoroughly with soap and water. Seek medical attention if irritation irritation, redness or swelling occurs or large area of contact.

Ingestion: DO NOT INDUCE VOMITING. Do not swallow liquids. Get prompt medical attention. If spontaneous vomiting occurs, lean person forward to reduce risk of aspiration. Monitor for breathing difficulties. Rinse product out of mouth.

Most important symptoms and effects, both acute and delayed: Effects of overexposure may include irritation of the respiratory tract, digestive tract, skin and eyes. May cause nausea, vomiting and signs of nervous system depression (e.g., headaches, drowsiness, dizziness, loss of coordination, disorientation and fatigue). Overexposure to hydrogen sulfide gas can induce immediate collapse, with loss of breathing and a high probability of death.

5. FIREFIGHTING MEASURES

General Fire Hazards:
See Section 9 for Physical and Chemical Properties related to flammability.
Vapours may be ignited rapidly when exposed to heat, spark, open flame or other source of ignition. When mixed with air and exposed to an ignition source, flammable vapours can burn in the open or explode in confined spaces. Being heavier than air, vapours may travel long distances to an ignition source and flash back. Runoff to sewer may cause fire or explosion hazard.
Hazardous Combustion Products:
Carbon monoxide, carbon dioxide, sulfur oxides, nitrogen oxides, smoke particles.
Extinguishing Media:
Foam, water fog or spray, carbon dioxide (CO_2), dry chemical. Use water spray to cool fire-exposed containers, and to disperse vapours if spill has not ignited. Water fog or spray may not extinguish the fire. Cut off fuel and allow flame to burn out.
Firefighting Equipment/Instructions:
Small fires in the incipient (beginning) stage may typically be extinguished using handheld portable fire extinguishers and other firefighting equipment. Firefighting activities that may result in potential exposure to high heat, smoke or toxic by-products of combustion should require NIOSH/MSHA- approved pressure-demand self-contained breathing apparatus with full facepiece and full protective clothing. Isolate area around container involved in fire. Cool tanks, shells, and containers exposed to fire and excessive heat with water. For massive fires the use of unmanned hose holders or monitor nozzles may be advantageous to further minimize personnel exposure. Major fires may require withdrawal, allowing the tank to burn. Large storage tank fires typically require specially trained personnel and equipment to extinguish the fire, often including the need for properly applied firefighting foam.

6. ACCIDENTAL RELEASE MEASURES

Notification Procedures
In the event of a spill or accidental release, notify relevant authorities in accordance with applicable regulations.
Personal precautions and Protective Equipment:
Avoid direct contact with material. Stay upwind of release; isolate the immediate hazard area; and keep unnecessary and unprotected people away. Response and clean-up crews must be properly trained and must utilize proper protective equipment (see Section 8). Use water spray to cool containers. Eliminate all sources of ignition. Provide explosion-proof clearing ventilation, if possible.
Environmental precautions: Prevent material from entering soil, waterways, drains, sewers, or confined areas.
Cleanup measures: Stop leak if safe to do so. Dyke and vacuum or take up with sand or other oil absorbing materials. Carefully pump, shovel, scoop or sweep up into a waste container for recycling or disposal.
Contact appropriate regulatory authorities for disposal requirements (see Section 13). Notify the appropriate regulatory authorities of reportable releases (see Section 15).

7. HANDLING AND STORAGE

Handling: Handle as a flammable liquid. Keep away from heat, sparks, and open flame. Wear appropriate personal protective equipment. Avoid contact with liquid. Avoid inhalation. Do not enter storage areas or confined spaces unless adequately ventilated. Bond and ground all transfers. Avoid sparking conditions. Wash hands and face after handling and before eating, drinking or smoking.
Storage: Store material in a cool, well-ventilated area away from heat, hot metal surfaces and ignition sources. Use approved containers only. Empty product containers or vessels may contain explosive vapours. Do not pressurize, cut, heat, weld or expose such containers to sources of ignition. Separate from incompatible material (see Section 10).

Caution: Hydrogen sulfide may accumulate in headspaces of tanks and other equipment, even when concentrations in the liquid product are low. Factors increasing this hazard potential include heating, agitation and contact of the liquid with acid or acid salts. Assess the exposure risk by gas monitoring. Wear air supplying breathing apparatus if necessary. Overexposure to hydrogen sulfide may cause dizziness, headache, nausea and possibly unconsciousness and death.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational Exposure Limits (8 Hour)

Hazardous Ingredient	Alberta	Saskatchewan	OSHA PEL	ACGIH TLV
Petroleum Crude Oil	300 ppm; [as VM&P naphtha]	300 ppm 500 ppm (15min) [as VM&P naphtha]	500 ppm; [as petroleum distillates/naphtha]	--
Benzene	0.5 ppm; 2.5 ppm (15min), Skin	--	1 ppm; 5 ppm STEL; Petroleum Industry: 10 ppm; 25 ppm (C)	0.5 ppm; 2.5 ppm STEL Skin
Hydrogen Sulfide	10 ppm; 15 ppm (C)	10 ppm; 15 ppm (15min)	20 ppm (C)	1 ppm, 5 ppm STEL

Engineering Controls: Use only in well-ventilated areas. Local exhaust ventilation required in confined areas. Equipment must be explosion proof.
Hygiene Measures: Emergency eye wash capability should be available in the near proximity to operations presenting a potential splash exposure. Avoid repeated and/or prolonged skin exposure. Wash hands with soap and water before eating, drinking, smoking, or using toilet facilities. Waterless hand cleaners are effective. Promptly remove contaminated clothing and launder before reuse. Use care when laundering to prevent the formation of flammable vapours which could ignite via washer or dryer. Consider the need to discard contaminated leather shoes and gloves.
Personal Protection
Respirator: Where concentrations may exceed exposure limits, use full-face, positive pressure self-contained breathing apparatus; full-face, positive pressure supplied-air breathing apparatus; or cartridge air-purifying respirator approved for organic vapours (note: air-purifying respirator is not suitable for hydrogen sulfide, oxygen-deficient or IDLH situations).
Gloves: Chemical-resistant gloves: Viton (Nitrile or neoprene adequate for short exposure to liquid).
Eyewear: Chemical splash goggles. A face shield may also be necessary, depending on handling conditions.
Footwear: As per safety policy.
Clothing: As per fire protection policy.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Liquid	**Appearance:**	Brown/black liquid
Odour:	Hydrocarbon-like	**Odour Threshold (ppm):**	Not Available
Specific Gravity:	0.91-0.94	**pH:**	Not Available
Vapour Pressure (mmHg):	375-525@ 38ºC	**RVP (kPa):**	50-70
Vapour Density (air=1):	2.5-5.0 (estimated)	**Evaporation Rate:**	Not Available
Boiling Range (°C):	-1-400+	**Initial Boiling Pt. (°C, D7169):**	20.5
Flash Point (°C, D93)	<-5	**Freezing Pt. (°C):**	<-60
Upper Explosive Limit (% v/v):	8 (estimated)	**Lower Explosive Limit (% v/v):**	0.8 (estimated)
Auto-Ignition Temp. (°C):	250 (estimated)		
Sensitivity to Impact:	No	**Sensitivity to Static Discharge:**	Yes, at normal temperatures.
Octanol/Water Coefficient:	<0.1	**Solubility in Water:**	Negligible

10. STABILITY AND REACTIVITY

Chemical Stability: Stable under normal, ambient conditions.
Hazardous Reactions: Not known to occur.
Conditions to Avoid: High temperatures, open flames, sparks, welding, smoking and other ignition sources.
Incompatibility: Incompatible with strong oxidizing agents (e.g. chlorine, peroxide).
Hazardous Decomposition Products: Carbon monoxide, carbon dioxide, sulfur oxides, smoke.

11. TOXICOLOGICAL INFORMATION

Acute Exposure
At concentrations above recommended exposure levels, vapour may cause irritation of eyes, nose and throat, dizziness and drowsiness. Contact with skin may cause irritation and possibly dermatitis. Contact of liquid with eyes may cause severe irritation or burns.
Ingestion may cause gastrointestinal disturbances, including irritation, nausea, vomiting and diarrhea, and central nervous system (brain) effects similar to alcohol intoxication.
In the case of over exposure to hydrogen sulfide by inhalation, tremors, convulsions, loss of consciousness, coma, respiratory arrest, and death may occur.

Hazardous Ingredients	Result	Species	Dose	Exposure
Petroleum Crude Oil	LD50 Oral	Rat	>4300 mg/kg	-
	LD50 Dermal	Rabbit	>2000 mg/kg	
Benzene	LD50 Oral	Rat	1800 mg/kg	-
	LD50 Dermal	Rabbit	>8260 mg/kg	-
	LC50 Inhalation	Rat	14000 ppm	4 hours
Hydrogen Sulfide	LC50 Inhalation	Rat	444 ppm/ 0.701 mg/L	4 hours
	LC50 Inhalation	Mouse	335 ppm	4 hours

Chronic Exposure
May cause damage to organs (liver, kidneys, blood, nervous system and skin) through prolonged or repeated exposure. Due to presence of benzene, long term exposure may increase the risk of anemia and leukemia.

Irritant: Yes
Skin Sensitization: No
Respiratory Sensitization: No
Carcinogenicity: Yes
Reproductive Toxicity: Possibly
Teratogenicity: Possibly
Mutagenicity: Possibly
Synergistic Materials/Products: None reported

Crude Oil
IARC – Crude oil is not classifiable as to its carcinogenicity to humans (Group 3).
ACGIH, OSHA, US NTP – not listed as a carcinogen.
Benzene
ACGIH A1-Confirmed Human Carcinogen
IARC, OSHA, US NTP – There is sufficient evidence that benzene is carcinogenic to man.
Hydrogen Sulfide
Hydrogen sulfide is not considered to be mutagenic or a reproductive or developmental toxicant.
ACGIH, IARC, OSHA, US NTP – Hydrogen sulfide is not listed as a carcinogen.

12. ECOLOGICAL INFORMATION

Ecotoxicity:
Expected to be harmful to aquatic organisms. May cause long-term adverse effects in the aquatic environment. Keep out of sewers, drainage areas and waterways. Report spills and releases, in accordance with current applicable laws and regulations
Biodegradation:
Low molecular weight component expected to be inherently biodegradable
High molecular weigt component expected to biodegrade slowly.

Bioaccumulation: Has the potential to bioaccumulate.
Atmospheric Oxidation: More volatile component expected to degrade rapidly in air.
Photolysis:
More water soluble component expected to degrade at a moderate rate in water when exposed to sunlight.
Mobility:
More volatile component, highly volatile, will partition rapidly to air. Not expected to partition to sediment and wastewater solids.
Less volatile component, low solubility and floats and is expected to migrate from water to the land. Expected to partition to sediment and wastewater solids.

13. DISPOSAL CONSIDERATIONS

Waste Disposal: Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.
Empty containers or liners may retain a residue and can be dangerous. Do not attempt to refill or clean containers without proper instructions. Empty drums should be completely drained and safely stored until appropriately reconditioned or disposed. Empty containers should be taken for recycling, recovery, or disposal through suitably qualified or licensed contractor and in accordance with governmental regulations.

US EPA Waste Numbers
D001 – Ignitability characteristic, D018 – Toxicity characteristic (Benzene) (Regulatory Level = 0.5 mg/L)

14. TRANSPORT INFORMATION

Regulatory Information	UN Number	Proper Shipping Name	Class	PG	Label	Additional Information
TDG	UN1267	Petroleum Crude Oil	3	I	Flammable Liquids	-
DOT	UN1267	Petroleum Crude Oil	3	I	Flammable Liquid	49 CFR 173.150; 173.201; 173.243
IMDG	UN1267	Petroleum Crude Oil	3	I	Flammable Liquid	12°C, P001 EmS:F-E, S-E MARPOL Annex I
ICAO/IATA	UN1267	Petroleum Crude Oil	3	I	Flammable Liquid	ERG Code: 3L

North American Emergency Response Guide Number: 128
TDG Emergency Response Assistance Plan (For Rail Transport): ERP2-1933-006; 1-800-265-0212
Latest Proof of Classification: refer to http://www.cenovus.com/contractor/sds.html

15. REGULATORY INFORMATION

Canadian Classification
This product has been classified in accordance with the hazard criteria of the Hazardous Products Regulation (HPR) and the SDS contains all of the information required by the HPR.
WHMIS Ingredient Disclosure List:
Meets criteria for disclosure at 0.1% or greater of benzene.
CEPA Domestic Substance List: All components are either listed or exempt.
US Federal and State Regulations
The contents of this MSDS comply with the OSHA Hazard Communication Standard 29 CFR 1910.1200.
CERCLA/SARA – Section 302 Extremely Hazardous Substances: Hydrogen sulfide: 500 lbs TPQ.
CERCLA/SARA 311-312 (Title III Hazard Categories):
Hydrogen Sulfide – Fire, Immediate (Acute),
Produced Hydrocarbons – Fire, Sudden Release of Pressure, Immediate (Acute), Delayed (Chronic).
CERCLA/SARA 313, Reportable Quantity: Hydrogen sulfide: 100 lbs ; Benzene: 10 lbs; RCRA Code U019.
Clean Air Act Section 112(b) Hazardous Air Pollutants: Exempt.
United States National Chemical Inventory: All components are listed or exempted.

California 65: This product contains benzene a chemical known to the State of California to cause cancer and developmental harm.
NFPA 704 Rating: Flammability:3, Instability/Reactivity:1, Health:2

16. OTHER INFORMATION

Guide to Abbreviations: 15min = 15 minutes; ACGIH = American Conference of Governmental Hygienists; C = Ceiling; CAS = Chemical Abstracts Service Registry; CEPA = Canadian Environmental Protection Act; CERCLA = Comprehensive Environmental Response, Compensation, and Liability Act cSt = centistokes; DOT = Department of Transport; EmS = Environmental Management System; ERG = Emergency Response Guide IARC = International Agency for Research on Cancer; ICAO/IATA = International Civil Aviation Organization/International Air Transport Association; IMDG = International Marine Dangerous Goods; GHS = Globally Harmonized System of Classification and Labeling of Chemicals; lbs = pounds; MARPOL = The International Convention for the Prevention of Pollution from Ships; mm2/sec = millimeters squared per second; OEL = Occupational Exposure Limit; OSHA = Occupational Safety and Health Administration; PEL = Permissible Exposure Limit; PG = Packing Group; Skin = danger of skin absorption; SARA = Superfund Amendments and Reauthorization Act; SDS = Safety Data Sheet; STEL = Short Term Exposure Limit; TDG = Transportation of Dangerous Goods; TLV = Threshold Limit Value; TWA = Time-Weighted Average; TPQ = Threshold Planning Quantity; US NTP = United States National Toxicology Program; WHMIS = Workplace Hazardous Materials Information System

Appendix E

Field Methods

Prior to the commencement of Site activities, a Site-Specific Safety, Health and Environment (SH&E) Plan was developed by HDR to address the potential physical and chemical hazards at the Site.

Initial Response Soil Sampling

Initial recovery of the CLB was completed in stages: snow and ice removal, removal of trees and woody debris and impacted soils within the vicinity of the recovered product. As part of this process, the ice cover on the oxbow between the constructed containment berms was broken to facilitate removal of residual impacts within ice fractures and to excavate any impacted sediment. The initial extents of this bulk recovery program were determined by aerial imagery. Removal of the CLB was undertaken by:

- Constructing three containment berms (one berm was removed and two remained after the initial response);
- Employing vacuum trucks and tracked excavators;
- Constructing lined containment cells for staging of impacted material awaiting transfer for off-Site disposal; and
- Removing rail, structural and fencing debris that resulted from the derailment.

Bulk removal of impacted soils were based on visual staining. All impacted soils were removed from third party and CN-owned lands with the following exceptions:

- Impacted soils within the rail bed and in close proximity of the rail line that CN's on-Site geotechnical subcontractor determined could not be removed without affecting the stability and safe operation of the rail line;
- Impacted soils in culvert areas that required immediate backfilling due to stability and safe operation of the rail line; and
- Marginal exceedances within the oxbow that could not be removed safely due to groundwater infiltration and saturated ground conditions.

The soil samples were submitted for analysis of BTEX, PHC Fractions F1 to F4. In order to prevent cross-contamination, the sampling equipment was washed with lab-grade detergent (Liquinox) and rinsed with de-ionized water between sample locations. Following removal of soil impacts, impacted lands were backfilled, graded and re-contoured.

Soil and sediment results are presented in Figures 10A, 10B, 10C, 11A, 11B, 11C, Tables 2, 3, 23, 24 and 25. Laboratory reports are provided in Appendix H.

Location and Elevation Survey

Assessment and sampling locations have been surveyed using a RTK survey by KGS Group Consulting Engineers since the initial response, including the survey of the monitoring well locations to assist in establishing the local ground and groundwater elevations.

RTK survey for high accuracy with sub-centimeter accuracy was used for all initial response sampling, borehole and monitoring well locations and elevations and sediment samples collected during the OMA excavations. A handheld Trimble GPS unit, for portability, with sub-meter accuracy was used during the time constrained source removal. Handheld GPS unit with accuracies of +/- 5 to 10 meters were used during sediment sampling and to record Third Party sampling locations.

Surface Water

Subsequent to the initial response and remediation, a site monitoring and inspection schedule was commenced on March 18, 2019. The timeline encompasses the post-freshet conditions and included three site visits each week to complete the tasks shown below:

Project Task(s)	Responsible Party	Schedule
Monitoring for aquatic life, in-situ water quality and imagery/drone flyovers	HDR/Matrix	Weekly Mondays
Analytical surface water sampling and imagery/drone flyovers	KGS	Weekly Wednesdays
Maintenance of Erosion Controls and/or Berms	Tervita	Weekly Fridays

Surface water samples were collected using a telescopic pole or directly from the surface water interface. In order to prevent cross-contamination, the equipment was washed with Liquinox and rinsed with de-ionized water between sample locations.

Monitoring transitioned to one inspection per week on April 19, 2019 with in-situ water quality monitoring and surface water sampling completed on alternating weeks by HDR/Matrix and KGS, respectively. The same monitoring and sampling methodology was used by all parties to ensure consistency and comparable data. A transition to monthly monitoring and surface water sampling was completed following the source removal below the CN rail bed and surface water and groundwater sample collection on June 26, 2019.

In-situ water quality parameters including temperature, pH, electrical conductivity (EC) and dissolved oxygen DO were measured at five locations within and beyond the monitoring area, as well as at individual surface water sampling locations using a YSI multimeter. Samples have been analyzed for BTEX, PHC Fractions F1 to F4, PAHs, routine water quality parameters and total metals.

Surface water monitoring locations are presented on Figure 6B and results are included on Figures 12 and 13 and in Tables 4 through 8.

Site Inspections

Weekly, bi-weekly and monthly Site inspections have been conducted at the Site to the end of December 2019. Site inspections included but were not limited to the following:

- collection of drone imagery;
- checking equipment;
- documenting wildlife sightings;

- inspecting the CN ROW and berms;
- observing surface water in the oxbow inside and beyond the berms;
- inspecting and repair, if required, erosion controls;
- monitoring in-situ surface water quality;
- collecting surface water and groundwater samples;
- cleaning the seepage that had adhered to the inside of the East Culvert; and
- removing residual product observed on the ground surface for off-Site disposal.

May 2019 Intrusive Investigation

Underground utility locates through Manitoba One Call, D.B. Higginbotham Electric and CN Signals were organized by HDR and were completed prior to any ground disturbance work on Site. CN was responsible for arranging track protection.

A total of 24 boreholes (BH19-1 to BH19-18 and MW19-1 to MW19-6) were drilled from May 1 to May 7, 2019. The boreholes were advanced using a track mounted drill rig equipped with 0.2 m (8 inch) diameter hollow stem augers, continuous core barrels and split spoon-sampling equipment. The drill rig was owned and operated by Paddock Drilling Ltd. of Brandon, MB. The boreholes were advanced with the purpose of delineating the extent of the CLB contamination below the rail bed. Directional boreholes were advanced at 11 locations on the south embankment and two locations on the north embankment to investigate the rail bed. The directional boreholes were completed at angles ranging from 19 to 49º from horizontal and advanced to vertical depths between 1.5 to 8.8 m below ground surface (m bgs). Three vertical boreholes were completed from the top of the rail bed to delineate observed CLB impacts in directional borehole BH19-1 and were advanced to 3 m bgs. Ten vertical boreholes were advanced ranging in depths between 5.7 to 8.8 mbgs; six of the boreholes were completed with monitoring wells.

Directional boreholes were backfilled with a bentonite slurry from the bottom of the borehole using a tremmie pipe with the exception of BH19-14 and BH19-15, which were backfilled through the auger casings with coated bentonite pellets and bentonite chips due to the close proximity to the rail line. Boreholes drilled from the top of the track bed were backfilled with bentonite chips.

Soil samples were collected at regular intervals or where the soil lithology changed. Soil conditions were recorded on HDR's standard borehole logs along with field observations (i.e., odours and/or staining). The soil was logged consistently with the Unified Soil Classification System. Each soil sample was given a unique identification number and split into two sub-samples. One of the sub-samples was placed into laboratory-supplied sample jars and placed into a chilled cooler for potential physical and chemical analysis of grain size, BTEX, PHC Fraction F1 to F4 and PAHs. The second sub-sample was placed into a laboratory-supplied re-sealable plastic bag for measurement of soil vapour concentrations. Vapour concentrations were measured in the soil samples using a RKI Eagle II calibrated to hexane.

In total, 37 soil samples, including three duplicates, were collected from the boreholes and submitted for analysis based on field observations (i.e., visual contamination), depth of samples, and the results of soil vapour screening. Soil samples selected for analysis were logged onto formal chain-of-custody

forms, and transported on ice to BV in Winnipeg, MB. Soil cuttings were placed in soil bags and later disposed off-Site by a third-party contractor.

Monitoring well and borehole locations are presented in Figure 8 and soil results are presented in Figures 10A, 10B, 10C, 10D, 11A, 11B, 11C, 11D and Tables 10 through 12.

Borehole records are presented in Appendix C.

Groundwater monitoring wells were installed in six of the boreholes (MW19-1 through MW19-6) ranging in depths from 3.4 to 6.1 mbgs. The monitoring wells were constructed of 50 mm diameter, Schedule 40 polyvinyl chloride (PVC) screen and solid casing. All monitoring wells included a screen between 2.1 and 3.1 m in length of 0.010" slot screen and solid riser from the screen to surface. The well annulus surrounding the screen was backfilled with 10/20 silica filter sand. Above the sand pack, the annulus was backfilled with hydrated bentonite chips to surface. The well screen and casing connections were threaded, and no glues or solvents were used in the construction of the monitoring wells. All monitoring wells were completed with locked aboveground metal protective casings.

Monitoring well completion details are presented on the borehole records located in Appendix C, Table 9 and presented in Figure 8.

Ground Penetrating Radar (GPR)

GPR was conducted on May 4, 2019 from the top of the rail bed along the entire stretch of the derailment Site to help assess the sub-surface conditions. GPR works by sending a tiny pulse of energy into a material and recording the strength and the time required for the return of any reflected signal. A series of pulses over a single area make up a scan. The reflections produced when an energy pulse enters into a material with different electrical conduction properties or dielectric permittivity from the material it left. The strength, or amplitude, of the reflection is determined by the contrast in the dielectric constants and conductivities of the two materials. For this reason, GPR was used as another media to potentially identify the extent of buried contaminants and/or the buried trestle at the Site to assist in planning for source removal.

The GPR was conducted during the above-mentioned drilling program when the buried trestle was encountered (see borehole log BH19-11). GPR was able to distinguish the extent of the buried trestle and allow field personnel to make further decisions regarding drilling locations on-Site, but did not yield definitive information in regard to residual contamination.

Source Removal

On June 2, 2019, previous surficial soil exceedances identified by laboratory results on the landowner's property located north of the rig mat access road along the south side of the CN ROW adjacent to the fence line were excavated. A total of 10 confirmatory soil samples were collected and submitted to Bureau Veritas in Winnipeg, MB, for analysis of BTEX, PHC Fractions F1 to F4, PAHs and seven samples including one duplicate for salinity.

Between June 4 and 6, 2019, two excavations (EX1 and EX2) and two slot trenches (Slot1 and Slot2) were conducted in order to complete source removal within the CN track bed. Residual CLB observed within the granular sub-ballast material was removed. A total of 41 discrete, confirmatory soil samples were collected and submitted to Bureau Veritas in Winnipeg, MB, for analysis of BTEX, PHC Fractions

F1 to F4 and PAHs. The base and walls of the two remedial excavations were sampled in an approximate 5 m by 10 m grid.

A total volume of approximately 1,507 m^3 of soil was removed from the excavation areas on the south side of the CN ROW, EX1, EX2, Slot1 and Slot2 for off-Site disposal as non-hazardous waste at the Virden Landfill.

The areas of the planned excavations are presented in Figure 7A and the final excavation areas are shown in Figure 7B, confirmatory sampling locations and results are presented in Figures 10B, 10C, Tables 2 and 19 to 23 attached.

Groundwater Monitoring and Sampling

Monitoring wells were monitored for depth to groundwater, total well depth and thickness of light and dense non-aqueous phase liquids (if present). In order to prevent cross-contamination, the interface probe was washed with lab-grade detergent (Liquinox) and rinsed with de-ionized water between monitoring wells. As part of groundwater monitoring, organic vapour concentrations within the well annulus were measured using and RKI Eagle II calibrated to hexane.

Approximately two weeks following installation, the monitoring wells were developed with dedicated disposable bailers. The static water column was measured and the well volume was calculated. Each well was developed until one of the following conditions was met: purged water was visibly clear of sediment and at least three well volumes (i.e., casing volume + filter pack volume) had been removed; or, until the well went dry. If a monitoring well went dry, the well was allowed to recover prior to collecting a sample.

Where water yields were sufficient, monitoring wells were sampled with dedicated disposable bailers. During groundwater purging, field parameters (temperature, pH, EC and DO) were measured in every well volume using a YSI multimeter. Samples were collected when field parameters became stable (i.e., within 10%) and at least three well volumes were purged.

Groundwater samples were collected in laboratory-supplied sample bottles. Immediately upon collecting the samples, the sample bottles were placed into a chilled cooler pending laboratory analysis. Groundwater samples were collected for analysis of BTEX, PHC Fractions F1 and F2 and PAHs, dissolved metals and/or total metals and routine water quality parameters. HDR also collected and submitted groundwater duplicate samples for quality assurance/quality control (QA/QC) purposes.

Field equipment was calibrated or bumped at the start of each day, to ensure the accuracy of the field data. All probes and meters were cleaned between each location to minimize cross contamination. Where consumable items were required, such as a bailer, it was dedicated to the sample location.

Well purge water was drummed and temporarily stored on-Site and later disposed off-Site by a third party contractor.

Groundwater results are presented in Figures 14, 15 and Tables 14 through 18.

Additional PAH Soil Sampling

An additional PAH soil sampling program was conducted on June 9, 2019, a total of 42 soil samples, including four duplicates, were collected from the CN ROW south of the rail line and the OMA. At each sampling location, two soil samples were collected; one from the surface and one from surface to 0.15 mbgs using a shovel and were submitted to Bureau Veritas in Winnipeg, MB, for analysis of PAH.

A background PAH soil sampling program was conducted on June 9, 2109, to determine the chemical characteristics of the native soils in the vicinity of the Site. Six background locations (BG-1 through BG-6) were selected from areas beyond where Site activities occurred. At each sampling location, two soil samples were collected; one from the surface and one from surface to 0.15 mbgs using a shovel and were submitted for analysis of PAHs.

Sediment samples were collected from the OMA on August 13 and 14, 2019, a total of 25 sediment samples, including one duplicate, were collected from the OMA and submitted to Bureau Veritas in Winnipeg, MB, for analysis of BTEX F1 to F4 and PAHs.

Based on the results of the additional PAH sampling, further PAH sampling was conducted at six locations on October 16, 2019 to further assess PAH concentrations at locations, which were previously identified exceedances.

Additional PAH soil sample locations are presented on Figures 11A, 11B, 11C and in Table 22.

Pathway Evaluation and Risk Assessment

An initial evaluation of the potential risk to human health and the environment related to the presence of PAHs in selected areas at the Site has been completed. The final, detailed assessment will be included as part of the Environmental Site Assessment (ESA) being prepared for the Site.

The Human Health and Ecological Risk Assessments evaluate the potential risks based on the presence and concentrations of incident-related chemicals of concern (COCs), potential COC toxicity, the receptors that may be exposed, and the exposure scenarios under which receptors may come into contact with COCs.

Risk assessments are typically conservative, as they incorporate assumptions that likely overestimate the potential for human health and ecological exposure and risks. For this effort, conservative assumptions have been chosen whenever indicated by applicable guidelines.

The Human Health Risk Assessment was performed in accordance with Health Canada Part I and V: Guidance on Human Health Preliminary/Detailed Quantitative Risk Assessment (PQRA/DQRA) Version 2.0 (Health Canada 2010; 2012), the Canadian Soil Quality Guidelines for the Protection of Environmental and Human Health – Polycyclic Aromatic Hydrocarbons (2010) and other guidance as appropriate. It was determined that there were sufficient data available to develop many of the components of a Detailed Quantitative Risk Assessment (DQRA). This provides a more detailed and site-specific evaluation of potential risks than a Project Quantitative Risk Assessment (PQRA) in that it uses actual sample data, rather than modeling results.

The ecological risk assessment has been completed in accordance with Canadian Council of Ministers of the Environment (CCME) guidelines, as provided in A Framework for Ecological Risk Assessment: General Guidance (CCME, 1996; 1997), supplemented primarily by the Canadian Soil Quality Guidelines for the Protection of Environmental and Human Health – Polycyclic Aromatic Hydrocarbons (CCME, 2010) and guidance from the Federal Contaminated Sites Action Plan (Health Canada, 2012). Other relevant guidance was used as appropriate. A Screening Assessment has been prepared, consisting of the calculation of PAH-specific Hazard Quotients (HQs), which represent the ratio of COC concentrations detected at the Site vs. available ecological guidelines.

Based on the initial risk assessment, a total of 36 locations (14 locations within vicinity of the oxbow monitoring area, 18 locations within the CN ROW and four locations on the north side of the rail line between the CN ROW and the public road allowance) were identified for further sampling and assessment for human health risk and ecological screening assessment. Re-sampling of these locations was completed during the week October 14, 2019, to further evaluate potential risks, and to determine if natural attenuation would be recommended as a management strategy for residual PAH at the Site.

The 36 locations were located by a KGS surveyor and resampled for analysis of PAHs. Laboratory analysis identified four remaining regulatory exceedances. These exceedances are considered to represent negligible risk and would likely be acceptable for regulatory closure. However, due to Third Party concerns, the three locations that are located within the OMA and/or flood zone will be excavated and resampled during the in-stream berm removal. The fourth location is within the CN ROW at a depth of 1 mbgs and posed no risk to surface water or sediments within the oxbow.

Initial Fish Salvage

During a July 4, 2019 site visit, CN and HDR representatives observed small-bodied fish in the OMA. The determination was made these fish should be moved into deeper waters to help prevent possible fish mortalities associated with warm summer temperatures and anticipated declines in dissolved oxygen (DO) levels.

On July 24, 2019, approximately 925 fish were relocated. Note that water levels observed on July 24, 2019 were higher than levels observed on July 4, 2019, reflective of recent rainfall. The DO reading in seine area 1 was 11.4 mg/l and 134% saturation. Water temperature was 24.4^{o}C. In seine area 2, the water temperature was the same as seine area1 and DO was 13.6 mg/l with 173.2% saturation.

As part of the program, it was determined that a mesh barrier should be put in-place to avoid fish re-entering the shallower areas of fish capture by confining fish to deep pools onsite. An attached Site sketch illustrates the location of the mesh barrier.

The open water portions of the OMA (seine net site 1 and 2) were fished using seine nets to capture, extract, ID and estimate fish numbers. These areas were netted three times over a period of three hours. Salvaged fish were placed in an insulated bucket and the water was oxygenated with a battery operated aeration bubbler. All fish were released to the deep water near the South Berm. No mortalities occurred between capture and release, and no federal Species at Risk Act (SARA) listed fish species were encountered.

In-situ Water Quality Monitoring and Documenting Observations of Fish

Weekly monitoring of DO levels within the OMA between the two in-stream berms has been conducted since July 24, 2019. DO has been monitored to ensure remaining fish were not at risk of potential mortality from low DO concentrations.

Response to Third Party Concern on Observed Sheen

On October 18, 2019, it was reported to CN that there was a potential oil sheen observed within the OMA. A crew immediately mobilized to the Site to assess the area of concern. The initial inspection of the South Berm inside of the OMA did not identify a sheen; however, bubbles were identified coming from the bottom of the monitoring area to surface, and a surface water sample was collected at this location.

After collection of the initial sample, a faint sheen roughly 0.6 m by 1.5 m in area was observed on the surface of the water within the same area that the bubbles had been observed. The sheen was assessed by observing its behavior when attempting to break it; the sheen did not break into platelets and instead appeared to slowly reform back together. Based on the observed characteristics of the sheen, there was potential for the sheen to be a result of hydrocarbons, although there was no rainbow appearance and no odour. A second surface water sample was collected that included the observed sheen to verify surface water quality through laboratory analysis of hydrocarbons.

The sediments along the shore of the South Berm were agitated using the stick. A small globule was observed rising to the surface of the water. Once the globule reached the surface, it appeared to bloom outwards creating a halo-like affect; although there was no rainbow appearance to the sheen and no odour. A third surface water sample was collected at this area observation.

The shores of the monitoring area were also assessed, with extra attention focused on observing conditions within the cattail reeds, as the wind was blowing in that direction. No sheen was identified within the reeds. An organic sheen previously identified in the October 17th update was identified along the shores of the south embankment; however, no other sheens were identified.

Additional samples were collected for laboratory analysis on Monday, October 21, 2019. Samples collected on October 18 and 21, 2019 were transported to Bureau Veritas Laboratories in Winnipeg, Manitoba for analysis on emergency turnaround time. Surface water samples collected on October 18 and 21, 2019 were analyzed for benzene, toluene, ethylbenzene and xylenes (BTEX) and petroleum hydrocarbon (PHC) Fractions F1 through F4 along with polycyclic aromatic hydrocarbons (PAHs). Analytical results are attached.

The results for all samples analyzed on October 18 and 21, 2019 were below the laboratory detection limits. As no hydrocarbons were detected through laboratory analysis of samples collected directly from the observed sheens on-Site, the sheens observed on October 18, 2019 were considered naturally occurring and unrelated to the CLB release.

Subsequent Fish Salvage

Due to seasonally declining temperatures, and reflective of the *Fisheries Act* (Section 34.4), the team conducted fish salvage at the OMA in October 2019 ahead of winter freeze-up. CN took action in a

collaborative effort with Manitoba Sustainable Development (MSD) to conduct fish salvage during the week of October 21, 2019, with subsequent minnow trapping into early November 2019.

MSD provided one staff person and an electro-fishing boat to assist CN with the fish salvage, and to relocate salvaged fish from the OMA directly to the Assiniboine River. CN in turn assisted MSD with the use of the helicopter to sling the boat into the OMA to complete electro-fishing.

Taiga Helicopters was subcontracted to provide the helicopter, a helicopter pilot and one ground person. The ground person assisted directly in slinging the electro-fishing boat and moving fish from the coolers to the water bucket.

Following the collaborative fish salvage effort by all parties involved with MSD during the week of October 21, 2019, minnow traps were deployed overnight on October 24, 29, 30 and 31. A total of 6,096 fish were removed from the OMA and relocated to the Assiniboine River mainstem in St. Lazare, with no Species at Risk captured.

December 2019 Intrusive Investigation

A total of 16 boreholes (BH19-100 to BH19-130 and MW19-7 to MW19-18) were drilled on December 4 and 5, 2019. The boreholes were advanced using a track mounted sonic drill rig equipped with 0.10 m (4 inch) continuous core barrels. The drill rig was owned and operated by Earth Drilling Ltd. of Regina, SK. The boreholes were advanced with the purpose of further assessing groundwater quality downgradient of MW19-3 and MW19-6. A total of 16 vertical boreholes were advanced ranging in depths between 4.6 to 7.6 mbgs; 12 of the boreholes were completed with monitoring wells and the remaining boreholes were backfilled with bentonite chips.

Soil samples were collected at regular intervals or where the soil lithology changed. Soil conditions were recorded on HDR's standard borehole logs along with field observations (i.e., odours and/or staining). The soil was logged consistently with the Unified Soil Classification System. Each soil sample was given a unique identification number and split into two sub-samples. One of the sub-samples was placed into laboratory-supplied sample jars and placed into a chilled cooler for potential physical and chemical analysis of grain size, BTEX, PHC Fraction F1 to F4 and PAHs. The second sub-sample was placed into a laboratory-supplied re-sealable plastic bag for measurement of soil vapour concentrations. Vapour concentrations were measured in the soil samples using a RKI Eagle II calibrated to hexane.

In total, 55 soil samples, including six duplicates, were collected from the boreholes and submitted for analysis based on field observations (i.e., visual contamination), depth of samples, and the results of soil vapour screening. Soil samples selected for analysis were logged onto formal chain-of-custody forms, and transported on ice to BV in Winnipeg, MB. The results of this sampling are provided in Tables 11 and 12. Soil cuttings were placed in soil bags and later disposed off-Site by third party contractor.

Monitoring well and borehole locations are presented on Figure 8 and soil results are presented on Figures 10A, 10B, 10C, 11A, 11B, 11C and in Tables 10 through 12.

Borehole records are presented in Appendix C.

Groundwater monitoring wells were installed in 12 of the boreholes (MW19-7 through MW19-18) ranging in depths from 2.7 to 7.3 mbgs. The monitoring wells were constructed of 50 mm diameter, Schedule 40 polyvinyl chloride (PVC) screen and solid casing. All monitoring wells included a screen between 2.1 and 3.1 m in length of 0.010" slot screen and solid riser from the screen to surface. The well annulus surrounding the screen was backfilled with 10/20 silica filter sand. Above the sand pack, the annulus was backfilled with hydrated bentonite chips to surface. The well screen and casing connections were threaded, and no glues or solvents were used in the construction of the monitoring wells. All monitoring wells were completed with locked aboveground metal protective casings.

Monitoring well completion details are presented on the borehole records located in Appendix C, Table 9 and presented on Figure 8.

Oxbow Island

During the week of February 10, 2020, approximately 1223 m^3 of subsoil and 1086 m^3 of topsoil were transported to the disturbed areas of the oxbow island. Approximately 75% of the subsoil was used to re-contour the oxbow island and the remainder was stockpiled and covered with anchored coco matting. All the topsoil was stockpiled and covered with anchored coco matting. The stockpiled subsoil and topsoil will be spread during the summer of 2020 as requested by the landowner.

In addition to the re-contouring and backfilling activities, additional work was conducted at this time to create a path for equipment to access the Site safely. Three additional samples were collected and submitted for analysis of BTEX F1 to F4 and PAHs: two samples were collected from the topsoil and subsoil used for the disturbed areas of the oxbow island (WA-SOIL-216 and WA-SOIL-217), and one sample was collected from the temporary gravel used for safe equipment access (WA-SOIL-218).

Additional backfill samples were collected on September 10, 2019 and submitted for analysis of BTEX F1 to F4, PAHs, salinity, grain size and texture (TOPSOIL 1 to TOPSOIL 7 and SUBSOIL 1 to SUBSOIL 3).

Soil analytical results for the backfill and temporary gravel used for safe equipment access are presented in Tables 10, 21 to 23.

South and East Berm Removal

On February 18 and 20, 2020, the South and East Berms were removed, respectively. The berms were removed by excavating loose cobbles and riprap, ripping (loosening) the frost and excavating the berms. A total of nine discrete, confirmatory sediment samples were collected from the base of the former berms and submitted to BV in Winnipeg, MB, for analysis of BTEX F1 to F4 and PAHs.

A total volume of approximately 1,507 m^3 of soil was removed from the berms and stockpiled within CN ROW located approximately 1.6 kilometers (1 mile) west of the Site (CN MP 199). Subsequent to berm removal activities, the oxbow island was ripped (loosened) to alleviate compaction and the temporary gravel used for safe equipment access was removed from Site.

The areas of the former South and East Berms, confirmatory sampling locations and results are presented on Figures 10D, 11D, and in Tables 24 and 25.

OMA Sediment Excavations

On February 24 and 25, 2020, previous soil exceedances identified by laboratory results on the landowner's property located in the bed of the oxbow were excavated. A total of 24 discrete confirmatory sediment samples, including two duplicates, were collected from the base of the excavations and submitted to BV in Winnipeg, MB, for analysis of BTEX F1 to F4 and PAHs. The base of the excavations were sampled in an approximate 5 m by 10 m grid.

A total volume of approximately 831 m^3 of sediment was removed from the excavation areas in the bed of the OMA and stockpiled in CN ROW located approximately 1 mile west of the Site (CN MP 199).

The areas of excavation, confirmatory sampling locations and results are presented in Figures 10D, 11D, Tables 3, 24 and 25.

Appendix F

Quality Control Program

The objective of the Field Quality Control (QC) program was to evaluate the quality and appropriateness of the analytical data, particularly at concentrations that may be at or near standard values.

Measures implemented in the field QC program included recording field notes at all stages of the project, using nitrile gloves when handling samples which were changed between each sample location. Non-dedicated sampling equipment was cleaned between sample locations using laboratory-grade detergent and distilled water. Field instruments were calibrated at least daily. Samples were preserved and placed in clean, laboratory-supplied jars as per laboratory protocols (e.g., no headspace) and samples were transported to the laboratory in ice-filled coolers using laboratory chain-of-custody procedures.

The measure of the reproducibility or precision of the data was quantified by calculating the Relative Percent Difference (RPD). The RPD was calculated as follows:

$$RPD \quad \% \quad = \left(\frac{|S - D|}{\frac{1}{2}(S + D)} \right) \times 100$$

where:

S = original sample concentration

D = duplicate sample concentration

Theoretically, the samples should have identical chemical concentrations (i.e., RPD = 0). However, due to factors such as sample matrix heterogeneity, natural variations or variations in sample collection, handling or analysis, a small variation in chemical concentration may occur (i.e., RPD >0). Measures of precision such as RPD are influenced by how close the analytical value is to the detection limit. Consequently, the use of the RPD should be limited to analytical values that are greater than five times the detection limit (BC MOE 2007). For the purpose of this investigation, RPD values >50% (soil) and 30% (groundwater) for organic compounds and 40% (soil) and 25% (groundwater) for inorganic compounds in duplicates are considered to represent an unacceptable level of precision. However, the reproducibility of duplicate analyses at concentrations near the reportable detection limit (RDL) can be poor, resulting in RPD values of greater than the allowable limits. Therefore, RPDs were not calculated for compounds with concentrations less than approximately five times the RDL.

Duplicates of the following soil/sediment samples were collected and submitted for laboratory analysis:

Parent Sample	Duplicate Sample	Sample Date
MW19-1-3	DUP 1	3-May-19
MW19-3-5	DUP 2	6-May-19
MW19-6-2	DUP 3	6-May-19
C-9158B	DUP4	2-Jun-19
EX1-8	DUP 5	4-Jun-19
EX1-4	DUP 6	4-Jun-19

Parent Sample	Duplicate Sample	Sample Date
EX2-1	DUP7	5-Jun-19
EX2-8	DUP8	5-Jun-19
SLOT2-1	DUP9	6-Jun-19
19-H6-001	DUP 10	9-Jun-19
19-H9-001	DUP 11	9-Jun-19
19-BG2-001	DUP 12	9-Jun-19
19-BG10-001	DUP 13	9-Jun-19
CELL2-2	DUP 14	9-Jun-19
S314WB	DUP15	16-Oct-19
C-2180B	DUP16	16-Oct-19
C-2061-B	DUP-3011	6-Mar-19
C-2138	DUPE-3010	6-Mar-19
C-2191	DUP-3012	6-Mar-19
C-2308	DUP-3015	7-Mar-19
C-2519W-B	DUP-3017	8-Mar-19
C-9158	DUPE-3024	13-Mar-19
C-9408	DUPE-3033	17-Mar-19
S-094	S-3001	27-Feb-19
S-141-B	DUP-3014	7-Mar-19
C-2424	DUP3016	8-Mar-19
C-5017	DUP-3019	10-Mar-19
C-5058W	DUPE-3020	11-Mar-19
C-6045	DUP 6999	6-Mar-19
C-6200	DUPE-3018	9-Mar-19
C-7206	DUPE-3022	11-Mar-19
C-7220	DUPE-3021	11-Mar-19
C-8080	DUPE-3031	16-Mar-19
C-9030	DUPE-3034	18-Mar-19

Parent Sample	Duplicate Sample	Sample Date
C-9041	DUPE-3035	18-Mar-19
C-9045	DUPE-3026	12-Mar-19
C-9086	DUPE-3025	12-Mar-19
C-9212	DUPE-3027	14-Mar-19
C-9306	DUPE-3030	16-Mar-19
C-9365	DUPE-3032	17-Mar-19
DB-018	DUP-3013	6-Mar-19
N-009	N-1000	26-Feb-19
C-1013F	S-3008	3-Mar-19
S-019A	DUP-100	27-Feb-19
S-047C	DUP-101	27-Feb-19
WA-SED-105	WA-SED-105-D	14-Aug-19
WA-SOIL-205	DUP001	14-Aug-19
WA-SED-108B	DUP002	16-Oct-19
South Arm 3	DUP003	16-Oct-19
MW19-10-4	DUP100	4-Dec-19
MW19-12-3	DUP101	4-Dec-19
MW19-13-3	DUP102	4-Dec-19
MW19-16-4	DUP103	4-Dec-19
BH19-100-6	DUP104	5-Dec-19
BH19-120-3	DUP105	5-Dec-19
MW19-17-A	DUP106	5-Dec-19
WA-SED-224	DUP01	25-Feb-20
WA-SED-103B	DUP02	25-Feb-20

Duplicates of the following surface water samples were collected and submitted for laboratory analysis:

Parent Sample	Duplicate Sample	Sample Date
TH-10	DUP4	24-Jul-19
TH-6	DUP5	24-Jul-19
TH-1	DUP6	21-Aug-19
TH-20	DUP7	21-Aug-19
TH-18	DUP8	18-Sept-19
TH-18	DUP9	17-Oct-19

Duplicates of the following groundwater samples were collected and submitted for laboratory analysis:

Parent Sample	Duplicate Sample	Sample Date
MW19-3	DUP1	3-Jun-19
MW19-4	DUP2	26-Jun-19
MW19-6	DUP3	24-Jul-19
MW19-6	DUP4	14-Aug-19
MW19-6	DUP5	21-Aug-19
MW19-6	DUP6	18-Sep-19
MW19-6	DUP7	16-Oct-19
MW19-6	DUP8	30-Oct-19
MW19-6	DUP9	13-Nov-19
MW19-6	DUP10	27-Nov-19
MW19-6	DUP11	11-Dec-19

A summary of the QA/QC review is presented in Tables 26 and 27.

Laboratory Quality Control Program

All soil samples were analyzed by BV of Calgary, Alberta. BV is a Canadian Association for Laboratory Accreditation Inc. accredited laboratory. As conveyed by the laboratory, method blanks, control standards samples, certified reference material standards, method spikes, replicates, duplicates and instrument blanks are routinely analyzed as part of their QC programs.

Appendix G

Draft Detailed Qualitative Risk Assessment – Human Health

Appendix G

DETAILED QUANTITATIVE RISK ASSESSMENT - HUMAN HEALTH

CN MILE 197.4 DERAILMENT

RIVERS SUBDIVISION – ST. LAZARE, MANITOBA
May 29, 2020

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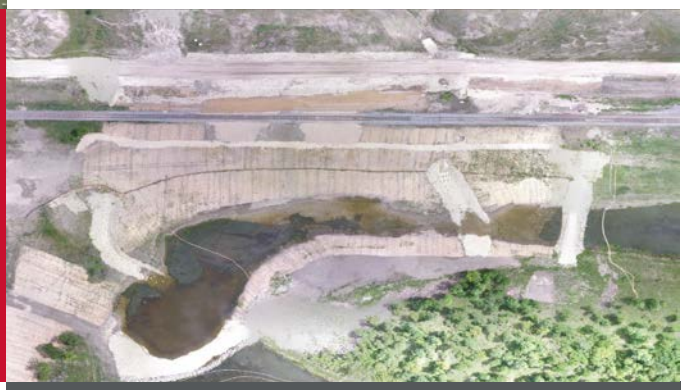

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ABBREVIATIONS AND ACRONYMS

ADAF	Age-dependent adjustment factor
AT	Averaging time
B(a)P	Benzo(a)pyrene
BTEX	Benzene, toluene, ethylbenzene, xylenes
BW	Body weight
CA OEHHA	California Office of Environmental Health Hazard Assessment
CCME	Canadian Council of Ministers of the Environment
CLB	Cold Lake Dilbit Blend
cm	Centimeter
CN	Canadian National Railway Company
COC	Constituent of concern
COPC	Constituent of potential concern
DQRA	Detailed Quantitative Risk Assessment
ED	Exposure duration
EF	Exposure frequency
EPC	Exposure point concentration
ESA	Environmental Site Assessment
GIABS	Gastrointestinal absorption factor
HDR	HDR Corporation
HI	Hazard Index
HQ	Hazard Quotient
IACR	Index of Additive Cancer Risk
ILCR	Incremental lifetime cancer risk
IR	Ingestion rate
IRIS	USEPA Integrated Risk Information System
kg	Kilogram
mbgs	Meters below ground surface
mg/kg-day	Milligrams per kilogram per day
mg/kg	Milligrams per kilogram
mg/m^3	Milligrams per cubic meter
PAH	Polycyclic aromatic hydrocarbon
PEF	Particulate emission factor

PHC	Petroleum hydrocarbon
PQRA	Preliminary Quantitative Risk Assessment
RBA	Relative bioavailability factor
ROS	Regression on order statistics
RoW	Right-of-Way
SCM	Site conceptual model
TPE	Toxic potency equivalents
TRV	Toxicity reference value
UCL	Upper confidence limit
USEPA	United States Environmental Protection Agency

1 Introduction

HDR has completed an evaluation of the potential human health risks at the Site specific to PAHs as part of the Environmental Site Assessment (ESA). The ESA is being submitted in response to the Letter of Designation issued by Manitoba Sustainable Development on February 21, 2019 for the Site described as "SW 13-16-28 W1M, Rural Municipality of Ellice-Archie, Manitoba".

On February 16, 2019, a CN freight train derailed immediately east of an oxbow of the Assiniboine River. The 34 cars that derailed were carrying Cold Lake Dilbit Blend (CLB), and 13 cars ruptured and released approximately 820,000 liters of CLB. The purpose of the ESA is to report on Site remediation and restoration to determine if the Site is no longer contaminated at a level that may pose a threat to human health or safety or to the environment related to PAHs that are included in the Letter of Designation.

1.1 Background and Objectives

In order to determine if contamination from the derailment has been reduced to levels that are no longer of concern, this Detailed Quantitative Risk Assessment (DQRA) has been performed in accordance with Health Canada Part I and V: *Guidance on Human Health Preliminary/Detailed Quantitative Risk Assessment* (PQRA/DQRA) Version 2.0 (Health Canada 2010a and c), the *Canadian Soil Quality Guidelines for the Protection of Environmental and Human Health – Polycyclic Aromatic Hydrocarbons* (CCME 2010b) and other guidance as appropriate.

It was determined that there were sufficient data available to develop the applicable components of a DQRA. This provides a more detailed and site-specific evaluation of potential risks than a Preliminary Quantitative Risk Assessment (PQRA) in that it uses actual sample data rather than modeling results.

The DQRA identifies the current and potential future land use exposure pathways by which human populations may be exposed to contaminants identified in environmental media. It presents incremental lifetime cancer risks (ILCRs) and threshold hazard quotients (HQs) for potential receptors for each Constituent of Potential Concern (COPC). An ILCR of 1E-05 and threshold hazard quotient of 0.2 are the applicable thresholds for evaluating the human health risks calculated herein. COPCs that contribute the most to the cumulative cancer risks and threshold hazard indices (HI) are identified as Constituents of Concern (COC) in **Section 5 Risk Characterization**.

This report contains the information necessary to understand how the risks at the Site are calculated, including the statistical treatment of the data, evaluation of COPCs, the exposure pathways, receptors, exposure parameters and the current toxicological values (e.g., tolerable daily intake) incorporated in the DQRA.

1.2 Site Description

Detailed information on the physical setting, surrounding land use, release and response history, data collection activities, description of geology and hydrogeology and

contaminants detected at the Site are presented in the main body of the ESA report (as noted below), to which this DQRA is an appendix.

Physical Setting and Land Use

See Section 3 of the ESA report for a description of the physical setting and land use.

Site Release and Response History

See Sections 6 and 7 of the ESA report for a description of the release resulting from and response actions taken as a result of the February 2019 derailment.

Summary of Sample Collection, Methodology and Analyses

See Section 8 of the ESA report for information regarding the numerous sampling events, sample collection methods and laboratory analyses performed.

Site Geology and Hydrogeology

See Sections 4 and 5 of the ESA report for a description of the geology and hydrogeology of the Site.

Contaminants Present

A detailed report of contamination detected at the Site is provided in Section 6 of the ESA report and incorporated into the discussion of COPCs for purposes of the DQRA, see **Section 2.2 Hazard Identification** below.

1.3 Scope of Risk Assessment

An evaluation of the potential human health risks (presented here) and ecological impacts (as presented in the SLERA, also attached to the ESA report) at the Site, specific to PAHs has been performed related to the release of PAHs that was associated with the February 16, 2019 train derailment.

The *Canadian Soil Quality Guidelines for Carcinogenic and Other PAHs* guidance (2010a and b) provides instruction on how to apply the soil guidelines for PAHs at a contaminated site and includes a three step process for calculating threshold and non-threshold effects to human and environmental health. This process was followed in the human health and ecological risk assessments:

- Step 1 – Human Health Direct Contact – Calculate cancer risks and threshold hazards using benzo(a)pyrene [B(a)P] toxic potency equivalents (TPEs) to ensure humans are protected from direct contact with soil;
- Step 2 – Human Health Impact to Groundwater – Calculate Index of Additive Cancer Risk (IACR) values for each soil sample to evaluate protection of groundwater (and human health via potable groundwater exposure pathways); and
- Step 3 – Ecological Direct Contact – Compare individual PAH detected concentrations to the appropriate guideline based on threshold effects and calculate a ratio (HQ).

For human health exposures, the area within the CN Right-of-Way (ROW) is to be evaluated as an Industrial land use and the area outside of the ROW as Agricultural, with the associated receptors (Adult only for Industrial; Infant, Toddler, Child, Teen and Adult for Agricultural) included as per the guidelines.

Supplemental Guidance on Human Health Risk Assessment of Contaminated Sediments: Direct Contact Pathway (Health Canada 2017b) and Canadian *Environmental Quality Guidelines* (CCME 2014) were used to evaluate sediment.

Guidance for Evaluating Human Health Impacts in Environmental Assessment: Drinking and Recreational Water Quality (Health Canada 2017a), *Guidelines for Canadian Recreational Water Quality* (Health Canada 2012) and *Health Canada Part I and V* (Health Canada 2010a and c) were used to evaluate surface water.

2 Problem Formulation

2.1 Site Characterization

The scope of the DQRA is limited to an evaluation of the PAHs that have been detected in environmental media as part of the characterization of the magnitude and extent of impacts from the February 2019 derailment, as described in detail in the ESA.

Section 8 of the ESA report provides a detailed description of the sampling events, sample collection methods and laboratory analyses performed as part of the response to the derailment. Section 8.7 of the ESA report describes the volume of contaminated soil removed from the site to date.

Section 11 of the ESA report provides detailed information on the detected concentrations of PAHs in soil, sediment, surface water and groundwater.

Section 11.6 of the ESA report provides a summary of the soil and sediment background samples. No background values based on statistical methods were calculated for PAHs; therefore, background data are not considered in this DQRA.

2.2 Hazard Identification

2.2.1 Summary of Contaminant Concentrations

Analytical data from samples collected by HDR in 2019 and a total of 27 PAHs were assessed based on the Standards Council of Canada Testing and Calibration Laboratory Accreditation Program for Bureau Veritas Canada (2019) Inc. that were used to quantitatively evaluate potential human exposure to contaminants. Tables presenting the environmental media data are provided in the ESA report, Tables 1 to 27 and detailed information on the contaminant concentrations in each environmental medium are presented in Section 11 of the ESA report. As documented in the ESA report and Tables 1 to 27, response actions, including excavation have been performed in which soil and sediment associated with various sample locations have been removed. These sample results (e.g., samples “A” and ‘B” collected on May 2, 2019) were identified in the ESA tables and are not included in this Screening Assessment as the contamination is no longer present. It was also determined that sample “C” (collected on May 3, 2019, see ESA report

Figure 7b) should not be included in the Screening Assessment as it is not representative of conditions resulting from the release.

Data from the 2019 sampling events were determined appropriate for use in the risk assessments and are further refined for use in the DQRA, as described below. In accordance with Health Canada and the United States Environmental Protection Agency (USEPA) *Guidance for Data Useability in Risk Assessment (Part A)* (Health Canada 2010a and c; USEPA 1992) data are refined as follows:

- The detection limit is used to represent non-detect results.
- The maximum result of the parent and field duplicate sample pairs is used if constituents are detected in both samples. The detected value is used when one was detected and the other reported as non-detect.

2.2.2 Contaminant Screening

CLB is a diluted crude with the hydrocarbons, benzene, toluene, ethylbenzene, xylenes, (BTEX) and Petroleum Hydrocarbon (PHC) Fractions F1 through F4, being the primary contaminants of concern. Non-carcinogenic PAHs (acenaphthene, anthracene, fluoranthene, fluorene, naphthalene, phenanthrene, and pyrene) have been included as components of petroleum hydrocarbon Fractions F1 to F4.

Analysis of these PAHs is necessary when dealing with non-petroleum hydrocarbons such as coal tar, creosote, hydrocarbons altered by incomplete combustion (e.g., flare pits, petroleum or petrochemical fires) or products such as solvents where individual compounds may be present at a much greater concentration than in crude products or fuels. The Safety Data Sheet provided for the CLB directly from the shipper, Cenovus, indicates that the composition/information on ingredients for CLB is 100% crude oil, petroleum.

When the sources of hydrocarbon contamination are crude petroleum or refined fuels, separate analysis of non-carcinogenic PAHs is not necessary, unless the contaminants are in a Domestic Use Aquifer or a surface water aquatic life receptor.[1]

The presence of a Domestic Use Aquifer was evaluated, as groundwater is currently being used for domestic purposes by some local residences. However, there is no residential groundwater use in the immediate vicinity of the Site. The applicable regulations do require the separate analysis of the above non-carcinogenic PAHs at the Site based on the presence of a surface water aquatic life receptor, i.e., the oxbow; therefore these analyses were performed.

The main ESA report provides Tables 1 to 27 that include a screening of the PAHs to human health and ecological guidelines from CCME (2014).

In soil and sediment, the non-threshold PAHs were evaluated using the IACR and B(a)P TPE methods on a sample basis (individual PAH concentrations are weighted by a factor and summed in each sample and then the sum is compared to the guideline). There is at least one sample with either an IACR or B(a)P TPE exceedance; therefore, all of the non-threshold PAHs were carried through for further evaluation in this DQRA. Note, that the

[1] Alberta Environment and Parks (AEP). 2019. Alberta Tier 1 Soil and Groundwater Remediation Guidelines. Land Policy Branch, Policy and Planning Division. 198 pp.

soil direct contact guidelines were used to compare to sediment data in accordance with the Health Canada sediment guidance (2017b). For threshold PAHs, there were exceedances of the guidelines for various PAHs in soil and sediment; to be conservative, all of the threshold PAHs were carried through for further evaluation in this DQRA.

In surface water, there are 20 detections of the PAHs fluoranthene (range of 0.01 to 0.012 ug/L in locations TH-21, 22 and 23) and phenanthrene (range of 0.051 to 0.066 ug/L in locations TH-10, 20, 22, 23, 29 and 30) as well as one detection of benzo(k)fluoranthene (0.0099 ug/L) in the sample collected from the culvert, in over 1,800 results. There are no CCME or Health Canada human health guidelines available for surface water agricultural exposure to PAHs or other chemicals (CCME 2014, Health Canada 2017b). USEPA's *National Recommended Water Quality Criteria* for Human Health consumption of water and organisms (2015a) provides a value of 20 ug/L for fluoranthene and 0.012 ug/L for benzo(k)fluoranthene; no value is available for phenanthrene. The Site detections are below these criteria. The *Canadian Environmental Protection Act for PAHs* (Health Canada 1994, Table 4) provides background values of PAHs in fresh water in railway ditches with poles, including 2,035 ug/L for fluoranthene, 1,027 ug/L for phenanthrene and 144 ug/L for benzo(b+k)fluoranthene. The Site detections are below these background values; however, surface water concentrations can be variable, considering that these values were identified over 20 years ago. The CCME guidelines for the protection of aquatic life (CCME 2014), which are typically more conservative than human health guidelines, are 0.04 ug/L for fluoranthene and 0.4 ug/L for phenanthrene; no guideline is available for benzo(k)fluoranthene. The detected surface water concentrations are below all of these comparison guidelines.

Potential drinking water impacts are based on leaching to ground water (Health Canada 2019), which is addressed in the IACR calculations included in this DQRA. Therefore, the surface water data are not further evaluated in this DQRA.

A summary of the occurrence and distribution of each PAH is provided in **Attachment A, Tables 2.1 to 2.3,** in which **Table 2.1** presents the soil data, **Table 2.2** including the sediment data and **Table 2.3** presenting the surface water data.

2.2.3 Identification of Contaminants of Potential Concern

The scope of the risk analyses includes PAHs; as there is no single Canadian Soil Quality Guideline that will protect both human and environmental health from all PAHs, CCME requires that B[a]P TPE, IACR and a comparison to 15 individual PAHs be completed. Results from all these analyses are included in the DQRA and incorporated as COPCs. See **Attachment A, Table 2.4**.

2.3 Receptor Identification

2.3.1 Present and Future Human Receptors

Potential receptors are defined as human populations that may be subject to contaminant exposure; receptor scenarios to be considered are included in the DQRA as provided in guidance and in the Letter of Designation. The receptor scenarios include adult Industrial workers within the CN ROW and Agricultural receptors (adult, teen, child, toddler and infant) outside of the CN ROW.

These receptor scenarios are depicted in the tabular format site conceptual model (SCM) in **Attachment A, Table 1.1**.

Industrial Worker

An industrial worker's exposure to soil [0-1.5 meters below ground surface (mbgs)] in the surface soil within the CN ROW via the incidental ingestion, dermal and inhalation pathways was evaluated as included in applicable guidance. It is unlikely that site activities result in exposure to soil at a depth greater than 1.5 mbgs. Maximum detected concentrations of COPCs in soil were identified in the surface soil zone; therefore, it is conservative to evaluate this receptor's exposure to soil using the surface soil data set.

Agricultural Receptor

An agricultural receptor's exposure to surface soil (0-1.5 mbgs) outside of the CN ROW via the incidental ingestion, dermal and inhalation pathways was evaluated as included in applicable guidance. It is unlikely that site activities result in exposure to soil at a depth greater than 1.5 mbgs. Maximum detected concentrations of COPCs in soil were identified in the surface soil zone; therefore, it is conservative to evaluate this receptor's exposure to soil using the surface soil data set.

An agricultural receptor's exposure to sediment outside of the CN ROW via the incidental ingestion and dermal contact pathways was evaluated. Exposure to sediment in the nearby culvert outside of the CN ROW was also evaluated separately via the incidental ingestion and dermal contact pathways.

2.4 Exposure Pathway Identification

The objective of the exposure assessment is to estimate the magnitude, frequency, duration and routes of current and reasonably anticipated exposure to COPCs associated with the Site. The exposure assessment includes exposure routes and pathways based on the industrial worker and agricultural receptor scenarios.

Standard default exposure factors for estimating reasonable maximum exposure are used where available. Where standard default exposure factors are not available or appropriate for use for an exposure pathway, the evaluation is conducted using similarly conservative exposure factors that are based on Site-specific considerations and professional judgment (e.g., fraction of soil adhering to skin). Information on the exposure factors is provided in Section 3.5 and presented in **Attachment A, Tables 4.1 and 4.2**.

2.4.1 Summary of Contaminant Sources and Release Mechanisms

See Section 6 of the ESA report.

2.4.2 Identification of Transport and Exposure Media

See Section 6 of the ESA report.

2.4.3 Exposure Pathways Screening

No exposure pathways screening was performed as the industrial worker and agricultural receptor scenarios were used as per guidance and the exposure pathways included are appropriate for the Site.

2.5 Site Conceptual Model

Specific elements of the SCM, for which detailed information for some are provided in the ESA, may include, but are not limited to:

- Historic, current and planned land use;
- Description of the site, its physical setting, the release and fate of contamination at the site;
- Sources of contamination, potential chemicals of concern, and the media (e.g., soil, sediments) that may be affected;
- Distribution and concentration of chemicals in environmental media;
- Contaminant migration from source to potential exposure of human or ecological receptors
- Activity patterns at the site or at areas impacted by the site.

The human health SCM is included as a tabular format in **Attachment A, Table 1.1**.

3 Exposure Assessment

3.1 Characterization of Contaminant Concentrations

3.1.1 Source Concentrations

See Section 11 of the ESA report.

3.1.2 Concentrations in Exposure Media

A summary of the occurrence and distribution of each PAH is provided in **Attachment A, Tables 2.1 to 2.3,** in which **Table 2.1** presents the soil data, **Table 2.2** the sediment data and **Table 2.3** the surface water data.

3.1.3 Background Concentrations

Section 11.6 of the ESA report provides a summary of the soil and sediment background samples. No background values based on statistical methods were calculated for PAHs; therefore, background data are not considered in this DQRA.

3.2 Characterization of Parameters Governing Fate and Transport

Information on contaminant- and site-specific fate and transport, as well as geological and hydrogeological parameters is provided in Sections 4, 5 and 6 of the ESA report.

3.3 Fate and Transport Modeling

No modelling, beyond the model incorporated into the derivation of the particulate emission factor in this DQRA, was performed as part of the response action; adequate data were collected to allow for use of actual site-specific PAH data in performing both the response action and risk assessments.

In the environment, PAHs released to soil will adsorb to the organic fraction of soils and sediments. Higher molecular weight PAHs are more likely to adsorb to soil and sediment as compared to lower molecular weight PAHs. In aquatic environments, PAHs will adsorb to sediment and persist, but typically have limited bioavailability to terrestrial and aquatic organisms. (CCME 2010a, 2010b)

PAHs may be biologically degraded by microorganisms in the aerobic soil zone. Factors such as the PAH molecular weight, temperature, soil type, oxygen levels in the soil zone, and type of microorganisms affect the biodegradation process. (CCME 2010a, 2010b)

3.4 Receptor Characterization

Receptors included in the DQRA are based on the industrial worker and agricultural receptor exposure scenarios, as described in the *Canadian Soil Quality Guidelines for Carcinogenic and Other PAHs* guidance (CCME 2010a and b).

For human health exposures, the area within the CN ROW is to be evaluated as an Industrial land use and the area outside of the ROW as Agricultural, with the associated receptors (Adult only for Industrial; Infant, Toddler, Child, Teen and Adult for Agricultural) included as per the guidelines.

3.5 Exposure Estimation

3.5.1 Estimation of Intake by COPC, Receptor and Exposure Route

Estimates of COPC concentrations at points of potential human exposure are necessary for evaluating chemical intakes by potentially exposed individuals. The concentrations of chemicals in the exposure medium at the exposure point are termed "exposure point concentrations" (EPCs). EPCs are determined for each medium sampled, as detailed below.

The EPC for the DQRA is defined as the 95 percent upper confidence limit (UCL) of the arithmetic mean or maximum observed concentration of an individual COPC, whichever is lower, per media. Calculation of the 95% UCL is conducted in accordance with guidance (USEPA 2015a, b). The ProUCL software package, version 5.1 is used to determine the underlying statistical distributions of the data set and the EPCs.

For non-detects, ProUCL applies the Regression on Order Statistics (ROS) methods for lognormal and gamma distributed data sets to provide a better estimate of the non-detected sample's true value based on actual detected concentrations. For normal distributions, ProUCL utilizes Kaplan-Meier estimates in lieu of the ROS methods because the ROS methods tend to yield biased and negative non-detect values for these distributions (USEPA 2015a and b).

EPCs were calculated for each medium as follows:

- Surface soil (0-1.5 mbgs) within CN RoW for Human Health Industrial exposure, and
- Surface soil (0-1.5 mbgs), sediment and culvert sediment outside of CN RoW for Human Health Agricultural exposure

The EPCs for each medium in the exposure assessment are presented in **Attachment A, Tables 3.1** to **3.4**. **Table 3.1** presents the EPCs for surface soil (0-1.5 mbgs) within CN Row, **Table 3.2** for surface soil (0-1.5 mbgs) outside of CN RoW, **Table 3.3** for sediment outside of CN RoW and **Table 3.4** for culvert sediment outside of CN RoW. As noted in Section 2.2.2, exposure to COPCs in surface water is evaluated qualitatively as there are a limited number of detected concentrations; no surface water EPCs were calculated and therefore, no cancer risks and noncancer hazards were calculated.

The supporting ProUCL data input and outputs for the EPC determination are provided in **Attachment B, Tables B.1** to **B.5**.

3.5.2 Equations and Exposure Factors

The EPCs are used in combination with default exposure factors to estimate COPC intake via each exposure pathway for each receptor.

COPC intake is expressed in terms of milligrams of chemical per kilogram of body weight per day (mg/kg-day), using the following general equation, which is adjusted based on the exposure pathway and medium:

$$Intake = \frac{EPC\ x\ IR\ x\ EF\ x\ ED\ x\ CF}{BW\ x\ AT}$$

Where:

Intake	=	daily intake or exposure dose (mg/kg-day)
EPC	=	exposure point concentration of COPC (mg/kg)
IR	=	ingestion rate; the amount of contaminated medium ingested over the exposure period (mg/day)
EF	=	exposure frequency; describes how often exposure occurs (days/year)
ED	=	exposure duration; describes how long exposure occurs (years)
CF	=	conversion factor; 1E-06 (kg/mg)
BW	=	body weight; the average body weight over the exposure period (kg)

AT = averaging time; period over which exposure is averaged (days)

Each of the intake variables in the above equation consists of a range of values taken from CCME (2006) and Health Canada (2010a, b and c, 2017b) and other applicable risk guidance. The exposure factors and intakes for receptor population groups for each exposure pathway are presented in **Attachment A, Tables 4.1** and **4.2,** to achieve units of mg/kg-day and are summarized below. **Attachment A, Table 4.1** describes in more detail the exposure factors and equations for pathways related to soil exposure scenarios and **Table 4.2** that for sediment. Supplemental values for the exposure factors are presented in **Attachment A, Tables 4.3** to **4.5.**

Exposure Factors

The averaging times, body weights, exposure durations and exposure frequencies are the same for all exposure pathways, as follows:

- The averaging time for evaluating cancer risk is equal to a lifetime of 80 years or 29,200 days (Health Canada 2010a). The averaging time for evaluating noncancer hazard quotients is equal to the exposure duration, which varies by receptor: 35 years for an adult industrial worker, 60 years for an adult agricultural receptor, 0.5 year for an infant, 4 to 5 years for a toddler, 7 years for a child and 8 years for a teen (CCME 2006, Health Canada 2010a).
- The body weight of 70.7 kg is the standard recommended body weight for assessing exposure to adults (CCME 2006, Health Canada 2010a). Body weights of 8.2, 16.5, 32.9 and 59.7 kg are used for an infant, toddler, child and teen, respectively (CCME 2006, Health Canada 2010a).
- The exposure duration for an industrial worker incidentally ingesting soil is 35 years of activity for 240 days/year (CCME 2006, Health Canada 2010a).

Ingestion Pathway of Exposure

- *Ingestion Rate*

  The adult industrial worker and adult agricultural receptor has a soil incidental ingestion rate of 20 mg/day (CCME 2006, Health Canada 2010a). The soil incidental ingestion rate of an infant, child and teen agricultural receptor is 20 mg/day each and that of a toddler is 80 mg/day (CCME 2006, Health Canada 2010a).

  The incidental ingestion rate of sediment for an agricultural receptor is 20 mg/hour for an adult, 72 mg/hour for a toddler, 57 mg/hour for a child and 18 mg/hour for a toddler (Health Canada 2017b). The Health Canada *Supplemental Guidance on Human Health Risk Assessment of Contaminated Sediments: Direct Contact Pathway* does not provide exposure factors for infants as this age group is expected to have minimal contact with sediments, as they are unable to crawl or walk and their caregiver would limit direct contact with sediments (2017b).

- *Relative Bioavailability Factor*

  The relative bioavailability factor (RBA) is incorporated in the ingestion pathway and accounts for the differences in the bioavailability of a constituent between the medium

of exposure and absorption into the gastrointestinal tract. An RBA of 100% (1.0) was assumed for all of the COPCs (Health Canada 2010a). The COPC-specific values are presented in **Attachment A, Table 4.3**.

Dermal Contact Pathway of Exposure

- *Skin Surface Area*

  The adult and infant/toddler/child/teen's skin surface areas for soil exposure are the sum of individual values for hands, arms (upper and lower), and legs (upper and lower) (Health Canada 2010a, Table 3).

  The toddler/child/teen's skin surface areas for sediment exposure are the sum of individual values for hands, forearms, legs, and feet (Health Canada 2017b, Table 2). The adult skin surface area is the same, excluding the feet (Health Canada 2017b, Table 2.

- Adherence Factor

  The soil adherence factor is 0.1 mg/cm^2-event that is based on soil loading to exposed skin on hands, as presented in Table 3 of Health Canada 2010a for each age group (2010a).

  The sediment adherence factors for an adult are taken from Table 3 of Health Canada 2017 for adults that are clam digging in a tidal flat (very fine to fine sand) with shoes on (2017b).

  The sediment adherence factors for a toddler, child and teen are taken from Table 3 of Health Canada 2017b for children in mud, first exposure: 11 cm^2 for forearms, 35 cm^2 for hands, 36 cm^2 for lower legs and 24 cm^2 for feet. A sensitivity analysis was performed using more realistic adherence factors for children in medium to coarse sand (overall exposure) in the table, based on soil types at the Site. These include loamy soils, which are a mix of clay and silt, dominated by and most similar to fine to very fine sand. The exposure factors include 0.17 cm^2 for forearms, 0.49 cm^2 for hands, 0.7 cm^2 for lower legs, and 21 cm^2 for feet, which results in an average AF of 3.4 mg/cm^2-event (Health Canada 2017b). The results of these exposure scenarios are included in **Section 5 Risk Characterization**.

- *Dermal Absorption Fraction*

  The dermal absorption of constituents into the body is COPC-specific. The value of 14.8% for B(a)P was applied to all PAHs as indicated in guidance (Health Canada 2010b).

- *Event Frequency*

  The event frequency is assumed to be one event/day for all exposures (USEPA 2004).

Inhalation Pathway of Exposure

- *Exposure Time*

  The exposure time for inhalation of soil particulates and soil vapor for an industrial worker is a 10-hour work day (CCME 2006, Health Canada 2010a). The exposure

time for an agricultural receptors for all age groups is 24 hours/day (Health Canada 2010a).

- *Particulate Emissions Factor*

  To evaluate a receptor's exposure to soil particulates, a particulate emission factor (PEF) of 7.6E-10 kg/m^3 is applied, which assumes an airborne concentration of suspended soil particulate above a contaminated site (CCME 2006, Health Canada 2010a).

3.5.3 Estimation of Background Exposure

Section 11.6 of the ESA report provides a summary of the soil and sediment background samples. No background values based on statistical methods were calculated for PAHs; therefore, background data are not considered in this DQRA.

4 Toxicity Assessment

The toxicity assessment provides a framework for characterizing the relationship between the magnitude of exposure to a COPC and the nature and likelihood of adverse health effects that may result from such exposure. For all exposure pathways, there are two approaches for deriving toxicity values. One involves the derivation of a noncancer reference value, e.g., tolerable daily intake (TDI) that represents the maximum dose of a threshold substance to which an individual could be exposed daily over a lifetime without any expected deleterious effects (Health Canada 1996). It is expressed as the amount of substance per unit body weight per unit time (i.e., mg/kg bw/day). Other noncancer values include dermal toxicological reference values (TRVs).

Cancer toxicity values quantitatively define the dose/response using the cancer slope factor. Health Canada values express potency as the dose or concentration causing a five percent increase in the incidence of/deaths due to tumors or heritable mutations considered to be associated with exposure. These are derived for oral, dermal and/or inhalation routes of exposure, for chemicals for which there is sufficient information. Toxicity values from Health Canada 2010 were applied and supplemented with values from USEPA Integrated Risk Information System (IRIS 2019a) and California Office of Environmental Health Hazard Assessment (CA OEHHA 2019) in accordance with guidance.

4.1 Evaluation of Threshold Contaminants

A tolerable daily intake is calculated for the ingestion exposure pathway, typically expressed as mg/kg-day for threshold (non-carcinogenic) contaminants. These values are presented in **Attachment A, Tables 5.1**.

In the absence of dermal slope factors for PAHs, the process utilizes the dose-response relationship obtained from oral administration studies to make an adjustment for absorption efficiency to represent the toxicity factor in terms of absorbed dose, using route-to-route (oral-to-dermal) extrapolations for systemic effects. This is performed using a chemical-specific oral absorption factor (GIABS) that accounts for the fact that most slope factors

are expressed as the amount administered per unit time and body weight, with exposure estimates for the dermal pathway expressed as a dose absorbed in the gastrointestinal tract. A GIABS of one (equivalent to assuming 100% absorption) is applied for the PAHs (Health Canada 2010b, USEPA 2004). These values are presented in **Attachment A, Tables 5.1**.

Guidance also provides a method to derive a tolerable daily intake concentration for the inhalation pathway, expressed in terms of the concentration in the air, as mg/m^3. No tolerable concentrations have been identified in Canadian guidance for PAHs, as indicated in **Attachment A, Tables 5.2**.

4.2 Evaluation of Non-threshold Contaminants

Risks associated with a given level of exposure to potential non-threshold contaminants (i.e., carcinogens) are typically extrapolated based on toxicity values termed slope factors. Oral slope factors are the upper 95th percent confidence limit of the slope of the dose-response curve, expressed in terms of risk per unit dose $[(mg/kg\text{-}day)^{-1}]$.

Cancer slope factors for the oral and inhalation routes of exposure were taken from Health Canada 2010b.

In the absence of dermal toxicity values for cancer development for many PAHs, the dermal slope factors were calculated by multiplying B(a)P's toxicity value by the TPE for each PAH, an accepted B(a)P "equivalency" risk assessment method was used, in accordance with applicable guidance. The dermal slope factor of 25 $(mg/kg\text{-}day)^{-1}$ for B(a)P was taken from Knafla 2006, as cited in Health Canada 2010b.

The cancer slope factors for the COPCs that are used in the DQRA are presented in **Attachment A, Table 6.1** for the oral/dermal pathway and **Attachment A, Table 6.2** for the inhalation pathway.

5 Risk Characterization

The information obtained from the exposure assessment (**Section 3**) and toxicity assessment (**Section 4**) is integrated to identify the potential non-carcinogenic hazard and characterize the carcinogenic ILCR posed by COPCs for evaluation in the DQRA. The hazards and risks associated with exposure to individual COPCs is described and the hazards and risks associated with exposures to multiple COPCs is characterized. The results of the risk characterization are presented below and in **Attachment A, Tables 7.1** to **7.4.** A summary of the cumulative risks and hazards for the Industrial and Agricultural exposure scenarios are presented in **Attachment A, Tables 8.1**.

5.1 Threshold Contaminants

5.1.1 Estimation of Pathway Hazard Quotients

Potential hazards for threshold contaminant threshold effects are typically estimated by calculating the HQ for each COPC, using the following general equation, which can vary by exposure pathway.

$$HQ = \frac{Intake}{Toxicity}$$

Where:

HQ	=	Hazard quotient (unitless)
Intake	=	Chronic daily intake of chemicals or exposure dose (mg/kg-day or mg/m^3)
Toxicity	=	Tolerable intake (mg/kg-day), dermal TRV (mg/kg-day) or tolerable concentration (mg/m^3)

When chemical-specific HQs exceed 0.2, there may be concern for potential threshold effects from that COPC (Health Canada 2010a and c). The cumulative noncancer HI from exposure to the combination of COPCs in an environmental medium and across all media for a receptor is estimated using the following equation (Health Canada 2010a and c):

$$Hazard\ Index\ = \sum_i HQ_i$$

When the HI for a COPC exceeds unity (one), there may be concern for potential threshold effects from that COPC (Health Canada 2010a and c). The HI is an indicator that potential hazard for a specific receptor exposed to a COPC in the environment cannot be ruled out, if it is greater than one, not that the hazard actually exists. In interpreting HI values, it is important to understand that the values are estimates and are subject to the uncertainties inherent in both the estimates of exposure and toxicity benchmarks.

5.1.2 Hazard Quotient Results

Industrial Worker

The HI values by exposure pathway for an industrial worker's exposure to COPCs in surface soil (0-1.5 mbgs) within the CN ROW are summarized in **Table 5-1** below. Additive chemical-specific HQs across all potential pathways of exposure are presented in **Attachment A, Table 7.1**. The chemical-specific HQs are less than the threshold of 0.2 and the HI values are less than the threshold of one.

Results of this evaluation indicate that there is unlikely to be unacceptable threshold hazards to current and future industrial workers from exposures to COPCs in surface soil (0-1.5 mbgs) within the CN ROW as the HQs are well below the threshold of 0.2.

Table 5-1. Potential Threshold Effects for an Industrial Worker's Exposure to Surface Soil within the CN ROW

Medium	Exposure Route	Hazard Index
		Adult
Surface Soil Within CN RoW 0-1.5 m	Incidental Ingestion	2.7E-05

	Dermal	6.8E-05
	Inhalation	Not calculated due to lack of toxicity values
	Total	9.5E-05

Agricultural Receptor

The HI values by exposure pathway for an agricultural receptor's exposure to COPCs in surface soil (0-1.5 mbgs) and sediment outside of the CN ROW are summarized in **Table 5-2** below. Chemical-specific HQs are presented in **Attachment A, Table 7.2**. The chemical-specific HQs are less than the threshold of 0.2 and the HI values are less than the threshold of one.

Results of this evaluation indicate that there is unlikely to be unacceptable threshold hazards to current and future agricultural receptors from exposures to COPCs in surface soil (0-1.5 mbgs) and sediment outside of the CN ROW.

Table 5-2. Potential Threshold Effects for an Agricultural Receptor's Exposure to Surface Soil and Sediment Outside of the CN ROW

Medium	**Exposure Route**	**Hazard Index**	
		Adult	**Infant/Toddler/Child/Teen**
Surface Soil Outside of CN RoW 0-1.5 m	Incidental Ingestion	1.2E-05	5.2E-05
	Dermal	8.3E-05	9.9E-05
	Inhalation	Not calculated due to lack of toxicity values	Not calculated due to lack of toxicity values
Medium	**Exposure Route**	**Adult**	**Toddler/Child/Teen**
Sediment Outside of CN RoW	Incidental Ingestion	4.5E-06	4.0E-05
	Dermal	1.4E-04	3.1E-02
	Total	2.4E-04	3.1E-02

Sensitivity Analysis: Culvert Sediment Exposure Scenario

A sensitivity analysis was performed to identify potential threshold hazards from exposure of agricultural receptors to COPCs in the culvert sediment outside of the CN ROW.

The HI values by exposure pathway for an agricultural receptor's exposure to COPCs in culvert sediment outside of the CN ROW are summarized in **Table 5-3** below. Chemical-specific HQs are presented in **Attachment A, Table 7.3**. The chemical-specific HQs are less than the threshold of 0.2 and the HI values are less than the threshold of one.

Results of this evaluation indicate that there is unlikely to be unacceptable threshold hazards to current and future agricultural receptors from exposures to COPCs in culvert sediment outside of the CN ROW.

Table 5-3. Sensitivity Analysis: Potential Threshold Effects for an Agricultural Receptor's Exposure to Culvert Sediment Outside of the CN ROW

Medium	Exposure Route	Hazard Index	
		Adult	Infant/Toddler/Child/Teen
Culvert Sediment Outside of RoW	Incidental Ingestion	5.2E-08	4.6E-07
	Dermal	1.6E-06	3.5E-04

5.2 Non-threshold Contaminants

5.2.1 Estimation of ILCRs

Potential risks for carcinogenic effects are typically estimated by calculating an ILCR as a result of exposure to Site-related carcinogens. Calculation of an ILCR for an exposure pathway involves multiplying the chronic daily intake for each chemical by its upper-bound cancer slope factor, as described by the following general equation (Health Canada 2010a and c), which can vary by exposure pathway and COPC:

$$Risk = Intake \; x \; Toxicity$$

where:

Risk	=	Cancer risk (unitless)
Intake	=	Chronic daily intake of chemicals (expressed in mg/kg-day)
Toxicity	=	Oral, dermal or inhalation slope factor [$(mg/kg\text{-}day)^{-1}$]

The cumulative cancer risk from exposure to the combination of COPCs in an environmental medium and also across all media for a receptor is estimated following risk guidance (Health Canada 2010a and c) and the following general equation:

$$Cumulative \; Risk = \sum_{i} Risk_i$$

For known or suspected carcinogens, non-threshold risks will be deemed to be "essentially negligible" (*de minimus*) where the estimated ILCR is less than or equation to 1 in 100,000 risk (1E-05) (Health Canada 2010a and c).

5.2.2 ILCR Results

Industrial Worker

The cumulative cancer risks by exposure pathway for an industrial worker's exposure to COPCs in surface soil (0-1.5 mbgs) within the CN ROW are summarized in **Table 5-4** below. Chemical-specific cancer risks are presented in **Attachment A, Table 7.1.**

The total ILCR for a worker's exposure to COPCs in surface soil within the CN ROW from all pathways is less than 1E-05. Results of this evaluation indicate that there is unlikely to

be unacceptable risk to current and future industrial workers from exposures to COPCs in surface soil (0-1.5 mbgs) within the CN ROW.

Table 5-4. Potential Non-Threshold Effects for an Industrial Worker's Exposure to Surface Soil within the CN ROW

Medium	Exposure Route	Cumulative Cancer Risk
		Lifetime
Surface Soil Within RoW 0-1.5 m	Incidental Ingestion	1.2E-08
	Dermal	3.2E-07
	Inhalation	2.1E-10
	Total ILCR	3.3E-07

Agricultural Receptor

The cumulative cancer risks by exposure pathway for an agricultural receptor's exposure to COPCs in surface soil (0-1.5 mbgs) and sediment outside of the CN ROW are summarized in **Table 5-5** below. Chemical-specific cancer risks are presented in **Attachment A, Table 7.2.**

Results of this evaluation indicate that there is unlikely to be unacceptable risk to current and future agricultural receptors from exposures to COPCs in surface soil (0-1.5 mbgs) outside of the CN ROW.

Dermal contact with COPCs in sediment outside of the CN ROW may present an unacceptable risk to current and future agricultural receptors.

Table 5-5. Potential Non-Threshold Effects for an Agricultural Receptor's Exposure to Surface Soil and Sediment Outside of the CN ROW

Medium	Exposure Route	Cumulative Cancer Risk
		Lifetime
Surface Soil Outside of RoW 0-1.5 m	Incidental Ingestion	3.6E-08
	Dermal	1.3E-06
	Inhalation	8.4E-10
Sediment Outside of RoW	Incidental Ingestion	1.4E-08
	Dermal	6.8E-05
	Total ILCR	6.9E-05

Review of the elevated ILCR for dermal pathway indicates that the adherence factors assuming a muddy substrate are the primary contributor to the risk.

Sensitivity Analysis: Alternate Dermal Adherence Factors Exposure Scenario

A sensitivity analysis was performed to evaluate the scenario using alternate dermal adherence factors (i.e., based on presence of sandy soils, see **Section 5.4.6** below). The analysis identified an ILCR of 8.7E-06 for the dermal pathway and 1.0E-05 for the overall ILCR for an agricultural receptor. The ILCR of 1.0E-05 meets the threshold of 1E-05. This indicates that there is unlikely to be unacceptable risk via dermal contact with COPCs in sandy sediment outside of the CN ROW. Chemical-specific cancer risks for this sensitivity analysis are presented in **Attachment A, Table 7.4.**

Sensitivity Analysis: Culvert Sediment Exposure Scenario

As indicated in **Section 5.1.2**, the first sensitivity analysis was performed to identify potential threshold and non-threshold effects from exposure of agricultural receptors to COPCs in the culvert sediment outside of the CN ROW.

The cumulative cancer risks by exposure pathway for an agricultural receptor's exposure specifically to COPCs in culvert sediment outside of the CN ROW are summarized in **Table 5-6** below. Chemical-specific HQs are presented in **Attachment A, Table 7.3**. Results of this evaluation indicate that there is unlikely to be unacceptable risk to current and future agricultural receptors from exposures to COPCs in culvert sediment outside of the CN RoW.

Table 5-6. Sensitivity Analysis: Potential Non-Threshold Effects for an Agricultural Receptor's Exposure to Culvert Sediment Outside of the CN ROW

Medium	Exposure Route	Cumulative Cancer Risk
		Lifetime
Culvert Sediment Outside of RoW	Incidental Ingestion	2.9E-11
	Dermal	1.5E-07

5.3 Impact to Groundwater

5.3.1 Estimation of IACRs

The IACR evaluation method uses soil quality guidelines derived for individual carcinogenic PAHs for the protection of potable water. They are not stand alone guidelines; rather they are incorporated into the IACR equation (CCME 2010b), to reflect the potential combined effects of individual PAHs in the mixture. An IACR value > 1.0 indicates possible ILCR greater than the accepted level of risk associated with the benzo[a]pyrene drinking water guideline.

IACR results indicate there is some potential for impacts to human health based on potential soil leaching (related to the incident) to groundwater that could be used for potable water supply, as summarized below.

- There are six locations within the ROW that exceed the IACR threshold, when data are limited to surface soil (0-1.5 mbgs). IACR values within the ROW range from 1.6 to 8.1.

- Subsurface soil (> 1.5 m) is included in a separate IACR analysis. Five additional locations minimally exceed the IACR, with values ranging from 1.2 to 5.9.

5.4 Uncertainties

This section includes a discussion on the inherent uncertainties in the DQRA methods, inputs and conclusions and the additional sensitivity analyses performed. There is uncertainty inherent in the methods, inputs and conclusions of any DQRA. This level of uncertainty results from the fact that the risk assessment process involves assumptions and unknowns, contributing to the total uncertainty in the final conclusions.

5.4.1 Uncertainties in Site Characterization

The site characterization performed as part of the response to the February 2019 derailment includes the collection and analysis of numerous media samples in impacted and background areas of the Site. While this effort has been extensive, any site characterization includes results only of those samples collected and not the complete population of concentrations that could be present. This is reflected in the variation in the analytical results of individual samples, which is why 95% UCLs are calculated to allow for use of an estimate of the likely concentration based on the population mean. Where the UCLs cannot be calculated, the risk assessment defaults to use of a maximum detected value.

Other uncertainties include knowledge of the Site and its environmental features, past and current land use impacts and variation inherent in environmental sampling and analysis.

5.4.2 Uncertainties in Exposure Assessment

The sensitivity analyses included in this risk assessment reflect a primary example of how exposure factors may add uncertainty to risk assessment. It is important that factors used consider actual site conditions, such as properties of the media to which receptors are exposed. Other factors, such as exposure frequency and duration may be impacted by the remote nature and weather patterns of the Site.

The exposure factors used for quantifying exposure are conservative and reflect upper-bound assumptions; the resulting risk estimates may be overestimated.

5.4.3 Uncertainties in Toxicity Assessment

Toxicity values are derived from animal or epidemiological studies that vary in their animal species, chemical dosage, study duration and other factors that influence the final results. Determination of which toxicity values are most appropriate and applicable for evaluation of human health exposures is also variable. In this DQRA, toxicity values were not available for many of the PAHs by exposure pathway and in the case of the slope factors, the toxicity of B(a)P was used to derive the slope factors of other non-threshold PAHs. (ITRC 2015)

5.4.4 Potential for Synergistic/Antagonistic Effects

PAH exposure typically includes mixtures of these chemicals, not exposure to individual PAHs. There is research indicating certain PAH mixtures showed an additive or synergistic effect on indicators of cell damage. Some mixtures appeared to have an antagonistic effect. Exposure to PAH mixtures that may induce additive, synergistic or antagonistic effects add to the uncertainty in risk assessment (ATSDR 1995).

5.4.5 Uncertainties in Risk Estimates

Uncertainties in the risk estimates are associated with the uncertainties with the inputs, the exposure intake and toxicity values.

5.4.6 Identification of Major Factors Influencing Uncertainty

As noted in **Section 3.5.2**, the sediment adherence factors for a toddler, child and teen are taken from Table 3 of Health Canada 2017b for children in contact with mud to be conservative. In consideration that deposition of sediment will continue to occur within the oxbow, the risk results were re-calculated using adherence factors based on local soil types. Using this Site-specific information, exposure and the ILCR decreased by an order of magnitude. The variation in the soil type, sediment deposition and actual exposure by agricultural receptors to the sediment may result in uncertainty in the risk estimates.

5.5 Discussion

5.5.1 Comparison with Background Exposures

No background values based on statistical methods were calculated for PAHs; therefore, background data are not considered in this DQRA.

5.5.2 Comparison with Regulatory Protection Goals

The main ESA report provides Tables 1 to 27 that include a screening of the PAHs to human health and ecological guidelines from CCME (2014).

5.5.3 Identification of Major Factors Driving Risk

Dermal contact with COPCs in sediment outside of the CN ROW may present unacceptable non-threshold effects to current and future agricultural receptors, largely due to high sediment adherence factors applied in this exposure scenario. See sensitivity analysis in Section 5.2.2.

5.5.4 Confidence in Risk Estimate

The scope of the investigation being limited to a specific release, the timely response to the release, extensive and iterative nature of the site characterization and reliance on conservative default parameters provides a high level of confidence in the evaluation of the potential human health risks specific to PAHs specified by CCME guidelines at the Site

being submitted in response to the Letter of Designation issued by Manitoba Sustainable Development.

5.5.5 Summary of Risk Characterization

This DQRA was prepared to quantitatively evaluate potential baseline health risks for exposure to COPCs present in soil, surface water and sediment. The DQRA evaluated the PAHs included in the Letter of Designation as COPCs and is conducted in accordance with guidance that incorporates conservative exposure factor and potential impacts to sensitive receptors.

The DQRA evaluation indicates there is unlikely to be threshold and non-threshold effects for the following exposure scenarios:

- Industrial Workers – ingestion, dermal contact and inhalation of COPCs in surface soil (0-1.5 mbgs) within the CN RoW
- Agricultural Receptors
    - Incidental ingestion, dermal contact and inhalation of COPCs in surface soil (0-1.5 mbgs) outside of the CN RoW
    - Incidental ingestion and dermal contact with sediment outside of the CN RoW for threshold effects only
    - Incidental ingestion and dermal contact with culvert sediment outside of the CN RoW
    - Incidental ingestion and dermal contact with surface water outside of the CN RoW, as there were a limited number of detected PAH concentrations in this medium.

Dermal contact with COPCs in sediment outside of the CN RoW may present unacceptable non-threshold effects to current and future agricultural receptors, largely due to high sediment adherence factors applied in this exposure scenario. The ILCR for the dermal pathway decreased below the acceptable limit of 1E-05 when alternate, less conservative adherence factors for a sandy soil were applied in a sensitivity analysis.

For the impact to groundwater pathway, IACR results indicate there are potential impacts at 10 sampling locations within the surface soil (0-1.5 mbgs) and at five sampling locations at deeper depths should the soils leach to groundwater and should the groundwater be used as potable water. They do not represent actual groundwater quality or use of groundwater respective to the Site. See **Attachment C, Table C.1**. As discussed in Section 12.6 of the ESA, groundwater monitoring results to-date (Table 15), indicates that some wells had intermittent exceedances of the CCME Guidelines for PAHs in 2019. Figure 15 indicates that the last sampling date for each well, found no exceedances of the CCME Guidelines for PAHs. A search of the MSD Water Well Information Database did not identify any water wells within a 1.0 km radius of the center of the Site.

6 Recommendations

6.1 Additional Data Collection Requirements

Sample locations whose analytical data contribute to the hazards and risk exceeding applicable thresholds were remediated; however, due to the heterogeneous nature of soils and sediment, additional marginal regulatory exceedances were identified. Continued monitoring of PAH concentrations is to be performed. The PAHs have largely been remediated and any residual contamination is subject to attenuation via weathering and biodegradation. As part of the monitoring program, soil, sediment and groundwater samples will continue to be collected in areas contributing to hazards and risks and evaluated to assure the response is protective over time.

6.2 Additional Risk Management Measures

Should monitoring activities indicate that PAH concentrations are not attenuating adequately over time, or they are shown to vary seasonally or by location, those results should be evaluated in terms of evaluating the need for further response action. This should include consideration of those exposure scenarios with threshold and non-threshold effects exceeding acceptable risk levels (i.e., direct contact with sediment and IACRs), as discussed herein.

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ATTACHMENT A

Human Health Risk Assessment Tables

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TABLE 1.1

EXPOSURE PATHWAYS
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Scenario Timeframe	Source	Receptor Population	Receptor Age	Medium / Exposure Medium	Exposure Point	Exposure Route	Type of Evaluation	Rationale for Selection or Exclusion of Exposure Pathway
Current/Future	PAH-Contaminated Environmental Media from CN Train Derailment at Mile 197.4	On-Site Industrial	Adult	Soil (CN ROW)	Soil (0-1.5 m)	Incidental Ingestion	Quantitative	The Site is a portion of the CN rail line surrounded by agricultural lands. Industrial receptors, such as railroad maintenance workers, may potentially be exposed to PAH-contaminated surface soil via the incidental ingestion, dermal contact and inhalation (fugitive dust) pathways while on-Site. Contact with surface water and sediment is unlikely to occur; therefore exposure to these media are not evaluated.
						Dermal		
					Soil Particulates	Inhalation		
Current/Future		Off-Site Agricultural	Adult & Infant/Toddler/ Child/Teen	Soil (Outside CN ROW)	Soil (0-1.5 m)	Incidental Ingestion	Quantitative	Adults and infants/toddlers/children/teens on nearby agricultural lands may come into contact be exposed to PAH-contaminated surface soil via the incidental ingestion, dermal contact and inhalation (fugitive dust) pathways.
						Dermal		
					Soil Particulates	Inhalation		
			Adult & Toddler/Child/ Teen	Sediment (Outside CN ROW)	Sediment	Incidental Ingestion	Quantitative	Adult and toddler/child/teen agricultural receptors may also come into contact with PAH-contaminated sediment via the incidental ingestion and dermal contact pathways.
						Dermal		
					Culvert Sediment	Incidental Ingestion		
						Dermal		
				Surface Water (Outside CN ROW)	Surface Water	Incidental Ingestion	Qualitative	Adult and toddler/child/teen agricultural receptors may also come into contact with PAH-contaminated surface water via the incidental ingestion and dermal contact pathways. This exposure pathway is evaluated qualitatively as there are a limited number of detected concentrations.
						Dermal		
					Culvert Surface Water	Incidental Ingestion		
						Dermal		

Abbreviation:

PAH -- Polycyclic aromatic hydrocarbon

ROW -- Right-of-way

TABLE 2.1
OCCURRENCE AND DISTRIBUTION OF HUMAN HEALTH COPCS FOR SOIL
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Scenario Timeframe: Current/Future
Medium: Soil
Exposure Medium: Soil (0-1.5 m)

Exposure Point	Constituent Group	Constituent	CASRN	Minimum Detected Concentration (mg/kg)	Maximum Detected Concentration (mg/kg)	Location of Maximum Detected Concentration	Sample Count	Detect Count	Detection Frequency (%)	Range of Detection Limits for Non-Detects (mg/kg)
CN RoW	SVOC	Acenaphthene	83-32-9	0.0085	0.39	D_BH19-15	85	16	19	0.005 - 0.005
CN RoW	SVOC	Acenaphthylene	208-96-8	0.0057	0.12	N-009	85	13	15	0.005 - 0.005
CN RoW	SVOC	Acridine	260-94-6	0.012	0.023	N-006	85	5	6	0.01 - 0.01
CN RoW	SVOC	Anthracene	120-12-7	0.0044	0.29	D_BH19-15	85	28	33	0.004 - 0.004
CN RoW	SVOC	Benzo(a)anthracene	56-55-3	0.0067	0.4	N-009	85	23	27	0.005 - 0.005
CN RoW	SVOC	Benzo(a)pyrene	50-32-8	0.0071	0.37	N-009	85	25	29	0.005 - 0.005
CN RoW	SVOC	Benzo(b&j)fluoranthene	205-99-2_205-82-3	0.0073	0.65	N-009	85	33	39	0.005 - 0.005
CN RoW	SVOC	Benzo(c)phenanthrene	195-19-7	0.0052	0.064	NSERIESDIL-2	85	12	14	0.005 - 0.005
CN RoW	SVOC	Benzo(e)pyrene	192-97-2	0.0064	0.42	N-009	85	28	33	0.005 - 0.005
CN RoW	SVOC	Benzo(g,h,i)perylene	191-24-2	0.0055	0.24	N-009	85	27	32	0.005 - 0.005
CN RoW	SVOC	Benzo(k)fluoranthene	207-08-9	0.0061	0.2	N-009	85	22	26	0.005 - 0.005
CN RoW	SVOC	Chrysene	218-01-9	0.0053	0.36	NSERIESDIL-2	85	27	32	0.005 - 0.005
CN RoW	SVOC	Dibenz(a,h)anthracene	53-70-3	0.0055	0.064	N-009	85	9	11	0.005 - 0.005
CN RoW	SVOC	Fluoranthene	206-44-0	0.0062	0.69	D_BH19-15	85	42	49	0.005 - 0.005
CN RoW	SVOC	Fluorene	86-73-7	0.0057	0.38	D_BH19-15	85	20	24	0.005 - 0.005
CN RoW	SVOC	Indeno (1,2,3-cd)pyrene	193-39-5	0.0062	0.2	N-009	85	24	28	0.005 - 0.005
CN RoW	SVOC	2-Methylnaphthalene	91-57-6	0.0066	0.071	D_BH19-15	85	21	25	0.005 - 0.005
CN RoW	SVOC	Naphthalene	91-20-3	0.0065	0.088	N-031	85	17	20	0.005 - 0.005
CN RoW	SVOC	Perylene	198-55-0	0.0052	0.1	N-009	85	39	46	0.005 - 0.005
CN RoW	SVOC	Phenanthrene	85-01-8	0.0056	0.79	D_BH19-15	85	41	48	0.005 - 0.005
CN RoW	SVOC	Pyrene	129-00-0	0.0053	0.54	D_BH19-15	85	43	51	0.005 - 0.005
CN RoW	SVOC	Quinoline	91-22-5	0.013	0.08	D_BH19-15	85	5	6	0.01 - 0.01
Outside CN RoW	SVOC	Acenaphthene	83-32-9	0.0077	0.011	19-H11-001	57	2	4	0.005 - 0.011
Outside CN RoW	SVOC	Acenaphthylene	208-96-8	0.0072	0.036	S-079	57	3	5	0.005 - 0.011
Outside CN RoW	SVOC	Acridine	260-94-6	0.015	0.068	WA-SOIL-202	57	2	4	0.01 - 0.021
Outside CN RoW	SVOC	Anthracene	120-12-7	0.004	0.055	S-079	57	9	16	0.004 - 0.0084
Outside CN RoW	SVOC	Benzo(a)anthracene	56-55-3	0.0053	0.12	S-079	57	12	21	0.005 - 0.011
Outside CN RoW	SVOC	Benzo(a)pyrene	50-32-8	0.0072	0.11	S-079	57	16	28	0.005 - 0.011
Outside CN RoW	SVOC	Benzo(b&j)fluoranthene	205-99-2_205-82-3	0.0054	0.24	S-079	57	29	51	0.005 - 0.005
Outside CN RoW	SVOC	Benzo(c)phenanthrene	195-19-7	0.008	0.021	S-079	57	3	5	0.005 - 0.011
Outside CN RoW	SVOC	Benzo(e)pyrene	192-97-2	0.0071	0.11	S-079	57	22	39	0.005 - 0.011
Outside CN RoW	SVOC	Benzo(g,h,i)perylene	191-24-2	0.0055	0.077	S-079	57	18	32	0.005 - 0.011
Outside CN RoW	SVOC	Benzo(k)fluoranthene	207-08-9	0.0076	0.093	S-079	57	11	19	0.005 - 0.011
Outside CN RoW	SVOC	Chrysene	218-01-9	0.0067	0.23	S-079	57	22	39	0.005 - 0.011
Outside CN RoW	SVOC	Dibenz(a,h)anthracene	53-70-3	0.0098	0.019	S-079	57	3	5	0.005 - 0.011
Outside CN RoW	SVOC	Fluoranthene	206-44-0	0.0058	0.27	S-079	57	30	53	0.005 - 0.005
Outside CN RoW	SVOC	Fluorene	86-73-7	0.0067	0.031	S-079	57	6	11	0.005 - 0.011

TABLE 2.1
OCCURRENCE AND DISTRIBUTION OF HUMAN HEALTH COPCS FOR SOIL
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Scenario Timeframe: Current/Future
Medium: Soil
Exposure Medium: Soil (0-1.5 m)

Exposure Point	Constituent Group	Constituent	CASRN	Minimum Detected Concentration (mg/kg)	Maximum Detected Concentration (mg/kg)	Location of Maximum Detected Concentration	Sample Count	Detect Count	Detection Frequency (%)	Range of Detection Limits for Non-Detects (mg/kg)
Outside CN RoW	SVOC	Indeno (1,2,3-cd)pyrene	193-39-5	0.0059	0.098	S-079	57	16	28	0.005 - 0.011
Outside CN RoW	SVOC	2-Methylnaphthalene	91-57-6	0.0079	0.031	C-2150-B	57	10	18	0.005 - 0.011
Outside CN RoW	SVOC	Naphthalene	91-20-3	0.0072	0.0097	C-2600B	57	5	9	0.005 - 0.011
Outside CN RoW	SVOC	Perylene	198-55-0	0.0058	0.26	C-6013B	57	50	88	0.005 - 0.005
Outside CN RoW	SVOC	Phenanthrene	85-01-8	0.0056	0.2	S-079	57	24	42	0.005 - 0.011
Outside CN RoW	SVOC	Pyrene	129-00-0	0.0075	0.2	S-079	57	26	46	0.005 - 0.011
Outside CN RoW	SVOC	Quinoline	91-22-5	ND	ND	--	57	0	0	0.01 - 0.021

Abbreviations:
COPC -- Constituent of potential concern
mg/kg -- milligrams per kilogram
SVOC -- Semi-volatile organic compound

TABLE 2.2
OCCURRENCE AND DISTRIBUTION OF HUMAN HEALTH COPCS FOR SEDIMENT
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Scenario Timeframe: Current/Future
Medium: Sediment
Exposure Medium: Sediment

Exposure Point	Constituent Group	Constituent	CASRN	Minimum Detected Concentration (mg/kg)	Maximum Detected Concentration (mg/kg)	Location of Maximum Detected Concentration	Sample Count	Detect Count	Detection Frequency (%)	Range of Detection Limits for Non-Detects (mg/kg)
Outside CN RoW	SVOC	Acenaphthene	83-32-9	0.009	0.02	WA-SED-105C	41	3	7	0.005 - 0.005
Outside CN RoW	SVOC	Acenaphthylene	208-96-8	0.012	0.012	WA-SED-220	41	1	2	0.005 - 0.005
Outside CN RoW	SVOC	Acridine	260-94-6	0.012	0.015	WA-SED-223	41	3	7	0.01 - 0.01
Outside CN RoW	SVOC	Anthracene	120-12-7	0.0079	0.033	WA-SED-220	41	4	10	0.004 - 0.004
Outside CN RoW	SVOC	Benzo(a)anthracene	56-55-3	0.0081	0.044	WA-SED-220	41	5	12	0.005 - 0.005
Outside CN RoW	SVOC	Benzo(a)pyrene	50-32-8	0.011	0.047	WA-SED-220	41	4	10	0.005 - 0.005
Outside CN RoW	SVOC	Benzo(b&j)fluoranthene	205-99-2_205-82-3	0.0072	0.074	WA-SED-220	41	15	37	0.005 - 0.005
Outside CN RoW	SVOC	Benzo(c)phenanthrene	195-19-7	0.0082	0.0088	WA-SED-220	41	2	5	0.005 - 0.005
Outside CN RoW	SVOC	Benzo(e)pyrene	192-97-2	0.0074	0.041	WA-SED-220	41	10	24	0.005 - 0.005
Outside CN RoW	SVOC	Benzo(g,h,i)perylene	191-24-2	0.0075	0.034	WA-SED-220	41	5	12	0.005 - 0.005
Outside CN RoW	SVOC	Benzo(k)fluoranthene	207-08-9	0.0098	0.026	WA-SED-220	41	4	10	0.005 - 0.005
Outside CN RoW	SVOC	Chrysene	218-01-9	0.0083	0.049	WA-SED-220	41	8	20	0.005 - 0.005
Outside CN RoW	SVOC	Dibenz(a,h)anthracene	53-70-3	ND	ND	--	41	0	0	0.005 - 0.005
Outside CN RoW	SVOC	Fluoranthene	206-44-0	0.0074	0.15	WA-SED-220	41	17	41	0.005 - 0.005
Outside CN RoW	SVOC	Fluorene	86-73-7	0.0079	0.02	WA-SED-220	41	7	17	0.005 - 0.005
Outside CN RoW	SVOC	Indeno (1,2,3-cd)pyrene	193-39-5	0.015	0.033	WA-SED-220	41	4	10	0.005 - 0.005
Outside CN RoW	SVOC	2-Methylnaphthalene	91-57-6	0.008	0.024	WA-SED-105C	41	11	27	0.005 - 0.005
Outside CN RoW	SVOC	Naphthalene	91-20-3	0.0085	0.068	WA-SED-105C	41	6	15	0.005 - 0.005
Outside CN RoW	SVOC	Perylene	198-55-0	0.0066	0.33	WA-SED-218	41	35	85	0.005 - 0.005
Outside CN RoW	SVOC	Phenanthrene	85-01-8	0.01	0.13	WA-SED-220	41	15	37	0.005 - 0.005
Outside CN RoW	SVOC	Pyrene	129-00-0	0.0082	0.12	WA-SED-220	41	18	44	0.005 - 0.005
Outside CN RoW	SVOC	Quinoline	91-22-5	0.021	0.033	WA-SED-224	41	2	5	0.01 - 0.01
Culvert - Outside CN RoW	SVOC	Acenaphthene	83-32-9	ND	ND	--	1	0	0	0.012 - 0.012
Culvert - Outside CN RoW	SVOC	Acenaphthylene	208-96-8	ND	ND	--	1	0	0	0.012 - 0.012
Culvert - Outside CN RoW	SVOC	Acridine	260-94-6	ND	ND	--	1	0	0	0.023 - 0.023
Culvert - Outside CN RoW	SVOC	Anthracene	120-12-7	ND	ND	--	1	0	0	0.0092 - 0.0092
Culvert - Outside CN RoW	SVOC	Benzo(a)anthracene	56-55-3	ND	ND	--	1	0	0	0.012 - 0.012
Culvert - Outside CN RoW	SVOC	Benzo(a)pyrene	50-32-8	ND	ND	--	1	0	0	0.012 - 0.012
Culvert - Outside CN RoW	SVOC	Benzo(b&j)fluoranthene	205-99-2_205-82-3	ND	ND	--	1	0	0	0.012 - 0.012
Culvert - Outside CN RoW	SVOC	Benzo(c)phenanthrene	195-19-7	ND	ND	--	1	0	0	0.012 - 0.012
Culvert - Outside CN RoW	SVOC	Benzo(e)pyrene	192-97-2	ND	ND	--	1	0	0	0.012 - 0.012
Culvert - Outside CN RoW	SVOC	Benzo(g,h,i)perylene	191-24-2	ND	ND	--	1	0	0	0.012 - 0.012
Culvert - Outside CN RoW	SVOC	Benzo(k)fluoranthene	207-08-9	ND	ND	--	1	0	0	0.012 - 0.012
Culvert - Outside CN RoW	SVOC	Chrysene	218-01-9	ND	ND	--	1	0	0	0.012 - 0.012
Culvert - Outside CN RoW	SVOC	Dibenz(a,h)anthracene	53-70-3	ND	ND	--	1	0	0	0.012 - 0.012
Culvert - Outside CN RoW	SVOC	Fluoranthene	206-44-0	0.017	0.017	BEFORE CULVERT	1	1	100	-
Culvert - Outside CN RoW	SVOC	Fluorene	86-73-7	ND	ND	--	1	0	0	0.012 - 0.012
Culvert - Outside CN RoW	SVOC	Indeno (1,2,3-cd)pyrene	193-39-5	ND	ND	--	1	0	0	0.012 - 0.012
Culvert - Outside CN RoW	SVOC	2-Methylnaphthalene	91-57-6	ND	ND	--	1	0	0	0.012 - 0.012

TABLE 2.2
OCCURRENCE AND DISTRIBUTION OF HUMAN HEALTH COPCS FOR SEDIMENT
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Scenario Timeframe: Current/Future
Medium: Sediment
Exposure Medium: Sediment

Exposure Point	Constituent Group	Constituent	CASRN	Minimum Detected Concentration (mg/kg)	Maximum Detected Concentration (mg/kg)	Location of Maximum Detected Concentration	Sample Count	Detect Count	Detection Frequency (%)	Range of Detection Limits for Non-Detects (mg/kg)
Culvert - Outside CN RoW	SVOC	Naphthalene	91-20-3	ND	ND	--	1	0	0	0.012 - 0.012
Culvert - Outside CN RoW	SVOC	Perylene	198-55-0	0.029	0.029	BEFORE CULVERT	1	1	100	-
Culvert - Outside CN RoW	SVOC	Phenanthrene	85-01-8	0.017	0.017	BEFORE CULVERT	1	1	100	-
Culvert - Outside CN RoW	SVOC	Pyrene	129-00-0	ND	ND	--	1	0	0	0.012 - 0.012
Culvert - Outside CN RoW	SVOC	Quinoline	91-22-5	ND	ND	--	1	0	0	0.023 - 0.023

Abbreviations:
COPC -- Constituent of potential concern
ND -- Not detected
mg/kg -- milligrams per kilogram
SVOC -- Semi-volatile organic compound

TABLE 2.3
OCCURRENCE AND DISTRIBUTION OF HUMAN HEALTH COPCS FOR SURFACE WATER
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Scenario Timeframe: Current/Future
Medium: Surface Water
Exposure Medium: Surface Water

Exposure Point	T or D	Constituent Group	Constituent	CASRN	Minimum Detected Concentration (ug/L)	Maximum Detected Concentration (ug/L)	Location of Maximum Detected Concentration	Sample Count	Detect Count	Detection Frequency (%)	Range of Detection Limits for Non-Detects (ug/L)
Outside CN RoW	T	SVOC	Acenaphthene	83-32-9	ND	ND	--	72	0	0	0.1 - 0.1
Outside CN RoW	T	SVOC	Acenaphthylene	208-96-8	ND	ND	--	72	0	0	0.1 - 0.1
Outside CN RoW	T	SVOC	Acridine	260-94-6	ND	ND	--	72	0	0	0.04 - 0.04
Outside CN RoW	T	SVOC	Anthracene	120-12-7	ND	ND	--	72	0	0	0.01 - 0.01
Outside CN RoW	T	SVOC	Benzo(a)anthracene	56-55-3	ND	ND	--	72	0	0	0.0085 - 0.0085
Outside CN RoW	T	SVOC	Benzo(a)pyrene	50-32-8	ND	ND	--	72	0	0	0.0075 - 0.0075
Outside CN RoW	T	SVOC	Benzo(b&j)fluoranthene	205-99-2_205-82-3	ND	ND	--	72	0	0	0.0085 - 0.0085
Outside CN RoW	T	SVOC	Benzo(c)phenanthrene	195-19-7	ND	ND	--	72	0	0	0.05 - 0.05
Outside CN RoW	T	SVOC	Benzo(e)pyrene	192-97-2	ND	ND	--	72	0	0	0.05 - 0.05
Outside CN RoW	T	SVOC	Benzo(g,h,i)perylene	191-24-2	ND	ND	--	72	0	0	0.0085 - 0.0085
Outside CN RoW	T	SVOC	Benzo(k)fluoranthene	207-08-9	ND	ND	--	72	0	0	0.0085 - 0.0085
Outside CN RoW	T	SVOC	Chrysene	218-01-9	ND	ND	--	72	0	0	0.0085 - 0.0085
Outside CN RoW	T	SVOC	Dibenz(a,h)anthracene	53-70-3	ND	ND	--	72	0	0	0.0075 - 0.0075
Outside CN RoW	T	SVOC	Fluoranthene	206-44-0	0.01	0.012	TH-21	72	7	10	0.01 - 0.01
Outside CN RoW	T	SVOC	Fluorene	86-73-7	ND	ND	--	72	0	0	0.05 - 0.05
Outside CN RoW	T	SVOC	Indeno (1,2,3-cd)pyrene	193-39-5	ND	ND	--	72	0	0	0.0085 - 0.0085
Outside CN RoW	T	SVOC	2-Methylnaphthalene	91-57-6	ND	ND	--	72	0	0	0.1 - 0.1
Outside CN RoW	T	SVOC	Naphthalene	91-20-3	ND	ND	--	72	0	0	0.1 - 0.1
Outside CN RoW	T	SVOC	Perylene	198-55-0	ND	ND	--	72	0	0	0.05 - 0.05
Outside CN RoW	T	SVOC	Phenanthrene	85-01-8	0.051	0.066	TH-22	72	13	18	0.05 - 0.05
Outside CN RoW	T	SVOC	Pyrene	129-00-0	ND	ND	--	72	0	0	0.02 - 0.02
Outside CN RoW	T	SVOC	Quinoline	91-22-5	ND	ND	--	72	0	0	0.2 - 0.2
Culvert - Outside CN RoW	T	SVOC	Acenaphthene	83-32-9	ND	ND	--	1	0	0	0.1 - 0.1
Culvert - Outside CN RoW	T	SVOC	Acenaphthylene	208-96-8	ND	ND	--	1	0	0	0.1 - 0.1
Culvert - Outside CN RoW	T	SVOC	Acridine	260-94-6	ND	ND	--	1	0	0	0.04 - 0.04
Culvert - Outside CN RoW	T	SVOC	Anthracene	120-12-7	ND	ND	--	1	0	0	0.01 - 0.01
Culvert - Outside CN RoW	T	SVOC	Benzo(a)anthracene	56-55-3	ND	ND	--	1	0	0	0.0085 - 0.0085
Culvert - Outside CN RoW	T	SVOC	Benzo(a)pyrene	50-32-8	ND	ND	--	1	0	0	0.0075 - 0.0075
Culvert - Outside CN RoW	T	SVOC	Benzo(b&j)fluoranthene	205-99-2_205-82-3	ND	ND	--	1	0	0	0.0085 - 0.0085
Culvert - Outside CN RoW	T	SVOC	Benzo(c)phenanthrene	195-19-7	ND	ND	--	1	0	0	0.05 - 0.05
Culvert - Outside CN RoW	T	SVOC	Benzo(e)pyrene	192-97-2	ND	ND	--	1	0	0	0.05 - 0.05
Culvert - Outside CN RoW	T	SVOC	Benzo(g,h,i)perylene	191-24-2	ND	ND	--	1	0	0	0.0085 - 0.0085
Culvert - Outside CN RoW	T	SVOC	Benzo(k)fluoranthene	207-08-9	0.0099	0.0099	BEFORE CULVERT	1	1	100	-
Culvert - Outside CN RoW	T	SVOC	Chrysene	218-01-9	ND	ND	--	1	0	0	0.0085 - 0.0085
Culvert - Outside CN RoW	T	SVOC	Dibenz(a,h)anthracene	53-70-3	ND	ND	--	1	0	0	0.0075 - 0.0075
Culvert - Outside CN RoW	T	SVOC	Fluoranthene	206-44-0	ND	ND	--	1	0	0	0.01 - 0.01
Culvert - Outside CN RoW	T	SVOC	Fluorene	86-73-7	ND	ND	--	1	0	0	0.05 - 0.05
Culvert - Outside CN RoW	T	SVOC	Indeno (1,2,3-cd)pyrene	193-39-5	ND	ND	--	1	0	0	0.0085 - 0.0085
Culvert - Outside CN RoW	T	SVOC	2-Methylnaphthalene	91-57-6	ND	ND	--	1	0	0	0.1 - 0.1

TABLE 2.3
OCCURRENCE AND DISTRIBUTION OF HUMAN HEALTH COPCS FOR SURFACE WATER
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Scenario Timeframe: Current/Future
Medium: Surface Water
Exposure Medium: Surface Water

Exposure Point	T or D	Constituent Group	Constituent	CASRN	Minimum Detected Concentration (ug/L)	Maximum Detected Concentration (ug/L)	Location of Maximum Detected Concentration	Sample Count	Detect Count	Detection Frequency (%)	Range of Detection Limits for Non-Detects (ug/L)
Culvert - Outside CN RoW	T	SVOC	Naphthalene	91-20-3	ND	ND	--	1	0	0	0.1 - 0.1
Culvert - Outside CN RoW	T	SVOC	Perylene	198-55-0	ND	ND	--	1	0	0	0.05 - 0.05
Culvert - Outside CN RoW	T	SVOC	Phenanthrene	85-01-8	ND	ND	--	1	0	0	0.05 - 0.05
Culvert - Outside CN RoW	T	SVOC	Pyrene	129-00-0	ND	ND	--	1	0	0	0.02 - 0.02
Culvert - Outside CN RoW	T	SVOC	Quinoline	91-22-5	ND	ND	--	1	0	0	0.2 - 0.2

Abbreviations:
COPC -- Constituent of potential concern
ND -- Not detected
SVOC -- Semi-volatile organic compound
T or D -- Total or dissolved
ug/L -- Micrograms per liter

TABLE 2.4
SUMMARY OF HUMAN HEALTH COPCS
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

COPC Group	COPC	CASRN	Surface Soil Within RoW (0-1.5 m)	Surface Soil Outside of RoW (0-1.5 m)	Surface Water Outside of RoW	Culvert Surface Water Outside of RoW	Sediment Outside of RoW	Culvert Sediment Outside of RoW
SVOC	Acenaphthene	83-32-9	Yes	Yes	No	No	Yes	No
SVOC	Acenaphthylene	208-96-8	Yes	Yes	No	No	Yes	No
SVOC	Acridine	260-94-6	Yes	Yes	No	No	Yes	No
SVOC	Anthracene	120-12-7	Yes	Yes	No	No	Yes	No
SVOC	Benzo(a)anthracene	56-55-3	Yes	Yes	No	No	Yes	No
SVOC	Benzo(a)pyrene	50-32-8	Yes	Yes	No	No	Yes	No
SVOC	Benzo(b&j)fluoranthene	205-99-2_205-82-3	Yes	Yes	No	No	Yes	No
SVOC	Benzo(c)phenanthrene	195-19-7	Yes	Yes	No	No	Yes	No
SVOC	Benzo(e)pyrene	192-97-2	Yes	Yes	No	No	Yes	No
SVOC	Benzo(g,h,i)perylene	191-24-2	Yes	Yes	No	No	Yes	No
SVOC	Benzo(k)fluoranthene	207-08-9	Yes	Yes	No	Yes	Yes	No
SVOC	Chrysene	218-01-9	Yes	Yes	No	No	Yes	No
SVOC	Dibenz(a,h)anthracene	53-70-3	Yes	Yes	No	No	No	No
SVOC	Fluoranthene	206-44-0	Yes	Yes	Yes	No	Yes	Yes
SVOC	Fluorene	86-73-7	Yes	Yes	No	No	Yes	No
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	Yes	Yes	No	No	Yes	No
SVOC	2-Methylnaphthalene	91-57-6	Yes	Yes	No	No	Yes	No
SVOC	Naphthalene	91-20-3	Yes	Yes	No	No	Yes	No
SVOC	Perylene	198-55-0	Yes	Yes	No	No	Yes	Yes
SVOC	Phenanthrene	85-01-8	Yes	Yes	Yes	No	Yes	Yes
SVOC	Pyrene	129-00-0	Yes	Yes	No	No	Yes	No
SVOC	Quinoline	91-22-5	Yes	No	No	No	Yes	No

Note:
Constituents marked "No" indicate that none of the samples have detected concentrations and the constituent will not be further evaluated in the risk assessment.
As noted in Table 1, exposure to COPCs in surface water is evaluated qualitatively as there are a limited number of detected concentrations. No exposure point concentrations will be calculated and no cancer risks and noncancer hazards will be calculated in the risk assessment.

Abbreviations:
COPC -- Constituent of potential concern
SVOC -- Semi-volatile organic compound

TABLE 3.1
EXPOSURE POINT CONCENTRATION SUMMARY FOR SURFACE SOIL (0-1.5 M) WITHIN RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Scenario Timeframe: Current/Future
Medium: Soil
Exposure Medium: Surface Soil (0-1.5 m) within RoW

COPC Group	COPC	CASRN	Maximum Detected Concentration (mg/kg)	95% UCL (mg/kg)	95% UCL Method	Sample Count	Detect Count	Detection Frequency (%)	Exposure Point Concentration (EPC)		
									Value (mg/kg)	Statistic	Rationale
SVOC	Acenaphthene	83-32-9	0.39	0.0276	95% KM Approximate Gamma UCL	85	16	19	0.0276	UCL	Lower of maximum and UCL
SVOC	Acenaphthylene	208-96-8	0.12	0.00771	KM H-UCL	85	13	15	0.00771	UCL	Lower of maximum and UCL
SVOC	Acridine	260-94-6	0.023	0.0108	95% KM (t) UCL	85	5	6	0.0108	UCL	Lower of maximum and UCL
SVOC	Anthracene	120-12-7	0.29	0.0161	KM H-UCL	85	28	33	0.0161	UCL	Lower of maximum and UCL
SVOC	Benzo(a)anthracene	56-55-3	0.4	0.0436	95% KM (Chebyshev) UCL	85	23	27	0.0436	UCL	Lower of maximum and UCL
SVOC	Benzo(a)pyrene	50-32-8	0.37	0.0417	95% KM (Chebyshev) UCL	85	25	29	0.0417	UCL	Lower of maximum and UCL
SVOC	Benzo(b&j)fluoranthene	205-99-2_205-82-3	0.65	0.028	KM H-UCL	85	33	39	0.028	UCL	Lower of maximum and UCL
SVOC	Benzo(c)phenanthrene	195-19-7	0.064	0.0117	95% KM (Chebyshev) UCL	85	12	14	0.0117	UCL	Lower of maximum and UCL
SVOC	Benzo(e)pyrene	192-97-2	0.42	0.0198	KM H-UCL	85	28	33	0.0198	UCL	Lower of maximum and UCL
SVOC	Benzo(g,h,i)perylene	191-24-2	0.24	0.0152	KM H-UCL	85	27	32	0.0152	UCL	Lower of maximum and UCL
SVOC	Benzo(k)fluoranthene	207-08-9	0.2	0.0257	95% KM (Chebyshev) UCL	85	22	26	0.0257	UCL	Lower of maximum and UCL
SVOC	Chrysene	218-01-9	0.36	0.0226	KM H-UCL	85	27	32	0.0226	UCL	Lower of maximum and UCL
SVOC	Dibenz(a,h)anthracene	53-70-3	0.064	0.00822	95% KM (t) UCL	85	9	11	0.00822	UCL	Lower of maximum and UCL
SVOC	Fluoranthene	206-44-0	0.69	0.0396	KM H-UCL	85	42	49	0.0396	UCL	Lower of maximum and UCL
SVOC	Fluorene	86-73-7	0.38	0.0267	95% KM Approximate Gamma UCL	85	20	24	0.0267	UCL	Lower of maximum and UCL
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	0.2	0.0129	KM H-UCL	85	24	28	0.0129	UCL	Lower of maximum and UCL
SVOC	2-Methylnaphthalene	91-57-6	0.071	0.0116	95% KM (t) UCL	85	21	25	0.0116	UCL	Lower of maximum and UCL
SVOC	Naphthalene	91-20-3	0.088	0.0123	95% KM (Chebyshev) UCL	85	17	20	0.0123	UCL	Lower of maximum and UCL
SVOC	Perylene	198-55-0	0.1	0.0201	95% KM (Chebyshev) UCL	85	39	46	0.0201	UCL	Lower of maximum and UCL
SVOC	Phenanthrene	85-01-8	0.79	0.0855	95% KM (Chebyshev) UCL	85	41	48	0.0855	UCL	Lower of maximum and UCL
SVOC	Pyrene	129-00-0	0.54	0.0319	KM H-UCL	85	43	51	0.0319	UCL	Lower of maximum and UCL
SVOC	Quinoline	91-22-5	0.08	0.0128	95% KM (t) UCL	85	5	6	0.0128	UCL	Lower of maximum and UCL

Notes:
The exposure point concentration (EPC) is the 95% upper confidence limit (UCL) of the arithmetic mean. When the UCL is greater than the maximum detected concentration or ProUCL did not calculate an UCL, the maximum detected concentration is chosen.
The most appropriate UCL is chosen from those ProUCL suggests based on the distribution of the dataset and ProUCL guidance. ProUCL outputs are provided in Attachment B.
These EPCs for soil (0-1.5 m) within the Right-of-way (RoW) will be used in the industrial worker scenario.

Abbreviations:
COPC -- Constituent of potential concern
EPC -- Exposure point concentration
UCL -- 95% Upper confidence limit

References:
USEPA. 2016. ProUCL Version 5.1.02. September 19. Available online: https://www.epa.gov/land-research/proucl-software
USEPA. 2015. ProUCL Version 5.1 User Guide. EPA/600/R-07/041. October. Available online: https://www.epa.gov/land-research/proucl-version-5100-documentation-downloads

TABLE 3.2
EXPOSURE POINT CONCENTRATION SUMMARY FOR SURFACE SOIL (0-1.5 M) OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Scenario Timeframe: Current/Future
Medium: Soil
Exposure Medium: Surface Soil (0-1.5 m) Outside of RoW

COPC Group	COPC	CASRN	Maximum Detected Concentration (mg/kg)	95% UCL (mg/kg)	95% UCL Method	ProUCL Notes	Sample Count	Detect Count	Detection Frequency (%)	Exposure Point Concentration (EPC)		
										Value (mg/kg)	Statistic	Rationale
SVOC	Acenaphthene	83-32-9	0.011	0.00543	95% KM (t) UCL	b, e	57	2	4	0.00543	UCL	Lower of maximum and UCL
SVOC	Acenaphthylene	208-96-8	0.036	0.00677	95% KM (t) UCL	f	57	3	5	0.00677	UCL	Lower of maximum and UCL
SVOC	Acridine	260-94-6	0.068	0.0173	95% KM (Chebyshev) UCL	e	57	2	4	0.0173	UCL	Lower of maximum and UCL
SVOC	Anthracene	120-12-7	0.055	0.0115	95% GROS Approximate Gamma UCL	j	57	9	16	0.0115	UCL	Lower of maximum and UCL
SVOC	Benzo(a)anthracene	56-55-3	0.12	0.0146	95% KM Approximate Gamma UCL	--	57	12	21	0.0146	UCL	Lower of maximum and UCL
SVOC	Benzo(a)pyrene	50-32-8	0.11	0.0116	KM H-UCL	--	57	16	28	0.0116	UCL	Lower of maximum and UCL
SVOC	Benzo(b&j)fluoranthene	205-99-2_205-82-3	0.24	0.0251	KM H-UCL	--	57	29	51	0.0251	UCL	Lower of maximum and UCL
SVOC	Benzo(c)phenanthrene	195-19-7	0.021	0.00612	95% KM (t) UCL	f	57	3	5	0.00612	UCL	Lower of maximum and UCL
SVOC	Benzo(e)pyrene	192-97-2	0.11	0.0142	KM H-UCL	--	57	22	39	0.0142	UCL	Lower of maximum and UCL
SVOC	Benzo(g,h,i)perylene	191-24-2	0.077	0.0153	95% GROS Approximate Gamma UCL	j	57	18	32	0.0153	UCL	Lower of maximum and UCL
SVOC	Benzo(k)fluoranthene	207-08-9	0.093	0.0147	95% GROS Approximate Gamma UCL	j	57	11	19	0.0147	UCL	Lower of maximum and UCL
SVOC	Chrysene	218-01-9	0.23	0.0157	KM H-UCL	--	57	22	39	0.0157	UCL	Lower of maximum and UCL
SVOC	Dibenz(a,h)anthracene	53-70-3	0.019	0.00617	95% KM (t) UCL	f	57	3	5	0.00617	UCL	Lower of maximum and UCL
SVOC	Fluoranthene	206-44-0	0.27	0.024	KM H-UCL	--	57	30	53	0.024	UCL	Lower of maximum and UCL
SVOC	Fluorene	86-73-7	0.031	0.00604	KM H-UCL	j	57	6	11	0.00604	UCL	Lower of maximum and UCL
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	0.098	0.0164	95% GROS Approximate Gamma UCL	j	57	16	28	0.0164	UCL	Lower of maximum and UCL
SVOC	2-Methylnaphthalene	91-57-6	0.031	0.0112	95% GROS Approximate Gamma UCL	j	57	10	18	0.0112	UCL	Lower of maximum and UCL
SVOC	Naphthalene	91-20-3	0.0097	0.00558	95% KM (t) UCL	--	57	5	9	0.00558	UCL	Lower of maximum and UCL
SVOC	Perylene	198-55-0	0.26	0.0704	95% KM (Chebyshev) UCL	--	57	50	88	0.0704	UCL	Lower of maximum and UCL
SVOC	Phenanthrene	85-01-8	0.2	0.0285	95% KM (Chebyshev) UCL	--	57	24	42	0.0285	UCL	Lower of maximum and UCL
SVOC	Pyrene	129-00-0	0.2	0.0347	95% KM (Chebyshev) UCL	--	57	26	46	0.0347	UCL	Lower of maximum and UCL

Notes:
The exposure point concentration (EPC) is the 95% upper confidence limit (UCL) of the arithmetic mean. When the UCL is greater than the maximum detected concentration or ProUCL did not calculate an UCL, the maximum detected concentration is chosen.
The most appropriate UCL is chosen from those ProUCL suggests based on the distribution of the dataset and ProUCL guidance. ProUCL outputs are provided in Attachment B.
These EPCs for soil (0-1.5 m) outside of the right-of-way (RoW) will be used in the agricultural receptor scenario.

Abbreviations:
COPC -- Constituent of potential concern
EPC -- Exposure point concentration
UCL -- 95% Upper confidence limit

ProUCL Notes and Warnings:
b One or more recommended UCL not available.
e Data set has only 2 Detected Values.
f Data set has only 3 Detected Values.
j More than one Suggested UCL available, applied the highest UCL

References:
USEPA. 2016. ProUCL Version 5.1.02. September 19. Available online: https://www.epa.gov/land-research/proucl-software
USEPA. 2015. ProUCL Version 5.1 User Guide. EPA/600/R-07/041. October. Available online: https://www.epa.gov/land-research/proucl-version-5100-documentation-downloads

TABLE 3.3
EXPOSURE POINT CONCENTRATION SUMMARY FOR SEDIMENT OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Scenario Timeframe: Current/Future
Medium: Sediment
Exposure Medium: Sediment Outside RoW

COPC Group	COPC	CASRN	Maximum Detected Concentration (mg/kg)	95% UCL (mg/kg)	95% UCL Method	ProUCL Notes	Sample Count	Detect Count	Detection Frequency (%)	Exposure Point Concentration (EPC)		
										Value (mg/kg)	Statistic	Rationale
SVOC	Acenaphthene	83-32-9	0.02	0.00642	95% KM (t) UCL	f	41	3	7	0.00642	UCL	Lower of maximum and UCL
SVOC	Acenaphthylene	208-96-8	0.012	--	Insufficient detects, no UCL calculated	d	41	1	2	0.012	Max	Lower of maximum and UCL
SVOC	Acridine	260-94-6	0.015	0.0105	95% KM (t) UCL	f	41	3	7	0.0105	UCL	Lower of maximum and UCL
SVOC	Anthracene	120-12-7	0.033	0.00867	95% KM (Chebyshev) UCL	--	41	4	10	0.00867	UCL	Lower of maximum and UCL
SVOC	Benzo(a)anthracene	56-55-3	0.044	0.00909	95% KM (t) UCL	--	41	5	12	0.00909	UCL	Lower of maximum and UCL
SVOC	Benzo(a)pyrene	50-32-8	0.047	0.0096	95% KM (t) UCL	f	41	4	10	0.0096	UCL	Lower of maximum and UCL
SVOC	Benzo(b&j)fluoranthene	205-99-2_205-82-3	0.074	0.0243	95% KM (Chebyshev) UCL	--	41	15	37	0.0243	UCL	Lower of maximum and UCL
SVOC	Benzo(c)phenanthrene	195-19-7	0.0088	0.00545	95% KM (t) UCL	b, e	41	2	5	0.00545	UCL	Lower of maximum and UCL
SVOC	Benzo(e)pyrene	192-97-2	0.041	0.0146	95% KM (t) UCL	--	41	10	24	0.0146	UCL	Lower of maximum and UCL
SVOC	Benzo(g,h,i)perylene	191-24-2	0.034	0.00872	95% KM (t) UCL	--	41	5	12	0.00872	UCL	Lower of maximum and UCL
SVOC	Benzo(k)fluoranthene	207-08-9	0.026	0.00788	95% KM (t) UCL	--	41	4	10	0.00788	UCL	Lower of maximum and UCL
SVOC	Chrysene	218-01-9	0.049	0.0146	95% GROS Adjusted Gamma UCL	--	41	8	20	0.0146	UCL	Lower of maximum and UCL
SVOC	Fluoranthene	206-44-0	0.15	0.0342	95% KM (Chebyshev) UCL	--	41	17	41	0.0342	UCL	Lower of maximum and UCL
SVOC	Fluorene	86-73-7	0.02	0.0071	95% KM (t) UCL	--	41	7	17	0.0071	UCL	Lower of maximum and UCL
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	0.033	0.00898	95% KM (t) UCL	--	41	4	10	0.00898	UCL	Lower of maximum and UCL
SVOC	2-Methylnaphthalene	91-57-6	0.024	0.00864	95% KM (t) UCL	--	41	11	27	0.00864	UCL	Lower of maximum and UCL
SVOC	Naphthalene	91-20-3	0.068	0.0144	95% KM (Chebyshev) UCL	--	41	6	15	0.0144	UCL	Lower of maximum and UCL
SVOC	Perylene	198-55-0	0.33	0.0692	95% KM (Chebyshev) UCL	--	41	35	85	0.0692	UCL	Lower of maximum and UCL
SVOC	Phenanthrene	85-01-8	0.13	0.0166	KM H-UCL	--	41	15	37	0.0166	UCL	Lower of maximum and UCL
SVOC	Pyrene	129-00-0	0.12	0.0278	95% KM (Chebyshev) UCL	--	41	18	44	0.0278	UCL	Lower of maximum and UCL
SVOC	Quinoline	91-22-5	0.033	0.0123	95% KM (t) UCL	b, e	41	2	5	0.0123	UCL	Lower of maximum and UCL

Notes:

The exposure point concentration (EPC) is the 95% upper confidence limit (UCL) of the arithmetic mean. When the UCL is greater than the maximum detected concentration or ProUCL did not calculate an UCL, the maximum detected concentration is chosen.

The most appropriate UCL is chosen from those ProUCL suggests based on the distribution of the dataset and ProUCL guidance. ProUCL outputs are provided in Attachment B.
These EPCs for sediment outside of the right-of-way (RoW) will be used in the agricultural receptor scenario.

Abbreviations:
COPC -- Constituent of potential concern
EPC -- Exposure point concentration
UCL -- 95% Upper confidence limit

ProUCL Notes and Warnings:

b	One or more recommended UCL not available.
d	Data set has only 1 Distinct Detected Values.
e	Data set has only 2 Detected Values.
f	Data set has only 3 Detected Values.

References:

USEPA. 2016. ProUCL Version 5.1.02. September 19. Available online: https://www.epa.gov/land-research/proucl-software
USEPA. 2015. ProUCL Version 5.1 User Guide. EPA/600/R-07/041. October. Available online: https://www.epa.gov/land-research/proucl-version-5100-documentation-downloads

TABLE 3.4
EXPOSURE POINT CONCENTRATION SUMMARY FOR CULVERT SEDIMENT OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Scenario Timeframe: Current/Future
Medium: Sediment
Exposure Medium: Culvert Sediment Outside RoW

COPC Group	COPC	CASRN	Maximum Detected Concentration (mg/kg)	95% UCL (mg/kg)	95% UCL Method	ProUCL Notes	Sample Count	Detect Count	Detection Frequency (%)	Exposure Point Concentration (EPC)		
										Value (mg/kg)	Statistic	Rationale
SVOC	Fluoranthene	206-44-0	0.017	--	Insufficient detects, no UCL calculated	d	1	1	100	0.017	Max	Lower of maximum and UCL
SVOC	Perylene	198-55-0	0.029	--	Insufficient detects, no UCL calculated	d	1	1	100	0.029	Max	Lower of maximum and UCL
SVOC	Phenanthrene	85-01-8	0.017	--	Insufficient detects, no UCL calculated	d	1	1	100	0.017	Max	Lower of maximum and UCL

Notes:

The exposure point concentration (EPC) is the 95% upper confidence limit (UCL) of the arithmetic mean. When the UCL is greater than the maximum detected concentration or ProUCL did not calculate an UCL, the maximum detected concentration is chosen.

The most appropriate UCL is chosen from those ProUCL suggests based on the distribution of the dataset and ProUCL guidance. ProUCL outputs are provided in Attachment B
These EPCs for culvert sediment outside of the right-of-way (RoW) will be used in the agricultural receptor scenario.

Abbreviations:
COPC -- Constituent of potential concern
EPC -- Exposure point concentration
UCL -- 95% Upper confidence limit

ProUCL Notes and Warnings:
d Data set has only 1 Distinct Detected Values.

References:

USEPA. 2016. ProUCL Version 5.1.02. September 19. Available online: https://www.epa.gov/land-research/proucl-software
USEPA. 2015. ProUCL Version 5.1 User Guide. EPA/600/R-07/041. October. Available online: https://www.epa.gov/land-research/proucl-version-5100-documentation-downloads

TABLE 4.1
VALUES USED FOR DAILY INTAKE CALCULATIONS FOR SOIL
REASONABLE MAXIMUM EXPOSURE
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Surface Soil (0-1.5 m)

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale / Reference	Intake Equation / Model Name
Incidental Ingestion	Industrial Worker	Adult	Soil (0-1.5 m)	AT	Averaging Time-cancer (life expectancy)	29,200	days	Health Canada 2010a	Intake (mg/kg/day) = (CS x IR x CF x FI x EF x ED x RBA) / (BW x AT)
				AT	Averaging Time-noncancer	12,775	days	Health Canada 2010a	
				BW	Body Weight	70.7	kg	CCME 2006, Health Canada 2010aa	
				CF	Conversion Factor	1E-06	kg/mg	--	
				CS	Chemical Concentration in Soil	EPC	mg/kg	--	
				FI	Fraction Ingested	1	unitless	Professional judgment	
				ED	Exposure Duration	35	years	Health Canada 2010aa	
				EF	Exposure Frequency	240	days/yr	CCME 2006, Health Canada 2010a	
				IR	Ingestion Rate	20	mg/day	CCME 2006, Health Canada 2010a	
				RBA	Relative Bioavailability	100	percent	Health Canada 2010a	
	Agricultural Receptor	Adult	Soil (0-1.5 m)	AT	Averaging Time-cancer (life expectancy)	29,200	days	Health Canada 2010a	For noncancer, the Intake (mg/kg/day) = (CS x IR x CF x FI x EF x ED x RBA) / (BW x AT), separately for adult and child using IR-adult or IR-child. For cancer, the ingestion rate was calculated for an adult, adjusting for age-specific exposure factors, where IR-Adj = ∑ (ED * IR) / BW. Intake (mg/kg/day) = (CS x (IR-Adj-adult + IR-Adj-child) x CF x FI x EF x RBA) / AT
				AT	Averaging Time-noncancer	21,900	days	Health Canada 2010a	
				BW	Body Weight	70.7	kg	CCME 2006, Health Canada 2010a	
				CF	Conversion Factor	1E-06	kg/mg	--	
				CS	Chemical Concentration in Soil	EPC	mg/kg	--	
				FI	Fraction Ingested	1	unitless	Professional judgment	
				ED	Exposure Duration	60	years	Health Canada 2010a	
				EF	Exposure Frequency	365	days/yr	Health Canada 2010a	
				IR-adult	Ingestion Rate	20	mg/day	CCME 2006, Health Canada 2010a	
				IR-Adj-adult	Ingestion Rate Age-Adjusted	17	mg-yr/day-kg	Calculated - See Age-Adjustment table	
				RBA	Relative Bioavailability	100	percent	Health Canada 2010a	
		Infant/Toddler/ Child/Teen	Soil (0-1.5 m)	AT	Averaging Time-cancer (life expectancy)	29,200	days	Health Canada 2010a	
				AT	Averaging Time-noncancer	7,300	days	Health Canada 2010a	
				BW	Body Weight	29.3	kg	CCME 2006, Health Canada 2010a - see note	
				CF	Conversion Factor	1E-06	kg/mg	--	
				CS	Chemical Concentration in Soil	EPC	mg/kg	--	
				FI	Fraction Ingested	1	unitless	Professional judgment	
				ED	Exposure Duration	20	years	Health Canada 2010a	
				EF	Exposure Frequency	365	days/yr	Health Canada 2010a	
				IR-child	Ingestion Rate	35	mg/day	CCME 2006, Health Canada 2010a - see note	
				IR-Adj-child	Ingestion Rate Age-Adjusted	30	mg-yr/day-kg	Calculated - See Age-Adjustment table	
				RBA	Relative Bioavailability	100	percent	Health Canada 2010a	

TABLE 4.1
VALUES USED FOR DAILY INTAKE CALCULATIONS FOR SOIL
REASONABLE MAXIMUM EXPOSURE
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Surface Soil (0-1.5 m)

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale / Reference	Intake Equation / Model Name
Dermal	Industrial Worker	Adult	Soil (0-1.5 m)	ABSd	Dermal Absorption Factor	Chemical-specific	unitless	Health Canada 2010b CCME 2006 / Health	DAD (mg/kg/day) = (DA-event x EF x ED x EV x SA) / (BW x AT), where DA-event (mg/cm^2-event)= Csoil x CF x AF x ABSd
				AF	Soil Loading / Adherence Factor	0.1	mg/cm^2-event	Canada 2010a - hands	
				AT	Averaging Time-cancer (life expectancy)	29,200	days	Health Canada 2010a	
				AT	Averaging Time-noncancer	12,775	days	Health Canada 2010a	
				BW	Body Weight	70.7	kg	CCME 2006, Health Canada 2010a	
				CF	Conversion Factor	1E-06	kg/mg	--	
				CS	Chemical Concentration in Soil	EPC	mg/kg	--	
				ED	Exposure Duration	35	years	Health Canada 2010a	
				EF	Exposure Frequency	240	days/yr	CCME 2006, Health Canada 2010a	
				EV	Events Frequency	1	events/day	Health Canada 2010a	
				SA	Skin Surface Area	3,390	cm^2	Health Canada 2010a - see note	
	Agricultural Receptor	Adult	Soil (0-1.5 m)	ABSd	Dermal Absorption Factor	Chemical-specific	unitless	Health Canada 2010b CCME 2006 / Health	For noncancer, the DAD (mg/kg/day) = (Csoil x CF x AF x ABSd x EF x ED x EV x SA) / (BW x AT). Separate calculations are performed for adult and child using SA-adult or SA-child. For cancer, the DAD was calculated for an adult, adjusting for age-specific exposure factors, where SA-Adj = ∑ (ED * SA) / BW. DAD (mg/kg/day) = (CS x CF x ABSd x EF x EV x (AF-adult x SA-Adj-adult + AF-child x SA-Adj-child)) / AT
				AF	Soil Loading / Adherence Factor	0.1	mg/cm^2-event	Canada 2010a - hands	
				AT	Averaging Time-cancer (life expectancy)	29,200	days	Health Canada 2010a	
				AT	Averaging Time-noncancer	21,900	days	Health Canada 2010a	
				BW	Body Weight	70.7	kg	CCME 2006, Health Canada 2010a	
				CF	Conversion Factor	1E-06	kg/mg	--	
				CS	Chemical Concentration in Soil	EPC	mg/kg	--	
				ED	Exposure Duration	60	years	Health Canada 2010a	
				EF	Exposure Frequency	365	days/yr	Health Canada 2010a	
				EV	Events Frequency	1	events/day	Health Canada 2010a	
				SA-adult	Skin Surface Area	9,110	cm2	Health Canada 2010a - see note	
				SA-Adj-adult	Skin Surface Area Age-Adjusted	7,731	cm^2-yr/kg	Calculated - See Age-Adjustment table	
		Infant/Toddler/ Child/Teen	Soil (0-1.5 m)	ABSd	Dermal Absorption Factor	Chemical-specific	unitless	Health Canada 2010b CCME 2006 / Health	See above.
				AF	Soil Loading / Adherence Factor	0.1	mg/cm^2-event	Canada 2010a - hands	
				AT	Averaging Time-cancer (life expectancy)	29,200	days	Health Canada 2010a	
				AT	Averaging Time-noncancer	7,300	days	Health Canada 2010a	
				BW	Body Weight	29.3	kg	CCME 2006, Health Canada 2010a - see note	
				CF	Conversion Factor	1E-06	kg/mg	--	
				CS	Chemical Concentration in Soil	EPC	mg/kg	--	
				ED	Exposure Duration	20	years	Health Canada 2010a	
				EF	Exposure Frequency	365	days/yr	Health Canada 2010a	
				EV	Events Frequency	1	events/day	Health Canada 2010a	
				SA-child	Skin Surface Area	4,483	cm^2	Health Canada 2010a - see note	
				SA-Adj-child	Skin Surface Area Age-Adjusted	3,095	cm^2-yr/kg	Calculated - See Age-Adjustment table	

TABLE 4.1
VALUES USED FOR DAILY INTAKE CALCULATIONS FOR SOIL
REASONABLE MAXIMUM EXPOSURE
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Surface Soil (0-1.5 m)

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale / Reference	Intake Equation / Model Name
Inhalation Outdoor Particulate	Industrial Worker	Adult	Soil (0-1.5 m)	AT	Averaging Time-cancer (life expectancy)	29,200	days	Health Canada 2010a	Inhalation Dose (mg/kg/day) = (CA x IR x RAF-inh X ET x EF x ED x CF) / BW x AT, where CA = CS * PEF
				AT	Averaging Time-noncancer	12,775	days	Health Canada 2010a CCME 2006, Health	
				BW	Body Weight	70.7	kg	Canada 2010a	
				CA	Chemical Concentration in Air	Chemical-specific	mg/m^3	Calculated	
				CF	Conversion Factor	0.042	day/hr	--	
				CS	Chemical Concentration in Soil	EPC	mg/kg	--	
				ED	Exposure Duration	35	years	Health Canada 2010a	
				EF	Exposure Frequency	240	days/yr	CCME 2006, Health Canada 2010a	
				ET	Exposure Time	10	hr/day	CCME 2006, Health Canada 2010a	
				InhR	Inhalation Rate	16.6	m^3/day	Health Canada 2010a	
				PEF	Particulates Emissions Factor	7.60E-10	kg/m^3	CCME 2006, Health Canada 2010a	
	Agricultural Receptor	Adult	Soil (0-1.5 m)	AT	Averaging Time-cancer (life expectancy)	29,200	days	Health Canada 2010a	For noncancer, inhalation dose (mg/kg/day) = (CA x IR x RAF-inh X ET x EF x ED x CF) / BW x AT, where CA = CS * PEF For cancer, the inhalation dose (mg/kg/day) was calculated for an adult, adjusting for age-specific exposure factors, where InhR-Adj = ∑ (ED * InhR) / BW. Dose (mg/kg/day) = (CA x RAF-inh x ET x EF x CF x (InhR-Adj-adult + InhR-child)) / AT where CA = CS * PEF
				AT	Averaging Time-noncancer	21,900	days	Health Canada 2010a CCME 2006, Health	
				BW	Body Weight	70.7	kg	Canada 2010a	
				CA	Chemical Concentration in Air	Chemical-specific	mg/m^3	Calculated	
				CF	Conversion Factor	0.042	day/hr	--	
				CS	Chemical Concentration in Soil	EPC	mg/kg	--	
				ED	Exposure Duration	60	years	Health Canada 2010a	
				EF	Exposure Frequency	365	days/yr	Health Canada 2010a	
				ET	Exposure Time	24	hr/day	Health Canada 2010a	
				InhR	Inhalation Rate	16.6	m^3/day	Health Canada 2010a	
				InhR-adj	Inhalation Rate Age-Adjusted	14	mg^3-yr/day-kg	Calculated - See Age-Adjustment table	
				PEF	Particulates Emissions Factor	7.60E-10	kg/m^3	CCME 2006, Health Canada 2010a	
		Infant/Toddler/ Child/Teen	Soil (0-1.5 m)	AT	Averaging Time-cancer (life expectancy)	29,200	days	Health Canada 2010a	See above.
				AT	Averaging Time-noncancer	7,300	days	Health Canada 2010a CCME 2006, Health	
				BW	Body Weight	29.3	kg	Canada 2010a - see note	
				CA	Chemical Concentration in Air	Chemical-specific	mg/m^3	Calculated	
				CF	Conversion Factor	0.042	day/hr	--	
				CS	Chemical Concentration in Soil	EPC	mg/kg	--	
				ED	Exposure Duration	20	years	Health Canada 2010a	
				EF	Exposure Frequency	365	days/yr	Health Canada 2010a	
				ET	Exposure Time	24	hr/day	Health Canada 2010a	
				InhR	Inhalation Rate	10.2	m^3/day	Health Canada 2010a - see note	
				InhR-adj	Inhalation Rate Age-Adjusted	7.6	mg^3-yr/day-kg	Calculated - See Age-Adjustment table	
				PEF	Particulates Emissions Factor	7.60E-10	kg/m^3	CCME 2006, Health Canada 2010a	

Note:
The toddler/child/teen's body weight is an average of the body weights reported in the sources for 20 years: 8.2 kg for an infant (birth to 6 mo), 16.5 kg for a toddler (7 mo to 4 yrs), 32.9 kg for a child (5 to 11 yrs), and 59.7 kg for a teen (12 to 19 yrs).
The toddler/child/teen's incidental soil ingestion rate is an average of the rates reported in the sources for 20 years: 20 mg/day each for an infant, child and teen, and 80 mg/day for a toddler.
The worker's skin surface area is the sum of the individual values for hands and arms (upper and lower).
The adult and infant/toddler/child/teen's skin surface areas are weighted averages of the sum of individual values for hands, arms (upper and lower), and legs (upper and lower).
The toddler/child/teen's inhalation rate is an average of the rates reported in the source for 20 years: 2.2 m^3/day for an infant, 8.3 m^3/day for a toddler, 14.5 m^3/day for a child, and 15.6 m^3/day for a teen.

Abbreviations:
Adj -- Adjusted to include both adult and child exposure factors
EPC -- Exposure point concentration

References:
CCME. 2006. A Protocol for the Derivation of Environmental and Human Health Soil Quality Guidelines.
Health Canada. 2010a. Part I: Guidance on Human Health Preliminary Quantitative Risk Assessment (PQRA), Version 2.0. Federal Contaminated Site Risk Assessment in Canada. Rev. 2012.
Health Canada. 2010b. Part II: Health Canada Toxicological Reference Values (TRVs) and Chemical-Specific Factors, Version 2.0. Federal Contaminated Site Risk Assessment in Canada.

TABLE 4.2
VALUES USED FOR DAILY INTAKE CALCULATIONS FOR SEDIMENT
REASONABLE MAXIMUM EXPOSURE
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale / Reference	Intake Equation / Model Name
Incidental Ingestion	Agricultural Receptor	Adult	Sediment	AT	Averaging Time-cancer	29,200	days	Health Canada 2010a	For noncancer, the Intake (mg/kg-day) = (CS x IR x CF x FI x EF x ED x RBA) / (BW x AT), separately for adult and child using IR-adult or IR-child.
				AT	Averaging Time-noncancer	21,900	days	Health Canada 2010a	
				BW	Body Weight	70.7	kg	CCME 2006, Health Canada 2010a	For cancer, the ingestion rate was calculated for an adult, adjusting for age-specific exposure factors, where IR-Adj = ∑ (ED * IR) / BW.
				CF	Conversion Factor	1E-06	kg/mg	--	
				CS	Chemical Concentration in Sediment	EPC	mg/kg	--	Intake (mg/kg-day) = (CS x (IR-Adj-adult + IR-Adj-child) x CF x FI x EF x RBA) / AT
				FI	Fraction Ingested	1	unitless	Professional judgment	
				ED	Exposure Duration	60	years	Health Canada 2010a	
				EF	Exposure Frequency	365	days/yr	Health Canada 2010a	
				ET	Exposure Time	0.43	hour/day	Richardson 2013, 26 minutes	
				IR-adult-hourly	Ingestion Rate Hourly	20	mg/hour	Health Canada 2017	
				IR-adult	Ingestion Rate	8.7	mg/day	Calculated: ET x IR-hourly	
				IR-Adj-adult	Ingestion Rate Age-Adjusted	7	mg-yr/day-kg	Calculated - See Age-Adjustment table	
				RBA	Relative Bioavailability	100	percent	Health Canada 2010a	
		Toddler/Child/Teen	Sediment	AT	Averaging Time-cancer	29,200	days	Health Canada 2010a	
				AT	Averaging Time-noncancer	7,300	days	Health Canada 2010a	
				BW	Body Weight	29.3	kg	CCME 2006, Health Canada 2010a - see note	
				CF	Conversion Factor	1E-06	kg/mg	--	
				CS	Chemical Concentration in Sediment	EPC	mg/kg	--	
				FI	Fraction Ingested	1	unitless	Professional judgment	
				ED	Exposure Duration	20	years	Health Canada 2010a	
				EF	Exposure Frequency	365	days/yr	Health Canada 2010a	
				ET	Exposure Time	0.65	hour/day	Richardson 2013, 39 minutes	
				IR-child-hourly	Ingestion Rate Hourly	49	mg/hour	Health Canada 2017 - see note	
				IR-child	Ingestion Rate	32	mg/day	Calculated: ET x IR-hourly	
				IR-Adj-child	Ingestion Rate Age-Adjusted	22	mg-yr/day-kg	Calculated - See Age-Adjustment table	

TABLE 4.2
VALUES USED FOR DAILY INTAKE CALCULATIONS FOR SEDIMENT
REASONABLE MAXIMUM EXPOSURE
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale / Reference	Intake Equation / Model Name
Dermal	Agricultural	Adult	Sediment	ABSd	Dermal Absorption Factor	Chemical-specific	unitless	Health Canada 2010b	For noncancer, the DAD (mg/kg-day) =
								Calculated - see Weighted	$(CS \times \Sigma[(AF_i \times SA_i)/SA_{total}] \times ABSd \times EF \times ED \times EV \times CF) / (BW \times AT)$.
	Receptor			AF	Adherence Factor	0.20	mg/cm^2-event	AF table	
				AT	Averaging Time-cancer	29,200	days	Health Canada 2010a	For cancer, the DAD was calculated for an adult, adjusting for age-specific exposure
				AT	Averaging Time-noncancer	21,900	days	Health Canada 2010a	factors, where SA-Adj = ∑ (ED * SA) / BW.
								CCME 2006, Health Canada	DAD (mg/kg-day) =
				BW	Body Weight	70.7	kg	2010a	(CS x CF x ABSd x EF x EV x (AF-adult x SA-Adj-adult + AF-child x SA-Adj-child)) / AT
				CF	Conversion Factor	1E-06	kg/mg	--	
				CS	Chemical Concentration in Sediment	EPC	mg/kg	--	
				ED	Exposure Duration	60	years	Health Canada 2010a	
				EF	Exposure Frequency	365	days/yr	Health Canada 2010a	
				EV	Events Frequency	1	events/day	Health Canada 2010a	
								Health Canada 2017 - see	
				SA-adult	Skin Surface Area	7,860	cm^2	note	
								Calculated - See Age-	
				SA-Adj-adult	Skin Surface Area Age-Adjusted	6,670	cm^2-yr/kg	Adjustment table	
		Toddler/Child/Teen	Sediment	ABSd	Dermal Absorption Factor	Chemical-specific	unitless	Health Canada 2010b	See above.
								Calculated - see Weighted	
				AF	Adherence Factor	30.6	mg/cm^2-event	AF table	
				AT	Averaging Time-cancer	29,200	days	Health Canada 2010a	
				AT	Averaging Time-noncancer	7,300	days	Health Canada 2010a	
								CCME 2006, Health Canada	
				BW	Body Weight	29.3	kg	2010a - see note	
				CF	Conversion Factor	1E-06	kg/mg	--	
				CS	Chemical Concentration in Sediment	EPC	mg/kg	--	
				ED	Exposure Duration	20	years	Health Canada 2010a	
				EF	Exposure Frequency	365	days/yr	Health Canada 2010a	
				EV	Events Frequency	1	events/day	Health Canada 2010a	
								Health Canada 2017 - see	
				SA-child	Skin Surface Area	5,363	cm^2	note	
								Calculated - See Age-	
				SA-Adj-child	Skin Surface Area Age-Adjusted	2,976	cm^2-yr/kg	Adjustment table	

Note:
The toddler/child/teen's body weight is an average of the body weights reported in the sources for 20 years: 8.2 kg for an infant (birth to 6 mo), 16.5 kg for a toddler (7 mo to 4 yrs), 32.9 kg for a child (5 to 11 yrs), and 59.7 kg for a teen (12 to 19 yrs).
The toddler/child/teen's incidental sediment ingestion rate is an average of the rates reported in the source: 72 mg/hour for a toddler, 57 mg/hour for a child, and 18 mg/hour for a teen.
The toddler/child/teen's skin surface areas for sediment exposure are weighted averages of the sum of individual values for hands, forearms, legs, and feet, as presented in Table 2 of Health Canada 2017. The adult skin surface area is the same, excluding the feet.

The toddler/child/teen's skin adherence factors for sediment exposure are weighted averages of the individual values for forearms, hands, lower legs and feet based on Shoaf et al. (2005a, child's overall exposure), as cited in Table 3 of Health Canada 2017. The adult skin surface area is the same, excluding the feet.

Abbreviations:
Adj -- Adjusted to include both adult and child exposure factors
DAD -- Dermally absorbed dose
EPC -- Exposure point concentration

References:
CCME. 2006. A Protocol for the Derivation of Environmental and Human Health Soil Quality Guidelines.
Health Canada. 2010a. Part I: Guidance on Human Health Preliminary Quantitative Risk Assessment (PQRA), Version 2.0. Federal Contaminated Site Risk Assessment in Canada. Rev. 2012.
Health Canada. 2010b. Part II: Health Canada Toxicological Reference Values (TRVs) and Chemical-Specific Factors, Version 2.0. Federal Contaminated Site Risk Assessment in Canada.
Health Canada. 2017. Supplemental Guidance on Human Health Risk Assessment of Contaminated Sediments: Direct Contact Pathway. Federal Contaminated Site Risk Assessment in Canada.
Richardson GM. 2013. Canadian Exposure Factors Handbook. Stantec Consulting, University of Saskatchewan Toxicology Centre.

TABLE 4.3
CONSTITUENT-SPECIFIC FACTORS FOR SOIL/SEDIMENT EXPOSURES
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

COPC Group	**COPC**	**CASRN**	**Inhalation Relative Absorption Factor** (unitless) (1)	**Dermal Absorption Fraction for Soil/Sediment** (unitless) (2)	**Ingestion Relative Absorption Bioavailability Factor for Soil/Sediment** (unitless) (3)
SVOC	Acenaphthene	83-32-9	1	0.148	1
SVOC	Acenaphthylene	208-96-8	1	0.148	1
SVOC	Acridine	260-94-6	1	0.148	1
SVOC	Anthracene	120-12-7	1	0.148	1
SVOC	Benzo(a)anthracene	56-55-3	1	0.148	1
SVOC	Benzo(a)pyrene	50-32-8	1	0.148	1
SVOC	Benzo(b&j)fluoranthene	205-99-2_205-82-3	1	0.148	1
SVOC	Benzo(c)phenanthrene	195-19-7	1	0.148	1
SVOC	Benzo(e)pyrene	192-97-2	1	0.148	1
SVOC	Benzo(g,h,i)perylene	191-24-2	1	0.148	1
SVOC	Benzo(k)fluoranthene	207-08-9	1	0.148	1
SVOC	Chrysene	218-01-9	1	0.148	1
SVOC	Dibenz(a,h)anthracene	53-70-3	1	0.148	1
SVOC	Fluoranthene	206-44-0	1	0.148	1
SVOC	Fluorene	86-73-7	1	0.148	1
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	1	0.148	1
SVOC	2-Methylnaphthalene	91-57-6	1	0.148	1
SVOC	Naphthalene	91-20-3	1	0.148	1
SVOC	Perylene	198-55-0	1	0.148	1
SVOC	Phenanthrene	85-01-8	1	0.148	1
SVOC	Pyrene	129-00-0	1	0.148	1
SVOC	Quinoline	91-22-5	1	0.148	1

Notes:
(1) A default relative absorption factor of one is applied for the inhalation pathway (Health Canada 2010b).
(2) Dermal absorption factors are taken from Table 3 and the value for benzo(a)pyrene was applied to all PAHs (Health Canada 2010b).
(3) A default relative absorption bioavailability factor (RBA) of one is applied for the ingestion pathway (Health Canada 2010b).

Abbreviations:
COPC -- Constituent of potential concern
SVOC -- Semi-volatile organic compound

References:

Health Canada. 2010a. Part I: Guidance on Human Health Preliminary Quantitative Risk Assessment (PQRA), Version 2.0. Federal Contaminated Site Risk Assessment in Canada. Rev. 2012.

Health Canada. 2010b. Part II: Health Canada Toxicological Reference Values (TRVs) and Chemical-Specific Factors, Version 2.0. Federal Contaminated Site Risk Assessment in Canada.

TABLE 4.4
CALCULATION OF AGE-ADJUSTED EXPOSURE FACTORS FOR AN AGRICULTURAL RECEPTOR
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

AGE	Exposure Duration	Body Weight (1)	Intake Rate		Dermal Surface Area		Inhalation Rate	Age-Adjusted Exposure Factors					
								AGE GROUP	Intake Rate		Dermal Surface Area		Inhalation Rate
			Soil IR-SO	Sediment IR-SE	Soil SA	Sediment SA	Soil InhR		IR-SO-Adj	IR-SE-Adj	SA-SO-Adj	SA-SE-Adj	InhR-SO-Adj
year	years	kg	mg/day	mg/hr	cm^2	cm^2	m^3/day		mg-yr/day-kg	mg-yr/day-kg	cm^2-yr/kg	cm^2-yr/kg	mg^3-yr/day-kg
Birth to 6 months	0.5	8.2	20	0	1,780	0	2.2						
7 mo to 4 yrs	4.5	16.5	80	72	3,010	3,000	8.3						
5 to 11 yrs	7	32.9	20	57	5,140	5,120	14.5						
12 to 19 yrs	8	59.7	20	18	8,000	7,970	15.6	20 yrs	30	22	3,095	2,976	7.6
≥ 20 yrs	60	70.7	20	20	9,110	7,860	16.6	60 yrs	17	7	7,731	6,670	14

Equations:

IR-SO-Adj (mg-yr/day-kg) = ∑ (ED * IR-SO / BW)
IR-SE-Adj (mg-yr/day-kg) = ∑ (ED * IR-SE * ET / BW)
SA-SO-Adj (cm^2-yr/kg) = ∑ (ED * SA-SO / BW)
SA-SE-Adj (cm^2-yr/kg) = ∑ (ED * SA-SE / BW)
InhR-SO-Adj (mg^3-yr/day-kg) = ∑ (ED * InhR-SO / BW)

where ET is 26 minutes for an adult and 39 minutes for a toddler/child/teen.

Abbreviations:

BW -- Body weight
ED -- Exposure duration
IR-SO -- Ingestion rate of soil
IR-SE -- Ingestion rate of sediment

Notes:

The adult and infant/toddler/child/teen's skin surface areas for soil exposure are the sum of individual values for hands, arms (upper and lower), and legs (upper and lower).

The toddler/child/teen's skin surface areas for sediment exposure are the sum of individual values for hands, forearms, legs, and feet, as presented in Table 2 of Health Canada 2017. The adult skin surface area is the same, excluding the feet.

References:

CCME. 2006. A Protocol for the Derivation of Environmental and Human Health Soil Quality Guidelines.
Health Canada. 2010. Part I: Guidance on Human Health Preliminary Quantitative Risk Assessment (PQRA), Version 2.0. Federal Contaminated Site Risk Assessment in Canada. Rev. 2012.
Health Canada. 2017. Supplemental Guidance on Human Health Risk Assessment of Contaminated Sediments: Direct Contact Pathway. Federal Contaminated Site Risk Assessment in Canada.

TABLE 4.5
CALCULATION OF WEIGHTED ADHERENCE FACTORS FOR SEDIMENT EXPOSURE
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

	SEDIMENT										
	Adult			Toddler, Child, and Teen							
				Surface Area (SA) (cm^2)				SA x AF			
Body Part	**Surface Area (SA)** (cm^2)	**Adherence Factor (AF)** (mg/cm^2-event)	**SA x AF**	**Toddler**	**Child**	**Teen**	**Adherence Factor (AF)** (mg/cm^2-event)	**Toddler**	**Child**	**Teen**
Face	Not reported	Not reported	0	Not reported	Not reported	Not reported	Not reported	0	0	0
Forearms	1,250	0.12	150	450	740	1,120	11	4,950	8,140	12,320
Hands	890	0.88	783	430	590	800	35	15,050	20,650	28,000
Lower Legs	5,720	0.16	915	1,690	3,070	4,970	36	60,840	110,520	178,920
Feet	Not applicable	Not applicable	0	430	720	1,080	24	10,320	17,280	25,920
		Total:	1,848				**Total:**	91,160	156,590	245,160
	Weighted AF (mg/cm^2-event)**:**		**0.24**				**Weighted AF** (mg/cm^2-event)**:**	**30.4**	**30.6**	**30.8**

Notes:
The adult adherence factors are taken from Table 3 of Health Canada 2017 for adults that areclam digging in tidal flat (very fine to fine sand) with shoes on.
The child adherence factors are taken from Table 3 of Health Canada 2017 for children in mud, 1st exposure. A sensitivity analysis was performed using less conservative exposure factors in the table: 0.17 for forearms, 0.49 for hands, 0.7 for lower legs, and 21 cm^2 for feet, which results in an average AF of 3.4 mg/cm^2-event.

References:
Health Canada. 2017. Supplemental Guidance on Human Health Risk Assessment of Contaminated Sediments: Direct Contact Pathway. Federal Contaminated Site Risk Assessment in Canada.

TABLE 5.1
NONCANCER TOXICITY DATA -- ORAL/DERMAL
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

COPC Group	COPC	CASRN	Tolerable Daily Intake		GIABS	Dermal Toxicological Reference Value		Source
			Value	Units		Value	Units	
SVOC	Acenaphthene	83-32-9	0.06	mg/kg-day	1	0.06	mg/kg-day	USEPA IRIS
SVOC	Acenaphthylene	208-96-8	NA	NA	NA	NA	NA	NA
SVOC	Acridine	260-94-6	NA	NA	NA	NA	NA	NA
SVOC	Anthracene	120-12-7	0.3	mg/kg-day	1	0.3	mg/kg-day	USEPA IRIS
SVOC	Benzo(a)anthracene	56-55-3	NA	NA	NA	NA	NA	NA
SVOC	Benzo(a)pyrene	50-32-8	0.0003	mg/kg-day	1	0.0003	mg/kg-day	USEPA IRIS
SVOC	Benzo(b&j)fluoranthene	205-99-2_205-82-3	NA	NA	NA	NA	NA	NA
SVOC	Benzo(c)phenanthrene	195-19-7	NA	NA	NA	NA	NA	NA
SVOC	Benzo(e)pyrene	192-97-2	NA	NA	NA	NA	NA	NA
SVOC	Benzo(g,h,i)perylene	191-24-2	NA	NA	NA	NA	NA	NA
SVOC	Benzo(k)fluoranthene	207-08-9	NA	NA	NA	NA	NA	NA
SVOC	Chrysene	218-01-9	NA	NA	NA	NA	NA	NA
SVOC	Dibenz(a,h)anthracene	53-70-3	NA	NA	NA	NA	NA	NA
SVOC	Fluoranthene	206-44-0	0.04	mg/kg-day	1	0.04	mg/kg-day	USEPA IRIS
SVOC	Fluorene	86-73-7	0.04	mg/kg-day	1	0.04	mg/kg-day	USEPA IRIS
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	NA	NA	NA	NA	NA	NA
SVOC	2-Methylnaphthalene	91-57-6	0.004	mg/kg-day	1	0.004	mg/kg-day	Health Canada
SVOC	Naphthalene	91-20-3	0.02	mg/kg-day	1	0.02	mg/kg-day	Health Canada
SVOC	Perylene	198-55-0	NA	NA	NA	NA	NA	NA
SVOC	Phenanthrene	85-01-8	NA	NA	NA	NA	NA	NA
SVOC	Pyrene	129-00-0	0.03	mg/kg-day	1	0.03	mg/kg-day	USEPA IRIS
SVOC	Quinoline	91-22-5	NA	NA	NA	NA	NA	NA

Note:
Toxicity values from Health Canada 2010 were applied and supplemented with values from USEPA IRIS.
The dermal reference dose assumes the gastrointestinal absorption is 100% and equals the oral reference dose (USEPA 2019b).

Abbreviations:
COPC -- Constituent of potential concern
GIABS -- Gastrointestinal absorption factor
IRIS -- USEPA Integrated Risk Information System
NA -- Not available
SVOC -- Semi-volatile organic compound
USEPA -- United States Environmental Protection Agency

References:

Health Canada. 2010. Part II: Health Canada Toxicological Reference Values (TRVs) and Chemical-Specific Factors, Version 2.0. Federal Contaminated Site Risk Assessment in Canada.
USEPA. 2019a. Integrated Risk Information System (IRIS). Website Last Updated May 28. Available online: https://www.epa.gov/iris
USEPA. 2019b. Regional Screening Levels Table. May. Available online: https://www.epa.gov/risk/regional-screening-levels-rsls

TABLE 5.2
NONCANCER TOXICITY DATA -- INHALATION
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

COPC Group	COPC	CASRN	Tolerable Concentration	
			Value	Units
SVOC	Acenaphthene	83-32-9	NA	NA
SVOC	Acenaphthylene	208-96-8	NA	NA
SVOC	Acridine	260-94-6	NA	NA
SVOC	Anthracene	120-12-7	NA	NA
SVOC	Benzo(a)anthracene	56-55-3	NA	NA
SVOC	Benzo(a)pyrene	50-32-8	NA	NA
SVOC	Benzo(b&j)fluoranthene	205-99-2_205-82-3	NA	NA
SVOC	Benzo(c)phenanthrene	195-19-7	NA	NA
SVOC	Benzo(e)pyrene	192-97-2	NA	NA
SVOC	Benzo(g,h,i)perylene	191-24-2	NA	NA
SVOC	Benzo(k)fluoranthene	207-08-9	NA	NA
SVOC	Chrysene	218-01-9	NA	NA
SVOC	Dibenz(a,h)anthracene	53-70-3	NA	NA
SVOC	Fluoranthene	206-44-0	NA	NA
SVOC	Fluorene	86-73-7	NA	NA
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	NA	NA
SVOC	2-Methylnaphthalene	91-57-6	NA	NA
SVOC	Naphthalene	91-20-3	NA	NA
SVOC	Perylene	198-55-0	NA	NA
SVOC	Phenanthrene	85-01-8	NA	NA
SVOC	Pyrene	129-00-0	NA	NA
SVOC	Quinoline	91-22-5	NA	NA

Abbreviation:

NA -- Not available

SVOC -- Semi-volatile organic compound

TABLE 6.1
CANCER TOXICITY DATA -- ORAL/DERMAL
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

COPC Group	COPC	CASRN	Potency Equivalence Factor to B(a)P	Oral Slope Factor		Dermal Slope Factor		Source
				Value	Units	Value	Units	
SVOC	Acenaphthene	83-32-9	Not applicable	NA	NA	NA	NA	NA
SVOC	Acenaphthylene	208-96-8	Not applicable	NA	NA	NA	NA	NA
SVOC	Acridine	260-94-6	Not applicable	NA	NA	NA	NA	NA
SVOC	Anthracene	120-12-7	0.1	0.23	(mg/kg/day)-1	2.5	(mg/kg-day)-1	Health Canada
SVOC	Benzo(a)anthracene	56-55-3	0.1	0.23	(mg/kg/day)-1	2.5	(mg/kg-day)-1	Health Canada
SVOC	Benzo(a)pyrene	50-32-8	1	2.3	(mg/kg/day)-1	25	(mg/kg-day)-1	Health Canada
SVOC	Benzo(b&j)fluoranthene	205-99-2_205-82-3	0.1	0.23	(mg/kg/day)-1	2.5	(mg/kg-day)-1	Health Canada
SVOC	Benzo(c)phenanthrene	195-19-7	0.01	0.023	(mg/kg/day)-1	0.25	(mg/kg-day)-1	Health Canada
SVOC	Benzo(e)pyrene	192-97-2	Not applicable	NA	NA	NA	NA	NA
SVOC	Benzo(g,h,i)perylene	191-24-2	0.01	0.023	(mg/kg/day)-1	0.25	(mg/kg-day)-1	Health Canada
SVOC	Benzo(k)fluoranthene	207-08-9	0.1	0.23	(mg/kg/day)-1	2.5	(mg/kg-day)-1	Health Canada
SVOC	Chrysene	218-01-9	0.01	0.023	(mg/kg/day)-1	0.25	(mg/kg-day)-1	Health Canada
SVOC	Dibenz(a,h)anthracene	53-70-3	1	2.3	(mg/kg/day)-1	25	(mg/kg-day)-1	Health Canada
SVOC	Fluoranthene	206-44-0	0.001	0.0023	(mg/kg/day)-1	0.025	(mg/kg-day)-1	Health Canada
SVOC	Fluorene	86-73-7	Not applicable	NA	NA	NA	NA	NA
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	0.1	0.23	(mg/kg/day)-1	2.5	(mg/kg-day)-1	Health Canada
SVOC	2-Methylnaphthalene	91-57-6	Not applicable	NA	NA	NA	NA	NA
SVOC	Naphthalene	91-20-3	Not applicable	0.12	(mg/kg/day)-1	0.12	(mg/kg-day)-1	CA OEHHA
SVOC	Perylene	198-55-0	Not applicable	NA	NA	NA	NA	NA
SVOC	Phenanthrene	85-01-8	0.001	0.0023	(mg/kg/day)-1	0.025	(mg/kg-day)-1	Health Canada
SVOC	Pyrene	129-00-0	Not applicable	NA	NA	NA	NA	NA
SVOC	Quinoline	91-22-5	Not applicable	NA	NA	NA	NA	NA

Notes:
Toxicity values from Health Canada 2010 were applied and supplemented with values from CA OEHHA.

The oral slope factor for each polycyclic aromatic hydrocarbon (PAH) is based on the slope factor for benzo(a)pyrene (Health Canada 2010, Table 1) multiplied by the PAH's potency equivalence factor.

The dermal slope factor of 25 (mg/kg-day)-1 for benzo(a)pyrene was taken from Knafla 2006, as cited in Health Canada 2010. The dermal slope factors for each PAH is based on this dermal slope factor multiplied by the PAH's potency equivalence factor.
For naphthalene, the dermal reference dose assumes the gastrointestinal absorption is 100% and equals the oral reference dose (USEPA 2019).

Abbreviations:
CA OEHHA -- California Office of Environmental Health Hazard Assessment
COPC -- Constituent of potential concern
GIABS -- Gastrointestinal absorption factor
NA -- Not available
SVOC -- Semi-volatile organic compound

References:
CA OEHHA. 2019. Toxicity Criteria Database. Available online: http://oehha.ca.gov/chemicals

Health Canada. 2010. Part II: Health Canada Toxicological Reference Values (TRVs) and Chemical-Specific Factors, Version 2.0. Federal Contaminated Site Risk Assessment in Canada.
Knafla A et. al. 2006. Development of a dermal cancer slope factor for benzo[a]pyrene. Apr. Regul Toxicol Pharm 45: 159-168.

TABLE 6.2
CANCER TOXICITY DATA -- INHALATION
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

COPC Group	COPC	CASRN	Potency Equivalence Factor to B(a)P	Inhalation Slope Factor		Source
				Value	Units	
SVOC	Acenaphthene	83-32-9	Not applicable	NA	NA	NA
SVOC	Acenaphthylene	208-96-8	Not applicable	NA	NA	NA
SVOC	Acridine	260-94-6	Not applicable	NA	NA	NA
SVOC	Anthracene	120-12-7	0.1	0.013	(mg/kg/day)-1	Health Canada
SVOC	Benzo(a)anthracene	56-55-3	0.1	0.013	(mg/kg/day)-1	Health Canada
SVOC	Benzo(a)pyrene	50-32-8	1	0.13	(mg/kg/day)-1	Health Canada
SVOC	Benzo(b&j)fluoranthene	205-99-2_205-82-3	0.1	0.013	(mg/kg/day)-1	Health Canada
SVOC	Benzo(c)phenanthrene	195-19-7	0.01	0.0013	(mg/kg/day)-1	Health Canada
SVOC	Benzo(e)pyrene	192-97-2	Not applicable	NA	NA	NA
SVOC	Benzo(g,h,i)perylene	191-24-2	0.01	0.0013	(mg/kg/day)-1	Health Canada
SVOC	Benzo(k)fluoranthene	207-08-9	0.1	0.013	(mg/kg/day)-1	Health Canada
SVOC	Chrysene	218-01-9	0.01	0.0013	(mg/kg/day)-1	Health Canada
SVOC	Dibenz(a,h)anthracene	53-70-3	1	0.13	(mg/kg/day)-1	Health Canada
SVOC	Fluoranthene	206-44-0	0.001	0.00013	(mg/kg/day)-1	Health Canada
SVOC	Fluorene	86-73-7	Not applicable	NA	NA	NA
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	0.1	0.013	(mg/kg/day)-1	Health Canada
SVOC	2-Methylnaphthalene	91-57-6	Not applicable	NA	NA	NA
SVOC	Naphthalene	91-20-3	Not applicable	0.12	(mg/kg/day)-1	CA OEHHA
SVOC	Perylene	198-55-0	Not applicable	NA	NA	NA
SVOC	Phenanthrene	85-01-8	0.001	0.00013	(mg/kg/day)-1	Health Canada
SVOC	Pyrene	129-00-0	Not applicable	NA	NA	NA
SVOC	Quinoline	91-22-5	Not applicable	NA	NA	NA

Note:
Toxicity values from Health Canada 2010 were applied and supplemented with values from CA OEHHA.

The inhalation slope factor for each polycyclic aromatic hydrocarbon (PAH) is based on the slope factor for benzo(a)pyrene (Health Canada 2010, Table 1) multiplied by the PAH's potency equivalence factor.

Abbreviation:
CA OEHHA -- California Office of Environmental Health Hazard Assessment
COPC -- Constituent of potential concern
NA -- Not available
SVOC -- Semi-volatile organic compound

References:
CA OEHHA. 2019. Toxicity Criteria Database. Available online: http://oehha.ca.gov/chemicals

Health Canada. 2010. Part II: Health Canada Toxicological Reference Values (TRVs) and Chemical-Specific Factors, Version 2.0. Federal Contaminated Site Risk Assessment in Canada.

TABLE 7.1
CALCULATION OF COPC CANCER RISKS AND NONCANCER HAZARDS FOR AN INDUSTRIAL WORKER
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Scenario Timeframe: Current/Future
Receptor Population: Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	COPC Group	COPC	CASRN	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
									Exposure Intake		Slope Factor			Exposure Intake		Reference Dose		
							Value	Units	Value	Units	Value	Units	Cancer Risk	Value	Units	Value	Units	Hazard Quotient
Soil	Soil	Surface Soil (0-1.5 m)	Incidental Ingestion															
				SVOC	Acenaphthene	83-32-9	2.8E-02	mg/kg	2.2E-09	mg/kg-day				5.1E-09	mg/kg-day	6.0E-02	mg/kg-day	8.6E-08
				SVOC	Acenaphthylene	208-96-8	7.7E-03	mg/kg	6.3E-10	mg/kg-day				1.4E-09	mg/kg-day			
				SVOC	Acridine	260-94-6	1.1E-02	mg/kg	8.8E-10	mg/kg-day				2.0E-09	mg/kg-day			
				SVOC	Anthracene	120-12-7	1.6E-02	mg/kg	1.3E-09	mg/kg-day	2.3E-01	(mg/kg-day)-1	3.0E-10	3.0E-09	mg/kg-day	3.0E-01	mg/kg-day	1.0E-08
				SVOC	Benzo(a)anthracene	56-55-3	4.4E-02	mg/kg	3.5E-09	mg/kg-day	2.3E-01	(mg/kg-day)-1	8.2E-10	8.1E-09	mg/kg-day			
				SVOC	Benzo(a)pyrene	50-32-8	4.2E-02	mg/kg	3.4E-09	mg/kg-day	2.3E+00	(mg/kg-day)-1	7.8E-09	7.8E-09	mg/kg-day	3.0E-04	mg/kg-day	2.6E-05
				SVOC	Benzo(b&j)fluoranthene	205-99-2_205-82-3	2.8E-02	mg/kg	2.3E-09	mg/kg-day	2.3E-01	(mg/kg-day)-1	5.2E-10	5.2E-09	mg/kg-day			
				SVOC	Benzo(c)phenanthrene	195-19-7	1.2E-02	mg/kg	9.5E-10	mg/kg-day	2.3E-02	(mg/kg-day)-1	2.2E-11	2.2E-09	mg/kg-day			
				SVOC	Benzo(e)pyrene	192-97-2	2.0E-02	mg/kg	1.6E-09	mg/kg-day				3.7E-09	mg/kg-day			
				SVOC	Benzo(g,h,i)perylene	191-24-2	1.5E-02	mg/kg	1.2E-09	mg/kg-day	2.3E-02	(mg/kg-day)-1	2.8E-11	2.8E-09	mg/kg-day			
				SVOC	Benzo(k)fluoranthene	207-08-9	2.6E-02	mg/kg	2.1E-09	mg/kg-day	2.3E-01	(mg/kg-day)-1	4.8E-10	4.8E-09	mg/kg-day			
				SVOC	Chrysene	218-01-9	2.3E-02	mg/kg	1.8E-09	mg/kg-day	2.3E-02	(mg/kg-day)-1	4.2E-11	4.2E-09	mg/kg-day			
				SVOC	Dibenz(a,h)anthracene	53-70-3	8.2E-03	mg/kg	6.7E-10	mg/kg-day	2.3E+00	(mg/kg-day)-1	1.5E-09	1.5E-09	mg/kg-day			
				SVOC	Fluoranthene	206-44-0	4.0E-02	mg/kg	3.2E-09	mg/kg-day	2.3E-03	(mg/kg-day)-1	7.4E-12	7.4E-09	mg/kg-day	4.0E-02	mg/kg-day	1.8E-07
				SVOC	Fluorene	86-73-7	2.7E-02	mg/kg	2.2E-09	mg/kg-day				5.0E-09	mg/kg-day	4.0E-02	mg/kg-day	1.2E-07
				SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	1.3E-02	mg/kg	1.0E-09	mg/kg-day	2.3E-01	(mg/kg-day)-1	2.4E-10	2.4E-09	mg/kg-day			
				SVOC	2-Methylnaphthalene	91-57-6	1.2E-02	mg/kg	9.4E-10	mg/kg-day				2.2E-09	mg/kg-day	4.0E-03	mg/kg-day	5.4E-07
				SVOC	Naphthalene	91-20-3	1.2E-02	mg/kg	1.0E-09	mg/kg-day	1.2E-01	(mg/kg-day)-1	1.2E-10	2.3E-09	mg/kg-day	2.0E-02	mg/kg-day	1.1E-07
				SVOC	Perylene	198-55-0	2.0E-02	mg/kg	1.6E-09	mg/kg-day				3.7E-09	mg/kg-day			
				SVOC	Phenanthrene	85-01-8	8.6E-02	mg/kg	7.0E-09	mg/kg-day	2.3E-03	(mg/kg-day)-1	1.6E-11	1.6E-08	mg/kg-day			
				SVOC	Pyrene	129-00-0	3.2E-02	mg/kg	2.6E-09	mg/kg-day				5.9E-09	mg/kg-day	3.0E-02	mg/kg-day	2.0E-07
				SVOC	Quinoline	91-22-5	1.3E-02	mg/kg	1.0E-09	mg/kg-day				2.4E-09	mg/kg-day			
			Ingestion Total										**1.2E-08**					**2.7E-05**
Soil	Soil	Surface Soil (0-1.5 m)	Dermal															
				SVOC	Acenaphthene	83-32-9	2.8E-02	mg/kg	5.6E-09	mg/kg-day				1.3E-08	mg/kg-day	6.0E-02	mg/kg-day	2.1E-07
				SVOC	Acenaphthylene	208-96-8	7.7E-03	mg/kg	1.6E-09	mg/kg-day				3.6E-09	mg/kg-day			
				SVOC	Acridine	260-94-6	1.1E-02	mg/kg	2.2E-09	mg/kg-day				5.0E-09	mg/kg-day			
				SVOC	Anthracene	120-12-7	1.6E-02	mg/kg	3.3E-09	mg/kg-day	2.5E+00	(mg/kg-day)-1	8.2E-09	7.5E-09	mg/kg-day	3.0E-01	mg/kg-day	2.5E-08
				SVOC	Benzo(a)anthracene	56-55-3	4.4E-02	mg/kg	8.9E-09	mg/kg-day	2.5E+00	(mg/kg-day)-1	2.2E-08	2.0E-08	mg/kg-day			
				SVOC	Benzo(a)pyrene	50-32-8	4.2E-02	mg/kg	8.5E-09	mg/kg-day	2.5E+01	(mg/kg-day)-1	2.1E-07	1.9E-08	mg/kg-day	3.0E-04	mg/kg-day	6.5E-05
				SVOC	Benzo(b&j)fluoranthene	205-99-2_205-82-3	2.8E-02	mg/kg	5.7E-09	mg/kg-day	2.5E+00	(mg/kg-day)-1	1.4E-08	1.3E-08	mg/kg-day			
				SVOC	Benzo(c)phenanthrene	195-19-7	1.2E-02	mg/kg	2.4E-09	mg/kg-day	2.5E-01	(mg/kg-day)-1	6.0E-10	5.5E-09	mg/kg-day			
				SVOC	Benzo(e)pyrene	192-97-2	2.0E-02	mg/kg	4.0E-09	mg/kg-day				9.2E-09	mg/kg-day			
				SVOC	Benzo(g,h,i)perylene	191-24-2	1.5E-02	mg/kg	3.1E-09	mg/kg-day	2.5E-01	(mg/kg-day)-1	7.8E-10	7.1E-09	mg/kg-day			
				SVOC	Benzo(k)fluoranthene	207-08-9	2.6E-02	mg/kg	5.2E-09	mg/kg-day	2.5E+00	(mg/kg-day)-1	1.3E-08	1.2E-08	mg/kg-day			
				SVOC	Chrysene	218-01-9	2.3E-02	mg/kg	4.6E-09	mg/kg-day	2.5E-01	(mg/kg-day)-1	1.2E-09	1.1E-08	mg/kg-day			
				SVOC	Dibenz(a,h)anthracene	53-70-3	8.2E-03	mg/kg	1.7E-09	mg/kg-day	2.5E+01	(mg/kg-day)-1	4.2E-08	3.8E-09	mg/kg-day			
				SVOC	Fluoranthene	206-44-0	4.0E-02	mg/kg	8.1E-09	mg/kg-day	2.5E-02	(mg/kg-day)-1	2.0E-10	1.8E-08	mg/kg-day	4.0E-02	mg/kg-day	4.6E-07
				SVOC	Fluorene	86-73-7	2.7E-02	mg/kg	5.5E-09	mg/kg-day				1.2E-08	mg/kg-day	4.0E-02	mg/kg-day	3.1E-07
				SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	1.3E-02	mg/kg	2.6E-09	mg/kg-day	2.5E+00	(mg/kg-day)-1	6.6E-09	6.0E-09	mg/kg-day			
				SVOC	2-Methylnaphthalene	91-57-6	1.2E-02	mg/kg	2.4E-09	mg/kg-day				5.4E-09	mg/kg-day	4.0E-03	mg/kg-day	1.4E-06
				SVOC	Naphthalene	91-20-3	1.2E-02	mg/kg	2.5E-09	mg/kg-day	1.2E-01	(mg/kg-day)-1	3.0E-10	5.7E-09	mg/kg-day	2.0E-02	mg/kg-day	2.9E-07
				SVOC	Perylene	198-55-0	2.0E-02	mg/kg	4.1E-09	mg/kg-day				9.4E-09	mg/kg-day			
				SVOC	Phenanthrene	85-01-8	8.6E-02	mg/kg	1.7E-08	mg/kg-day	2.5E-02	(mg/kg-day)-1	4.4E-10	4.0E-08	mg/kg-day			
				SVOC	Pyrene	129-00-0	3.2E-02	mg/kg	6.5E-09	mg/kg-day				1.5E-08	mg/kg-day	3.0E-02	mg/kg-day	5.0E-07
				SVOC	Quinoline	91-22-5	1.3E-02	mg/kg	2.6E-09	mg/kg-day				6.0E-09	mg/kg-day			
			Dermal Total										**3.2E-07**					**6.8E-05**

TABLE 7.1
CALCULATION OF COPC CANCER RISKS AND NONCANCER HAZARDS FOR AN INDUSTRIAL WORKER
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Scenario Timeframe: Current/Future
Receptor Population: Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	COPC Group	COPC	CASRN	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
									Exposure Intake		Slope Factor			Exposure Intake		Reference Dose		
							Value	Units	Value	Units	Value	Units	Cancer Risk	Value	Units	Value	Units	Hazard Quotient
Soil	Soil	Surface Soil (0-1.5 m)	Outdoor Inhalation															
				SVOC	Acenaphthene	83-32-9	2.1E-11	(m2)-1	5.9E-13	m3/kg-day				1.3E-12	m3/kg-day			
				SVOC	Acenaphthylene	208-96-8	5.9E-12	(m2)-1	1.6E-13	m3/kg-day				3.8E-13	m3/kg-day			
				SVOC	Acridine	260-94-6	8.2E-12	(m2)-1	2.3E-13	m3/kg-day				5.3E-13	m3/kg-day			
				SVOC	Anthracene	120-12-7	1.2E-11	(m2)-1	3.4E-13	m3/kg-day	1.3E+01	(mg/kg/day)-1	4.5E-12	7.9E-13	m3/kg-day			
				SVOC	Benzo(a)anthracene	56-55-3	3.3E-11	(m2)-1	9.3E-13	m3/kg-day	1.3E+01	(mg/kg/day)-1	1.2E-11	2.1E-12	m3/kg-day			
				SVOC	Benzo(a)pyrene	50-32-8	3.2E-11	(m2)-1	8.9E-13	m3/kg-day	1.3E+02	(mg/kg/day)-1	1.2E-10	2.0E-12	m3/kg-day			
				SVOC	Benzo(b&j)fluoranthene	205-99-2_205-82-3	2.1E-11	(m2)-1	6.0E-13	m3/kg-day	1.3E+01	(mg/kg/day)-1	7.8E-12	1.4E-12	m3/kg-day			
				SVOC	Benzo(c)phenanthrene	195-19-7	8.9E-12	(m2)-1	2.5E-13	m3/kg-day	1.3E+00	(mg/kg/day)-1	3.3E-13	5.7E-13	m3/kg-day			
				SVOC	Benzo(e)pyrene	192-97-2	1.5E-11	(m2)-1	4.2E-13	m3/kg-day				9.7E-13	m3/kg-day			
				SVOC	Benzo(g,h,i)perylene	191-24-2	1.2E-11	(m2)-1	3.3E-13	m3/kg-day	1.3E+00	(mg/kg/day)-1	4.2E-13	7.4E-13	m3/kg-day			
				SVOC	Benzo(k)fluoranthene	207-08-9	2.0E-11	(m2)-1	5.5E-13	m3/kg-day	1.3E+01	(mg/kg/day)-1	7.1E-12	1.3E-12	m3/kg-day			
				SVOC	Chrysene	218-01-9	1.7E-11	(m2)-1	4.8E-13	m3/kg-day	1.3E+00	(mg/kg/day)-1	6.3E-13	1.1E-12	m3/kg-day			
				SVOC	Dibenz(a,h)anthracene	53-70-3	6.2E-12	(m2)-1	1.8E-13	m3/kg-day	1.3E+02	(mg/kg/day)-1	2.3E-11	4.0E-13	m3/kg-day			
				SVOC	Fluoranthene	206-44-0	3.0E-11	(m2)-1	8.5E-13	m3/kg-day	1.3E-01	(mg/kg/day)-1	1.1E-13	1.9E-12	m3/kg-day			
				SVOC	Fluorene	86-73-7	2.0E-11	(m2)-1	5.7E-13	m3/kg-day				1.3E-12	m3/kg-day			
				SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	9.8E-12	(m2)-1	2.8E-13	m3/kg-day	1.3E+01	(mg/kg/day)-1	3.6E-12	6.3E-13	m3/kg-day			
				SVOC	2-Methylnaphthalene	91-57-6	8.8E-12	(m2)-1	2.5E-13	m3/kg-day				5.7E-13	m3/kg-day			
				SVOC	Naphthalene	91-20-3	9.3E-12	(m2)-1	2.6E-13	m3/kg-day	1.2E+02	(mg/kg/day)-1	3.2E-11	6.0E-13	m3/kg-day			
				SVOC	Perylene	198-55-0	1.5E-11	(m2)-1	4.3E-13	m3/kg-day				9.8E-13	m3/kg-day			
				SVOC	Phenanthrene	85-01-8	6.5E-11	(m2)-1	1.8E-12	m3/kg-day	1.3E-01	(mg/kg/day)-1	2.4E-13	4.2E-12	m3/kg-day			
				SVOC	Pyrene	129-00-0	2.4E-11	(m2)-1	6.8E-13	m3/kg-day				1.6E-12	m3/kg-day			
				SVOC	Quinoline	91-22-5	9.7E-12	(m2)-1	2.7E-13	m3/kg-day				6.3E-13	m3/kg-day			
			Outdoor Inhalation Total										**2.1E-10**					
Soil (0-1.5 m) Total													**3.3E-07**					**9.5E-05**

Abbreviations:
COPC -- Constituent of potential concern
EPC -- Exposure point concentration
SVOC --Semi-volatile organic compound

TABLE 7.2
CALCULATION OF COPC CANCER RISKS AND NONCANCER HAZARDS FOR AN AGRICULTURAL RECEPTOR
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Scenario Timeframe: Current/Future
Receptor Population: Agricultural Receptor
Receptor Age: Adult and Infant/Toddler/Child/Teen

Medium	Exposure Medium	Exposure Point	Exposure Route	COPC Group	COPC	CASRN	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations									
									Adult and Infant/Toddler/Child/Teen Age-Adjusted					Adult					Toddler/Child/Teen				
									Exposure Intake		Slope Factor			Exposure Intake		Reference Dose		Hazard	Exposure Intake		Reference Dose		Hazard
							Value	Units	Value	Units	Value	Units	Cancer Risk	Value	Units	Value	Units	Quotient	Value	Units	Value	Units	Quotient
Soil	Soil	Surface Soil (0-1.5 m)	Incidental Ingestion																				
				SVOC	Acenaphthene	83-32-9	5.4E-03	mg/kg	3.2E-09	mg/kg-day				1.5E-09	mg/kg-day	6.0E-02	mg/kg-day	2.6E-08	6.5E-09	mg/kg-day	6.0E-02	mg/kg-day	1.1E-07
				SVOC	Acenaphthylene	208-96-8	6.8E-03	mg/kg	4.0E-09	mg/kg-day				1.9E-09	mg/kg-day				8.1E-09	mg/kg-day			
				SVOC	Acridine	260-94-6	1.7E-02	mg/kg	1.0E-08	mg/kg-day				4.9E-09	mg/kg-day				2.1E-08	mg/kg-day			
				SVOC	Anthracene	120-12-7	1.2E-02	mg/kg	6.7E-09	mg/kg-day	2.3E-01	(mg/kg-day)-1	1.6E-09	3.3E-09	mg/kg-day	3.0E-01	mg/kg-day	1.1E-08	1.4E-08	mg/kg-day	3.0E-01	mg/kg-day	4.6E-08
				SVOC	Benzo(a)anthracene	56-55-3	1.5E-02	mg/kg	8.6E-09	mg/kg-day	2.3E-01	(mg/kg-day)-1	2.0E-09	4.1E-09	mg/kg-day				1.7E-08	mg/kg-day			
				SVOC	Benzo(a)pyrene	50-32-8	1.2E-02	mg/kg	6.8E-09	mg/kg-day	2.3E+00	(mg/kg-day)-1	1.6E-08	3.3E-09	mg/kg-day	3.0E-04	mg/kg-day	1.1E-05	1.4E-08	mg/kg-day	3.0E-04	mg/kg-day	4.6E-05
				SVOC	Benzo(b&j)fluoranthene	205-99-2_205-82-3	2.5E-02	mg/kg	1.5E-08	mg/kg-day	2.3E-01	(mg/kg-day)-1	3.4E-09	7.1E-09	mg/kg-day				3.0E-08	mg/kg-day			
				SVOC	Benzo(c)phenanthrene	195-19-7	6.1E-03	mg/kg	3.6E-09	mg/kg-day	2.3E-02	(mg/kg-day)-1	8.3E-11	1.7E-09	mg/kg-day				7.3E-09	mg/kg-day			
				SVOC	Benzo(e)pyrene	192-97-2	1.4E-02	mg/kg	8.3E-09	mg/kg-day				4.0E-09	mg/kg-day				1.7E-08	mg/kg-day			
				SVOC	Benzo(g,h,i)perylene	191-24-2	1.5E-02	mg/kg	9.0E-09	mg/kg-day	2.3E-02	(mg/kg-day)-1	2.1E-10	4.3E-09	mg/kg-day				1.8E-08	mg/kg-day			
				SVOC	Benzo(k)fluoranthene	207-08-9	1.5E-02	mg/kg	8.6E-09	mg/kg-day	2.3E-01	(mg/kg-day)-1	2.0E-09	4.2E-09	mg/kg-day				1.8E-08	mg/kg-day			
				SVOC	Chrysene	218-01-9	1.6E-02	mg/kg	9.2E-09	mg/kg-day	2.3E-02	(mg/kg-day)-1	2.1E-10	4.4E-09	mg/kg-day				1.9E-08	mg/kg-day			
				SVOC	Dibenz(a,h)anthracene	53-70-3	6.2E-03	mg/kg	3.6E-09	mg/kg-day	2.3E+00	(mg/kg-day)-1	8.3E-09	1.7E-09	mg/kg-day				7.4E-09	mg/kg-day			
				SVOC	Fluoranthene	206-44-0	2.4E-02	mg/kg	1.4E-08	mg/kg-day	2.3E-03	(mg/kg-day)-1	3.2E-11	6.8E-09	mg/kg-day	4.0E-02	mg/kg-day	1.7E-07	2.9E-08	mg/kg-day	4.0E-02	mg/kg-day	7.2E-07
				SVOC	Fluorene	86-73-7	6.0E-03	mg/kg	3.5E-09	mg/kg-day				1.7E-09	mg/kg-day	4.0E-02	mg/kg-day	4.3E-08	7.2E-09	mg/kg-day	4.0E-02	mg/kg-day	1.8E-07
				SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	1.6E-02	mg/kg	9.6E-09	mg/kg-day	2.3E-01	(mg/kg-day)-1	2.2E-09	4.6E-09	mg/kg-day				2.0E-08	mg/kg-day			
				SVOC	2-Methylnaphthalene	91-57-6	1.1E-02	mg/kg	6.6E-09	mg/kg-day				3.2E-09	mg/kg-day	4.0E-03	mg/kg-day	7.9E-07	1.3E-08	mg/kg-day	4.0E-03	mg/kg-day	3.3E-06
				SVOC	Naphthalene	91-20-3	5.6E-03	mg/kg	3.3E-09	mg/kg-day	1.2E-01	(mg/kg-day)-1	3.9E-10	1.6E-09	mg/kg-day	2.0E-02	mg/kg-day	7.9E-08	6.7E-09	mg/kg-day	2.0E-02	mg/kg-day	3.3E-07
				SVOC	Perylene	198-55-0	7.0E-02	mg/kg	4.1E-08	mg/kg-day				2.0E-08	mg/kg-day				8.4E-08	mg/kg-day			
				SVOC	Phenanthrene	85-01-8	2.9E-02	mg/kg	1.7E-08	mg/kg-day	2.3E-03	(mg/kg-day)-1	3.8E-11	8.1E-09	mg/kg-day				3.4E-08	mg/kg-day			
				SVOC	Pyrene	129-00-0	3.5E-02	mg/kg	2.0E-08	mg/kg-day				9.8E-09	mg/kg-day	3.0E-02	mg/kg-day	3.3E-07	4.1E-08	mg/kg-day	3.0E-02	mg/kg-day	1.4E-06
				SVOC	Quinoline	91-22-5																	
			Ingestion Total										**3.6E-08**					**1.2E-05**					**5.2E-05**
Soil	Soil	Surface Soil (0-1.5 m)	Dermal																				
				SVOC	Acenaphthene	83-32-9	5.4E-03	mg/kg	1.1E-08	mg/kg-day				1.0E-08	mg/kg-day	6.0E-02	mg/kg-day	1.7E-07	1.2E-08	mg/kg-day	6.0E-02	mg/kg-day	2.0E-07
				SVOC	Acenaphthylene	208-96-8	6.8E-03	mg/kg	1.4E-08	mg/kg-day				1.3E-08	mg/kg-day				1.5E-08	mg/kg-day			
				SVOC	Acridine	260-94-6	1.7E-02	mg/kg	3.5E-08	mg/kg-day				3.3E-08	mg/kg-day				3.9E-08	mg/kg-day			
				SVOC	Anthracene	120-12-7	1.2E-02	mg/kg	2.3E-08	mg/kg-day	2.5E+00	(mg/kg-day)-1	5.8E-08	2.2E-08	mg/kg-day	3.0E-01	mg/kg-day	7.3E-08	2.6E-08	mg/kg-day	3.0E-01	mg/kg-day	8.7E-08
				SVOC	Benzo(a)anthracene	56-55-3	1.5E-02	mg/kg	2.9E-08	mg/kg-day	2.5E+00	(mg/kg-day)-1	7.3E-08	2.8E-08	mg/kg-day				3.3E-08	mg/kg-day			
				SVOC	Benzo(a)pyrene	50-32-8	1.2E-02	mg/kg	2.3E-08	mg/kg-day	2.5E+01	(mg/kg-day)-1	5.8E-07	2.2E-08	mg/kg-day	3.0E-04	mg/kg-day	7.4E-05	2.6E-08	mg/kg-day	3.0E-04	mg/kg-day	8.7E-05
				SVOC	Benzo(b&j)fluoranthene	205-99-2_205-82-3	2.5E-02	mg/kg	5.0E-08	mg/kg-day	2.5E+00	(mg/kg-day)-1	1.3E-07	4.8E-08	mg/kg-day				5.7E-08	mg/kg-day			
				SVOC	Benzo(c)phenanthrene	195-19-7	6.1E-03	mg/kg	1.2E-08	mg/kg-day	2.5E-01	(mg/kg-day)-1	3.1E-09	1.2E-08	mg/kg-day				1.4E-08	mg/kg-day			
				SVOC	Benzo(e)pyrene	192-97-2	1.4E-02	mg/kg	2.8E-08	mg/kg-day				2.7E-08	mg/kg-day				3.2E-08	mg/kg-day			
				SVOC	Benzo(g,h,i)perylene	191-24-2	1.5E-02	mg/kg	3.1E-08	mg/kg-day	2.5E-01	(mg/kg-day)-1	7.7E-09	2.9E-08	mg/kg-day				3.5E-08	mg/kg-day			
				SVOC	Benzo(k)fluoranthene	207-08-9	1.5E-02	mg/kg	2.9E-08	mg/kg-day	2.5E+00	(mg/kg-day)-1	7.4E-08	2.8E-08	mg/kg-day				3.3E-08	mg/kg-day			
				SVOC	Chrysene	218-01-9	1.6E-02	mg/kg	3.1E-08	mg/kg-day	2.5E-01	(mg/kg-day)-1	7.9E-09	3.0E-08	mg/kg-day				3.6E-08	mg/kg-day			
				SVOC	Dibenz(a,h)anthracene	53-70-3	6.2E-03	mg/kg	1.2E-08	mg/kg-day	2.5E+01	(mg/kg-day)-1	3.1E-07	1.2E-08	mg/kg-day				1.4E-08	mg/kg-day			
				SVOC	Fluoranthene	206-44-0	2.4E-02	mg/kg	4.8E-08	mg/kg-day	2.5E-02	(mg/kg-day)-1	1.2E-09	4.6E-08	mg/kg-day	4.0E-02	mg/kg-day	1.1E-06	5.4E-08	mg/kg-day	4.0E-02	mg/kg-day	1.4E-06
				SVOC	Fluorene	86-73-7	6.0E-03	mg/kg	1.2E-08	mg/kg-day				1.2E-08	mg/kg-day	4.0E-02	mg/kg-day	2.9E-07	1.4E-08	mg/kg-day	4.0E-02	mg/kg-day	3.4E-07
				SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	1.6E-02	mg/kg	3.3E-08	mg/kg-day	2.5E+00	(mg/kg-day)-1	8.2E-08	3.1E-08	mg/kg-day				3.7E-08	mg/kg-day			
				SVOC	2-Methylnaphthalene	91-57-6	1.1E-02	mg/kg	2.2E-08	mg/kg-day				2.1E-08	mg/kg-day	4.0E-03	mg/kg-day	5.3E-06	2.5E-08	mg/kg-day	4.0E-03	mg/kg-day	6.3E-06
				SVOC	Naphthalene	91-20-3	5.6E-03	mg/kg	1.1E-08	mg/kg-day	1.2E-01	(mg/kg-day)-1	1.3E-09	1.1E-08	mg/kg-day	2.0E-02	mg/kg-day	5.3E-07	1.3E-08	mg/kg-day	2.0E-02	mg/kg-day	6.3E-07
				SVOC	Perylene	198-55-0	7.0E-02	mg/kg	1.4E-07	mg/kg-day				1.3E-07	mg/kg-day				1.6E-07	mg/kg-day			
				SVOC	Phenanthrene	85-01-8	2.9E-02	mg/kg	5.7E-08	mg/kg-day	2.5E-02	(mg/kg-day)-1	1.4E-09	5.4E-08	mg/kg-day				6.4E-08	mg/kg-day			
				SVOC	Pyrene	129-00-0	3.5E-02	mg/kg	6.9E-08	mg/kg-day				6.6E-08	mg/kg-day	3.0E-02	mg/kg-day	2.2E-06	7.9E-08	mg/kg-day	3.0E-02	mg/kg-day	2.6E-06
				SVOC	Quinoline	91-22-5																	
			Dermal Total										**1.3E-06**					**8.3E-05**					**9.9E-05**
Soil	Soil	Surface Soil (0-1.5 m)	Inhalation																				
				SVOC	Acenaphthene	83-32-9	4.1E-12	mg/m3	1.1E-12	mg/m3				9.7E-13	mg/m3				1.4E-12	mg/m3			
				SVOC	Acenaphthylene	208-96-8	5.1E-12	mg/m3	1.4E-12	mg/m3				1.2E-12	mg/m3				1.8E-12	mg/m3			
				SVOC	Acridine	260-94-6	1.3E-11	mg/m3	3.6E-12	mg/m3				3.1E-12	mg/m3				4.6E-12	mg/m3			
				SVOC	Anthracene	120-12-7	8.7E-12	mg/m3	2.4E-12	mg/m3	1.3E+01	(mg/m3)-1	3.1E-11	2.1E-12	mg/m3				3.0E-12	mg/m3			
				SVOC	Benzo(a)anthracene	56-55-3	1.1E-11	mg/m3	3.0E-12	mg/m3	1.3E+01	(mg/m3)-1	3.9E-11	2.6E-12	mg/m3				3.8E-12	mg/m3			
				SVOC	Benzo(a)pyrene	50-32-8	8.8E-12	mg/m3	2.4E-12	mg/m3	1.3E+02	(mg/m3)-1	3.1E-10	2.1E-12	mg/m3				3.1E-12	mg/m3			
				SVOC	Benzo(b&j)fluoranthene	205-99-2_205-82-3	1.9E-11	mg/m3	5.2E-12	mg/m3	1.3E+01	(mg/m3)-1	6.7E-11	4.5E-12	mg/m3				6.6E-12	mg/m3			
				SVOC	Benzo(c)phenanthrene	195-19-7	4.7E-12	mg/m3	1.3E-12	mg/m3	1.3E+00	(mg/m3)-1	1.6E-12	1.1E-12	mg/m3				1.6E-12	mg/m3			
				SVOC	Benzo(e)pyrene	192-97-2	1.1E-11	mg/m3	2.9E-12	mg/m3				2.5E-12	mg/m3				3.7E-12	mg/m3			
				SVOC	Benzo(g,h,i)perylene	191-24-2	1.2E-11	mg/m3	3.1E-12	mg/m3	1.3E+00	(mg/m3)-1	4.1E-12	2.7E-12	mg/m3				4.0E-12	mg/m3			
				SVOC	Benzo(k)fluoranthene	207-08-9	1.1E-11	mg/m3	3.0E-12	mg/m3	1.3E+01	(mg/m3)-1	3.9E-11	2.6E-12	mg/m3				3.9E-12	mg/m3			
				SVOC	Chrysene	218-01-9	1.2E-11	mg/m3	3.2E-12	mg/m3	1.3E+00	(mg/m3)-1	4.2E-12	2.8E-12	mg/m3				4.1E-12	mg/m3			
				SVOC	Dibenz(a,h)anthracene	53-70-3	4.7E-12	mg/m3	1.3E-12	mg/m3	1.3E+02	(mg/m3)-1	1.7E-10	1.1E-12	mg/m3				1.6E-12	mg/m3			
				SVOC	Fluoranthene	206-44-0	1.8E-11	mg/m3	4.9E-12	mg/m3	1.3E-01	(mg/m3)-1	6.4E-13	4.3E-12	mg/m3				6.3E-12	mg/m3			
				SVOC	Fluorene	86-73-7	4.6E-12	mg/m3	1.2E-12	mg/m3				1.1E-12	mg/m3				1.6E-12	mg/m3			
				SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	1.2E-11	mg/m3	3.4E-12	mg/m3	1.3E+01	(mg/m3)-1	4.4E-11	2.9E-12	mg/m3				4.3E-12	mg/m3			
				SVOC	2-Methylnaphthalene	91-57-6	8.5E-12	mg/m3	2.3E-12	mg/m3				2.0E-12	mg/m3				2.9E-12	mg/m3			
				SVOC	Naphthalene	91-20-3	4.2E-12	mg/m3	1.1E-12	mg/m3	1.2E+02	(mg/m3)-1	1.4E-10	1.0E-12	mg/m3				1.5E-12	mg/m3			
				SVOC	Perylene	198-55-0	5.4E-11	mg/m3	1.4E-11	mg/m3				1.3E-11	mg/m3				1.9E-11	mg/m3			
				SVOC	Phenanthrene	85-01-8	2.2E-11	mg/m3	5.9E-12	mg/m3	1.3E-01	(mg/m3)-1	7.6E-13	5.1E-12	mg/m3				7.5E-12	mg/m3			
				SVOC	Pyrene	129-00-0	2.6E-11	mg/m3	7.1E-12	mg/m3				6.2E-12	mg/m3				9.1E-12	mg/m3			
				SVOC	Quinoline	91-22-5																	
			Inhalation Total										**8.4E-10**										
Soil (0-1.5 m) Total													**1.4E-06**					**9.6E-05**					**1.5E-04**

TABLE 7.2
CALCULATION OF COPC CANCER RISKS AND NONCANCER HAZARDS FOR AN AGRICULTURAL RECEPTOR
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Scenario Timeframe: Current/Future
Receptor Population: Agricultural Receptor
Receptor Age: Adult and Infant/Toddler/Child/Teen

Medium	Exposure Medium	Exposure Point	Exposure Route	COPC Group	COPC	CASRN	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations									
									Adult and Infant/Toddler/Child/Teen Age-Adjusted					Adult					Toddler/Child/Teen				
									Exposure Intake		Slope Factor			Exposure Intake		Reference Dose		Hazard	Exposure Intake		Reference Dose		Hazard
							Value	Units	Value	Units	Value	Units	Cancer Risk	Value	Units	Value	Units	Quotient	Value	Units	Value	Units	Quotient
Sediment	Sediment	Sediment	Incidental Ingestion																				
				SVOC	Acenaphthene	83-32-9	6.4E-03	mg/kg	2.4E-09	mg/kg-day				7.9E-10	mg/kg-day	6.0E-02	mg/kg-day	1.3E-08	7.0E-09	mg/kg-day	6.0E-02	mg/kg-day	1.2E-07
				SVOC	Acenaphthylene	208-96-8	1.2E-02	mg/kg	4.4E-09	mg/kg-day				1.5E-09	mg/kg-day				1.3E-08	mg/kg-day			
				SVOC	Acridine	260-94-6	1.1E-02	mg/kg	3.9E-09	mg/kg-day				1.3E-09	mg/kg-day				1.1E-08	mg/kg-day			
				SVOC	Anthracene	120-12-7	8.7E-03	mg/kg	3.2E-09	mg/kg-day	2.3E-01	(mg/kg-day)-1	7.4E-10	1.1E-09	mg/kg-day	3.0E-01	mg/kg-day	3.5E-09	9.4E-09	mg/kg-day	3.0E-01	mg/kg-day	3.1E-08
				SVOC	Benzo(a)anthracene	56-55-3	9.1E-03	mg/kg	3.4E-09	mg/kg-day	2.3E-01	(mg/kg-day)-1	7.7E-10	1.1E-09	mg/kg-day				9.9E-09	mg/kg-day			
				SVOC	Benzo(a)pyrene	50-32-8	9.6E-03	mg/kg	3.5E-09	mg/kg-day	2.3E+00	(mg/kg-day)-1	8.2E-09	1.2E-09	mg/kg-day	3.0E-04	mg/kg-day	3.9E-06	1.0E-08	mg/kg-day	3.0E-04	mg/kg-day	3.5E-05
				SVOC	Benzo(b&j)fluoranthene	205-99-2_205-82-3	2.4E-02	mg/kg	9.0E-09	mg/kg-day	2.3E-01	(mg/kg-day)-1	2.1E-09	3.0E-09	mg/kg-day				2.6E-08	mg/kg-day			
				SVOC	Benzo(c)phenanthrene	195-19-7	5.5E-03	mg/kg	2.0E-09	mg/kg-day	2.3E-02	(mg/kg-day)-1	4.6E-11	6.7E-10	mg/kg-day				5.9E-09	mg/kg-day			
				SVOC	Benzo(e)pyrene	192-97-2	1.5E-02	mg/kg	5.4E-09	mg/kg-day				1.8E-09	mg/kg-day				1.6E-08	mg/kg-day			
				SVOC	Benzo(g,h,i)perylene	191-24-2	8.7E-03	mg/kg	3.2E-09	mg/kg-day	2.3E-02	(mg/kg-day)-1	7.4E-11	1.1E-09	mg/kg-day				9.5E-09	mg/kg-day			
				SVOC	Benzo(k)fluoranthene	207-08-9	7.9E-03	mg/kg	2.9E-09	mg/kg-day	2.3E-01	(mg/kg-day)-1	6.7E-10	9.7E-10	mg/kg-day				8.6E-09	mg/kg-day			
				SVOC	Chrysene	218-01-9	1.5E-02	mg/kg	5.4E-09	mg/kg-day	2.3E-02	(mg/kg-day)-1	1.2E-10	1.8E-09	mg/kg-day				1.6E-08	mg/kg-day			
				SVOC	Fluoranthene	206-44-0	3.4E-02	mg/kg	1.3E-08	mg/kg-day	2.3E-03	(mg/kg-day)-1	2.9E-11	4.2E-09	mg/kg-day	4.0E-02	mg/kg-day	1.0E-07	3.7E-08	mg/kg-day	4.0E-02	mg/kg-day	9.3E-07
				SVOC	Fluorene	86-73-7	7.1E-03	mg/kg	2.6E-09	mg/kg-day				8.7E-10	mg/kg-day	4.0E-02	mg/kg-day	2.2E-08	7.7E-09	mg/kg-day	4.0E-02	mg/kg-day	1.9E-07
				SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	9.0E-03	mg/kg	3.3E-09	mg/kg-day	2.3E-01	(mg/kg-day)-1	7.6E-10	1.1E-09	mg/kg-day				9.8E-09	mg/kg-day			
				SVOC	2-Methylnaphthalene	91-57-6	8.6E-03	mg/kg	3.2E-09	mg/kg-day				1.1E-09	mg/kg-day	4.0E-03	mg/kg-day	2.6E-07	9.4E-09	mg/kg-day	4.0E-03	mg/kg-day	2.3E-06
				SVOC	Naphthalene	91-20-3	1.4E-02	mg/kg	5.3E-09	mg/kg-day	1.2E-01	(mg/kg-day)-1	6.4E-10	1.8E-09	mg/kg-day	2.0E-02	mg/kg-day	8.8E-08	1.6E-08	mg/kg-day	2.0E-02	mg/kg-day	7.8E-07
				SVOC	Perylene	198-55-0	6.9E-02	mg/kg	2.6E-08	mg/kg-day				8.5E-09	mg/kg-day				7.5E-08	mg/kg-day			
				SVOC	Phenanthrene	85-01-8	1.7E-02	mg/kg	6.1E-09	mg/kg-day	2.3E-03	(mg/kg-day)-1	1.4E-11	2.0E-09	mg/kg-day				1.8E-08	mg/kg-day			
				SVOC	Pyrene	129-00-0	2.8E-02	mg/kg	1.0E-08	mg/kg-day				3.4E-09	mg/kg-day	3.0E-02	mg/kg-day	1.1E-07	3.0E-08	mg/kg-day	3.0E-02	mg/kg-day	1.0E-06
				SVOC	Quinoline	91-22-5	1.2E-02	mg/kg	4.5E-09	mg/kg-day				1.5E-09	mg/kg-day				1.3E-08	mg/kg-day			
			Ingestion Total										**1.4E-08**					**4.5E-06**					**4.0E-05**
Sediment	Sediment	Sediment	Dermal																				
				SVOC	Acenaphthene	83-32-9	6.4E-03	mg/kg	1.1E-06	mg/kg-day				2.5E-08	mg/kg-day	6.0E-02	mg/kg-day	4.1E-07	5.3E-06	mg/kg-day	6.0E-02	mg/kg-day	8.9E-05
				SVOC	Acenaphthylene	208-96-8	1.2E-02	mg/kg	2.1E-06	mg/kg-day				4.6E-08	mg/kg-day				9.9E-06	mg/kg-day			
				SVOC	Acridine	260-94-6	1.1E-02	mg/kg	1.8E-06	mg/kg-day				4.1E-08	mg/kg-day				8.7E-06	mg/kg-day			
				SVOC	Anthracene	120-12-7	8.7E-03	mg/kg	1.5E-06	mg/kg-day	2.5E+00	(mg/kg-day)-1	3.7E-06	3.4E-08	mg/kg-day	3.0E-01	mg/kg-day	1.1E-07	7.2E-06	mg/kg-day	3.0E-01	mg/kg-day	2.4E-05
				SVOC	Benzo(a)anthracene	56-55-3	9.1E-03	mg/kg	1.6E-06	mg/kg-day	2.5E+00	(mg/kg-day)-1	3.9E-06	3.5E-08	mg/kg-day				7.5E-06	mg/kg-day			
				SVOC	Benzo(a)pyrene	50-32-8	9.6E-03	mg/kg	1.6E-06	mg/kg-day	2.5E+01	(mg/kg-day)-1	4.1E-05	3.7E-08	mg/kg-day	3.0E-04	mg/kg-day	1.2E-04	7.9E-06	mg/kg-day	3.0E-04	mg/kg-day	2.6E-02
				SVOC	Benzo(b&j)fluoranthene	205-99-2_205-82-3	2.4E-02	mg/kg	4.2E-06	mg/kg-day	2.5E+00	(mg/kg-day)-1	1.0E-05	9.4E-08	mg/kg-day				2.0E-05	mg/kg-day			
				SVOC	Benzo(c)phenanthrene	195-19-7	5.5E-03	mg/kg	9.3E-07	mg/kg-day	2.5E-01	(mg/kg-day)-1	2.3E-07	2.1E-08	mg/kg-day				4.5E-06	mg/kg-day			
				SVOC	Benzo(e)pyrene	192-97-2	1.5E-02	mg/kg	2.5E-06	mg/kg-day				5.6E-08	mg/kg-day				1.2E-05	mg/kg-day			
				SVOC	Benzo(g,h,i)perylene	191-24-2	8.7E-03	mg/kg	1.5E-06	mg/kg-day	2.5E-01	(mg/kg-day)-1	3.7E-07	3.4E-08	mg/kg-day				7.2E-06	mg/kg-day			
				SVOC	Benzo(k)fluoranthene	207-08-9	7.9E-03	mg/kg	1.3E-06	mg/kg-day	2.5E+00	(mg/kg-day)-1	3.4E-06	3.0E-08	mg/kg-day				6.5E-06	mg/kg-day			
				SVOC	Chrysene	218-01-9	1.5E-02	mg/kg	2.5E-06	mg/kg-day	2.5E-01	(mg/kg-day)-1	6.2E-07	5.6E-08	mg/kg-day				1.2E-05	mg/kg-day			
				SVOC	Fluoranthene	206-44-0	3.4E-02	mg/kg	5.9E-06	mg/kg-day	2.5E-02	(mg/kg-day)-1	1.5E-07	1.3E-07	mg/kg-day	4.0E-02	mg/kg-day	3.3E-06	2.8E-05	mg/kg-day	4.0E-02	mg/kg-day	7.1E-04
				SVOC	Fluorene	86-73-7	7.1E-03	mg/kg	1.2E-06	mg/kg-day				2.7E-08	mg/kg-day	4.0E-02	mg/kg-day	6.9E-07	5.9E-06	mg/kg-day	4.0E-02	mg/kg-day	1.5E-04
				SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	9.0E-03	mg/kg	1.5E-06	mg/kg-day	2.5E+00	(mg/kg-day)-1	3.8E-06	3.5E-08	mg/kg-day				7.4E-06	mg/kg-day			
				SVOC	2-Methylnaphthalene	91-57-6	8.6E-03	mg/kg	1.5E-06	mg/kg-day				3.3E-08	mg/kg-day	4.0E-03	mg/kg-day	8.4E-06	7.2E-06	mg/kg-day	4.0E-03	mg/kg-day	1.8E-03
				SVOC	Naphthalene	91-20-3	1.4E-02	mg/kg	2.5E-06	mg/kg-day	1.2E-01	(mg/kg-day)-1	3.0E-07	5.6E-08	mg/kg-day	2.0E-02	mg/kg-day	2.8E-06	1.2E-05	mg/kg-day	2.0E-02	mg/kg-day	6.0E-04
				SVOC	Perylene	198-55-0	6.9E-02	mg/kg	1.2E-05	mg/kg-day				2.7E-07	mg/kg-day				5.7E-05	mg/kg-day			
				SVOC	Phenanthrene	85-01-8	1.7E-02	mg/kg	2.8E-06	mg/kg-day	2.5E-02	(mg/kg-day)-1	7.1E-08	6.4E-08	mg/kg-day				1.4E-05	mg/kg-day			
				SVOC	Pyrene	129-00-0	2.8E-02	mg/kg	4.8E-06	mg/kg-day				1.1E-07	mg/kg-day	3.0E-02	mg/kg-day	3.6E-06	2.3E-05	mg/kg-day	3.0E-02	mg/kg-day	7.7E-04
				SVOC	Quinoline	91-22-5	1.2E-02	mg/kg	2.1E-06	mg/kg-day				4.8E-08	mg/kg-day				1.0E-05	mg/kg-day			
			Dermal Total										**6.8E-05**					**1.4E-04**					**3.1E-02**
Sediment Total													**6.8E-05**					**1.5E-04**					**3.1E-02**
Receptor Total for Soil and Sediment Exposures													**6.9E-05**					**2.4E-04**					**3.1E-02**

Abbreviations:
COPC -- Constituent of potential concern
EPC -- Exposure point concentration
SVOC --Semi-volatile organic compound

TABLE 7.3
SENSITIVITY ANALYSIS USING CULVERT SEDIMENT: CALCULATION OF COPC CANCER RISKS AND NONCANCER HAZARDS FOR AN AGRICULTURAL RECEPTOR
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Scenario Timeframe: Current/Future
Receptor Population: Agricultural Receptor
Receptor Age: Adult and Infant/Toddler/Child/Teen

Medium	Exposure Medium	Exposure Point	Exposure Route	COPC Group	COPC	CASRN	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations									
									Adult and Infant/Toddler/Child/Teen Age-Adjusted					Adult					Toddler/Child/Teen				
									Exposure Intake		Slope Factor			Exposure Intake		Reference Dose			Exposure Intake		Reference Dose		
							Value	Units	Value	Units	Value	Units	Cancer Risk	Value	Units	Value	Units	Hazard Quotient	Value	Units	Value	Units	Hazard Quotient
Sediment	Sediment	Sediment	Incidental Ingestion	SVOC	Fluoranthene	206-44-0	1.7E-02	mg/kg	6.3E-09	mg/kg-day	2.3E-03	(mg/kg-day)-1	1.4E-11	2.1E-09	mg/kg-day	4.0E-02	mg/kg-day	5.2E-08	1.8E-08	mg/kg-day	4.0E-02	mg/kg-day	4.6E-07
				SVOC	Perylene	198-55-0	2.9E-02	mg/kg	1.1E-08	mg/kg-day				3.6E-09	mg/kg-day				3.1E-08	mg/kg-day			
				SVOC	Phenanthrene	85-01-8	1.7E-02	mg/kg	6.3E-09	mg/kg-day	2.3E-03	(mg/kg-day)-1	1.4E-11	2.1E-09	mg/kg-day				1.8E-08	mg/kg-day			
			Ingestion Total										**2.9E-11**					**5.2E-08**					**4.6E-07**
Sediment	Sediment	Sediment	Dermal	SVOC	Fluoranthene	206-44-0	1.7E-02	mg/kg	2.9E-06	mg/kg-day	2.5E-02	(mg/kg-day)-1	7.3E-08	6.6E-08	mg/kg-day	4.0E-02	mg/kg-day	1.6E-06	1.4E-05	mg/kg-day	4.0E-02	mg/kg-day	3.5E-04
				SVOC	Perylene	198-55-0	2.9E-02	mg/kg	5.0E-06	mg/kg-day				1.1E-07	mg/kg-day				2.4E-05	mg/kg-day			
				SVOC	Phenanthrene	85-01-8	1.7E-02	mg/kg	2.9E-06	mg/kg-day	2.5E-02	(mg/kg-day)-1	7.3E-08	6.6E-08	mg/kg-day				1.4E-05	mg/kg-day			
			Dermal Total										**1.5E-07**					**1.6E-06**					**3.5E-04**
Sediment Total													**1.5E-07**					**1.7E-06**					**3.5E-04**

Abbreviations:
COPC -- Constituent of potential concern
EPC -- Exposure point concentration
SVOC --Semi-volatile organic compound

TABLE 7.4
SENSITIVITY ANALYSIS USING ALTERNATE SEDIMENT ADHERENCE FACTORS: CALCULATION OF COPC CANCER RISKS AND NONCANCER HAZARDS FOR AN AGRICULTURAL RECEPTOR
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Scenario Timeframe: Current/Future
Receptor Population: Agricultural Receptor
Receptor Age: Adult and Infant/Toddler/Child/Teen

Medium	Exposure Medium	Exposure Point	Exposure Route	COPC Group	COPC	CASRN	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations									
									Adult and Infant/Toddler/Child/Teen Age-Adjusted					Adult					Toddler/Child/Teen				
									Exposure Intake		Slope Factor			Exposure Intake		Reference Dose			Exposure Intake		Reference Dose		
							Value	Units	Value	Units	Value	Units	Cancer Risk	Value	Units	Value	Units	Hazard Quotient	Value	Units	Value	Units	Hazard Quotient
Sediment	Sediment	Sediment	Incidental Ingestion																				
				SVOC	Acenaphthene	83-32-9	6.4E-03	mg/kg	2.4E-09	mg/kg-day				7.9E-10	mg/kg-day	6.0E-02	mg/kg-day	1.3E-08	7.0E-09	mg/kg-day	6.0E-02	mg/kg-day	1.2E-07
				SVOC	Acenaphthylene	208-96-8	1.2E-02	mg/kg	4.4E-09	mg/kg-day				1.5E-09	mg/kg-day				1.3E-08	mg/kg-day			
				SVOC	Acridine	260-94-6	1.1E-02	mg/kg	3.9E-09	mg/kg-day				1.3E-09	mg/kg-day				1.1E-08	mg/kg-day			
				SVOC	Anthracene	120-12-7	8.7E-03	mg/kg	3.2E-09	mg/kg-day	2.3E-01	(mg/kg-day)-1	7.4E-10	1.1E-09	mg/kg-day	3.0E-01	mg/kg-day	3.5E-09	9.4E-09	mg/kg-day	3.0E-01	mg/kg-day	3.1E-08
				SVOC	Benzo(a)anthracene	56-55-3	9.1E-03	mg/kg	3.4E-09	mg/kg-day	2.3E-01	(mg/kg-day)-1	7.7E-10	1.1E-09	mg/kg-day				9.9E-09	mg/kg-day			
				SVOC	Benzo(a)pyrene	50-32-8	9.6E-03	mg/kg	3.5E-09	mg/kg-day	2.3E+00	(mg/kg-day)-1	8.2E-09	1.2E-09	mg/kg-day	3.0E-04	mg/kg-day	3.9E-06	1.0E-08	mg/kg-day	3.0E-04	mg/kg-day	3.5E-05
				SVOC	Benzo(b&j)fluoranthene	205-99-2_205-82-3	2.4E-02	mg/kg	9.0E-09	mg/kg-day	2.3E-01	(mg/kg-day)-1	2.1E-09	3.0E-09	mg/kg-day				2.6E-08	mg/kg-day			
				SVOC	Benzo(c)phenanthrene	195-19-7	5.5E-03	mg/kg	2.0E-09	mg/kg-day	2.3E-02	(mg/kg-day)-1	4.6E-11	6.7E-10	mg/kg-day				5.9E-09	mg/kg-day			
				SVOC	Benzo(e)pyrene	192-97-2	1.5E-02	mg/kg	5.4E-09	mg/kg-day				1.8E-09	mg/kg-day				1.6E-08	mg/kg-day			
				SVOC	Benzo(g,h,i)perylene	191-24-2	8.7E-03	mg/kg	3.2E-09	mg/kg-day	2.3E-02	(mg/kg-day)-1	7.4E-11	1.1E-09	mg/kg-day				9.5E-09	mg/kg-day			
				SVOC	Benzo(k)fluoranthene	207-08-9	7.9E-03	mg/kg	2.9E-09	mg/kg-day	2.3E-01	(mg/kg-day)-1	6.7E-10	9.7E-10	mg/kg-day				8.6E-09	mg/kg-day			
				SVOC	Chrysene	218-01-9	1.5E-02	mg/kg	5.4E-09	mg/kg-day	2.3E-02	(mg/kg-day)-1	1.2E-10	1.8E-09	mg/kg-day				1.6E-08	mg/kg-day			
				SVOC	Fluoranthene	206-44-0	3.4E-02	mg/kg	1.3E-08	mg/kg-day	2.3E-03	(mg/kg-day)-1	2.9E-11	4.2E-09	mg/kg-day	4.0E-02	mg/kg-day	1.0E-07	3.7E-08	mg/kg-day	4.0E-02	mg/kg-day	9.3E-07
				SVOC	Fluorene	86-73-7	7.1E-03	mg/kg	2.6E-09	mg/kg-day				8.7E-10	mg/kg-day	4.0E-02	mg/kg-day	2.2E-08	7.7E-09	mg/kg-day	4.0E-02	mg/kg-day	1.9E-07
				SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	9.0E-03	mg/kg	3.3E-09	mg/kg-day	2.3E-01	(mg/kg-day)-1	7.6E-10	1.1E-09	mg/kg-day				9.8E-09	mg/kg-day			
				SVOC	2-Methylnaphthalene	91-57-6	8.6E-03	mg/kg	3.2E-09	mg/kg-day				1.1E-09	mg/kg-day	4.0E-03	mg/kg-day	2.6E-07	9.4E-09	mg/kg-day	4.0E-03	mg/kg-day	2.3E-06
				SVOC	Naphthalene	91-20-3	1.4E-02	mg/kg	5.3E-09	mg/kg-day	1.2E-01	(mg/kg-day)-1	6.4E-10	1.8E-09	mg/kg-day	2.0E-02	mg/kg-day	8.8E-08	1.6E-08	mg/kg-day	2.0E-02	mg/kg-day	7.8E-07
				SVOC	Perylene	198-55-0	6.9E-02	mg/kg	2.6E-08	mg/kg-day				8.5E-09	mg/kg-day				7.5E-08	mg/kg-day			
				SVOC	Phenanthrene	85-01-8	1.7E-02	mg/kg	6.1E-09	mg/kg-day	2.3E-03	(mg/kg-day)-1	1.4E-11	2.0E-09	mg/kg-day				1.8E-08	mg/kg-day			
				SVOC	Pyrene	129-00-0	2.8E-02	mg/kg	1.0E-08	mg/kg-day				3.4E-09	mg/kg-day	3.0E-02	mg/kg-day	1.1E-07	3.0E-08	mg/kg-day	3.0E-02	mg/kg-day	1.0E-06
				SVOC	Quinoline	91-22-5	1.2E-02	mg/kg	4.5E-09	mg/kg-day				1.5E-09	mg/kg-day				1.3E-08	mg/kg-day			
			Ingestion Total										**1.4E-08**					**4.5E-06**					**4.0E-05**
Sediment	Sediment	Sediment	Dermal																				
				SVOC	Acenaphthene	83-32-9	6.4E-03	mg/kg	1.4E-07	mg/kg-day				2.5E-08	mg/kg-day	6.0E-02	mg/kg-day	4.1E-07	6.0E-07	mg/kg-day	6.0E-02	mg/kg-day	1.0E-05
				SVOC	Acenaphthylene	208-96-8	1.2E-02	mg/kg	2.6E-07	mg/kg-day				4.6E-08	mg/kg-day				1.1E-06	mg/kg-day			
				SVOC	Acridine	260-94-6	1.1E-02	mg/kg	2.3E-07	mg/kg-day				4.1E-08	mg/kg-day				9.8E-07	mg/kg-day			
				SVOC	Anthracene	120-12-7	8.7E-03	mg/kg	1.9E-07	mg/kg-day	2.5E+00	(mg/kg-day)-1	4.7E-07	3.4E-08	mg/kg-day	3.0E-01	mg/kg-day	1.1E-07	8.1E-07	mg/kg-day	3.0E-01	mg/kg-day	2.7E-06
				SVOC	Benzo(a)anthracene	56-55-3	9.1E-03	mg/kg	2.0E-07	mg/kg-day	2.5E+00	(mg/kg-day)-1	5.0E-07	3.5E-08	mg/kg-day				8.5E-07	mg/kg-day			
				SVOC	Benzo(a)pyrene	50-32-8	9.6E-03	mg/kg	2.1E-07	mg/kg-day	2.5E+01	(mg/kg-day)-1	5.2E-06	3.7E-08	mg/kg-day	3.0E-04	mg/kg-day	1.2E-04	8.9E-07	mg/kg-day	3.0E-04	mg/kg-day	3.0E-03
				SVOC	Benzo(b&j)fluoranthene	205-99-2_205-82-3	2.4E-02	mg/kg	5.3E-07	mg/kg-day	2.5E+00	(mg/kg-day)-1	1.3E-06	9.4E-08	mg/kg-day				2.3E-06	mg/kg-day			
				SVOC	Benzo(c)phenanthrene	195-19-7	5.5E-03	mg/kg	1.2E-07	mg/kg-day	2.5E-01	(mg/kg-day)-1	3.0E-08	2.1E-08	mg/kg-day				5.1E-07	mg/kg-day			
				SVOC	Benzo(e)pyrene	192-97-2	1.5E-02	mg/kg	3.2E-07	mg/kg-day				5.6E-08	mg/kg-day				1.4E-06	mg/kg-day			
				SVOC	Benzo(g,h,i)perylene	191-24-2	8.7E-03	mg/kg	1.9E-07	mg/kg-day	2.5E-01	(mg/kg-day)-1	4.8E-08	3.4E-08	mg/kg-day				8.1E-07	mg/kg-day			
				SVOC	Benzo(k)fluoranthene	207-08-9	7.9E-03	mg/kg	1.7E-07	mg/kg-day	2.5E+00	(mg/kg-day)-1	4.3E-07	3.0E-08	mg/kg-day				7.3E-07	mg/kg-day			
				SVOC	Chrysene	218-01-9	1.5E-02	mg/kg	3.2E-07	mg/kg-day	2.5E-01	(mg/kg-day)-1	8.0E-08	5.6E-08	mg/kg-day				1.4E-06	mg/kg-day			
				SVOC	Fluoranthene	206-44-0	3.4E-02	mg/kg	7.5E-07	mg/kg-day	2.5E-02	(mg/kg-day)-1	1.9E-08	1.3E-07	mg/kg-day	4.0E-02	mg/kg-day	3.3E-06	3.2E-06	mg/kg-day	4.0E-02	mg/kg-day	8.0E-05
				SVOC	Fluorene	86-73-7	7.1E-03	mg/kg	1.5E-07	mg/kg-day				2.7E-08	mg/kg-day	4.0E-02	mg/kg-day	6.9E-07	6.6E-07	mg/kg-day	4.0E-02	mg/kg-day	1.7E-05
				SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	9.0E-03	mg/kg	2.0E-07	mg/kg-day	2.5E+00	(mg/kg-day)-1	4.9E-07	3.5E-08	mg/kg-day				8.4E-07	mg/kg-day			
				SVOC	2-Methylnaphthalene	91-57-6	8.6E-03	mg/kg	1.9E-07	mg/kg-day				3.3E-08	mg/kg-day	4.0E-03	mg/kg-day	8.4E-06	8.0E-07	mg/kg-day	4.0E-03	mg/kg-day	2.0E-04
				SVOC	Naphthalene	91-20-3	1.4E-02	mg/kg	3.1E-07	mg/kg-day	1.2E-01	(mg/kg-day)-1	3.8E-08	5.6E-08	mg/kg-day	2.0E-02	mg/kg-day	2.8E-06	1.3E-06	mg/kg-day	2.0E-02	mg/kg-day	6.7E-05
				SVOC	Perylene	198-55-0	6.9E-02	mg/kg	1.5E-06	mg/kg-day				2.7E-07	mg/kg-day				6.4E-06	mg/kg-day			
				SVOC	Phenanthrene	85-01-8	1.7E-02	mg/kg	3.6E-07	mg/kg-day	2.5E-02	(mg/kg-day)-1	9.1E-09	6.4E-08	mg/kg-day				1.5E-06	mg/kg-day			
				SVOC	Pyrene	129-00-0	2.8E-02	mg/kg	6.1E-07	mg/kg-day				1.1E-07	mg/kg-day	3.0E-02	mg/kg-day	3.6E-06	2.6E-06	mg/kg-day	3.0E-02	mg/kg-day	8.6E-05
				SVOC	Quinoline	91-22-5	1.2E-02	mg/kg	2.7E-07	mg/kg-day				4.8E-08	mg/kg-day				1.1E-06	mg/kg-day			
			Dermal Total										**8.7E-06**					**1.4E-04**					**3.4E-03**
Sediment Total													**8.7E-06**					**1.5E-04**					**3.5E-03**

Abbreviations:
COPC -- Constituent of potential concern
EPC -- Exposure point concentration
SVOC --Semi-volatile organic compound

TABLE 8.1
SUMMARY OF HUMAN HEALTH RISK ASSESSMENT CANCER RISKS AND HAZARDS FOR DIRECT CONTACT EXPOSURE PATHWAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Receptor	Medium	Exposure Route	Cumulative Cancer Risk	Hazard Index	
			Lifetime	Adult	Infant/Toddler/Child/Teen
Industrial Receptor	Surface Soil Within RoW 0-1.5 m	Incidental Ingestion	1.2E-08	2.7E-05	N/A
		Dermal	3.2E-07	6.8E-05	N/A
		Inhalation	2.1E-10	--	N/A
		Total	3.3E-07	9.5E-05	N/A
Agricultural Receptor	Surface Soil Outside of RoW 0-1.5 m	Incidental Ingestion	3.6E-08	1.2E-05	5.2E-05
		Dermal	1.3E-06	8.3E-05	9.9E-05
		Inhalation	8.4E-10	--	--
	Sediment Outside of RoW *	Incidental Ingestion	1.4E-08	4.5E-06	4.0E-05
		Dermal	6.8E-05	1.4E-04	3.1E-02
		Total	6.9E-05	2.4E-04	3.1E-02

* A sediment adherence factor of 31 mg/cm^2 applied for toddler/child/teen scenario for "kid in mud" from Health Canada 2017.

Cumulative cancer risks were compared to Health Canada's acceptable limit of 1E-05 and the chemical-specific noncancer hazards were compared to 0.2. Exceedances are bolded in red font.

Sensitivity Analysis - Adherence Factor

Agricultural Receptor	Sediment Outside of RoW **	Incidental Ingestion	1.4E-08	4.5E-06	4.0E-05
		Dermal	8.7E-06	1.4E-04	3.4E-03

** A sediment adherence factor of 3.4 mg/cm2 applied for toddler/child/teen scenario for "play in tidal flat - sand" from Health Canada 2017.

Sensitivity Analysis - Culvert

Agricultural Receptor	Culvert Sediment Outside of RoW	Incidental Ingestion	2.9E-11	5.2E-08	4.6E-07
		Dermal	1.5E-07	1.6E-06	3.5E-04

ATTACHMENT B

ProUCL Software Inputs and Outputs

ATTACHMENT B TABLE OF CONTENTS:

Table B.1 **ProUCL Output for Surface Soil (0-1.5 m) Within RoW**

Table B.2 **ProUCL Output for Surface Soil (0-1.5 m) Outside of RoW**

Table B.3 **ProUCL Output for Sediment Outside of RoW**

Table B.4 **ProUCL Output for Culvert Sediment Outside of RoW**

Table B.5 **Data Input for ProUCL Software**

TABLE B.1
PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) WITHIN RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	ProUCL 5.14/6/2020 3:02:18 PM
From File	WorkSheet.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

result (cn row_so_surface soil 0-1.5m_acenaphthene_83-32-9)

General Statistics

Total Number of Observations	85	Number of Distinct Observations	16
Number of Detects	16	Number of Non-Detects	69
Number of Distinct Detects	15	Number of Distinct Non-Detects	1
Minimum Detect	0.0085	Minimum Non-Detect	0.005
Maximum Detect	0.39	Maximum Non-Detect	0.005
Variance Detects	0.00863	Percent Non-Detects	81.18%
Mean Detects	0.0584	SD Detects	0.0929
Median Detects	0.028	CV Detects	1.591
Skewness Detects	3.401	Kurtosis Detects	12.51
Mean of Logged Detects	-3.466	SD of Logged Detects	1.052

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.534	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.887	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.296	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.213	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.0151	KM Standard Error of Mean	0.00496
KM SD	0.0443	95% KM (BCA) UCL	0.0244
95% KM (t) UCL	0.0233	95% KM (Percentile Bootstrap) UCL	0.0243
95% KM (z) UCL	0.0232	95% KM Bootstrap t UCL	0.0378
90% KM Chebyshev UCL	0.0299	95% KM Chebyshev UCL	0.0367
97.5% KM Chebyshev UCL	0.046	99% KM Chebyshev UCL	0.0644

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.862	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.766	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.169	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.222	Detected data appear Gamma Distributed at 5% Significance Level

Detected data follow Appr. Gamma Distribution at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.93	k star (bias corrected MLE)	0.798
Theta hat (MLE)	0.0628	Theta star (bias corrected MLE)	0.0732
nu hat (MLE)	29.77	nu star (bias corrected)	25.52
Mean (detects)	0.0584		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)
For such situations, GROS method may yield incorrect values of UCLs and BTVs
This is especially true when the sample size is small.
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0085	Mean	0.0191
Maximum	0.39	Median	0.01
SD	0.0436	CV	2.283
k hat (MLE)	1.295	k star (bias corrected MLE)	1.258
Theta hat (MLE)	0.0148	Theta star (bias corrected MLE)	0.0152

TABLE B.1
PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) WITHIN RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

nu hat (MLE)	220.2	nu star (bias corrected)	213.8
Adjusted Level of Significance (β)	0.0472		
Approximate Chi Square Value (213.79, α)	181	Adjusted Chi Square Value (213.79, β)	180.4
95% Gamma Approximate UCL (use when n>=50)	0.0226	95% Gamma Adjusted UCL (use when n<50)	0.0226

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.0151	SD (KM)	0.0443
Variance (KM)	0.00196	SE of Mean (KM)	0.00496
k hat (KM)	0.116	k star (KM)	0.119
nu hat (KM)	19.66	nu star (KM)	20.3
theta hat (KM)	0.13	theta star (KM)	0.126
80% gamma percentile (KM)	0.0131	90% gamma percentile (KM)	0.0426
95% gamma percentile (KM)	0.0859	99% gamma percentile (KM)	0.218

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (20.30, α)	11.07	Adjusted Chi Square Value (20.30, β)	10.95
95% Gamma Approximate KM-UCL (use when n>=50)	0.0276	95% Gamma Adjusted KM-UCL (use when n<50)	0.0279

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.932	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.887	Detected Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.156	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.213	Detected Data appear Lognormal at 5% Significance Level	

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.012	Mean in Log Scale	-7.141
SD in Original Scale	0.0453	SD in Log Scale	2.539
95% t UCL (assumes normality of ROS data)	0.0201	95% Percentile Bootstrap UCL	0.0211
95% BCA Bootstrap UCL	0.0278	95% Bootstrap t UCL	0.0333
95% H-UCL (Log ROS)	0.0614		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-4.953	KM Geo Mean	0.00706
KM SD (logged)	0.842	95% Critical H Value (KM-Log)	2.092
KM Standard Error of Mean (logged)	0.0943	95% H-UCL (KM -Log)	0.0122
KM SD (logged)	0.842	95% Critical H Value (KM-Log)	2.092
KM Standard Error of Mean (logged)	0.0943		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.013	Mean in Log Scale	-5.516
SD in Original Scale	0.045	SD in Log Scale	1.088
95% t UCL (Assumes normality)	0.0211	95% H-Stat UCL	0.00957

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Approximate Gamma Distributed at 5% Significance Level

Suggested UCL to Use

95% KM Approximate Gamma UCL	0.0276

When a data set follows an approximate (e.g., normal) distribution passing one of the GOF test
When applicable, it is suggested to use a UCL based upon a distribution (e.g., gamma) passing both GOF tests in ProUCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

result (cn row_so_surface soil 0-1.5m_acenaphthylene_208-96-8)

TABLE B.1
PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) WITHIN RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

General Statistics

Total Number of Observations	85	Number of Distinct Observations	14
Number of Detects	13	Number of Non-Detects	72
Number of Distinct Detects	13	Number of Distinct Non-Detects	1
Minimum Detect	0.0057	Minimum Non-Detect	0.005
Maximum Detect	0.12	Maximum Non-Detect	0.005
Variance Detects	0.00113	Percent Non-Detects	84.71%
Mean Detects	0.026	SD Detects	0.0336
Median Detects	0.013	CV Detects	1.291
Skewness Detects	2.262	Kurtosis Detects	5.02
Mean of Logged Detects	-4.185	SD of Logged Detects	0.995

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.66	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.866	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.321	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.234	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.00822	KM Standard Error of Mean	0.00166
KM SD	0.0147	95% KM (BCA) UCL	0.0111
95% KM (t) UCL	0.011	95% KM (Percentile Bootstrap) UCL	0.011
95% KM (z) UCL	0.011	95% KM Bootstrap t UCL	0.0159
90% KM Chebyshev UCL	0.0132	95% KM Chebyshev UCL	0.0155
97.5% KM Chebyshev UCL	0.0186	99% KM Chebyshev UCL	0.0248

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.987	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.756	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.265	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.243	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	1.067	k star (bias corrected MLE)	0.872
Theta hat (MLE)	0.0244	Theta star (bias corrected MLE)	0.0299
nu hat (MLE)	27.74	nu star (bias corrected)	22.67
Mean (detects)	0.026		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)
For such situations, GROS method may yield incorrect values of UCLs and BTVs
This is especially true when the sample size is small.
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0057	Mean	0.0125
Maximum	0.12	Median	0.01
SD	0.014	CV	1.122
k hat (MLE)	3.379	k star (bias corrected MLE)	3.268
Theta hat (MLE)	0.00369	Theta star (bias corrected MLE)	0.00381
nu hat (MLE)	574.5	nu star (bias corrected)	555.5
Adjusted Level of Significance (β)	0.0472		
Approximate Chi Square Value (555.52, α)	501.9	Adjusted Chi Square Value (555.52, β)	501
95% Gamma Approximate UCL (use when n>=50)	0.0138	95% Gamma Adjusted UCL (use when n<50)	0.0138

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.00822	SD (KM)	0.0147
Variance (KM)	2.1695E-4	SE of Mean (KM)	0.00166
k hat (KM)	0.311	k star (KM)	0.308
nu hat (KM)	52.93	nu star (KM)	52.4
theta hat (KM)	0.0264	theta star (KM)	0.0267

TABLE B.1
PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) WITHIN RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

80% gamma percentile (KM)	0.0127	90% gamma percentile (KM)	0.0242
95% gamma percentile (KM)	0.0373	99% gamma percentile (KM)	0.0712

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (52.40, α)	36.77	Adjusted Chi Square Value (52.40, β)	36.54
95% Gamma Approximate KM-UCL (use when n>=50)	0.0117	95% Gamma Adjusted KM-UCL (use when n<50)	0.0118

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.875	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.866	Detected Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.198	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.234	Detected Data appear Lognormal at 5% Significance Level	

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.00444	Mean in Log Scale	-8.203
SD in Original Scale	0.0157	SD in Log Scale	2.579
95% t UCL (assumes normality of ROS data)	0.00728	95% Percentile Bootstrap UCL	0.00766
95% BCA Bootstrap UCL	0.00901	95% Bootstrap t UCL	0.0116
95% H-UCL (Log ROS)	0.0243		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-5.128	KM Geo Mean	0.00593
KM SD (logged)	0.548	95% Critical H Value (KM-Log)	1.874
KM Standard Error of Mean (logged)	0.0619	95% H-UCL (KM -Log)	0.00771
KM SD (logged)	0.548	95% Critical H Value (KM-Log)	1.874
KM Standard Error of Mean (logged)	0.0619		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.0061	Mean in Log Scale	-5.715
SD in Original Scale	0.0153	SD in Log Scale	0.754
95% t UCL (Assumes normality)	0.00886	95% H-Stat UCL	0.00518

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Lognormal Distributed at 5% Significance Level

Suggested UCL to Use

KM H-UCL 0.00771

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

result (cn row_so_surface soil 0-1.5m_acridine_260-94-6)

General Statistics

Total Number of Observations	85	Number of Distinct Observations	4
Number of Detects	5	Number of Non-Detects	80
Number of Distinct Detects	3	Number of Distinct Non-Detects	1
Minimum Detect	0.012	Minimum Non-Detect	0.01
Maximum Detect	0.023	Maximum Non-Detect	0.01
Variance Detects	1.5200E-5	Percent Non-Detects	94.12%
Mean Detects	0.0172	SD Detects	0.0039
Median Detects	0.017	CV Detects	0.227
Skewness Detects	0.383	Kurtosis Detects	2.078
Mean of Logged Detects	-4.084	SD of Logged Detects	0.23

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.879	**Shapiro Wilk GOF Test**	

TABLE B.1
PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) WITHIN RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

5% Shapiro Wilk Critical Value	0.762	Detected Data appear Normal at 5% Significance Level	
Lilliefors Test Statistic	0.32	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.343	Detected Data appear Normal at 5% Significance Level	

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.0104	KM Standard Error of Mean	2.2962E-4
KM SD	0.00189	95% KM (BCA) UCL	N/A
95% KM (t) UCL	0.0108	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	0.0108	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	0.0111	95% KM Chebyshev UCL	0.0114
97.5% KM Chebyshev UCL	0.0119	99% KM Chebyshev UCL	0.0127

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.517	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.679	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.304	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.357	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	24.09	k star (bias corrected MLE)	9.768
Theta hat (MLE)	7.1406E-4	Theta star (bias corrected MLE)	0.00176
nu hat (MLE)	240.9	nu star (bias corrected)	97.68
Mean (detects)	0.0172		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)
For such situations, GROS method may yield incorrect values of UCLs and BTVs
This is especially true when the sample size is small.
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	0.0104
Maximum	0.023	Median	0.01
SD	0.00191	CV	0.183
k hat (MLE)	46.37	k star (bias corrected MLE)	44.75
Theta hat (MLE)	2.2511E-4	Theta star (bias corrected MLE)	2.3330E-4
nu hat (MLE)	7884	nu star (bias corrected)	7607
Adjusted Level of Significance (β)	0.0472		
Approximate Chi Square Value (N/A, α)	7405	Adjusted Chi Square Value (N/A, β)	7402
95% Gamma Approximate UCL (use when n>=50)	0.0107	95% Gamma Adjusted UCL (use when n<50)	0.0107

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.0104	SD (KM)	0.00189
Variance (KM)	3.5853E-6	SE of Mean (KM)	2.2962E-4
k hat (KM)	30.3	k star (KM)	29.24
nu hat (KM)	5152	nu star (KM)	4971
theta hat (KM)	3.4396E-4	theta star (KM)	3.5645E-4
80% gamma percentile (KM)	0.012	90% gamma percentile (KM)	0.013
95% gamma percentile (KM)	0.0138	99% gamma percentile (KM)	0.0154

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (N/A, α)	4808	Adjusted Chi Square Value (N/A, β)	4806
95% Gamma Approximate KM-UCL (use when n>=50)	0.0108	95% Gamma Adjusted KM-UCL (use when n<50)	0.0108

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.881	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.762	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.316	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.343	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

TABLE B.1
PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) WITHIN RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.00503	Mean in Log Scale	-5.561
SD in Original Scale	0.00408	SD in Log Scale	0.74
95% t UCL (assumes normality of ROS data)	0.00577	95% Percentile Bootstrap UCL	0.00577
95% BCA Bootstrap UCL	0.00591	95% Bootstrap t UCL	0.00594
95% H-UCL (Log ROS)	0.00596		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-4.574	KM Geo Mean	0.0103
KM SD (logged)	0.132	95% Critical H Value (KM-Log)	1.683
KM Standard Error of Mean (logged)	0.0161	95% H-UCL (KM -Log)	0.0107
KM SD (logged)	0.132	95% Critical H Value (KM-Log)	1.683
KM Standard Error of Mean (logged)	0.0161		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.00572	Mean in Log Scale	-5.227
SD in Original Scale	0.00301	SD in Log Scale	0.292
95% t UCL (Assumes normality)	0.00626	95% H-Stat UCL	0.00592

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL 0.0108

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

result (cn row_so_surface soil 0-1.5m_anthracene_120-12-7)

General Statistics

Total Number of Observations	85	Number of Distinct Observations	27
Number of Detects	28	Number of Non-Detects	57
Number of Distinct Detects	26	Number of Distinct Non-Detects	1
Minimum Detect	0.0044	Minimum Non-Detect	0.004
Maximum Detect	0.29	Maximum Non-Detect	0.004
Variance Detects	0.0044	Percent Non-Detects	67.06%
Mean Detects	0.0466	SD Detects	0.0663
Median Detects	0.021	CV Detects	1.424
Skewness Detects	2.529	Kurtosis Detects	6.716
Mean of Logged Detects	-3.777	SD of Logged Detects	1.171

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.654	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.924	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.262	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.164	Detected Data Not Normal at 5% Significance Level	

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.018	KM Standard Error of Mean	0.00468
KM SD	0.0424	95% KM (BCA) UCL	0.0261
95% KM (t) UCL	0.0258	95% KM (Percentile Bootstrap) UCL	0.0259
95% KM (z) UCL	0.0257	95% KM Bootstrap t UCL	0.0318
90% KM Chebyshev UCL	0.0321	95% KM Chebyshev UCL	0.0384
97.5% KM Chebyshev UCL	0.0473	99% KM Chebyshev UCL	0.0646

Gamma GOF Tests on Detected Observations Only

TABLE B.1
PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) WITHIN RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

A-D Test Statistic	1.175	**Anderson-Darling GOF Test**	
5% A-D Critical Value	0.781	Detected Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.183	**Kolmogorov-Smirnov GOF**	
5% K-S Critical Value	0.171	Detected Data Not Gamma Distributed at 5% Significance Level	

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.832	k star (bias corrected MLE)	0.766
Theta hat (MLE)	0.056	Theta star (bias corrected MLE)	0.0608
nu hat (MLE)	46.57	nu star (bias corrected)	42.91
Mean (detects)	0.0466		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)
For such situations, GROS method may yield incorrect values of UCLs and BTVs
This is especially true when the sample size is small.
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0044	Mean	0.022
Maximum	0.29	Median	0.01
SD	0.0414	CV	1.877
k hat (MLE)	1.103	k star (bias corrected MLE)	1.071
Theta hat (MLE)	0.02	Theta star (bias corrected MLE)	0.0206
nu hat (MLE)	187.4	nu star (bias corrected)	182.1
Adjusted Level of Significance (β)	0.0472		
Approximate Chi Square Value (182.14, α)	151.9	Adjusted Chi Square Value (182.14, β)	151.5
95% Gamma Approximate UCL (use when n>=50)	0.0264	95% Gamma Adjusted UCL (use when n<50)	0.0265

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.018	SD (KM)	0.0424
Variance (KM)	0.0018	SE of Mean (KM)	0.00468
k hat (KM)	0.181	k star (KM)	0.182
nu hat (KM)	30.72	nu star (KM)	30.97
theta hat (KM)	0.0997	theta star (KM)	0.0989
80% gamma percentile (KM)	0.0225	90% gamma percentile (KM)	0.0544
95% gamma percentile (KM)	0.0951	99% gamma percentile (KM)	0.209

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (30.97, α)	19.26	Adjusted Chi Square Value (30.97, β)	19.1
95% Gamma Approximate KM-UCL (use when n>=50)	0.029	95% Gamma Adjusted KM-UCL (use when n<50)	0.0292

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.941	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.924	Detected Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.156	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.164	Detected Data appear Lognormal at 5% Significance Level	

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.0161	Mean in Log Scale	-6.39
SD in Original Scale	0.0433	SD in Log Scale	2.349
95% t UCL (assumes normality of ROS data)	0.0239	95% Percentile Bootstrap UCL	0.0245
95% BCA Bootstrap UCL	0.0273	95% Bootstrap t UCL	0.0288
95% H-UCL (Log ROS)	0.0705		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-4.947	KM Geo Mean	0.00711
KM SD (logged)	1.053	95% Critical H Value (KM-Log)	2.288
KM Standard Error of Mean (logged)	0.116	95% H-UCL (KM -Log)	0.0161
KM SD (logged)	1.053	95% Critical H Value (KM-Log)	2.288
KM Standard Error of Mean (logged)	0.116		

TABLE B.1
PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) WITHIN RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.0167	Mean in Log Scale	-5.412
SD in Original Scale	0.0431	SD in Log Scale	1.33
95% t UCL (Assumes normality)	0.0245	95% H-Stat UCL	0.0157

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Lognormal Distributed at 5% Significance Level

Suggested UCL to Use

KM H-UCL 0.0161

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

result (cn row_so_surface soil 0-1.5m_benzo(a)anthracene_56-55-3)

General Statistics

Total Number of Observations	85	Number of Distinct Observations	20
Number of Detects	23	Number of Non-Detects	62
Number of Distinct Detects	19	Number of Distinct Non-Detects	1
Minimum Detect	0.0067	Minimum Non-Detect	0.005
Maximum Detect	0.4	Maximum Non-Detect	0.005
Variance Detects	0.00854	Percent Non-Detects	72.94%
Mean Detects	0.0547	SD Detects	0.0924
Median Detects	0.019	CV Detects	1.689
Skewness Detects	3.05	Kurtosis Detects	9.461
Mean of Logged Detects	-3.59	SD of Logged Detects	1.027

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.52	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.914	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.39	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.18	Detected Data Not Normal at 5% Significance Level	

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.0184	KM Standard Error of Mean	0.00576
KM SD	0.0519	95% KM (BCA) UCL	0.0281
95% KM (t) UCL	0.028	95% KM (Percentile Bootstrap) UCL	0.0286
95% KM (z) UCL	0.0279	95% KM Bootstrap t UCL	0.0463
90% KM Chebyshev UCL	0.0357	95% KM Chebyshev UCL	0.0436
97.5% KM Chebyshev UCL	0.0544	99% KM Chebyshev UCL	0.0758

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	2.236	**Anderson-Darling GOF Test**	
5% A-D Critical Value	0.777	Detected Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.258	**Kolmogorov-Smirnov GOF**	
5% K-S Critical Value	0.188	Detected Data Not Gamma Distributed at 5% Significance Level	

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.86	k star (bias corrected MLE)	0.777
Theta hat (MLE)	0.0636	Theta star (bias corrected MLE)	0.0704
nu hat (MLE)	39.55	nu star (bias corrected)	35.73
Mean (detects)	0.0547		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

TABLE B.1
PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) WITHIN RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)
For such situations, GROS method may yield incorrect values of UCLs and BTVs
This is especially true when the sample size is small.
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0067	Mean	0.0221
Maximum	0.4	Median	0.01
SD	0.0513	CV	2.323
k hat (MLE)	1.102	k star (bias corrected MLE)	1.071
Theta hat (MLE)	0.02	Theta star (bias corrected MLE)	0.0206
nu hat (MLE)	187.4	nu star (bias corrected)	182.1
Adjusted Level of Significance (β)	0.0472		
Approximate Chi Square Value (182.08, α)	151.9	Adjusted Chi Square Value (182.08, β)	151.4
95% Gamma Approximate UCL (use when n>=50)	0.0265	95% Gamma Adjusted UCL (use when n<50)	0.0266

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.0184	SD (KM)	0.0519
Variance (KM)	0.0027	SE of Mean (KM)	0.00576
k hat (KM)	0.126	k star (KM)	0.13
nu hat (KM)	21.45	nu star (KM)	22.02
theta hat (KM)	0.146	theta star (KM)	0.142
80% gamma percentile (KM)	0.0176	90% gamma percentile (KM)	0.0533
95% gamma percentile (KM)	0.104	99% gamma percentile (KM)	0.257

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (22.02, α)	12.35	Adjusted Chi Square Value (22.02, β)	12.23
95% Gamma Approximate KM-UCL (use when n>=50)	0.0329	95% Gamma Adjusted KM-UCL (use when n<50)	0.0332

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.882	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.914	Detected Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.188	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.18	Detected Data Not Lognormal at 5% Significance Level	

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.016	Mean in Log Scale	-6.282
SD in Original Scale	0.0529	SD in Log Scale	2.177
95% t UCL (assumes normality of ROS data)	0.0255	95% Percentile Bootstrap UCL	0.0268
95% BCA Bootstrap UCL	0.0317	95% Bootstrap t UCL	0.0435
95% H-UCL (Log ROS)	0.047		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-4.836	KM Geo Mean	0.00794
KM SD (logged)	0.922	95% Critical H Value (KM-Log)	2.165
KM Standard Error of Mean (logged)	0.102	95% H-UCL (KM -Log)	0.0151
KM SD (logged)	0.922	95% Critical H Value (KM-Log)	2.165
KM Standard Error of Mean (logged)	0.102		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.0166	Mean in Log Scale	-5.342
SD in Original Scale	0.0527	SD in Log Scale	1.195
95% t UCL (Assumes normality)	0.0261	95% H-Stat UCL	0.0134

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

95% KM (Chebyshev) UCL 0.0436

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

TABLE B.1
PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) WITHIN RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

result (cn row_so_surface soil 0-1.5m_benzo(a)pyrene_50-32-8)

General Statistics

Total Number of Observations	85	Number of Distinct Observations	21
Number of Detects	25	Number of Non-Detects	60
Number of Distinct Detects	20	Number of Distinct Non-Detects	1
Minimum Detect	0.0071	Minimum Non-Detect	0.005
Maximum Detect	0.37	Maximum Non-Detect	0.005
Variance Detects	0.00724	Percent Non-Detects	70.59%
Mean Detects	0.0486	SD Detects	0.0851
Median Detects	0.018	CV Detects	1.751
Skewness Detects	3.091	Kurtosis Detects	9.538
Mean of Logged Detects	-3.747	SD of Logged Detects	1.044

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.508	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.918	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.373	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.173	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.0178	KM Standard Error of Mean	0.00547
KM SD	0.0494	95% KM (BCA) UCL	0.028
95% KM (t) UCL	0.0269	95% KM (Percentile Bootstrap) UCL	0.0276
95% KM (z) UCL	0.0268	95% KM Bootstrap t UCL	0.0438
90% KM Chebyshev UCL	0.0342	95% KM Chebyshev UCL	0.0417
97.5% KM Chebyshev UCL	0.052	99% KM Chebyshev UCL	0.0722

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	2.631	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.781	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.31	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.181	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.818	k star (bias corrected MLE)	0.747
Theta hat (MLE)	0.0594	Theta star (bias corrected MLE)	0.0651
nu hat (MLE)	40.9	nu star (bias corrected)	37.33
Mean (detects)	0.0486		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)
For such situations, GROS method may yield incorrect values of UCLs and BTVs
This is especially true when the sample size is small.
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0071	Mean	0.0214
Maximum	0.37	Median	0.01
SD	0.0488	CV	2.286
k hat (MLE)	1.125	k star (bias corrected MLE)	1.093
Theta hat (MLE)	0.019	Theta star (bias corrected MLE)	0.0195
nu hat (MLE)	191.2	nu star (bias corrected)	185.8
Adjusted Level of Significance (β)	0.0472		
Approximate Chi Square Value (185.80, α)	155.3	Adjusted Chi Square Value (185.80, β)	154.8
95% Gamma Approximate UCL (use when n>=50)	0.0256	95% Gamma Adjusted UCL (use when n<50)	0.0256

TABLE B.1
PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) WITHIN RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.0178	SD (KM)	0.0494
Variance (KM)	0.00244	SE of Mean (KM)	0.00547
k hat (KM)	0.13	k star (KM)	0.133
nu hat (KM)	22.13	nu star (KM)	22.69
theta hat (KM)	0.137	theta star (KM)	0.134
80% gamma percentile (KM)	0.0175	90% gamma percentile (KM)	0.0518
95% gamma percentile (KM)	0.1	99% gamma percentile (KM)	0.244

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (22.69, α)	12.85	Adjusted Chi Square Value (22.69, β)	12.73
95% Gamma Approximate KM-UCL (use when n>=50)	0.0315	95% Gamma Adjusted KM-UCL (use when n<50)	0.0318

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.857	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.918	Detected Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.223	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.173	Detected Data Not Lognormal at 5% Significance Level	

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.0153	Mean in Log Scale	-6.29
SD in Original Scale	0.0504	SD in Log Scale	2.146
95% t UCL (assumes normality of ROS data)	0.0244	95% Percentile Bootstrap UCL	0.0253
95% BCA Bootstrap UCL	0.0297	95% Bootstrap t UCL	0.0415
95% H-UCL (Log ROS)	0.0427		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-4.842	KM Geo Mean	0.00789
KM SD (logged)	0.898	95% Critical H Value (KM-Log)	2.144
KM Standard Error of Mean (logged)	0.0995	95% H-UCL (KM -Log)	0.0146
KM SD (logged)	0.898	95% Critical H Value (KM-Log)	2.144
KM Standard Error of Mean (logged)	0.0995		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.0161	Mean in Log Scale	-5.331
SD in Original Scale	0.0502	SD in Log Scale	1.17
95% t UCL (Assumes normality)	0.0251	95% H-Stat UCL	0.013

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

95% KM (Chebyshev) UCL 0.0417

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

result (cn row_so_surface soil 0-1.5m_benzo(b&j)fluoranthene_205-99-2_205-82-3)

General Statistics

Total Number of Observations	85	Number of Distinct Observations	29
Number of Detects	33	Number of Non-Detects	52
Number of Distinct Detects	28	Number of Distinct Non-Detects	1
Minimum Detect	0.0073	Minimum Non-Detect	0.005
Maximum Detect	0.65	Maximum Non-Detect	0.005
Variance Detects	0.017	Percent Non-Detects	61.18%
Mean Detects	0.0732	SD Detects	0.13

TABLE B.1
PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) WITHIN RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Median Detects	0.032	CV Detects	1.783
Skewness Detects	3.432	Kurtosis Detects	12.67
Mean of Logged Detects	-3.4	SD of Logged Detects	1.156

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.52	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.931	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.334	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.152	Detected Data Not Normal at 5% Significance Level	

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.0315	KM Standard Error of Mean	0.00955
KM SD	0.0867	95% KM (BCA) UCL	0.051
95% KM (t) UCL	0.0474	95% KM (Percentile Bootstrap) UCL	0.0481
95% KM (z) UCL	0.0472	95% KM Bootstrap t UCL	0.067
90% KM Chebyshev UCL	0.0601	95% KM Chebyshev UCL	0.0731
97.5% KM Chebyshev UCL	0.0911	99% KM Chebyshev UCL	0.126

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	1.932	**Anderson-Darling GOF Test**	
5% A-D Critical Value	0.787	Detected Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.23	**Kolmogorov-Smirnov GOF**	
5% K-S Critical Value	0.159	Detected Data Not Gamma Distributed at 5% Significance Level	

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.761	k star (bias corrected MLE)	0.712
Theta hat (MLE)	0.0962	Theta star (bias corrected MLE)	0.103
nu hat (MLE)	50.21	nu star (bias corrected)	46.98
Mean (detects)	0.0732		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)
For such situations, GROS method may yield incorrect values of UCLs and BTVs
This is especially true when the sample size is small.
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0073	Mean	0.0345
Maximum	0.65	Median	0.01
SD	0.0863	CV	2.499
k hat (MLE)	0.773	k star (bias corrected MLE)	0.753
Theta hat (MLE)	0.0447	Theta star (bias corrected MLE)	0.0458
nu hat (MLE)	131.4	nu star (bias corrected)	128.1
Adjusted Level of Significance (β)	0.0472		
Approximate Chi Square Value (128.07, α)	102.9	Adjusted Chi Square Value (128.07, β)	102.5
95% Gamma Approximate UCL (use when n>=50)	0.043	95% Gamma Adjusted UCL (use when n<50)	0.0431

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.0315	SD (KM)	0.0867
Variance (KM)	0.00752	SE of Mean (KM)	0.00955
k hat (KM)	0.132	k star (KM)	0.135
nu hat (KM)	22.41	nu star (KM)	22.95
theta hat (KM)	0.239	theta star (KM)	0.233
80% gamma percentile (KM)	0.0312	90% gamma percentile (KM)	0.0917
95% gamma percentile (KM)	0.177	99% gamma percentile (KM)	0.428

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (22.95, α)	13.06	Adjusted Chi Square Value (22.95, β)	12.93
95% Gamma Approximate KM-UCL (use when n>=50)	0.0553	95% Gamma Adjusted KM-UCL (use when n<50)	0.0559

Lognormal GOF Test on Detected Observations Only

TABLE B.1
PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) WITHIN RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Shapiro Wilk Test Statistic	0.931	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.931	Detected Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.127	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.152	Detected Data appear Lognormal at 5% Significance Level	

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.0296	Mean in Log Scale	-5.569
SD in Original Scale	0.0878	SD in Log Scale	2.17
95% t UCL (assumes normality of ROS data)	0.0454	95% Percentile Bootstrap UCL	0.047
95% BCA Bootstrap UCL	0.0546	95% Bootstrap t UCL	0.0641
95% H-UCL (Log ROS)	0.0941		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-4.561	KM Geo Mean	0.0104
KM SD (logged)	1.166	95% Critical H Value (KM-Log)	2.401
KM Standard Error of Mean (logged)	0.128	95% H-UCL (KM -Log)	0.028
KM SD (logged)	1.166	95% Critical H Value (KM-Log)	2.401
KM Standard Error of Mean (logged)	0.128		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.0299	Mean in Log Scale	-4.985
SD in Original Scale	0.0877	SD in Log Scale	1.457
95% t UCL (Assumes normality)	0.0458	95% H-Stat UCL	0.0304

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Lognormal Distributed at 5% Significance Level

Suggested UCL to Use

KM H-UCL 0.028

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

result (cn row_so_surface soil 0-1.5m_benzo(c)phenanthrene_195-19-7)

General Statistics

Total Number of Observations	85	Number of Distinct Observations	11
Number of Detects	12	Number of Non-Detects	73
Number of Distinct Detects	10	Number of Distinct Non-Detects	1
Minimum Detect	0.0052	Minimum Non-Detect	0.005
Maximum Detect	0.064	Maximum Non-Detect	0.005
Variance Detects	4.7762E-4	Percent Non-Detects	85.88%
Mean Detects	0.0199	SD Detects	0.0219
Median Detects	0.00895	CV Detects	1.1
Skewness Detects	1.626	Kurtosis Detects	1.358
Mean of Logged Detects	-4.362	SD of Logged Detects	0.921

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.677	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.859	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.343	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.243	Detected Data Not Normal at 5% Significance Level	

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.0071	KM Standard Error of Mean	0.00107
KM SD	0.00941	95% KM (BCA) UCL	0.00882

TABLE B.1
PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) WITHIN RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

95% KM (t) UCL	0.00887	95% KM (Percentile Bootstrap) UCL	0.009
95% KM (z) UCL	0.00885	95% KM Bootstrap t UCL	0.0113
90% KM Chebyshev UCL	0.0103	95% KM Chebyshev UCL	0.0117
97.5% KM Chebyshev UCL	0.0138	99% KM Chebyshev UCL	0.0177

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	1.196	**Anderson-Darling GOF Test**	
5% A-D Critical Value	0.751	Detected Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.319	**Kolmogorov-Smirnov GOF**	
5% K-S Critical Value	0.251	Detected Data Not Gamma Distributed at 5% Significance Level	

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	1.267	k star (bias corrected MLE)	1.006
Theta hat (MLE)	0.0157	Theta star (bias corrected MLE)	0.0198
nu hat (MLE)	30.4	nu star (bias corrected)	24.14
Mean (detects)	0.0199		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)
For such situations, GROS method may yield incorrect values of UCLs and BTVs
This is especially true when the sample size is small.
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0052	Mean	0.0114
Maximum	0.064	Median	0.01
SD	0.00863	CV	0.758
k hat (MLE)	5.357	k star (bias corrected MLE)	5.176
Theta hat (MLE)	0.00213	Theta star (bias corrected MLE)	0.0022
nu hat (MLE)	910.7	nu star (bias corrected)	879.9
Adjusted Level of Significance (β)	0.0472		
Approximate Chi Square Value (879.91, α)	812.1	Adjusted Chi Square Value (879.91, β)	810.9
95% Gamma Approximate UCL (use when n>=50)	0.0123	95% Gamma Adjusted UCL (use when n<50)	0.0124

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.0071	SD (KM)	0.00941
Variance (KM)	8.8637E-5	SE of Mean (KM)	0.00107
k hat (KM)	0.569	k star (KM)	0.556
nu hat (KM)	96.68	nu star (KM)	94.6
theta hat (KM)	0.0125	theta star (KM)	0.0128
80% gamma percentile (KM)	0.0117	90% gamma percentile (KM)	0.0188
95% gamma percentile (KM)	0.0262	99% gamma percentile (KM)	0.0444

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (94.60, α)	73.17	Adjusted Chi Square Value (94.60, β)	72.85
95% Gamma Approximate KM-UCL (use when n>=50)	0.00918	95% Gamma Adjusted KM-UCL (use when n<50)	0.00922

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.824	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.859	Detected Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.275	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.243	Detected Data Not Lognormal at 5% Significance Level	

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.00326	Mean in Log Scale	-8.19
SD in Original Scale	0.0104	SD in Log Scale	2.396
95% t UCL (assumes normality of ROS data)	0.00515	95% Percentile Bootstrap UCL	0.00536
95% BCA Bootstrap UCL	0.00618	95% Bootstrap t UCL	0.00759
95% H-UCL (Log ROS)	0.0135		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

TABLE B.1
PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) WITHIN RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

KM Mean (logged)	-5.166	KM Geo Mean	0.00571
KM SD (logged)	0.465	95% Critical H Value (KM-Log)	1.824
KM Standard Error of Mean (logged)	0.0527	95% H-UCL (KM -Log)	0.00697
KM SD (logged)	0.465	95% Critical H Value (KM-Log)	1.824
KM Standard Error of Mean (logged)	0.0527		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.00495	Mean in Log Scale	-5.761
SD in Original Scale	0.00998	SD in Log Scale	0.661
95% t UCL (Assumes normality)	0.00675	95% H-Stat UCL	0.00451

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

95% KM (Chebyshev) UCL 0.0117

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

result (cn row_so_surface soil 0-1.5m_benzo(e)pyrene_192-97-2)

General Statistics

Total Number of Observations	85	Number of Distinct Observations	23
Number of Detects	28	Number of Non-Detects	57
Number of Distinct Detects	22	Number of Distinct Non-Detects	1
Minimum Detect	0.0064	Minimum Non-Detect	0.005
Maximum Detect	0.42	Maximum Non-Detect	0.005
Variance Detects	0.00916	Percent Non-Detects	67.06%
Mean Detects	0.0596	SD Detects	0.0957
Median Detects	0.0265	CV Detects	1.607
Skewness Detects	2.823	Kurtosis Detects	7.874
Mean of Logged Detects	-3.524	SD of Logged Detects	1.089

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.56	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.924	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.353	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.164	Detected Data Not Normal at 5% Significance Level	

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.023	KM Standard Error of Mean	0.0066
KM SD	0.0597	95% KM (BCA) UCL	0.0344
95% KM (t) UCL	0.0339	95% KM (Percentile Bootstrap) UCL	0.0337
95% KM (z) UCL	0.0338	95% KM Bootstrap t UCL	0.0442
90% KM Chebyshev UCL	0.0428	95% KM Chebyshev UCL	0.0517
97.5% KM Chebyshev UCL	0.0642	99% KM Chebyshev UCL	0.0886

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	1.952	**Anderson-Darling GOF Test**	
5% A-D Critical Value	0.781	Detected Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.223	**Kolmogorov-Smirnov GOF**	
5% K-S Critical Value	0.171	Detected Data Not Gamma Distributed at 5% Significance Level	

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.838	k star (bias corrected MLE)	0.772

TABLE B.1
PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) WITHIN RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Theta hat (MLE)	0.071	Theta star (bias corrected MLE)	0.0771
nu hat (MLE)	46.95	nu star (bias corrected)	43.25
Mean (detects)	0.0596		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0064	Mean	0.0263
Maximum	0.42	Median	0.01
SD	0.0591	CV	2.245
k hat (MLE)	0.949	k star (bias corrected MLE)	0.924
Theta hat (MLE)	0.0277	Theta star (bias corrected MLE)	0.0285
nu hat (MLE)	161.4	nu star (bias corrected)	157
Adjusted Level of Significance (β)	0.0472		
Approximate Chi Square Value (157.00, α)	129	Adjusted Chi Square Value (157.00, β)	128.6
95% Gamma Approximate UCL (use when n>=50)	0.032	95% Gamma Adjusted UCL (use when n<50)	0.0321

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.023	SD (KM)	0.0597
Variance (KM)	0.00357	SE of Mean (KM)	0.0066
k hat (KM)	0.148	k star (KM)	0.151
nu hat (KM)	25.15	nu star (KM)	25.6
theta hat (KM)	0.155	theta star (KM)	0.153
80% gamma percentile (KM)	0.0251	90% gamma percentile (KM)	0.0682
95% gamma percentile (KM)	0.126	99% gamma percentile (KM)	0.295

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (25.60, α)	15.07	Adjusted Chi Square Value (25.60, β)	14.93
95% Gamma Approximate KM-UCL (use when n>=50)	0.039	95% Gamma Adjusted KM-UCL (use when n<50)	0.0394

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.925	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.924	Detected Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.136	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.164	Detected Data appear Lognormal at 5% Significance Level	

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.0208	Mean in Log Scale	-5.936
SD in Original Scale	0.0608	SD in Log Scale	2.169
95% t UCL (assumes normality of ROS data)	0.0317	95% Percentile Bootstrap UCL	0.0326
95% BCA Bootstrap UCL	0.0361	95% Bootstrap t UCL	0.0416
95% H-UCL (Log ROS)	0.0649		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-4.714	KM Geo Mean	0.00897
KM SD (logged)	1.035	95% Critical H Value (KM-Log)	2.271
KM Standard Error of Mean (logged)	0.114	95% H-UCL (KM -Log)	0.0198
KM SD (logged)	1.035	95% Critical H Value (KM-Log)	2.271
KM Standard Error of Mean (logged)	0.114		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.0213	Mean in Log Scale	-5.179
SD in Original Scale	0.0606	SD in Log Scale	1.32
95% t UCL (Assumes normality)	0.0322	95% H-Stat UCL	0.0195

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

TABLE B.1
PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) WITHIN RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Detected Data appear Lognormal Distributed at 5% Significance Level

Suggested UCL to Use

KM H-UCL 0.0198

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

result (cn row_so_surface soil 0-1.5m_benzo(g,h,i)perylene_191-24-2)

General Statistics

Total Number of Observations	85	Number of Distinct Observations	25
Number of Detects	27	Number of Non-Detects	58
Number of Distinct Detects	24	Number of Distinct Non-Detects	1
Minimum Detect	0.0055	Minimum Non-Detect	0.005
Maximum Detect	0.24	Maximum Non-Detect	0.005
Variance Detects	0.00335	Percent Non-Detects	68.24%
Mean Detects	0.0416	SD Detects	0.0579
Median Detects	0.02	CV Detects	1.389
Skewness Detects	2.556	Kurtosis Detects	6.267
Mean of Logged Detects	-3.758	SD of Logged Detects	1.006

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.616	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.923	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.299	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.167	Detected Data Not Normal at 5% Significance Level	

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.0166	KM Standard Error of Mean	0.00401
KM SD	0.0363	95% KM (BCA) UCL	0.024
95% KM (t) UCL	0.0233	95% KM (Percentile Bootstrap) UCL	0.0237
95% KM (z) UCL	0.0232	95% KM Bootstrap t UCL	0.0292
90% KM Chebyshev UCL	0.0287	95% KM Chebyshev UCL	0.0341
97.5% KM Chebyshev UCL	0.0417	99% KM Chebyshev UCL	0.0565

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	1.552	**Anderson-Darling GOF Test**	
5% A-D Critical Value	0.773	Detected Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.205	**Kolmogorov-Smirnov GOF**	
5% K-S Critical Value	0.173	Detected Data Not Gamma Distributed at 5% Significance Level	

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.997	k star (bias corrected MLE)	0.911
Theta hat (MLE)	0.0418	Theta star (bias corrected MLE)	0.0457
nu hat (MLE)	53.82	nu star (bias corrected)	49.17
Mean (detects)	0.0416		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)
For such situations, GROS method may yield incorrect values of UCLs and BTVs
This is especially true when the sample size is small.
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0055	Mean	0.0201
Maximum	0.24	Median	0.01
SD	0.0354	CV	1.767
k hat (MLE)	1.314	k star (bias corrected MLE)	1.275

TABLE B.1
PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) WITHIN RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Theta hat (MLE)	0.0153	Theta star (bias corrected MLE)	0.0157
nu hat (MLE)	223.3	nu star (bias corrected)	216.8
Adjusted Level of Significance (β)	0.0472		
Approximate Chi Square Value (216.77, α)	183.7	Adjusted Chi Square Value (216.77, β)	183.2
95% Gamma Approximate UCL (use when n>=50)	0.0237	95% Gamma Adjusted UCL (use when n<50)	0.0237

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.0166	SD (KM)	0.0363
Variance (KM)	0.00131	SE of Mean (KM)	0.00401
k hat (KM)	0.211	k star (KM)	0.211
nu hat (KM)	35.8	nu star (KM)	35.87
theta hat (KM)	0.079	theta star (KM)	0.0789
80% gamma percentile (KM)	0.0225	90% gamma percentile (KM)	0.0503
95% gamma percentile (KM)	0.0845	99% gamma percentile (KM)	0.178

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (35.87, α)	23.16	Adjusted Chi Square Value (35.87, β)	22.99
95% Gamma Approximate KM-UCL (use when n>=50)	0.0258	95% Gamma Adjusted KM-UCL (use when n<50)	0.026

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.934	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.923	Detected Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.135	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.167	Detected Data appear Lognormal at 5% Significance Level	

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.0143	Mean in Log Scale	-6.084
SD in Original Scale	0.0373	SD in Log Scale	2.047
95% t UCL (assumes normality of ROS data)	0.021	95% Percentile Bootstrap UCL	0.0217
95% BCA Bootstrap UCL	0.0237	95% Bootstrap t UCL	0.0268
95% H-UCL (Log ROS)	0.0399		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-4.809	KM Geo Mean	0.00816
KM SD (logged)	0.908	95% Critical H Value (KM-Log)	2.153
KM Standard Error of Mean (logged)	0.1	95% H-UCL (KM -Log)	0.0152
KM SD (logged)	0.908	95% Critical H Value (KM-Log)	2.153
KM Standard Error of Mean (logged)	0.1		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.0149	Mean in Log Scale	-5.282
SD in Original Scale	0.037	SD in Log Scale	1.186
95% t UCL (Assumes normality)	0.0216	95% H-Stat UCL	0.0141

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Lognormal Distributed at 5% Significance Level

Suggested UCL to Use

KM H-UCL 0.0152

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

result (cn row_so_surface soil 0-1.5m_benzo(k)fluoranthene_207-08-9)

General Statistics

Total Number of Observations	85	Number of Distinct Observations	18

TABLE B.1
PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) WITHIN RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Number of Detects	22	Number of Non-Detects	63
Number of Distinct Detects	17	Number of Distinct Non-Detects	1
Minimum Detect	0.0061	Minimum Non-Detect	0.005
Maximum Detect	0.2	Maximum Non-Detect	0.005
Variance Detects	0.00242	Percent Non-Detects	74.12%
Mean Detects	0.0335	SD Detects	0.0492
Median Detects	0.0145	CV Detects	1.467
Skewness Detects	2.694	Kurtosis Detects	6.923
Mean of Logged Detects	-3.954	SD of Logged Detects	0.934

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.56	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.911	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.349	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.184	Detected Data Not Normal at 5% Significance Level	

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.0124	KM Standard Error of Mean	0.00305
KM SD	0.0274	95% KM (BCA) UCL	0.0183
95% KM (t) UCL	0.0174	95% KM (Percentile Bootstrap) UCL	0.0177
95% KM (z) UCL	0.0174	95% KM Bootstrap t UCL	0.0253
90% KM Chebyshev UCL	0.0215	95% KM Chebyshev UCL	0.0257
97.5% KM Chebyshev UCL	0.0314	99% KM Chebyshev UCL	0.0427

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	2.261	**Anderson-Darling GOF Test**	
5% A-D Critical Value	0.77	Detected Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.308	**Kolmogorov-Smirnov GOF**	
5% K-S Critical Value	0.191	Detected Data Not Gamma Distributed at 5% Significance Level	

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	1.03	k star (bias corrected MLE)	0.92
Theta hat (MLE)	0.0325	Theta star (bias corrected MLE)	0.0364
nu hat (MLE)	45.32	nu star (bias corrected)	40.48
Mean (detects)	0.0335		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)
For such situations, GROS method may yield incorrect values of UCLs and BTVs
This is especially true when the sample size is small.
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0061	Mean	0.0161
Maximum	0.2	Median	0.01
SD	0.0267	CV	1.659
k hat (MLE)	1.778	k star (bias corrected MLE)	1.723
Theta hat (MLE)	0.00905	Theta star (bias corrected MLE)	0.00934
nu hat (MLE)	302.2	nu star (bias corrected)	292.9
Adjusted Level of Significance (β)	0.0472		
Approximate Chi Square Value (292.85, α)	254.2	Adjusted Chi Square Value (292.85, β)	253.6
95% Gamma Approximate UCL (use when n>=50)	0.0185	95% Gamma Adjusted UCL (use when n<50)	0.0186

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.0124	SD (KM)	0.0274
Variance (KM)	7.5340E-4	SE of Mean (KM)	0.00305
k hat (KM)	0.203	k star (KM)	0.204
nu hat (KM)	34.59	nu star (KM)	34.7
theta hat (KM)	0.0609	theta star (KM)	0.0607
80% gamma percentile (KM)	0.0165	90% gamma percentile (KM)	0.0374
95% gamma percentile (KM)	0.0635	99% gamma percentile (KM)	0.135

TABLE B.1
PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) WITHIN RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (34.70, α)	22.23	Adjusted Chi Square Value (34.70, β)	22.05
95% Gamma Approximate KM-UCL (use when n>=50)	0.0193	95% Gamma Adjusted KM-UCL (use when n<50)	0.0195

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.854	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.911	Detected Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.259	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.184	Detected Data Not Lognormal at 5% Significance Level	

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.00965	Mean in Log Scale	-6.493
SD in Original Scale	0.0284	SD in Log Scale	2.009
95% t UCL (assumes normality of ROS data)	0.0148	95% Percentile Bootstrap UCL	0.0151
95% BCA Bootstrap UCL	0.0179	95% Bootstrap t UCL	0.022
95% H-UCL (Log ROS)	0.0239		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-4.95	KM Geo Mean	0.00708
KM SD (logged)	0.75	95% Critical H Value (KM-Log)	2.037
KM Standard Error of Mean (logged)	0.0832	95% H-UCL (KM -Log)	0.0111
KM SD (logged)	0.75	95% Critical H Value (KM-Log)	2.037
KM Standard Error of Mean (logged)	0.0832		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.0105	Mean in Log Scale	-5.464
SD in Original Scale	0.0281		1.012
95% t UCL (Assumes normality)	0.0156	95% H-Stat UCL	0.00906

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

95% KM (Chebyshev) UCL 0.0257

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

result (cn row_so_surface soil 0-1.5m_chrysene_218-01-9)

General Statistics

Total Number of Observations	85	Number of Distinct Observations	25
Number of Detects	27	Number of Non-Detects	58
Number of Distinct Detects	24	Number of Distinct Non-Detects	1
Minimum Detect	0.0053	Minimum Non-Detect	0.005
Maximum Detect	0.36	Maximum Non-Detect	0.005
Variance Detects	0.00917	Percent Non-Detects	68.24%
Mean Detects	0.0682	SD Detects	0.0958
Median Detects	0.032	CV Detects	1.405
Skewness Detects	2.412	Kurtosis Detects	5.273
Mean of Logged Detects	-3.333	SD of Logged Detects	1.104

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.62	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.923	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.32	**Lilliefors GOF Test**	

TABLE B.1
PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) WITHIN RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

5% Lilliefors Critical Value	0.167	Detected Data Not Normal at 5% Significance Level	

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.0251	KM Standard Error of Mean	0.0067
KM SD	0.0606	95% KM (BCA) UCL	0.037
95% KM (t) UCL	0.0362	95% KM (Percentile Bootstrap) UCL	0.0359
95% KM (z) UCL	0.0361	95% KM Bootstrap t UCL	0.0447
90% KM Chebyshev UCL	0.0452	95% KM Chebyshev UCL	0.0543
97.5% KM Chebyshev UCL	0.0669	99% KM Chebyshev UCL	0.0917

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	1.264	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.777	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.195	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.174	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.903	k star (bias corrected MLE)	0.827
Theta hat (MLE)	0.0755	Theta star (bias corrected MLE)	0.0824
nu hat (MLE)	48.76	nu star (bias corrected)	44.68
Mean (detects)	0.0682		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)
For such situations, GROS method may yield incorrect values of UCLs and BTVs
This is especially true when the sample size is small.
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0053	Mean	0.0285
Maximum	0.36	Median	0.01
SD	0.0598	CV	2.101
k hat (MLE)	0.909	k star (bias corrected MLE)	0.885
Theta hat (MLE)	0.0313	Theta star (bias corrected MLE)	0.0322
nu hat (MLE)	154.5	nu star (bias corrected)	150.4
Adjusted Level of Significance (β)	0.0472		
Approximate Chi Square Value (150.38, α)	123	Adjusted Chi Square Value (150.38, β)	122.6
95% Gamma Approximate UCL (use when n>=50)	0.0348	95% Gamma Adjusted UCL (use when n<50)	0.0349

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.0251	SD (KM)	0.0606
Variance (KM)	0.00367	SE of Mean (KM)	0.0067
k hat (KM)	0.171	k star (KM)	0.173
nu hat (KM)	29.11	nu star (KM)	29.41
theta hat (KM)	0.146	theta star (KM)	0.145
80% gamma percentile (KM)	0.0303	90% gamma percentile (KM)	0.0754
95% gamma percentile (KM)	0.134	99% gamma percentile (KM)	0.299

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (29.41, α)	18.03	Adjusted Chi Square Value (29.41, β)	17.88
95% Gamma Approximate KM-UCL (use when n>=50)	0.0409	95% Gamma Adjusted KM-UCL (use when n<50)	0.0412

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.958	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.923	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.129	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.167	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.023	Mean in Log Scale	-5.858

TABLE B.1
PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) WITHIN RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

SD in Original Scale	0.0617	SD in Log Scale	2.224
95% t UCL (assumes normality of ROS data)	0.0341	95% Percentile Bootstrap UCL	0.0348
95% BCA Bootstrap UCL	0.0378	95% Bootstrap t UCL	0.0413
95% H-UCL (Log ROS)	0.0823		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-4.674	KM Geo Mean	0.00934
KM SD (logged)	1.1	95% Critical H Value (KM-Log)	2.334
KM Standard Error of Mean (logged)	0.122	95% H-UCL (KM -Log)	0.0226
KM SD (logged)	1.1	95% Critical H Value (KM-Log)	2.334
KM Standard Error of Mean (logged)	0.122		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.0234	Mean in Log Scale	-5.147
SD in Original Scale	0.0615	SD in Log Scale	1.388
95% t UCL (Assumes normality)	0.0345	95% H-Stat UCL	0.0227

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Lognormal Distributed at 5% Significance Level

Suggested UCL to Use

KM H-UCL 0.0226

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

result (cn row_so_surface soil 0-1.5m_dibenz(a,h)anthracene_53-70-3)

General Statistics

Total Number of Observations	85	Number of Distinct Observations	10
Number of Detects	9	Number of Non-Detects	76
Number of Distinct Detects	9	Number of Distinct Non-Detects	1
Minimum Detect	0.0055	Minimum Non-Detect	0.005
Maximum Detect	0.064	Maximum Non-Detect	0.005
Variance Detects	3.7538E-4	Percent Non-Detects	89.41%
Mean Detects	0.0214	SD Detects	0.0194
Median Detects	0.016	CV Detects	0.907
Skewness Detects	1.582	Kurtosis Detects	2.206
Mean of Logged Detects	-4.171	SD of Logged Detects	0.84

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.811	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.829	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.256	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.274	Detected Data appear Normal at 5% Significance Level	

Detected Data appear Approximate Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.00673	KM Standard Error of Mean	8.9624E-4
KM SD	0.00779	95% KM (BCA) UCL	0.00834
95% KM (t) UCL	0.00822	95% KM (Percentile Bootstrap) UCL	0.00827
95% KM (z) UCL	0.00821	95% KM Bootstrap t UCL	0.0102
90% KM Chebyshev UCL	0.00942	95% KM Chebyshev UCL	0.0106
97.5% KM Chebyshev UCL	0.0123	99% KM Chebyshev UCL	0.0157

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.392	**Anderson-Darling GOF Test**	
5% A-D Critical Value	0.733	Detected data appear Gamma Distributed at 5% Significance Level	

TABLE B.1
PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) WITHIN RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

K-S Test Statistic	0.205	**Kolmogorov-Smirnov GOF**	
5% K-S Critical Value	0.283	Detected data appear Gamma Distributed at 5% Significance Level	

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	1.684	k star (bias corrected MLE)	1.197
Theta hat (MLE)	0.0127	Theta star (bias corrected MLE)	0.0179
nu hat (MLE)	30.32	nu star (bias corrected)	21.54
Mean (detects)	0.0214		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)
For such situations, GROS method may yield incorrect values of UCLs and BTVs
This is especially true when the sample size is small.
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0055	Mean	0.0112
Maximum	0.064	Median	0.01
SD	0.00694	CV	0.619
k hat (MLE)	7.548	k star (bias corrected MLE)	7.289
Theta hat (MLE)	0.00148	Theta star (bias corrected MLE)	0.00154
nu hat (MLE)	1283	nu star (bias corrected)	1239
Adjusted Level of Significance (β)	0.0472		
Approximate Chi Square Value (N/A, α)	1158	Adjusted Chi Square Value (N/A, β)	1157
95% Gamma Approximate UCL (use when n>=50)	0.012	95% Gamma Adjusted UCL (use when n<50)	0.012

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.00673	SD (KM)	0.00779
Variance (KM)	6.0689E-5	SE of Mean (KM)	8.9624E-4
k hat (KM)	0.747	k star (KM)	0.728
nu hat (KM)	127	nu star (KM)	123.8
theta hat (KM)	0.00901	theta star (KM)	0.00924
80% gamma percentile (KM)	0.0111	90% gamma percentile (KM)	0.0167
95% gamma percentile (KM)	0.0226	99% gamma percentile (KM)	0.0365

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (123.83, α)	99.13	Adjusted Chi Square Value (123.83, β)	98.76
95% Gamma Approximate KM-UCL (use when n>=50)	0.00841	95% Gamma Adjusted KM-UCL (use when n<50)	0.00844

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.94	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.829	Detected Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.184	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.274	Detected Data appear Lognormal at 5% Significance Level	

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.00277	Mean in Log Scale	-8.442
SD in Original Scale	0.00883	SD in Log Scale	2.457
95% t UCL (assumes normality of ROS data)	0.00436	95% Percentile Bootstrap UCL	0.00453
95% BCA Bootstrap UCL	0.00509	95% Bootstrap t UCL	0.00628
95% H-UCL (Log ROS)	0.0127		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-5.179	KM Geo Mean	0.00563
KM SD (logged)	0.432	95% Critical H Value (KM-Log)	1.806
KM Standard Error of Mean (logged)	0.0497	95% H-UCL (KM -Log)	0.00673
KM SD (logged)	0.432	95% Critical H Value (KM-Log)	1.806
KM Standard Error of Mean (logged)	0.0497		

DL/2 Statistics

DL/2 Normal	**DL/2 Log-Transformed**

TABLE B.1
PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) WITHIN RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Mean in Original Scale	0.0045	Mean in Log Scale	-5.799
SD in Original Scale	0.00836	SD in Log Scale	0.62
95% t UCL (Assumes normality)	0.00601	95% H-Stat UCL	0.00419

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Approximate Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL 0.00822

When a data set follows an approximate (e.g., normal) distribution passing one of the GOF test
When applicable, it is suggested to use a UCL based upon a distribution (e.g., gamma) passing both GOF tests in ProUCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

result (cn row_so_surface soil 0-1.5m_fluoranthene_206-44-0)

General Statistics

Total Number of Observations	85	Number of Distinct Observations	35
Number of Detects	42	Number of Non-Detects	43
Number of Distinct Detects	34	Number of Distinct Non-Detects	1
Minimum Detect	0.0062	Minimum Non-Detect	0.005
Maximum Detect	0.69	Maximum Non-Detect	0.005
Variance Detects	0.0149	Percent Non-Detects	50.59%
Mean Detects	0.0739	SD Detects	0.122
Median Detects	0.024	CV Detects	1.652
Skewness Detects	3.523	Kurtosis Detects	15.58
Mean of Logged Detects	-3.439	SD of Logged Detects	1.241

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.567	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.942	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.29	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.135	Detected Data Not Normal at 5% Significance Level	

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.039	KM Standard Error of Mean	0.01
KM SD	0.0915	95% KM (BCA) UCL	0.0572
95% KM (t) UCL	0.0557	95% KM (Percentile Bootstrap) UCL	0.0564
95% KM (z) UCL	0.0556	95% KM Bootstrap t UCL	0.0684
90% KM Chebyshev UCL	0.0692	95% KM Chebyshev UCL	0.0828
97.5% KM Chebyshev UCL	0.102	99% KM Chebyshev UCL	0.139

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	2.119	**Anderson-Darling GOF Test**	
5% A-D Critical Value	0.792	Detected Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.189	**Kolmogorov-Smirnov GOF**	
5% K-S Critical Value	0.142	Detected Data Not Gamma Distributed at 5% Significance Level	

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.722	k star (bias corrected MLE)	0.686
Theta hat (MLE)	0.102	Theta star (bias corrected MLE)	0.108
nu hat (MLE)	60.66	nu star (bias corrected)	57.66
Mean (detects)	0.0739		

Gamma ROS Statistics using Imputed Non-Detects

TABLE B.1

PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) WITHIN RIGHT-OF-WAY

CN MILE 197.4, RIVERS SUBDIVISION

SOUTHEAST OF ST. LAZARE, MANITOBA

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0062	Mean	0.0416
Maximum	0.69	Median	0.01
SD	0.0911	CV	2.193
k hat (MLE)	0.711	k star (bias corrected MLE)	0.694
Theta hat (MLE)	0.0585	Theta star (bias corrected MLE)	0.0599
nu hat (MLE)	120.9	nu star (bias corrected)	117.9
Adjusted Level of Significance (β)	0.0472		
Approximate Chi Square Value (117.93, α)	93.85	Adjusted Chi Square Value (117.93, β)	93.49
95% Gamma Approximate UCL (use when n>=50)	0.0522	95% Gamma Adjusted UCL (use when n<50)	0.0524

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.039	SD (KM)	0.0915
Variance (KM)	0.00837	SE of Mean (KM)	0.01
k hat (KM)	0.182	k star (KM)	0.183
nu hat (KM)	30.94	nu star (KM)	31.18
theta hat (KM)	0.215	theta star (KM)	0.213
80% gamma percentile (KM)	0.049	90% gamma percentile (KM)	0.118
95% gamma percentile (KM)	0.206	99% gamma percentile (KM)	0.451

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (31.18, α)	19.42	Adjusted Chi Square Value (31.18, β)	19.26
95% Gamma Approximate KM-UCL (use when n>=50)	0.0627	95% Gamma Adjusted KM-UCL (use when n<50)	0.0632

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.878	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.942	Detected Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.128	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.135	Detected Data appear Lognormal at 5% Significance Level	

Detected Data appear Approximate Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.0374	Mean in Log Scale	-5.174
SD in Original Scale	0.0927	SD in Log Scale	2.122
95% t UCL (assumes normality of ROS data)	0.0541	95% Percentile Bootstrap UCL	0.0545
95% BCA Bootstrap UCL	0.0605	95% Bootstrap t UCL	0.0663
95% H-UCL (Log ROS)	0.122		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-4.379	KM Geo Mean	0.0125
KM SD (logged)	1.268	95% Critical H Value (KM-Log)	2.509
KM Standard Error of Mean (logged)	0.139	95% H-UCL (KM -Log)	0.0396
KM SD (logged)	1.268	95% Critical H Value (KM-Log)	2.509
KM Standard Error of Mean (logged)	0.139		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.0378	Mean in Log Scale	-4.73
SD in Original Scale	0.0925	SD in Log Scale	1.549
95% t UCL (Assumes normality)	0.0545	95% H-Stat UCL	0.0473

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Approximate Lognormal Distributed at 5% Significance Level

Suggested UCL to Use

KM H-UCL 0.0396

TABLE B.1
PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) WITHIN RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

result (cn row_so_surface soil 0-1.5m_fluorene_86-73-7)

General Statistics

Total Number of Observations	85	Number of Distinct Observations	21
Number of Detects	20	Number of Non-Detects	65
Number of Distinct Detects	20	Number of Distinct Non-Detects	1
Minimum Detect	0.0057	Minimum Non-Detect	0.005
Maximum Detect	0.38	Maximum Non-Detect	0.005
Variance Detects	0.00682	Percent Non-Detects	76.47%
Mean Detects	0.046	SD Detects	0.0826
Median Detects	0.0175	CV Detects	1.796
Skewness Detects	3.826	Kurtosis Detects	15.81
Mean of Logged Detects	-3.809	SD of Logged Detects	1.121

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.486	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.905	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.313	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.192	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.0146	KM Standard Error of Mean	0.00476
KM SD	0.0428	95% KM (BCA) UCL	0.0241
95% KM (t) UCL	0.0226	95% KM (Percentile Bootstrap) UCL	0.0233
95% KM (z) UCL	0.0225	95% KM Bootstrap t UCL	0.0372
90% KM Chebyshev UCL	0.0289	95% KM Chebyshev UCL	0.0354
97.5% KM Chebyshev UCL	0.0444	99% KM Chebyshev UCL	0.062

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	1.118	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.777	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.183	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.201	Detected data appear Gamma Distributed at 5% Significance Level

Detected data follow Appr. Gamma Distribution at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.812	k star (bias corrected MLE)	0.723
Theta hat (MLE)	0.0567	Theta star (bias corrected MLE)	0.0636
nu hat (MLE)	32.46	nu star (bias corrected)	28.93
Mean (detects)	0.046		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)
For such situations, GROS method may yield incorrect values of UCLs and BTVs
This is especially true when the sample size is small.
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0057	Mean	0.0185
Maximum	0.38	Median	0.01
SD	0.0422	CV	2.284
k hat (MLE)	1.315	k star (bias corrected MLE)	1.276
Theta hat (MLE)	0.014	Theta star (bias corrected MLE)	0.0145
nu hat (MLE)	223.5	nu star (bias corrected)	216.9
Adjusted Level of Significance (β)	0.0472		
Approximate Chi Square Value (216.94, α)	183.8	Adjusted Chi Square Value (216.94, β)	183.3
95% Gamma Approximate UCL (use when n>=50)	0.0218	95% Gamma Adjusted UCL (use when n<50)	0.0219

TABLE B.1
PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) WITHIN RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.0146	SD (KM)	0.0428
Variance (KM)	0.00183	SE of Mean (KM)	0.00476
k hat (KM)	0.117	k star (KM)	0.121
nu hat (KM)	19.95	nu star (KM)	20.58
theta hat (KM)	0.125	theta star (KM)	0.121
80% gamma percentile (KM)	0.013	90% gamma percentile (KM)	0.0416
95% gamma percentile (KM)	0.0835	99% gamma percentile (KM)	0.211

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (20.58, α)	11.28	Adjusted Chi Square Value (20.58, β)	11.16
95% Gamma Approximate KM-UCL (use when n>=50)	0.0267	95% Gamma Adjusted KM-UCL (use when n<50)	0.027

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.921	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.905	Detected Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.134	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.192	Detected Data appear Lognormal at 5% Significance Level	

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.0115	Mean in Log Scale	-7.13
SD in Original Scale	0.0438	SD in Log Scale	2.514
95% t UCL (assumes normality of ROS data)	0.0194	95% Percentile Bootstrap UCL	0.0197
95% BCA Bootstrap UCL	0.0262	95% Bootstrap t UCL	0.0321
95% H-UCL (Log ROS)	0.0571		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-4.948	KM Geo Mean	0.0071
KM SD (logged)	0.825	95% Critical H Value (KM-Log)	2.079
KM Standard Error of Mean (logged)	0.0918	95% H-UCL (KM -Log)	0.012
KM SD (logged)	0.825	95% Critical H Value (KM-Log)	2.079
KM Standard Error of Mean (logged)	0.0918		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.0127	Mean in Log Scale	-5.478
SD in Original Scale	0.0435	SD in Log Scale	1.073
95% t UCL (Assumes normality)	0.0206	95% H-Stat UCL	0.00974

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Approximate Gamma Distributed at 5% Significance Level

Suggested UCL to Use

95% KM Approximate Gamma UCL 0.0267

When a data set follows an approximate (e.g., normal) distribution passing one of the GOF test
When applicable, it is suggested to use a UCL based upon a distribution (e.g., gamma) passing both GOF tests in ProUCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

result (cn row_so_surface soil 0-1.5m_indeno(1,2,3-cd)pyrene_193-39-5)

General Statistics

Total Number of Observations	85	Number of Distinct Observations	23
Number of Detects	24	Number of Non-Detects	61
Number of Distinct Detects	22	Number of Distinct Non-Detects	1

TABLE B.1
PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) WITHIN RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Minimum Detect	0.0062	Minimum Non-Detect	0.005
Maximum Detect	0.2	Maximum Non-Detect	0.005
Variance Detects	0.0024	Percent Non-Detects	71.76%
Mean Detects	0.037	SD Detects	0.049
Median Detects	0.017	CV Detects	1.324
Skewness Detects	2.478	Kurtosis Detects	5.855
Mean of Logged Detects	-3.814	SD of Logged Detects	0.937

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.62	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.916	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.308	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.177	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.014	KM Standard Error of Mean	0.00324
KM SD	0.0293	95% KM (BCA) UCL	0.0194
95% KM (t) UCL	0.0194	95% KM (Percentile Bootstrap) UCL	0.0196
95% KM (z) UCL	0.0194	95% KM Bootstrap t UCL	0.0251
90% KM Chebyshev UCL	0.0238	95% KM Chebyshev UCL	0.0282
97.5% KM Chebyshev UCL	0.0343	99% KM Chebyshev UCL	0.0463

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	1.706	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.77	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.231	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.183	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	1.103	k star (bias corrected MLE)	0.993
Theta hat (MLE)	0.0336	Theta star (bias corrected MLE)	0.0373
nu hat (MLE)	52.93	nu star (bias corrected)	47.65
Mean (detects)	0.037		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)
For such situations, GROS method may yield incorrect values of UCLs and BTVs
This is especially true when the sample size is small.
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0062	Mean	0.0176
Maximum	0.2	Median	0.01
SD	0.0284	CV	1.612
k hat (MLE)	1.602	k star (bias corrected MLE)	1.553
Theta hat (MLE)	0.011	Theta star (bias corrected MLE)	0.0114
nu hat (MLE)	272.3	nu star (bias corrected)	264
Adjusted Level of Significance (β)	0.0472		
Approximate Chi Square Value (263.98, α)	227.4	Adjusted Chi Square Value (263.98, β)	226.8
95% Gamma Approximate UCL (use when n>=50)	0.0205	95% Gamma Adjusted UCL (use when n<50)	0.0205

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.014	SD (KM)	0.0293
Variance (KM)	8.5775E-4	SE of Mean (KM)	0.00324
k hat (KM)	0.23	k star (KM)	0.23
nu hat (KM)	39.08	nu star (KM)	39.04
theta hat (KM)	0.0611	theta star (KM)	0.0612
80% gamma percentile (KM)	0.0197	90% gamma percentile (KM)	0.0424
95% gamma percentile (KM)	0.0697	99% gamma percentile (KM)	0.143

Gamma Kaplan-Meier (KM) Statistics

TABLE B.1
PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) WITHIN RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Approximate Chi Square Value (39.04, α)	25.72	Adjusted Chi Square Value (39.04, β)	25.54
95% Gamma Approximate KM-UCL (use when n>=50)	0.0213	95% Gamma Adjusted KM-UCL (use when n<50)	0.0215

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.904	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.916	Detected Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.167	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.177	Detected Data appear Lognormal at 5% Significance Level	

Detected Data appear Approximate Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.0116	Mean in Log Scale	-6.218
SD in Original Scale	0.0303	SD in Log Scale	1.984
95% t UCL (assumes normality of ROS data)	0.017	95% Percentile Bootstrap UCL	0.0176
95% BCA Bootstrap UCL	0.0195	95% Bootstrap t UCL	0.0221
95% H-UCL (Log ROS)	0.0295		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-4.879	KM Geo Mean	0.0076
KM SD (logged)	0.827	95% Critical H Value (KM-Log)	2.081
KM Standard Error of Mean (logged)	0.0917	95% H-UCL (KM -Log)	0.0129
KM SD (logged)	0.827	95% Critical H Value (KM-Log)	2.081
KM Standard Error of Mean (logged)	0.0917		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.0122	Mean in Log Scale	-5.377
SD in Original Scale	0.03	SD in Log Scale	1.101
95% t UCL (Assumes normality)	0.0177	95% H-Stat UCL	0.0112

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Approximate Lognormal Distributed at 5% Significance Level

Suggested UCL to Use

KM H-UCL 0.0129

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

result (cn row_so_surface soil 0-1.5m_methylnaphthalene, 2-_91-57-6)

General Statistics

Total Number of Observations	85	Number of Distinct Observations	19
Number of Detects	21	Number of Non-Detects	64
Number of Distinct Detects	18	Number of Distinct Non-Detects	1
Minimum Detect	0.0066	Minimum Non-Detect	0.005
Maximum Detect	0.071	Maximum Non-Detect	0.005
Variance Detects	3.0428E-4	Percent Non-Detects	75.29%
Mean Detects	0.023	SD Detects	0.0174
Median Detects	0.017	CV Detects	0.759
Skewness Detects	1.348	Kurtosis Detects	1.572
Mean of Logged Detects	-4.029	SD of Logged Detects	0.734

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.853	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.908	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.187	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.188	Detected Data appear Normal at 5% Significance Level	

Detected Data appear Approximate Normal at 5% Significance Level

TABLE B.1
PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) WITHIN RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.00944	KM Standard Error of Mean	0.00128
KM SD	0.0115	95% KM (BCA) UCL	0.0117
95% KM (t) UCL	0.0116	95% KM (Percentile Bootstrap) UCL	0.0116
95% KM (z) UCL	0.0115	95% KM Bootstrap t UCL	0.0125
90% KM Chebyshev UCL	0.0133	95% KM Chebyshev UCL	0.015
97.5% KM Chebyshev UCL	0.0174	99% KM Chebyshev UCL	0.0221

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.46	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.753	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.142	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.192	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	2.101	k star (bias corrected MLE)	1.832
Theta hat (MLE)	0.0109	Theta star (bias corrected MLE)	0.0125
nu hat (MLE)	88.23	nu star (bias corrected)	76.96
Mean (detects)	0.023		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)
For such situations, GROS method may yield incorrect values of UCLs and BTVs
This is especially true when the sample size is small.
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0066	Mean	0.0132
Maximum	0.071	Median	0.01
SD	0.0102	CV	0.773
k hat (MLE)	3.835	k star (bias corrected MLE)	3.708
Theta hat (MLE)	0.00344	Theta star (bias corrected MLE)	0.00356
nu hat (MLE)	652	nu star (bias corrected)	630.3
Adjusted Level of Significance (β)	0.0472		
Approximate Chi Square Value (630.28, α)	573	Adjusted Chi Square Value (630.28, β)	572.1
95% Gamma Approximate UCL (use when n>=50)	0.0145	95% Gamma Adjusted UCL (use when n<50)	0.0146

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.00944	SD (KM)	0.0115
Variance (KM)	1.3177E-4	SE of Mean (KM)	0.00128
k hat (KM)	0.677	k star (KM)	0.661
nu hat (KM)	115.1	nu star (KM)	112.3
theta hat (KM)	0.014	theta star (KM)	0.0143
80% gamma percentile (KM)	0.0155	90% gamma percentile (KM)	0.024
95% gamma percentile (KM)	0.0328	99% gamma percentile (KM)	0.0539

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (112.33, α)	88.86	Adjusted Chi Square Value (112.33, β)	88.5
95% Gamma Approximate KM-UCL (use when n>=50)	0.0119	95% Gamma Adjusted KM-UCL (use when n<50)	0.012

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.948	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.908	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.125	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.188	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.00712	Mean in Log Scale	-6.1
SD in Original Scale	0.0126	SD in Log Scale	1.603
95% t UCL (assumes normality of ROS data)	0.00939	95% Percentile Bootstrap UCL	0.00954

TABLE B.1
PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) WITHIN RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

95% BCA Bootstrap UCL	0.00999	95% Bootstrap t UCL	0.0102
95% H-UCL (Log ROS)	0.0134		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-4.985	KM Geo Mean	0.00684
KM SD (logged)	0.653	95% Critical H Value (KM-Log)	1.956
KM Standard Error of Mean (logged)	0.0726	95% H-UCL (KM -Log)	0.00973
KM SD (logged)	0.653	95% Critical H Value (KM-Log)	1.956
KM Standard Error of Mean (logged)	0.0726		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.00756	Mean in Log Scale	-5.507
SD in Original Scale	0.0123	SD in Log Scale	0.924
95% t UCL (Assumes normality)	0.00978	95% H-Stat UCL	0.00774

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Approximate Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL 0.0116

When a data set follows an approximate (e.g., normal) distribution passing one of the GOF test
When applicable, it is suggested to use a UCL based upon a distribution (e.g., gamma) passing both GOF tests in ProUCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

result (cn row_so_surface soil 0-1.5m_naphthalene_91-20-3)

General Statistics

Total Number of Observations	85	Number of Distinct Observations	15
Number of Detects	17	Number of Non-Detects	68
Number of Distinct Detects	14	Number of Distinct Non-Detects	1
Minimum Detect	0.0065	Minimum Non-Detect	0.005
Maximum Detect	0.088	Maximum Non-Detect	0.005
Variance Detects	3.7204E-4	Percent Non-Detects	80%
Mean Detects	0.0176	SD Detects	0.0193
Median Detects	0.011	CV Detects	1.098
Skewness Detects	3.416	Kurtosis Detects	12.59
Mean of Logged Detects	-4.308	SD of Logged Detects	0.637

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.527	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.892	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.338	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.207	Detected Data Not Normal at 5% Significance Level	

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.00751	KM Standard Error of Mean	0.00109
KM SD	0.00976	95% KM (BCA) UCL	0.0095
95% KM (t) UCL	0.00933	95% KM (Percentile Bootstrap) UCL	0.00951
95% KM (z) UCL	0.00931	95% KM Bootstrap t UCL	0.0122
90% KM Chebyshev UCL	0.0108	95% KM Chebyshev UCL	0.0123
97.5% KM Chebyshev UCL	0.0143	99% KM Chebyshev UCL	0.0184

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	1.673	**Anderson-Darling GOF Test**	

TABLE B.1
PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) WITHIN RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

5% A-D Critical Value	0.749	Detected Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.293	**Kolmogorov-Smirnov GOF**	
5% K-S Critical Value	0.212	Detected Data Not Gamma Distributed at 5% Significance Level	

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	2.026	k star (bias corrected MLE)	1.708
Theta hat (MLE)	0.00867	Theta star (bias corrected MLE)	0.0103
nu hat (MLE)	68.89	nu star (bias corrected)	58.07
Mean (detects)	0.0176		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)
For such situations, GROS method may yield incorrect values of UCLs and BTVs
This is especially true when the sample size is small.
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0065	Mean	0.0115
Maximum	0.088	Median	0.01
SD	0.00895	CV	0.778
k hat (MLE)	6.29	k star (bias corrected MLE)	6.076
Theta hat (MLE)	0.00183	Theta star (bias corrected MLE)	0.00189
nu hat (MLE)	1069	nu star (bias corrected)	1033
Adjusted Level of Significance (β)	0.0472		
Approximate Chi Square Value (N/A, α)	959.4	Adjusted Chi Square Value (N/A, β)	958.2
95% Gamma Approximate UCL (use when n>=50)	0.0124	95% Gamma Adjusted UCL (use when n<50)	0.0124

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.00751	SD (KM)	0.00976
Variance (KM)	9.5315E-5	SE of Mean (KM)	0.00109
k hat (KM)	0.592	k star (KM)	0.579
nu hat (KM)	100.7	nu star (KM)	98.48
theta hat (KM)	0.0127	theta star (KM)	0.013
80% gamma percentile (KM)	0.0124	90% gamma percentile (KM)	0.0197
95% gamma percentile (KM)	0.0274	99% gamma percentile (KM)	0.046

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (98.48, α)	76.59	Adjusted Chi Square Value (98.48, β)	76.26
95% Gamma Approximate KM-UCL (use when n>=50)	0.00966	95% Gamma Adjusted KM-UCL (use when n<50)	0.0097

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.831	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.892	Detected Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.24	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.207	Detected Data Not Lognormal at 5% Significance Level	

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.00483	Mean in Log Scale	-6.38
SD in Original Scale	0.0107	SD in Log Scale	1.467
95% t UCL (assumes normality of ROS data)	0.00675	95% Percentile Bootstrap UCL	0.00698
95% BCA Bootstrap UCL	0.00767	95% Bootstrap t UCL	0.00866
95% H-UCL (Log ROS)	0.00769		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-5.1	KM Geo Mean	0.0061
KM SD (logged)	0.483	95% Critical H Value (KM-Log)	1.834
KM Standard Error of Mean (logged)	0.054	95% H-UCL (KM -Log)	0.00754
KM SD (logged)	0.483	95% Critical H Value (KM-Log)	1.834
KM Standard Error of Mean (logged)	0.054		

DL/2 Statistics

TABLE B.1
PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) WITHIN RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.00551	Mean in Log Scale	-5.655
SD in Original Scale	0.0104	SD in Log Scale	0.732
95% t UCL (Assumes normality)	0.00739	95% H-Stat UCL	0.00538

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

95% KM (Chebyshev) UCL 0.0123

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

result (cn row_so_surface soil 0-1.5m_perylene_198-55-0)

General Statistics

Total Number of Observations	85	Number of Distinct Observations	30
Number of Detects	39	Number of Non-Detects	46
Number of Distinct Detects	29	Number of Distinct Non-Detects	1
Minimum Detect	0.0052	Minimum Non-Detect	0.005
Maximum Detect	0.1	Maximum Non-Detect	0.005
Variance Detects	4.9994E-4	Percent Non-Detects	54.12%
Mean Detects	0.0203	SD Detects	0.0224
Median Detects	0.012	CV Detects	1.099
Skewness Detects	2.44	Kurtosis Detects	5.406
Mean of Logged Detects	-4.247	SD of Logged Detects	0.762

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.631	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.939	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.261	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.14	Detected Data Not Normal at 5% Significance Level	

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.012	KM Standard Error of Mean	0.00185
KM SD	0.0168	95% KM (BCA) UCL	0.015
95% KM (t) UCL	0.0151	95% KM (Percentile Bootstrap) UCL	0.0152
95% KM (z) UCL	0.0151	95% KM Bootstrap t UCL	0.0168
90% KM Chebyshev UCL	0.0176	95% KM Chebyshev UCL	0.0201
97.5% KM Chebyshev UCL	0.0236	99% KM Chebyshev UCL	0.0304

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	2.576	**Anderson-Darling GOF Test**	
5% A-D Critical Value	0.765	Detected Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.202	**Kolmogorov-Smirnov GOF**	
5% K-S Critical Value	0.144	Detected Data Not Gamma Distributed at 5% Significance Level	

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	1.566	k star (bias corrected MLE)	1.463
Theta hat (MLE)	0.013	Theta star (bias corrected MLE)	0.0139
nu hat (MLE)	122.1	nu star (bias corrected)	114.1
Mean (detects)	0.0203		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

TABLE B.1

PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) WITHIN RIGHT-OF-WAY

CN MILE 197.4, RIVERS SUBDIVISION

SOUTHEAST OF ST. LAZARE, MANITOBA

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0052	Mean	0.0147
Maximum	0.1	Median	0.01
SD	0.0159	CV	1.079
k hat (MLE)	2.385	k star (bias corrected MLE)	2.308
Theta hat (MLE)	0.00618	Theta star (bias corrected MLE)	0.00639
nu hat (MLE)	405.4	nu star (bias corrected)	392.4
Adjusted Level of Significance (β)	0.0472		
Approximate Chi Square Value (392.41, α)	347.5	Adjusted Chi Square Value (392.41, β)	346.8
95% Gamma Approximate UCL (use when n>=50)	0.0167	95% Gamma Adjusted UCL (use when n<50)	0.0167

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.012	SD (KM)	0.0168
Variance (KM)	2.8198E-4	SE of Mean (KM)	0.00185
k hat (KM)	0.514	k star (KM)	0.504
nu hat (KM)	87.41	nu star (KM)	85.66
theta hat (KM)	0.0234	theta star (KM)	0.0239
80% gamma percentile (KM)	0.0198	90% gamma percentile (KM)	0.0325
95% gamma percentile (KM)	0.0461	99% gamma percentile (KM)	0.0796

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (85.66, α)	65.33	Adjusted Chi Square Value (85.66, β)	65.02
95% Gamma Approximate KM-UCL (use when n>=50)	0.0158	95% Gamma Adjusted KM-UCL (use when n<50)	0.0159

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.886	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.939	Detected Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.142	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.14	Detected Data Not Lognormal at 5% Significance Level	

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.0105	Mean in Log Scale	-5.42
SD in Original Scale	0.0176	SD in Log Scale	1.339
95% t UCL (assumes normality of ROS data)	0.0137	95% Percentile Bootstrap UCL	0.0139
95% BCA Bootstrap UCL	0.0146	95% Bootstrap t UCL	0.0152
95% H-UCL (Log ROS)	0.0158		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-4.816	KM Geo Mean	0.0081
KM SD (logged)	0.731	95% Critical H Value (KM-Log)	2.026
KM Standard Error of Mean (logged)	0.0803	95% H-UCL (KM -Log)	0.0124
KM SD (logged)	0.731	95% Critical H Value (KM-Log)	2.026
KM Standard Error of Mean (logged)	0.0803		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.0107	Mean in Log Scale	-5.191
SD in Original Scale	0.0175	SD in Log Scale	1.014
95% t UCL (Assumes normality)	0.0138	95% H-Stat UCL	0.0119

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

95% KM (Chebyshev) UCL 0.0201

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

TABLE B.1
PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) WITHIN RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

result (cn row_so_surface soil 0-1.5m_phenanthrene_85-01-8)

General Statistics

Total Number of Observations	85	Number of Distinct Observations	35
Number of Detects	41	Number of Non-Detects	44
Number of Distinct Detects	34	Number of Distinct Non-Detects	1
Minimum Detect	0.0056	Minimum Non-Detect	0.005
Maximum Detect	0.79	Maximum Non-Detect	0.005
Variance Detects	0.0187	Percent Non-Detects	51.76%
Mean Detects	0.0728	SD Detects	0.137
Median Detects	0.02	CV Detects	1.879
Skewness Detects	3.979	Kurtosis Detects	19.05
Mean of Logged Detects	-3.524	SD of Logged Detects	1.24

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.52	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.941	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.312	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.137	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.0377	KM Standard Error of Mean	0.011
KM SD	0.0998	95% KM (BCA) UCL	0.0594
95% KM (t) UCL	0.056	95% KM (Percentile Bootstrap) UCL	0.057
95% KM (z) UCL	0.0558	95% KM Bootstrap t UCL	0.0714
90% KM Chebyshev UCL	0.0706	95% KM Chebyshev UCL	0.0855
97.5% KM Chebyshev UCL	0.106	99% KM Chebyshev UCL	0.147

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	2.754	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.797	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.211	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.144	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.672	k star (bias corrected MLE)	0.639
Theta hat (MLE)	0.108	Theta star (bias corrected MLE)	0.114
nu hat (MLE)	55.07	nu star (bias corrected)	52.38
Mean (detects)	0.0728		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)
For such situations, GROS method may yield incorrect values of UCLs and BTVs
This is especially true when the sample size is small.
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0056	Mean	0.0403
Maximum	0.79	Median	0.01
SD	0.0996	CV	2.471
k hat (MLE)	0.693	k star (bias corrected MLE)	0.677
Theta hat (MLE)	0.0581	Theta star (bias corrected MLE)	0.0596
nu hat (MLE)	117.9	nu star (bias corrected)	115
Adjusted Level of Significance (β)	0.0472		
Approximate Chi Square Value (115.04, α)	91.28	Adjusted Chi Square Value (115.04, β)	90.91
95% Gamma Approximate UCL (use when n>=50)	0.0508	95% Gamma Adjusted UCL (use when n<50)	0.051

Estimates of Gamma Parameters using KM Estimates

TABLE B.1
PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) WITHIN RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Mean (KM)	0.0377	SD (KM)	0.0998
Variance (KM)	0.00997	SE of Mean (KM)	0.011
k hat (KM)	0.143	k star (KM)	0.146
nu hat (KM)	24.27	nu star (KM)	24.75
theta hat (KM)	0.264	theta star (KM)	0.259
80% gamma percentile (KM)	0.0401	90% gamma percentile (KM)	0.111
95% gamma percentile (KM)	0.209	99% gamma percentile (KM)	0.493

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (24.75, α)	14.42	Adjusted Chi Square Value (24.75, β)	14.29
95% Gamma Approximate KM-UCL (use when n>=50)	0.0647	95% Gamma Adjusted KM-UCL (use when n<50)	0.0654

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.91	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.941	Detected Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.154	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.137	Detected Data Not Lognormal at 5% Significance Level	

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.036	Mean in Log Scale	-5.32
SD in Original Scale	0.101	SD in Log Scale	2.145
95% t UCL (assumes normality of ROS data)	0.0542	95% Percentile Bootstrap UCL	0.0563
95% BCA Bootstrap UCL	0.0637	95% Bootstrap t UCL	0.07
95% H-UCL (Log ROS)	0.112		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-4.443	KM Geo Mean	0.0118
KM SD (logged)	1.228	95% Critical H Value (KM-Log)	2.467
KM Standard Error of Mean (logged)	0.135	95% H-UCL (KM -Log)	0.0348
KM SD (logged)	1.228	95% Critical H Value (KM-Log)	2.467
KM Standard Error of Mean (logged)	0.135		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.0364	Mean in Log Scale	-4.802
SD in Original Scale	0.101	SD in Log Scale	1.507
95% t UCL (Assumes normality)	0.0546	95% H-Stat UCL	0.0403

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

95% KM (Chebyshev) UCL 0.0855

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

result (cn row_so_surface soil 0-1.5m_pyrene_129-00-0)

General Statistics

Total Number of Observations	85	Number of Distinct Observations	34
Number of Detects	43	Number of Non-Detects	42
Number of Distinct Detects	33	Number of Distinct Non-Detects	1
Minimum Detect	0.0053	Minimum Non-Detect	0.005
Maximum Detect	0.54	Maximum Non-Detect	0.005
Variance Detects	0.0102	Percent Non-Detects	49.41%
Mean Detects	0.0605	SD Detects	0.101
Median Detects	0.018	CV Detects	1.669

TABLE B.1
PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) WITHIN RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Skewness Detects	3.141	Kurtosis Detects	11.87
Mean of Logged Detects	-3.67	SD of Logged Detects	1.243

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.59	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.943	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.309	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.134	Detected Data Not Normal at 5% Significance Level	

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.0331	KM Standard Error of Mean	0.00836
KM SD	0.0762	95% KM (BCA) UCL	0.0493
95% KM (t) UCL	0.047	95% KM (Percentile Bootstrap) UCL	0.0475
95% KM (z) UCL	0.0468	95% KM Bootstrap t UCL	0.0568
90% KM Chebyshev UCL	0.0581	95% KM Chebyshev UCL	0.0695
97.5% KM Chebyshev UCL	0.0853	99% KM Chebyshev UCL	0.116

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	2.603	**Anderson-Darling GOF Test**	
5% A-D Critical Value	0.794	Detected Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.2	**Kolmogorov-Smirnov GOF**	
5% K-S Critical Value	0.141	Detected Data Not Gamma Distributed at 5% Significance Level	

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.699	k star (bias corrected MLE)	0.666
Theta hat (MLE)	0.0865	Theta star (bias corrected MLE)	0.0908
nu hat (MLE)	60.13	nu star (bias corrected)	57.27
Mean (detects)	0.0605		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)
For such situations, GROS method may yield incorrect values of UCLs and BTVs
This is especially true when the sample size is small.
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0053	Mean	0.0355
Maximum	0.54	Median	0.01
SD	0.0757	CV	2.131
k hat (MLE)	0.753	k star (bias corrected MLE)	0.734
Theta hat (MLE)	0.0472	Theta star (bias corrected MLE)	0.0484
nu hat (MLE)	128	nu star (bias corrected)	124.8
Adjusted Level of Significance (β)	0.0472		
Approximate Chi Square Value (124.79, α)	99.99	Adjusted Chi Square Value (124.79, β)	99.61
95% Gamma Approximate UCL (use when n>=50)	0.0443	95% Gamma Adjusted UCL (use when n<50)	0.0445

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.0331	SD (KM)	0.0762
Variance (KM)	0.0058	SE of Mean (KM)	0.00836
k hat (KM)	0.188	k star (KM)	0.19
nu hat (KM)	32.04	nu star (KM)	32.24
theta hat (KM)	0.175	theta star (KM)	0.174
80% gamma percentile (KM)	0.0423	90% gamma percentile (KM)	0.0999
95% gamma percentile (KM)	0.173	99% gamma percentile (KM)	0.375

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (32.24, α)	20.26	Adjusted Chi Square Value (32.24, β)	20.1
95% Gamma Approximate KM-UCL (use when n>=50)	0.0526	95% Gamma Adjusted KM-UCL (use when n<50)	0.053

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.912	**Shapiro Wilk GOF Test**	

TABLE B.1
PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) WITHIN RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

5% Shapiro Wilk Critical Value	0.943	Detected Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.122	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.134	Detected Data appear Lognormal at 5% Significance Level	

Detected Data appear Approximate Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.0313	Mean in Log Scale	-5.352
SD in Original Scale	0.0773	SD in Log Scale	2.106
95% t UCL (assumes normality of ROS data)	0.0452	95% Percentile Bootstrap UCL	0.0455
95% BCA Bootstrap UCL	0.0503	95% Bootstrap t UCL	0.0546
95% H-UCL (Log ROS)	0.0974		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-4.475	KM Geo Mean	0.0114
KM SD (logged)	1.194	95% Critical H Value (KM-Log)	2.431
KM Standard Error of Mean (logged)	0.131	95% H-UCL (KM -Log)	0.0319
KM SD (logged)	1.194	95% Critical H Value (KM-Log)	2.431
KM Standard Error of Mean (logged)	0.131		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.0318	Mean in Log Scale	-4.817
SD in Original Scale	0.0771	SD in Log Scale	1.461
95% t UCL (Assumes normality)	0.0457	95% H-Stat UCL	0.0363

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Approximate Lognormal Distributed at 5% Significance Level

Suggested UCL to Use

KM H-UCL 0.0319

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

result (cn row_so_surface soil 0-1.5m_quinoline_91-22-5)

General Statistics

Total Number of Observations	85	Number of Distinct Observations	5
Number of Detects	5	Number of Non-Detects	80
Number of Distinct Detects	4	Number of Distinct Non-Detects	1
Minimum Detect	0.013	Minimum Non-Detect	0.01
Maximum Detect	0.08	Maximum Non-Detect	0.01
Variance Detects	8.2600E-4	Percent Non-Detects	94.12%
Mean Detects	0.03	SD Detects	0.0287
Median Detects	0.015	CV Detects	0.958
Skewness Detects	1.962	Kurtosis Detects	3.849
Mean of Logged Detects	-3.79	SD of Logged Detects	0.781

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.709	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.762	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.314	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.343	Detected Data appear Normal at 5% Significance Level	

Detected Data appear Approximate Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.0112	KM Standard Error of Mean	9.4726E-4
KM SD	0.00781	95% KM (BCA) UCL	N/A
95% KM (t) UCL	0.0128	95% KM (Percentile Bootstrap) UCL	N/A

TABLE B.1
PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) WITHIN RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

95% KM (z) UCL	0.0127	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	0.014	95% KM Chebyshev UCL	0.0153
97.5% KM Chebyshev UCL	0.0171	99% KM Chebyshev UCL	0.0206

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.655	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.685	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.327	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.361	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	1.912	k star (bias corrected MLE)	0.898
Theta hat (MLE)	0.0157	Theta star (bias corrected MLE)	0.0334
nu hat (MLE)	19.12	nu star (bias corrected)	8.981
Mean (detects)	0.03		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)
For such situations, GROS method may yield incorrect values of UCLs and BTVs
This is especially true when the sample size is small.
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	0.0112
Maximum	0.08	Median	0.01
SD	0.00786	CV	0.703
k hat (MLE)	8.063	k star (bias corrected MLE)	7.786
Theta hat (MLE)	0.00139	Theta star (bias corrected MLE)	0.00144
nu hat (MLE)	1371	nu star (bias corrected)	1324
Adjusted Level of Significance (β)	0.0472		
Approximate Chi Square Value (N/A, α)	1240	Adjusted Chi Square Value (N/A, β)	1239
95% Gamma Approximate UCL (use when n>=50)	0.0119	95% Gamma Adjusted UCL (use when n<50)	0.0119

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.0112	SD (KM)	0.00781
Variance (KM)	6.1016E-5	SE of Mean (KM)	9.4726E-4
k hat (KM)	2.047	k star (KM)	1.983
nu hat (KM)	348	nu star (KM)	337.1
theta hat (KM)	0.00546	theta star (KM)	0.00564
80% gamma percentile (KM)	0.0167	90% gamma percentile (KM)	0.0218
95% gamma percentile (KM)	0.0266	99% gamma percentile (KM)	0.0372

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (337.08, α)	295.5	Adjusted Chi Square Value (337.08, β)	294.9
95% Gamma Approximate KM-UCL (use when n>=50)	0.0127	95% Gamma Adjusted KM-UCL (use when n<50)	0.0128

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.805	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.762	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.3	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.343	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.00226	Mean in Log Scale	-9.242
SD in Original Scale	0.00944	SD in Log Scale	2.728
95% t UCL (assumes normality of ROS data)	0.00396	95% Percentile Bootstrap UCL	0.00407
95% BCA Bootstrap UCL	0.00546	95% Bootstrap t UCL	0.00749
95% H-UCL (Log ROS)	0.0145		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-4.557	KM Geo Mean	0.0105

TABLE B.1

PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) WITHIN RIGHT-OF-WAY

CN MILE 197.4, RIVERS SUBDIVISION

SOUTHEAST OF ST. LAZARE, MANITOBA

KM SD (logged)	0.256	95% Critical H Value (KM-Log)	1.724
KM Standard Error of Mean (logged)	0.031	95% H-UCL (KM -Log)	0.0114
KM SD (logged)	0.256	95% Critical H Value (KM-Log)	1.724
KM Standard Error of Mean (logged)	0.031		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.00647	Mean in Log Scale	-5.21
SD in Original Scale	0.00862	SD in Log Scale	0.396
95% t UCL (Assumes normality)	0.00803	95% H-Stat UCL	0.00638

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Approximate Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL 0.0128

When a data set follows an approximate (e.g., normal) distribution passing one of the GOF test

When applicable, it is suggested to use a UCL based upon a distribution (e.g., gamma) passing both GOF tests in ProUCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

TABLE B.2
PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	ProUCL 5.14/2/2020 1:25:34 PM
From File	WorkSheet.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

result (outside cn row_so_surface soil 0-1.5m_acenaphthene_83-32-9)

General Statistics

Total Number of Observations	57	Number of Distinct Observations	4
Number of Detects	2	Number of Non-Detects	55
Number of Distinct Detects	2	Number of Distinct Non-Detects	3
Minimum Detect	0.0077	Minimum Non-Detect	0.005
Maximum Detect	0.011	Maximum Non-Detect	0.011
Variance Detects	5.4450E-6	Percent Non-Detects	96.49%
Mean Detects	0.00935	SD Detects	0.00233
Median Detects	0.00935	CV Detects	0.25
Skewness Detects	N/A	Kurtosis Detects	N/A
Mean of Logged Detects	-4.688	SD of Logged Detects	0.252

Warning: Data set has only 2 Detected Values.
This is not enough to compute meaningful or reliable statistics and estimates.

Normal GOF Test on Detects Only
Not Enough Data to Perform GOF Test

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.00516	KM Standard Error of Mean	1.6223E-4
KM SD	8.6174E-4	95% KM (BCA) UCL	N/A
95% KM (t) UCL	0.00543	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	0.00542	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	0.00564	95% KM Chebyshev UCL	0.00586
97.5% KM Chebyshev UCL	0.00617	99% KM Chebyshev UCL	0.00677

Gamma GOF Tests on Detected Observations Only
Not Enough Data to Perform GOF Test

Gamma Statistics on Detected Data Only

k hat (MLE)	31.77	k star (bias corrected MLE)	N/A
Theta hat (MLE)	2.9426E-4	Theta star (bias corrected MLE)	N/A
nu hat (MLE)	127.1	nu star (bias corrected)	N/A
Mean (detects)	0.00935		

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.00516	SD (KM)	8.6174E-4
Variance (KM)	7.4259E-7	SE of Mean (KM)	1.6223E-4
k hat (KM)	35.79	k star (KM)	33.92
nu hat (KM)	4080	nu star (KM)	3867
theta hat (KM)	1.4404E-4	theta star (KM)	1.5199E-4
80% gamma percentile (KM)	0.00588	90% gamma percentile (KM)	0.00632
95% gamma percentile (KM)	0.00669	99% gamma percentile (KM)	0.00743

Gamma Kaplan-Meier (KM) Statistics

		Adjusted Level of Significance (β)	0.0458
Approximate Chi Square Value (N/A, α)	3723	Adjusted Chi Square Value (N/A, β)	3720
95% Gamma Approximate KM-UCL (use when n>=50)	0.00535	95% Gamma Adjusted KM-UCL (use when n<50)	0.00536

Lognormal GOF Test on Detected Observations Only
Not Enough Data to Perform GOF Test

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.00219	Mean in Log Scale	-6.407
SD in Original Scale	0.0019	SD in Log Scale	0.753
95% t UCL (assumes normality of ROS data)	0.00261	95% Percentile Bootstrap UCL	0.00261
95% BCA Bootstrap UCL	0.0027	95% Bootstrap t UCL	0.00274
95% H-UCL (Log ROS)	0.0027		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-5.276	KM Geo Mean	0.00511
KM SD (logged)	0.118	95% Critical H Value (KM-Log)	1.698
KM Standard Error of Mean (logged)	0.0222	95% H-UCL (KM -Log)	0.00529
KM SD (logged)	0.118	95% Critical H Value (KM-Log)	1.698
KM Standard Error of Mean (logged)	0.0222		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.00289	Mean in Log Scale	-5.907
SD in Original Scale	0.00143	SD in Log Scale	0.29
95% t UCL (Assumes normality)	0.0032	95% H-Stat UCL	0.00303

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	0.00543	KM H-UCL	0.00529
95% KM (BCA) UCL	N/A		

TABLE B.2
PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Warning: One or more Recommended UCL(s) not available!

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

result (outside cn row_so_surface soil 0-1.5m_acenaphthylene_208-96-8)

General Statistics

Total Number of Observations	57	Number of Distinct Observations	6
Number of Detects	3	Number of Non-Detects	54
Number of Distinct Detects	3	Number of Distinct Non-Detects	3
Minimum Detect	0.0072	Minimum Non-Detect	0.005
Maximum Detect	0.036	Maximum Non-Detect	0.011
Variance Detects	2.5944E-4	Percent Non-Detects	94.74%
Mean Detects	0.0174	SD Detects	0.0161
Median Detects	0.0091	CV Detects	0.924
Skewness Detects	1.705	Kurtosis Detects	N/A
Mean of Logged Detects	-4.319	SD of Logged Detects	0.87

Warning: Data set has only 3 Detected Values.
This is not enough to compute meaningful or reliable statistics and estimates.

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.799	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.767	Detected Data appear Normal at 5% Significance Level	
Lilliefors Test Statistic	0.364	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.425	Detected Data appear Normal at 5% Significance Level	

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.00566	KM Standard Error of Mean	6.6583E-4
KM SD	0.0041	95% KM (BCA) UCL	N/A
95% KM (t) UCL	0.00677	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	0.00676	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	0.00766	95% KM Chebyshev UCL	0.00856
97.5% KM Chebyshev UCL	0.00982	99% KM Chebyshev UCL	0.0123

Gamma GOF Tests on Detected Observations Only

Not Enough Data to Perform GOF Test

Gamma Statistics on Detected Data Only

k hat (MLE)	2.004	k star (bias corrected MLE)	N/A
Theta hat (MLE)	0.0087	Theta star (bias corrected MLE)	N/A
nu hat (MLE)	12.03	nu star (bias corrected)	N/A
Mean (detects)	0.0174		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)
For such situations, GROS method may yield incorrect values of UCLs and BTVs
This is especially true when the sample size is small.
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0072	Mean	0.0104
Maximum	0.036	Median	0.01
SD	0.00347	CV	0.334
k hat (MLE)	21.6	k star (bias corrected MLE)	20.48
Theta hat (MLE)	4.8098E-4	Theta star (bias corrected MLE)	5.0741E-4
nu hat (MLE)	2463	nu star (bias corrected)	2335
Adjusted Level of Significance (β)	0.0458		
Approximate Chi Square Value (N/A, α)	2223	Adjusted Chi Square Value (N/A, β)	2221
95% Gamma Approximate UCL (use when n>=50)	0.0109	95% Gamma Adjusted UCL (use when n<50)	N/A

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.00566	SD (KM)	0.0041
Variance (KM)	1.6825E-5	SE of Mean (KM)	6.6583E-4
k hat (KM)	1.905	k star (KM)	1.816
nu hat (KM)	217.1	nu star (KM)	207
theta hat (KM)	0.00297	theta star (KM)	0.00312
80% gamma percentile (KM)	0.00857	90% gamma percentile (KM)	0.0113
95% gamma percentile (KM)	0.0138	99% gamma percentile (KM)	0.0196

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (207.02, α)	174.7	Adjusted Chi Square Value (207.02, β)	174
95% Gamma Approximate KM-UCL (use when n>=50)	0.00671	95% Gamma Adjusted KM-UCL (use when n<50)	0.00674

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.856	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.767	Detected Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.336	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.425	Detected Data appear Lognormal at 5% Significance Level	

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.00124	Mean in Log Scale	-9.388
SD in Original Scale	0.00495	SD in Log Scale	2.404
95% t UCL (assumes normality of ROS data)	0.00233	95% Percentile Bootstrap UCL	0.00246
95% BCA Bootstrap UCL	0.00348	95% Bootstrap t UCL	0.00534
95% H-UCL (Log ROS)	0.00637		

TABLE B.2
PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-5.246	KM Geo Mean	0.00527
KM SD (logged)	0.273	95% Critical H Value (KM-Log)	1.708
KM Standard Error of Mean (logged)	0.0445	95% H-UCL (KM -Log)	0.00582
KM SD (logged)	0.273	95% Critical H Value (KM-Log)	1.708
KM Standard Error of Mean (logged)	0.0445		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.00343	Mean in Log Scale	-5.865
SD in Original Scale	0.00455	SD in Log Scale	0.436
95% t UCL (Assumes normality)	0.00444	95% H-Stat UCL	0.00348

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL 0.00677

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

result (outside cn row_so_surface soil 0-1.5m_acridine_260-94-6)

General Statistics

Total Number of Observations	57	Number of Distinct Observations	5
Number of Detects	2	Number of Non-Detects	55
Number of Distinct Detects	2	Number of Distinct Non-Detects	3
Minimum Detect	0.015	Minimum Non-Detect	0.01
Maximum Detect	0.068	Maximum Non-Detect	0.021
Variance Detects	0.0014	Percent Non-Detects	96.49%
Mean Detects	0.0415	SD Detects	0.0375
Median Detects	0.0415	CV Detects	0.903
Skewness Detects	N/A	Kurtosis Detects	N/A
Mean of Logged Detects	-3.444	SD of Logged Detects	1.069

Warning: Data set has only 2 Detected Values.
This is not enough to compute meaningful or reliable statistics and estimates.

Normal GOF Test on Detects Only

Not Enough Data to Perform GOF Test

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.0111	KM Standard Error of Mean	0.00143
KM SD	0.00763	95% KM (BCA) UCL	N/A
95% KM (t) UCL	0.0135	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	0.0135	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	0.0154	95% KM Chebyshev UCL	0.0173
97.5% KM Chebyshev UCL	0.02	99% KM Chebyshev UCL	0.0253

Gamma GOF Tests on Detected Observations Only

Not Enough Data to Perform GOF Test

Gamma Statistics on Detected Data Only

k hat (MLE)	2.06	k star (bias corrected MLE)	N/A
Theta hat (MLE)	0.0201	Theta star (bias corrected MLE)	N/A
nu hat (MLE)	8.241	nu star (bias corrected)	N/A
Mean (detects)	0.0415		

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.0111	SD (KM)	0.00763
Variance (KM)	5.8248E-5	SE of Mean (KM)	0.00143
k hat (KM)	2.119	k star (KM)	2.019
nu hat (KM)	241.6	nu star (KM)	230.2
theta hat (KM)	0.00524	theta star (KM)	0.0055
80% gamma percentile (KM)	0.0166	90% gamma percentile (KM)	0.0216
95% gamma percentile (KM)	0.0263	99% gamma percentile (KM)	0.0367

Gamma Kaplan-Meier (KM) Statistics

		Adjusted Level of Significance (β)	0.0458
Approximate Chi Square Value (230.20, α)	196.1	Adjusted Chi Square Value (230.20, β)	195.3
95% Gamma Approximate KM-UCL (use when n>=50)	0.013	95% Gamma Adjusted KM-UCL (use when n<50)	0.0131

Lognormal GOF Test on Detected Observations Only

Not Enough Data to Perform GOF Test

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.00175	Mean in Log Scale	-10.73
SD in Original Scale	0.00918	SD in Log Scale	3.193
95% t UCL (assumes normality of ROS data)	0.00378	95% Percentile Bootstrap UCL	0.00409
95% BCA Bootstrap UCL	0.00592	95% Bootstrap t UCL	0.0209
95% H-UCL (Log ROS)	0.0412		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-4.564	KM Geo Mean	0.0104
KM SD (logged)	0.257	95% Critical H Value (KM-Log)	1.714

TABLE B.2
PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

KM Standard Error of Mean (logged)	0.0481	95% H-UCL (KM -Log)	0.0114
KM SD (logged)	0.257	95% Critical H Value (KM-Log)	1.714
KM Standard Error of Mean (logged)	0.0481		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.00655	Mean in Log Scale	-5.196
SD in Original Scale	0.00846	SD in Log Scale	0.399
95% t UCL (Assumes normality)	0.00843	95% H-Stat UCL	0.00661

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

95% KM (Chebyshev) UCL 0.0173

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

result (outside cn row_so_surface soil 0-1.5m_anthracene_120-12-7)

General Statistics

Total Number of Observations	57	Number of Distinct Observations	11
Number of Detects	9	Number of Non-Detects	48
Number of Distinct Detects	9	Number of Distinct Non-Detects	3
Minimum Detect	0.004	Minimum Non-Detect	0.004
Maximum Detect	0.055	Maximum Non-Detect	0.0084
Variance Detects	2.6270E-4	Percent Non-Detects	84.21%
Mean Detects	0.0138	SD Detects	0.0162
Median Detects	0.0086	CV Detects	1.175
Skewness Detects	2.525	Kurtosis Detects	6.739
Mean of Logged Detects	-4.674	SD of Logged Detects	0.848

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.644	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.829	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.297	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.274	Detected Data Not Normal at 5% Significance Level	

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.00555	KM Standard Error of Mean	9.8951E-4
KM SD	0.00704	95% KM (BCA) UCL	0.00747
95% KM (t) UCL	0.0072	95% KM (Percentile Bootstrap) UCL	0.00732
95% KM (z) UCL	0.00718	95% KM Bootstrap t UCL	0.0114
90% KM Chebyshev UCL	0.00852	95% KM Chebyshev UCL	0.00986
97.5% KM Chebyshev UCL	0.0117	99% KM Chebyshev UCL	0.0154

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.682	**Anderson-Darling GOF Test**	
5% A-D Critical Value	0.736	Detected data appear Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.209	**Kolmogorov-Smirnov GOF**	
5% K-S Critical Value	0.284	Detected data appear Gamma Distributed at 5% Significance Level	

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	1.424	k star (bias corrected MLE)	1.023
Theta hat (MLE)	0.00968	Theta star (bias corrected MLE)	0.0135
nu hat (MLE)	25.63	nu star (bias corrected)	18.42
Mean (detects)	0.0138		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)
For such situations, GROS method may yield incorrect values of UCLs and BTVs
This is especially true when the sample size is small.
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.004	Mean	0.0106
Maximum	0.055	Median	0.01
SD	0.00628	CV	0.593
k hat (MLE)	7.405	k star (bias corrected MLE)	7.027
Theta hat (MLE)	0.00143	Theta star (bias corrected MLE)	0.00151
nu hat (MLE)	844.1	nu star (bias corrected)	801
Adjusted Level of Significance (β)	0.0458		
Approximate Chi Square Value (801.03, α)	736.3	Adjusted Chi Square Value (801.03, β)	734.7
95% Gamma Approximate UCL (use when n>=50)	0.0115	95% Gamma Adjusted UCL (use when n<50)	0.0116

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.00555	SD (KM)	0.00704
Variance (KM)	4.9605E-5	SE of Mean (KM)	9.8951E-4
k hat (KM)	0.621	k star (KM)	0.6
nu hat (KM)	70.75	nu star (KM)	68.36
theta hat (KM)	0.00894	theta star (KM)	0.00925
80% gamma percentile (KM)	0.00915	90% gamma percentile (KM)	0.0144
95% gamma percentile (KM)	0.02	99% gamma percentile (KM)	0.0334

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (68.36, α)	50.33	Adjusted Chi Square Value (68.36, β)	49.93

TABLE B.2
PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

95% Gamma Approximate KM-UCL (use when n>=50)	0.00754	95% Gamma Adjusted KM-UCL (use when n<50)	0.0076

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.893	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.829	Detected Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.178	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.274	Detected Data appear Lognormal at 5% Significance Level	

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.0026	Mean in Log Scale	-7.918
SD in Original Scale	0.00786	SD in Log Scale	2.067
95% t UCL (assumes normality of ROS data)	0.00434	95% Percentile Bootstrap UCL	0.00443
95% BCA Bootstrap UCL	0.00574	95% Bootstrap t UCL	0.00772
95% H-UCL (Log ROS)	0.009		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-5.387	KM Geo Mean	0.00458
KM SD (logged)	0.443	95% Critical H Value (KM-Log)	1.855
KM Standard Error of Mean (logged)	0.0623	95% H-UCL (KM -Log)	0.00563
KM SD (logged)	0.443	95% Critical H Value (KM-Log)	1.855
KM Standard Error of Mean (logged)	0.0623		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.00397	Mean in Log Scale	-5.934
SD in Original Scale	0.00749	SD in Log Scale	0.656
95% t UCL (Assumes normality)	0.00563	95% H-Stat UCL	0.00391

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Gamma Distributed at 5% Significance Level

Suggested UCL to Use

95% KM Approximate Gamma UCL	0.00754	95% GROS Approximate Gamma UCL	0.0115

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

result (outside cn row_so_surface soil 0-1.5m_benzo(a)anthracene_56-55-3)

General Statistics

Total Number of Observations	57	Number of Distinct Observations	12
Number of Detects	12	Number of Non-Detects	45
Number of Distinct Detects	10	Number of Distinct Non-Detects	3
Minimum Detect	0.0053	Minimum Non-Detect	0.005
Maximum Detect	0.12	Maximum Non-Detect	0.011
Variance Detects	0.0011	Percent Non-Detects	78.95%
Mean Detects	0.0258	SD Detects	0.0332
Median Detects	0.0125	CV Detects	1.288
Skewness Detects	2.525	Kurtosis Detects	6.467
Mean of Logged Detects	-4.122	SD of Logged Detects	0.898

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.618	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.859	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.355	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.243	Detected Data Not Normal at 5% Significance Level	

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.00939	KM Standard Error of Mean	0.00233
KM SD	0.0169	95% KM (BCA) UCL	0.0131
95% KM (t) UCL	0.0133	95% KM (Percentile Bootstrap) UCL	0.0136
95% KM (z) UCL	0.0132	95% KM Bootstrap t UCL	0.0241
90% KM Chebyshev UCL	0.0164	95% KM Chebyshev UCL	0.0196
97.5% KM Chebyshev UCL	0.024	99% KM Chebyshev UCL	0.0326

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	1.036	**Anderson-Darling GOF Test**	
5% A-D Critical Value	0.752	Detected Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.243	**Kolmogorov-Smirnov GOF**	
5% K-S Critical Value	0.251	Detected data appear Gamma Distributed at 5% Significance Level	

Detected data follow Appr. Gamma Distribution at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	1.217	k star (bias corrected MLE)	0.969
Theta hat (MLE)	0.0212	Theta star (bias corrected MLE)	0.0266
nu hat (MLE)	29.22	nu star (bias corrected)	23.25
Mean (detects)	0.0258		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)
For such situations, GROS method may yield incorrect values of UCLs and BTVs
This is especially true when the sample size is small.
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0053	Mean	0.0133
Maximum	0.12	Median	0.01

TABLE B.2
PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

SD	0.0161	CV	1.207
k hat (MLE)	2.857	k star (bias corrected MLE)	2.718
Theta hat (MLE)	0.00466	Theta star (bias corrected MLE)	0.0049
nu hat (MLE)	325.7	nu star (bias corrected)	309.9
Adjusted Level of Significance (β)	0.0458		
Approximate Chi Square Value (309.89, α)	270.1	Adjusted Chi Square Value (309.89, β)	269.1
95% Gamma Approximate UCL (use when n>=50)	0.0153	95% Gamma Adjusted UCL (use when n<50)	0.0153

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.00939	SD (KM)	0.0169
Variance (KM)	2.8436E-4	SE of Mean (KM)	0.00233
k hat (KM)	0.31	k star (KM)	0.305
nu hat (KM)	35.31	nu star (KM)	34.79
theta hat (KM)	0.0303	theta star (KM)	0.0308
80% gamma percentile (KM)	0.0145	90% gamma percentile (KM)	0.0276
95% gamma percentile (KM)	0.0427	99% gamma percentile (KM)	0.0818

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (34.79, α)	22.3	Adjusted Chi Square Value (34.79, β)	22.04
95% Gamma Approximate KM-UCL (use when n>=50)	0.0146	95% Gamma Adjusted KM-UCL (use when n<50)	0.0148

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.891	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.859	Detected Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.167	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.243	Detected Data appear Lognormal at 5% Significance Level	

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.0062	Mean in Log Scale	-6.971
SD in Original Scale	0.0179	SD in Log Scale	2.025
95% t UCL (assumes normality of ROS data)	0.0102	95% Percentile Bootstrap UCL	0.0104
95% BCA Bootstrap UCL	0.013	95% Bootstrap t UCL	0.0179
95% H-UCL (Log ROS)	0.0205		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-5.049	KM Geo Mean	0.00642
KM SD (logged)	0.621	95% Critical H Value (KM-Log)	1.972
KM Standard Error of Mean (logged)	0.086	95% H-UCL (KM -Log)	0.00916
	0.621	95% Critical H Value (KM-Log)	1.972
KM Standard Error of Mean (logged)	0.086		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.00754	Mean in Log Scale	-5.559
SD in Original Scale	0.0175	SD in Log Scale	0.864
95% t UCL (Assumes normality)	0.0114	95% H-Stat UCL	0.0072

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Approximate Gamma Distributed at 5% Significance Level

Suggested UCL to Use

95% KM Approximate Gamma UCL 0.0146

When a data set follows an approximate (e.g., normal) distribution passing one of the GOF test
When applicable, it is suggested to use a UCL based upon a distribution (e.g., gamma) passing both GOF tests in ProUCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

result (outside cn row_so_surface soil 0-1.5m_benzo(a)pyrene_50-32-8)

General Statistics

Total Number of Observations	57	Number of Distinct Observations	15
Number of Detects	16	Number of Non-Detects	41
Number of Distinct Detects	13	Number of Distinct Non-Detects	3
Minimum Detect	0.0072	Minimum Non-Detect	0.005
Maximum Detect	0.11	Maximum Non-Detect	0.011
Variance Detects	8.8961E-4	Percent Non-Detects	71.93%
Mean Detects	0.0273	SD Detects	0.0298
Median Detects	0.0135	CV Detects	1.093
Skewness Detects	2.179	Kurtosis Detects	4.097
Mean of Logged Detects	-3.971	SD of Logged Detects	0.809

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.659	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.887	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.26	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.213	Detected Data Not Normal at 5% Significance Level	

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.0113	KM Standard Error of Mean	0.0025
KM SD	0.0183	95% KM (BCA) UCL	0.0159
95% KM (t) UCL	0.0155	95% KM (Percentile Bootstrap) UCL	0.0157
95% KM (z) UCL	0.0154	95% KM Bootstrap t UCL	0.0211
90% KM Chebyshev UCL	0.0188	95% KM Chebyshev UCL	0.0222
97.5% KM Chebyshev UCL	0.0269	99% KM Chebyshev UCL	0.0362

TABLE B.2
PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	1.195	**Anderson-Darling GOF Test**	
5% A-D Critical Value	0.755	Detected Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.235	**Kolmogorov-Smirnov GOF**	
5% K-S Critical Value	0.219	Detected Data Not Gamma Distributed at 5% Significance Level	

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	1.496	k star (bias corrected MLE)	1.257
Theta hat (MLE)	0.0183	Theta star (bias corrected MLE)	0.0217
nu hat (MLE)	47.86	nu star (bias corrected)	40.22
Mean (detects)	0.0273		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)
For such situations, GROS method may yield incorrect values of UCLs and BTVs
This is especially true when the sample size is small.
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0072	Mean	0.0149
Maximum	0.11	Median	0.01
SD	0.0173	CV	1.165
k hat (MLE)	2.449	k star (bias corrected MLE)	2.332
Theta hat (MLE)	0.00607	Theta star (bias corrected MLE)	0.00637
nu hat (MLE)	279.2	nu star (bias corrected)	265.9
Adjusted Level of Significance (β)	0.0458		
Approximate Chi Square Value (265.85, α)	229.1	Adjusted Chi Square Value (265.85, β)	228.2
95% Gamma Approximate UCL (use when n>=50)	0.0172	95% Gamma Adjusted UCL (use when n<50)	0.0173

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.0113	SD (KM)	0.0183
Variance (KM)	3.3438E-4	SE of Mean (KM)	0.0025
k hat (KM)	0.38	k star (KM)	0.372
nu hat (KM)	43.34	nu star (KM)	42.39
theta hat (KM)	0.0297	theta star (KM)	0.0303
80% gamma percentile (KM)	0.018	90% gamma percentile (KM)	0.0322
95% gamma percentile (KM)	0.048	99% gamma percentile (KM)	0.088

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (42.39, α)	28.47	Adjusted Chi Square Value (42.39, β)	28.17
95% Gamma Approximate KM-UCL (use when n>=50)	0.0168	95% Gamma Adjusted KM-UCL (use when n<50)	0.017

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.883	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.887	Detected Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.206	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.213	Detected Data appear Lognormal at 5% Significance Level	

Detected Data appear Approximate Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.00892	Mean in Log Scale	-6.042
SD in Original Scale	0.0193	SD in Log Scale	1.683
95% t UCL (assumes normality of ROS data)	0.0132	95% Percentile Bootstrap UCL	0.0132
95% BCA Bootstrap UCL	0.0155	95% Bootstrap t UCL	0.0182
95% H-UCL (Log ROS)	0.0207		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-4.923	KM Geo Mean	0.00727
KM SD (logged)	0.726	95% Critical H Value (KM-Log)	2.06
KM Standard Error of Mean (logged)	0.0995	95% H-UCL (KM -Log)	0.0116
KM SD (logged)	0.726	95% Critical H Value (KM-Log)	2.06
KM Standard Error of Mean (logged)	0.0995		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.00961	Mean in Log Scale	-5.385
SD in Original Scale	0.0191	SD in Log Scale	0.999
95% t UCL (Assumes normality)	0.0138	95% H-Stat UCL	0.0103

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Approximate Lognormal Distributed at 5% Significance Level

Suggested UCL to Use

KM H-UCL 0.0116

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

result (outside cn row_so_surface soil 0-1.5m_benzo(b&j)fluoranthene_205-99-2_205-82-3)

General Statistics

Total Number of Observations	57	Number of Distinct Observations	24
Number of Detects	29	Number of Non-Detects	28
Number of Distinct Detects	23	Number of Distinct Non-Detects	1
Minimum Detect	0.0054	Minimum Non-Detect	0.005
Maximum Detect	0.24	Maximum Non-Detect	0.005
Variance Detects	0.00259	Percent Non-Detects	49.12%

TABLE B.2
PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Mean Detects	0.0383	SD Detects	0.0509
Median Detects	0.019	CV Detects	1.331
Skewness Detects	3.027	Kurtosis Detects	9.644
Mean of Logged Detects	-3.733	SD of Logged Detects	0.895

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.587	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.926	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.315	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.161	Detected Data Not Normal at 5% Significance Level	

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.0219	KM Standard Error of Mean	0.00531
KM SD	0.0394	95% KM (BCA) UCL	0.0312
95% KM (t) UCL	0.0308	95% KM (Percentile Bootstrap) UCL	0.0314
95% KM (z) UCL	0.0306	95% KM Bootstrap t UCL	0.0415
90% KM Chebyshev UCL	0.0378	95% KM Chebyshev UCL	0.045
97.5% KM Chebyshev UCL	0.0551	99% KM Chebyshev UCL	0.0747

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	1.662	**Anderson-Darling GOF Test**	
5% A-D Critical Value	0.769	Detected Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.223	**Kolmogorov-Smirnov GOF**	
5% K-S Critical Value	0.167	Detected Data Not Gamma Distributed at 5% Significance Level	

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	1.205	k star (bias corrected MLE)	1.103
Theta hat (MLE)	0.0317	Theta star (bias corrected MLE)	0.0347
nu hat (MLE)	69.89	nu star (bias corrected)	64
Mean (detects)	0.0383		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)
For such situations, GROS method may yield incorrect values of UCLs and BTVs
This is especially true when the sample size is small.
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0054	Mean	0.0244
Maximum	0.24	Median	0.01
SD	0.0387	CV	1.589
k hat (MLE)	1.259	k star (bias corrected MLE)	1.204
Theta hat (MLE)	0.0194	Theta star (bias corrected MLE)	0.0202
nu hat (MLE)	143.5	nu star (bias corrected)	137.3
Adjusted Level of Significance (β)	0.0458		
Approximate Chi Square Value (137.30, α)	111.2	Adjusted Chi Square Value (137.30, β)	110.6
95% Gamma Approximate UCL (use when n>=50)	0.0301	95% Gamma Adjusted UCL (use when n<50)	0.0303

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.0219	SD (KM)	0.0394
Variance (KM)	0.00155	SE of Mean (KM)	0.00531
k hat (KM)	0.31	k star (KM)	0.305
nu hat (KM)	35.34	nu star (KM)	34.81
theta hat (KM)	0.0707	theta star (KM)	0.0718
80% gamma percentile (KM)	0.0338	90% gamma percentile (KM)	0.0645
95% gamma percentile (KM)	0.0997	99% gamma percentile (KM)	0.191

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (34.81, α)	22.31	Adjusted Chi Square Value (34.81, β)	22.05
95% Gamma Approximate KM-UCL (use when n>=50)	0.0342	95% Gamma Adjusted KM-UCL (use when n<50)	0.0346

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.94	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.926	Detected Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.145	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.161	Detected Data appear Lognormal at 5% Significance Level	

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.0208	Mean in Log Scale	-4.932
SD in Original Scale	0.0402	SD in Log Scale	1.509
95% t UCL (assumes normality of ROS data)	0.0297	95% Percentile Bootstrap UCL	0.0309
95% BCA Bootstrap UCL	0.0341	95% Bootstrap t UCL	0.0386
95% H-UCL (Log ROS)	0.042		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-4.502	KM Geo Mean	0.0111
KM SD (logged)	1.003	95% Critical H Value (KM-Log)	2.343
KM Standard Error of Mean (logged)	0.135	95% H-UCL (KM -Log)	0.0251
KM SD (logged)	1.003	95% Critical H Value (KM-Log)	2.343
KM Standard Error of Mean (logged)	0.135		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.0207	Mean in Log Scale	-4.842
SD in Original Scale	0.0403	SD in Log Scale	1.303
95% t UCL (Assumes normality)	0.0296	95% H-Stat UCL	0.0303

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

TABLE B.2
PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Detected Data appear Lognormal Distributed at 5% Significance Level

Suggested UCL to Use

KM H-UCL 0.0251

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

result (outside cn row_so_surface soil 0-1.5m_benzo(c)phenanthrene_195-19-7)

General Statistics

Total Number of Observations	57	Number of Distinct Observations	6
Number of Detects	3	Number of Non-Detects	54
Number of Distinct Detects	3	Number of Distinct Non-Detects	3
Minimum Detect	0.008	Minimum Non-Detect	0.005
Maximum Detect	0.021	Maximum Non-Detect	0.011
Variance Detects	4.3000E-5	Percent Non-Detects	94.74%
Mean Detects	0.014	SD Detects	0.00656
Median Detects	0.013	CV Detects	0.468
Skewness Detects	0.67	Kurtosis Detects	N/A
Mean of Logged Detects	-4.345	SD of Logged Detects	0.483

Warning: Data set has only 3 Detected Values.
This is not enough to compute meaningful or reliable statistics and estimates.

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.983	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.767	Detected Data appear Normal at 5% Significance Level	
Lilliefors Test Statistic	0.227	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.425	Detected Data appear Normal at 5% Significance Level	

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.00548	KM Standard Error of Mean	3.8262E-4
KM SD	0.00236	95% KM (BCA) UCL	N/A
95% KM (t) UCL	0.00612	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	0.00611	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	0.00662	95% KM Chebyshev UCL	0.00714
97.5% KM Chebyshev UCL	0.00787	99% KM Chebyshev UCL	0.00928

Gamma GOF Tests on Detected Observations Only

Not Enough Data to Perform GOF Test

Gamma Statistics on Detected Data Only

k hat (MLE)	6.734	k star (bias corrected MLE)	N/A
Theta hat (MLE)	0.00208	Theta star (bias corrected MLE)	N/A
nu hat (MLE)	40.4	nu star (bias corrected)	N/A
Mean (detects)	0.014		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)
For such situations, GROS method may yield incorrect values of UCLs and BTVs
This is especially true when the sample size is small.
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.008	Mean	0.0102
Maximum	0.021	Median	0.01
SD	0.00153	CV	0.15
k hat (MLE)	70.3	k star (bias corrected MLE)	66.61
Theta hat (MLE)	1.4525E-4	Theta star (bias corrected MLE)	1.5329E-4
nu hat (MLE)	8014	nu star (bias corrected)	7593
Adjusted Level of Significance (β)	0.0458		
Approximate Chi Square Value (N/A, α)	7392	Adjusted Chi Square Value (N/A, β)	7387
95% Gamma Approximate UCL (use when n>=50)	0.0105	95% Gamma Adjusted UCL (use when n<50)	N/A

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.00548	SD (KM)	0.00236
Variance (KM)	5.5538E-6	SE of Mean (KM)	3.8262E-4
k hat (KM)	5.401	k star (KM)	5.128
nu hat (KM)	615.7	nu star (KM)	584.6
theta hat (KM)	0.00101	theta star (KM)	0.00107
80% gamma percentile (KM)	0.00734	90% gamma percentile (KM)	0.00871
95% gamma percentile (KM)	0.00996	99% gamma percentile (KM)	0.0126

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (584.61, α)	529.5	Adjusted Chi Square Value (584.61, β)	528.2
95% Gamma Approximate KM-UCL (use when n>=50)	0.00605	95% Gamma Adjusted KM-UCL (use when n<50)	0.00606

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	1	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.767	Detected Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.175	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.425	Detected Data appear Lognormal at 5% Significance Level	

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.00154	Mean in Log Scale	-7.725
SD in Original Scale	0.0034	SD in Log Scale	1.608

TABLE B.2
PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

95% t UCL (assumes normality of ROS data)	0.00229	95% Percentile Bootstrap UCL	0.00232
95% BCA Bootstrap UCL	0.00267	95% Bootstrap t UCL	0.00317
95% H-UCL (Log ROS)	0.00322		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-5.248	KM Geo Mean	0.00526
KM SD (logged)	0.232	95% Critical H Value (KM-Log)	1.72
KM Standard Error of Mean (logged)	0.0377	95% H-UCL (KM -Log)	0.0057
KM SD (logged)	0.232	95% Critical H Value (KM-Log)	1.72
KM Standard Error of Mean (logged)	0.0377		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.00325	Mean in Log Scale	-5.866
SD in Original Scale	0.00291	SD in Log Scale	0.409
95% t UCL (Assumes normality)	0.00389	95% H-Stat UCL	0.00341

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL 0.00612

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

result (outside cn row_so_surface soil 0-1.5m_benzo(e)pyrene_192-97-2)

General Statistics

Total Number of Observations	57	Number of Distinct Observations	21
Number of Detects	22	Number of Non-Detects	35
Number of Distinct Detects	19	Number of Distinct Non-Detects	3
Minimum Detect	0.0071	Minimum Non-Detect	0.005
Maximum Detect	0.11	Maximum Non-Detect	0.011
Variance Detects	7.3965E-4	Percent Non-Detects	61.4%
Mean Detects	0.026	SD Detects	0.0272
Median Detects	0.0145	CV Detects	1.048
Skewness Detects	2.361	Kurtosis Detects	5.191
Mean of Logged Detects	-3.982	SD of Logged Detects	0.755

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.652	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.911	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.283	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.184	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.0131	KM Standard Error of Mean	0.00263
KM SD	0.0194	95% KM (BCA) UCL	0.0179
95% KM (t) UCL	0.0175	95% KM (Percentile Bootstrap) UCL	0.0175
95% KM (z) UCL	0.0174	95% KM Bootstrap t UCL	0.0213
90% KM Chebyshev UCL	0.021	95% KM Chebyshev UCL	0.0246
97.5% KM Chebyshev UCL	0.0295	99% KM Chebyshev UCL	0.0393

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	1.406	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.758	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.228	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.188	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	1.661	k star (bias corrected MLE)	1.465
Theta hat (MLE)	0.0156	Theta star (bias corrected MLE)	0.0177
nu hat (MLE)	73.07	nu star (bias corrected)	64.44
Mean (detects)	0.026		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)
For such situations, GROS method may yield incorrect values of UCLs and BTVs
This is especially true when the sample size is small.
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0071	Mean	0.0162
Maximum	0.11	Median	0.01
SD	0.0184	CV	1.139
k hat (MLE)	2.242	k star (bias corrected MLE)	2.136
Theta hat (MLE)	0.00721	Theta star (bias corrected MLE)	0.00757
nu hat (MLE)	255.6	nu star (bias corrected)	243.5
Adjusted Level of Significance (β)	0.0458		
Approximate Chi Square Value (243.51, α)	208.4	Adjusted Chi Square Value (243.51, β)	207.5
95% Gamma Approximate UCL (use when n>=50)	0.0189	95% Gamma Adjusted UCL (use when n<50)	0.019

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.0131	SD (KM)	0.0194
Variance (KM)	3.7635E-4	SE of Mean (KM)	0.00263
k hat (KM)	0.457	k star (KM)	0.444

TABLE B.2
PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

nu hat (KM)	52.07	nu star (KM)	50.66
theta hat (KM)	0.0287	theta star (KM)	0.0295
80% gamma percentile (KM)	0.0214	90% gamma percentile (KM)	0.0363
95% gamma percentile (KM)	0.0525	99% gamma percentile (KM)	0.0928

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (50.66, α)	35.32	Adjusted Chi Square Value (50.66, β)	34.98
95% Gamma Approximate KM-UCL (use when n>=50)	0.0188	95% Gamma Adjusted KM-UCL (use when n<50)	0.019

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.903	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.911	Detected Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.172	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.184	Detected Data appear Lognormal at 5% Significance Level	

Detected Data appear Approximate Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.0115	Mean in Log Scale	-5.404
SD in Original Scale	0.0203	SD in Log Scale	1.403
95% t UCL (assumes normality of ROS data)	0.016	95% Percentile Bootstrap UCL	0.0163
95% BCA Bootstrap UCL	0.0173	95% Bootstrap t UCL	0.0198
95% H-UCL (Log ROS)	0.021		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-4.787	KM Geo Mean	0.00834
KM SD (logged)	0.787	95% Critical H Value (KM-Log)	2.114
KM Standard Error of Mean (logged)	0.107	95% H-UCL (KM -Log)	0.0142
KM SD (logged)	0.787	95% Critical H Value (KM-Log)	2.114
KM Standard Error of Mean (logged)	0.107		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.0117	Mean in Log Scale	-5.177
SD in Original Scale	0.0202	SD in Log Scale	1.075
95% t UCL (Assumes normality)	0.0162	95% H-Stat UCL	0.0143

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Approximate Lognormal Distributed at 5% Significance Level

Suggested UCL to Use

KM H-UCL 0.0142

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

result (outside cn row_so_surface soil 0-1.5m_benzo(g,h,i)perylene_191-24-2)

General Statistics

Total Number of Observations	57	Number of Distinct Observations	19
Number of Detects	18	Number of Non-Detects	39
Number of Distinct Detects	17	Number of Distinct Non-Detects	3
Minimum Detect	0.0055	Minimum Non-Detect	0.005
Maximum Detect	0.077	Maximum Non-Detect	0.011
Variance Detects	3.9930E-4	Percent Non-Detects	68.42%
Mean Detects	0.021	SD Detects	0.02
Median Detects	0.012	CV Detects	0.95
Skewness Detects	2.016	Kurtosis Detects	3.512
Mean of Logged Detects	-4.164	SD of Logged Detects	0.742

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.711	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.897	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.243	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.202	Detected Data Not Normal at 5% Significance Level	

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.0101	KM Standard Error of Mean	0.0018
KM SD	0.0132	95% KM (BCA) UCL	0.0139
95% KM (t) UCL	0.0131	95% KM (Percentile Bootstrap) UCL	0.0132
95% KM (z) UCL	0.013	95% KM Bootstrap t UCL	0.016
90% KM Chebyshev UCL	0.0155	95% KM Chebyshev UCL	0.0179
97.5% KM Chebyshev UCL	0.0213	99% KM Chebyshev UCL	0.028

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	1.027	**Anderson-Darling GOF Test**	
5% A-D Critical Value	0.754	Detected Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.2	**Kolmogorov-Smirnov GOF**	
5% K-S Critical Value	0.207	Detected data appear Gamma Distributed at 5% Significance Level	

Detected data follow Appr. Gamma Distribution at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	1.807	k star (bias corrected MLE)	1.543
Theta hat (MLE)	0.0116	Theta star (bias corrected MLE)	0.0136
nu hat (MLE)	65.04	nu star (bias corrected)	55.53
Mean (detects)	0.021		

Gamma ROS Statistics using Imputed Non-Detects

TABLE B.2
PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)
For such situations, GROS method may yield incorrect values of UCLs and BTVs
This is especially true when the sample size is small.
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0055	Mean	0.0135
Maximum	0.077	Median	0.01
SD	0.0122	CV	0.902
k hat (MLE)	3.295	k star (bias corrected MLE)	3.134
Theta hat (MLE)	0.00409	Theta star (bias corrected MLE)	0.0043
nu hat (MLE)	375.7	nu star (bias corrected)	357.2
Adjusted Level of Significance (β)	0.0458		
Approximate Chi Square Value (357.24, α)	314.4	Adjusted Chi Square Value (357.24, β)	313.4
95% Gamma Approximate UCL (use when n>=50)	0.0153	95% Gamma Adjusted UCL (use when n<50)	0.0154

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.0101	SD (KM)	0.0132
Variance (KM)	1.7443E-4	SE of Mean (KM)	0.0018
k hat (KM)	0.583	k star (KM)	0.564
nu hat (KM)	66.51	nu star (KM)	64.35
theta hat (KM)	0.0173	theta star (KM)	0.0179
80% gamma percentile (KM)	0.0166	90% gamma percentile (KM)	0.0266
95% gamma percentile (KM)	0.0371	99% gamma percentile (KM)	0.0627

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (64.35, α)	46.89	Adjusted Chi Square Value (64.35, β)	46.51
95% Gamma Approximate KM-UCL (use when n>=50)	0.0138	95% Gamma Adjusted KM-UCL (use when n<50)	0.014

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.917	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.897	Detected Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.18	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.202	Detected Data appear Lognormal at 5% Significance Level	

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.00794	Mean in Log Scale	-5.852
SD in Original Scale	0.0143	SD in Log Scale	1.466
95% t UCL (assumes normality of ROS data)	0.0111	95% Percentile Bootstrap UCL	0.0113
95% BCA Bootstrap UCL	0.0123	95% Bootstrap t UCL	0.0131
95% H-UCL (Log ROS)	0.0153		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-4.936	KM Geo Mean	0.00718
KM SD (logged)	0.665	95% Critical H Value (KM-Log)	2.008
KM Standard Error of Mean (logged)	0.0908	95% H-UCL (KM -Log)	0.0107
KM SD (logged)	0.665	95% Critical H Value (KM-Log)	2.008
KM Standard Error of Mean (logged)	0.0908		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.0085	Mean in Log Scale	-5.375
SD in Original Scale	0.014	SD in Log Scale	0.94
95% t UCL (Assumes normality)	0.0116	95% H-Stat UCL	0.00958

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Approximate Gamma Distributed at 5% Significance Level

Suggested UCL to Use

95% KM Approximate Gamma UCL	0.0138	95% GROS Approximate Gamma UCL	0.0153

When a data set follows an approximate (e.g., normal) distribution passing one of the GOF test
When applicable, it is suggested to use a UCL based upon a distribution (e.g., gamma) passing both GOF tests in ProUCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

result (outside cn row_so_surface soil 0-1.5m_benzo(k)fluoranthene_207-08-9)

General Statistics

Total Number of Observations	57	Number of Distinct Observations	14
Number of Detects	11	Number of Non-Detects	46
Number of Distinct Detects	11	Number of Distinct Non-Detects	3
Minimum Detect	0.0076	Minimum Non-Detect	0.005
Maximum Detect	0.093	Maximum Non-Detect	0.011
Variance Detects	6.8783E-4	Percent Non-Detects	80.7%
Mean Detects	0.0256	SD Detects	0.0262
Median Detects	0.014	CV Detects	1.023
Skewness Detects	2.065	Kurtosis Detects	4.208
Mean of Logged Detects	-4.01	SD of Logged Detects	0.814

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.718	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.85	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.252	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.251	Detected Data Not Normal at 5% Significance Level	

Detected Data Not Normal at 5% Significance Level

TABLE B.2
PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.009	KM Standard Error of Mean	0.0019
KM SD	0.0137	95% KM (BCA) UCL	0.0124
95% KM (t) UCL	0.0122	95% KM (Percentile Bootstrap) UCL	0.0123
95% KM (z) UCL	0.0121	95% KM Bootstrap t UCL	0.017
90% KM Chebyshev UCL	0.0147	95% KM Chebyshev UCL	0.0173
97.5% KM Chebyshev UCL	0.0209	99% KM Chebyshev UCL	0.0279

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.704	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.742	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.207	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.259	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	1.589	k star (bias corrected MLE)	1.216
Theta hat (MLE)	0.0161	Theta star (bias corrected MLE)	0.0211
nu hat (MLE)	34.96	nu star (bias corrected)	26.76
Mean (detects)	0.0256		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)
For such situations, GROS method may yield incorrect values of UCLs and BTVs
This is especially true when the sample size is small.
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0076	Mean	0.013
Maximum	0.093	Median	0.01
SD	0.0127	CV	0.977
k hat (MLE)	3.514	k star (bias corrected MLE)	3.341
Theta hat (MLE)	0.0037	Theta star (bias corrected MLE)	0.0039
nu hat (MLE)	400.6	nu star (bias corrected)	380.9
Adjusted Level of Significance (β)	0.0458		
Approximate Chi Square Value (380.89, α)	336.7	Adjusted Chi Square Value (380.89, β)	335.6
95% Gamma Approximate UCL (use when n>=50)	0.0147	95% Gamma Adjusted UCL (use when n<50)	0.0148

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.009	SD (KM)	0.0137
Variance (KM)	1.8698E-4	SE of Mean (KM)	0.0019
k hat (KM)	0.433	k star (KM)	0.422
nu hat (KM)	49.4	nu star (KM)	48.13
theta hat (KM)	0.0208	theta star (KM)	0.0213
80% gamma percentile (KM)	0.0146	90% gamma percentile (KM)	0.0252
95% gamma percentile (KM)	0.0367	99% gamma percentile (KM)	0.0655

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (48.13, α)	33.21	Adjusted Chi Square Value (48.13, β)	32.88
95% Gamma Approximate KM-UCL (use when n>=50)	0.013	95% Gamma Adjusted KM-UCL (use when n<50)	0.0132

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.898	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.85	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.17	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.251	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.00594	Mean in Log Scale	-6.789
SD in Original Scale	0.0148	SD in Log Scale	1.906
95% t UCL (assumes normality of ROS data)	0.00922	95% Percentile Bootstrap UCL	0.00935
95% BCA Bootstrap UCL	0.011	95% Bootstrap t UCL	0.0133
95% H-UCL (Log ROS)	0.0175		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-5.047	KM Geo Mean	0.00643
KM SD (logged)	0.612	95% Critical H Value (KM-Log)	1.966
KM Standard Error of Mean (logged)	0.0852	95% H-UCL (KM -Log)	0.00911
KM SD (logged)	0.612	95% Critical H Value (KM-Log)	1.966
KM Standard Error of Mean (logged)	0.0852		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.00711	Mean in Log Scale	-5.57
SD in Original Scale	0.0144	SD in Log Scale	0.859
95% t UCL (Assumes normality)	0.0103	95% H-Stat UCL	0.00708

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Gamma Distributed at 5% Significance Level

Suggested UCL to Use

95% KM Approximate Gamma UCL	0.013	95% GROS Approximate Gamma UCL	0.0147

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

result (outside cn row_so_surface soil 0-1.5m_chrysene_218-01-9)

TABLE B.2
PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

General Statistics

Total Number of Observations	57	Number of Distinct Observations	21
Number of Detects	22	Number of Non-Detects	35
Number of Distinct Detects	19	Number of Distinct Non-Detects	3
Minimum Detect	0.0067	Minimum Non-Detect	0.005
Maximum Detect	0.23	Maximum Non-Detect	0.011
Variance Detects	0.00241	Percent Non-Detects	61.4%
Mean Detects	0.0325	SD Detects	0.0491
Median Detects	0.0155	CV Detects	1.511
Skewness Detects	3.483	Kurtosis Detects	13.34
Mean of Logged Detects	-3.94	SD of Logged Detects	0.893

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.524	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.911	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.333	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.184	Detected Data Not Normal at 5% Significance Level	

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.0156	KM Standard Error of Mean	0.00443
KM SD	0.0327	95% KM (BCA) UCL	0.0232
95% KM (t) UCL	0.0231	95% KM (Percentile Bootstrap) UCL	0.0239
95% KM (z) UCL	0.0229	95% KM Bootstrap t UCL	0.0336
90% KM Chebyshev UCL	0.0289	95% KM Chebyshev UCL	0.035
97.5% KM Chebyshev UCL	0.0433	99% KM Chebyshev UCL	0.0597

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	1.736	**Anderson-Darling GOF Test**	
5% A-D Critical Value	0.768	Detected Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.248	**Kolmogorov-Smirnov GOF**	
5% K-S Critical Value	0.19	Detected Data Not Gamma Distributed at 5% Significance Level	

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	1.11	k star (bias corrected MLE)	0.989
Theta hat (MLE)	0.0293	Theta star (bias corrected MLE)	0.0329
nu hat (MLE)	48.83	nu star (bias corrected)	43.51
Mean (detects)	0.0325		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)
For such situations, GROS method may yield incorrect values of UCLs and BTVs
This is especially true when the sample size is small.
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0067	Mean	0.0187
Maximum	0.23	Median	0.01
SD	0.032	CV	1.715
k hat (MLE)	1.501	k star (bias corrected MLE)	1.434
Theta hat (MLE)	0.0124	Theta star (bias corrected MLE)	0.013
nu hat (MLE)	171.1	nu star (bias corrected)	163.5
Adjusted Level of Significance (β)	0.0458		
Approximate Chi Square Value (163.47, α)	134.9	Adjusted Chi Square Value (163.47, β)	134.2
95% Gamma Approximate UCL (use when n>=50)	0.0226	95% Gamma Adjusted UCL (use when n<50)	0.0228

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.0156	SD (KM)	0.0327
Variance (KM)	0.00107	SE of Mean (KM)	0.00443
k hat (KM)	0.229	k star (KM)	0.229
nu hat (KM)	26.13	nu star (KM)	26.09
theta hat (KM)	0.0683	theta star (KM)	0.0684
80% gamma percentile (KM)	0.022	90% gamma percentile (KM)	0.0472
95% gamma percentile (KM)	0.0777	99% gamma percentile (KM)	0.16

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (26.09, α)	15.45	Adjusted Chi Square Value (26.09, β)	15.24
95% Gamma Approximate KM-UCL (use when n>=50)	0.0264	95% Gamma Adjusted KM-UCL (use when n<50)	0.0268

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.885	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.911	Detected Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.162	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.184	Detected Data appear Lognormal at 5% Significance Level	

Detected Data appear Approximate Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.0137	Mean in Log Scale	-5.609
SD in Original Scale	0.0336	SD in Log Scale	1.649
95% t UCL (assumes normality of ROS data)	0.0212	95% Percentile Bootstrap UCL	0.0221
95% BCA Bootstrap UCL	0.0252	95% Bootstrap t UCL	0.0313
95% H-UCL (Log ROS)	0.0294		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-4.77	KM Geo Mean	0.00848
KM SD (logged)	0.854	95% Critical H Value (KM-Log)	2.177
KM Standard Error of Mean (logged)	0.116	95% H-UCL (KM -Log)	0.0157
KM SD (logged)	0.854	95% Critical H Value (KM-Log)	2.177
KM Standard Error of Mean (logged)	0.116		

DL/2 Statistics

TABLE B.2
PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.0142	Mean in Log Scale	-5.161
SD in Original Scale	0.0335	SD in Log Scale	1.131
95% t UCL (Assumes normality)	0.0216	95% H-Stat UCL	0.016

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Approximate Lognormal Distributed at 5% Significance Level

Suggested UCL to Use

KM H-UCL 0.0157

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

result (outside cn row_so_surface soil 0-1.5m_dibenz(a,h)anthracene_53-70-3)

General Statistics

Total Number of Observations	57	Number of Distinct Observations	6
Number of Detects	3	Number of Non-Detects	54
Number of Distinct Detects	3	Number of Distinct Non-Detects	3
Minimum Detect	0.0098	Minimum Non-Detect	0.005
Maximum Detect	0.019	Maximum Non-Detect	0.011
Variance Detects	2.2013E-5	Percent Non-Detects	94.74%
Mean Detects	0.0149	SD Detects	0.00469
Median Detects	0.016	CV Detects	0.314
Skewness Detects	-0.97	Kurtosis Detects	N/A
Mean of Logged Detects	-4.241	SD of Logged Detects	0.344

Warning: Data set has only 3 Detected Values.
This is not enough to compute meaningful or reliable statistics and estimates.

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.961	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.767	Detected Data appear Normal at 5% Significance Level	
Lilliefors Test Statistic	0.257	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.425	Detected Data appear Normal at 5% Significance Level	

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.00553	KM Standard Error of Mean	3.8797E-4
KM SD	0.00239	95% KM (BCA) UCL	N/A
95% KM (t) UCL	0.00617	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	0.00616	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	0.00669	95% KM Chebyshev UCL	0.00722
97.5% KM Chebyshev UCL	0.00795	99% KM Chebyshev UCL	0.00939

Gamma GOF Tests on Detected Observations Only

Not Enough Data to Perform GOF Test

Gamma Statistics on Detected Data Only

k hat (MLE)	13.63	k star (bias corrected MLE)	N/A
Theta hat (MLE)	0.0011	Theta star (bias corrected MLE)	N/A
nu hat (MLE)	81.79	nu star (bias corrected)	N/A
Mean (detects)	0.0149		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)
For such situations, GROS method may yield incorrect values of UCLs and BTVs
This is especially true when the sample size is small.
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0098	Mean	0.0103
Maximum	0.019	Median	0.01
SD	0.00142	CV	0.139
k hat (MLE)	77.31	k star (bias corrected MLE)	73.25
Theta hat (MLE)	1.3271E-4	Theta star (bias corrected MLE)	1.4006E-4
nu hat (MLE)	8813	nu star (bias corrected)	8350
Adjusted Level of Significance (β)	0.0458		
Approximate Chi Square Value (N/A, α)	8139	Adjusted Chi Square Value (N/A, β)	8134
95% Gamma Approximate UCL (use when n>=50)	0.0105	95% Gamma Adjusted UCL (use when n<50)	N/A

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.00553	SD (KM)	0.00239
Variance (KM)	5.7042E-6	SE of Mean (KM)	3.8797E-4
k hat (KM)	5.353	k star (KM)	5.083
nu hat (KM)	610.3	nu star (KM)	579.5
theta hat (KM)	0.00103	theta star (KM)	0.00109
80% gamma percentile (KM)	0.00741	90% gamma percentile (KM)	0.00881
95% gamma percentile (KM)	0.0101	99% gamma percentile (KM)	0.0128

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (579.49, α)	524.7	Adjusted Chi Square Value (579.49, β)	523.3
95% Gamma Approximate KM-UCL (use when n>=50)	0.0061	95% Gamma Adjusted KM-UCL (use when n<50)	0.00612

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.928	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.767	Detected Data appear Lognormal at 5% Significance Level	

TABLE B.2
PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Lilliefors Test Statistic	0.288	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.425	Detected Data appear Lognormal at 5% Significance Level	

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.00257	Mean in Log Scale	-6.572
SD in Original Scale	0.00351	SD in Log Scale	1.109
95% t UCL (assumes normality of ROS data)	0.00335	95% Percentile Bootstrap UCL	0.00337
95% BCA Bootstrap UCL	0.00359	95% Bootstrap t UCL	0.00368
95% H-UCL (Log ROS)	0.00375		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-5.242	KM Geo Mean	0.00529
KM SD (logged)	0.245	95% Critical H Value (KM-Log)	1.717
KM Standard Error of Mean (logged)	0.0399	95% H-UCL (KM -Log)	0.00577
KM SD (logged)	0.245	95% Critical H Value (KM-Log)	1.717
KM Standard Error of Mean (logged)	0.0399		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.0033	Mean in Log Scale	-5.86
SD in Original Scale	0.00297	SD in Log Scale	0.425
95% t UCL (Assumes normality)	0.00396	95% H-Stat UCL	0.00346

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL 0.00617

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

result (outside cn row_so_surface soil 0-1.5m_fluoranthene_206-44-0)

General Statistics

Total Number of Observations	57	Number of Distinct Observations	22
Number of Detects	30	Number of Non-Detects	27
Number of Distinct Detects	21	Number of Distinct Non-Detects	1
Minimum Detect	0.0058	Minimum Non-Detect	0.005
Maximum Detect	0.27	Maximum Non-Detect	0.005
Variance Detects	0.00248	Percent Non-Detects	47.37%
Mean Detects	0.0354	SD Detects	0.0498
Median Detects	0.02	CV Detects	1.404
Skewness Detects	3.973	Kurtosis Detects	17.89
Mean of Logged Detects	-3.763	SD of Logged Detects	0.823

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.515	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.927	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.334	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.159	Detected Data Not Normal at 5% Significance Level	

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.021	KM Standard Error of Mean	0.0052
KM SD	0.0386	95% KM (BCA) UCL	0.0308
95% KM (t) UCL	0.0297	95% KM (Percentile Bootstrap) UCL	0.0304
95% KM (z) UCL	0.0296	95% KM Bootstrap t UCL	0.0398
90% KM Chebyshev UCL	0.0366	95% KM Chebyshev UCL	0.0437
97.5% KM Chebyshev UCL	0.0535	99% KM Chebyshev UCL	0.0728

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	1.934	**Anderson-Darling GOF Test**	
5% A-D Critical Value	0.767	Detected Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.267	**Kolmogorov-Smirnov GOF**	
5% K-S Critical Value	0.164	Detected Data Not Gamma Distributed at 5% Significance Level	

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	1.323	k star (bias corrected MLE)	1.213
Theta hat (MLE)	0.0268	Theta star (bias corrected MLE)	0.0292
nu hat (MLE)	79.39	nu star (bias corrected)	72.79
Mean (detects)	0.0354		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)
For such situations, GROS method may yield incorrect values of UCLs and BTVs
This is especially true when the sample size is small.
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0058	Mean	0.0234
Maximum	0.27	Median	0.01
SD	0.038	CV	1.626
k hat (MLE)	1.373	k star (bias corrected MLE)	1.312
Theta hat (MLE)	0.017	Theta star (bias corrected MLE)	0.0178
nu hat (MLE)	156.5	nu star (bias corrected)	149.6
Adjusted Level of Significance (β)	0.0458		

TABLE B.2
PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Approximate Chi Square Value (149.59, α)	122.3	Adjusted Chi Square Value (149.59, β)	121.7
95% Gamma Approximate UCL (use when n>=50)	0.0286	95% Gamma Adjusted UCL (use when n<50)	0.0288

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.021	SD (KM)	0.0386
Variance (KM)	0.00149	SE of Mean (KM)	0.0052
k hat (KM)	0.296	k star (KM)	0.293
nu hat (KM)	33.79	nu star (KM)	33.35
theta hat (KM)	0.0709	theta star (KM)	0.0719
80% gamma percentile (KM)	0.032	90% gamma percentile (KM)	0.0622
95% gamma percentile (KM)	0.0969	99% gamma percentile (KM)	0.188

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (33.35, α)	21.14	Adjusted Chi Square Value (33.35, β)	20.89
95% Gamma Approximate KM-UCL (use when n>=50)	0.0332	95% Gamma Adjusted KM-UCL (use when n<50)	0.0336

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.929	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.927	Detected Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.194	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.159	Detected Data Not Lognormal at 5% Significance Level	

Detected Data appear Approximate Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.0202	Mean in Log Scale	-4.798
SD in Original Scale	0.0393	SD in Log Scale	1.352
95% t UCL (assumes normality of ROS data)	0.0289	95% Percentile Bootstrap UCL	0.0295
95% BCA Bootstrap UCL	0.0339	95% Bootstrap t UCL	0.0375
95% H-UCL (Log ROS)	0.0348		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-4.49	KM Geo Mean	0.0112
KM SD (logged)	0.965	95% Critical H Value (KM-Log)	2.296
KM Standard Error of Mean (logged)	0.13	95% H-UCL (KM -Log)	0.024
KM SD (logged)	0.965	95% Critical H Value (KM-Log)	2.296
KM Standard Error of Mean (logged)	0.13		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.0198	Mean in Log Scale	-4.819
SD in Original Scale	0.0395	SD in Log Scale	1.269
95% t UCL (Assumes normality)	0.0286	95% H-Stat UCL	0.029

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Approximate Lognormal Distributed at 5% Significance Level

Suggested UCL to Use

KM H-UCL 0.024

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

result (outside cn row_so_surface soil 0-1.5m_fluorene_86-73-7)

General Statistics

Total Number of Observations	57	Number of Distinct Observations	7
Number of Detects	6	Number of Non-Detects	51
Number of Distinct Detects	5	Number of Distinct Non-Detects	3
Minimum Detect	0.0067	Minimum Non-Detect	0.005
Maximum Detect	0.031	Maximum Non-Detect	0.011
Variance Detects	8.4634E-5	Percent Non-Detects	89.47%
Mean Detects	0.0126	SD Detects	0.0092
Median Detects	0.0097	CV Detects	0.731
Skewness Detects	2.243	Kurtosis Detects	5.211
Mean of Logged Detects	-4.531	SD of Logged Detects	0.556

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.672	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.788	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.402	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.325	Detected Data Not Normal at 5% Significance Level	

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.00581	KM Standard Error of Mean	5.2052E-4
KM SD	0.00358	95% KM (BCA) UCL	0.00676
95% KM (t) UCL	0.00668	95% KM (Percentile Bootstrap) UCL	0.00671
95% KM (z) UCL	0.00666	95% KM Bootstrap t UCL	0.00756
90% KM Chebyshev UCL	0.00737	95% KM Chebyshev UCL	0.00807
97.5% KM Chebyshev UCL	0.00906	99% KM Chebyshev UCL	0.011

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.756	**Anderson-Darling GOF Test**	
5% A-D Critical Value	0.701	Detected Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.356	**Kolmogorov-Smirnov GOF**	
5% K-S Critical Value	0.334	Detected Data Not Gamma Distributed at 5% Significance Level	

Detected Data Not Gamma Distributed at 5% Significance Level

TABLE B.2
PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Gamma Statistics on Detected Data Only

k hat (MLE)	3.374	k star (bias corrected MLE)	1.798
Theta hat (MLE)	0.00373	Theta star (bias corrected MLE)	0.007
nu hat (MLE)	40.49	nu star (bias corrected)	21.58
Mean (detects)	0.0126		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)
For such situations, GROS method may yield incorrect values of UCLs and BTVs
This is especially true when the sample size is small.
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0067	Mean	0.0103
Maximum	0.031	Median	0.01
SD	0.00286	CV	0.279
k hat (MLE)	26.48	k star (bias corrected MLE)	25.09
Theta hat (MLE)	3.8797E-4	Theta star (bias corrected MLE)	4.0933E-4
nu hat (MLE)	3018	nu star (bias corrected)	2861
Adjusted Level of Significance (β)	0.0458		
Approximate Chi Square Value (N/A, α)	2737	Adjusted Chi Square Value (N/A, β)	2734
95% Gamma Approximate UCL (use when n>=50)	0.0107	95% Gamma Adjusted UCL (use when n<50)	0.0107

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.00581	SD (KM)	0.00358
Variance (KM)	1.2849E-5	SE of Mean (KM)	5.2052E-4
k hat (KM)	2.624	k star (KM)	2.497
nu hat (KM)	299.1	nu star (KM)	284.7
theta hat (KM)	0.00221	theta star (KM)	0.00232
80% gamma percentile (KM)	0.00847	90% gamma percentile (KM)	0.0107
95% gamma percentile (KM)	0.0129	99% gamma percentile (KM)	0.0175

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (284.68, α)	246.6	Adjusted Chi Square Value (284.68, β)	245.7
95% Gamma Approximate KM-UCL (use when n>=50)	0.0067	95% Gamma Adjusted KM-UCL (use when n<50)	0.00673

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.811	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.788	Detected Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.318	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.325	Detected Data appear Lognormal at 5% Significance Level	

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.00235	Mean in Log Scale	-7.023
SD in Original Scale	0.00461	SD in Log Scale	1.401
95% t UCL (assumes normality of ROS data)	0.00337	95% Percentile Bootstrap UCL	0.00346
95% BCA Bootstrap UCL	0.00388	95% Bootstrap t UCL	0.00446
95% H-UCL (Log ROS)	0.00415		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-5.216	KM Geo Mean	0.00543
KM SD (logged)	0.288	95% Critical H Value (KM-Log)	1.701
KM Standard Error of Mean (logged)	0.0419	95% H-UCL (KM -Log)	0.00604
KM SD (logged)	0.288	95% Critical H Value (KM-Log)	1.701
KM Standard Error of Mean (logged)	0.0419		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.00371	Mean in Log Scale	-5.799
SD in Original Scale	0.00417	SD in Log Scale	0.498
95% t UCL (Assumes normality)	0.00463	95% H-Stat UCL	0.00389

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Lognormal Distributed at 5% Significance Level

Suggested UCL to Use

KM H-UCL 0.00604

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

result (outside cn row_so_surface soil 0-1.5m_indeno(1,2,3-cd)pyrene_193-39-5)

General Statistics

Total Number of Observations	57	Number of Distinct Observations	16
Number of Detects	16	Number of Non-Detects	41
Number of Distinct Detects	14	Number of Distinct Non-Detects	3
Minimum Detect	0.0059	Minimum Non-Detect	0.005
Maximum Detect	0.098	Maximum Non-Detect	0.011
Variance Detects	6.3672E-4	Percent Non-Detects	71.93%
Mean Detects	0.0252	SD Detects	0.0252
Median Detects	0.0145	CV Detects	1.001
Skewness Detects	2.098	Kurtosis Detects	4.24
Mean of Logged Detects	-4.021	SD of Logged Detects	0.802

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.722	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.887	Detected Data Not Normal at 5% Significance Level	

TABLE B.2
PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Lilliefors Test Statistic	0.238	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.213	Detected Data Not Normal at 5% Significance Level	

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.0107	KM Standard Error of Mean	0.00216
KM SD	0.0158	95% KM (BCA) UCL	0.0143
95% KM (t) UCL	0.0143	95% KM (Percentile Bootstrap) UCL	0.0145
95% KM (z) UCL	0.0142	95% KM Bootstrap t UCL	0.0177
90% KM Chebyshev UCL	0.0172	95% KM Chebyshev UCL	0.0201
97.5% KM Chebyshev UCL	0.0242	99% KM Chebyshev UCL	0.0322

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.739	**Anderson-Darling GOF Test**	
5% A-D Critical Value	0.754	Detected data appear Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.193	**Kolmogorov-Smirnov GOF**	
5% K-S Critical Value	0.219	Detected data appear Gamma Distributed at 5% Significance Level	

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	1.618	k star (bias corrected MLE)	1.356
Theta hat (MLE)	0.0156	Theta star (bias corrected MLE)	0.0186
nu hat (MLE)	51.77	nu star (bias corrected)	43.39
Mean (detects)	0.0252		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)
For such situations, GROS method may yield incorrect values of UCLs and BTVs
This is especially true when the sample size is small.
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0059	Mean	0.0143
Maximum	0.098	Median	0.01
SD	0.0148	CV	1.035
k hat (MLE)	2.769	k star (bias corrected MLE)	2.635
Theta hat (MLE)	0.00515	Theta star (bias corrected MLE)	0.00541
nu hat (MLE)	315.7	nu star (bias corrected)	300.4
Adjusted Level of Significance (β)	0.0458		
Approximate Chi Square Value (300.39, α)	261.2	Adjusted Chi Square Value (300.39, β)	260.3
95% Gamma Approximate UCL (use when n>=50)	0.0164	95% Gamma Adjusted UCL (use when n<50)	0.0165

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.0107	SD (KM)	0.0158
Variance (KM)	2.4987E-4	SE of Mean (KM)	0.00216
k hat (KM)	0.457	k star (KM)	0.444
nu hat (KM)	52.05	nu star (KM)	50.65
theta hat (KM)	0.0234	theta star (KM)	0.024
80% gamma percentile (KM)	0.0174	90% gamma percentile (KM)	0.0296
95% gamma percentile (KM)	0.0428	99% gamma percentile (KM)	0.0756

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (50.65, α)	35.3	Adjusted Chi Square Value (50.65, β)	34.97
95% Gamma Approximate KM-UCL (use when n>=50)	0.0153	95% Gamma Adjusted KM-UCL (use when n<50)	0.0155

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.942	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.887	Detected Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.151	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.213	Detected Data appear Lognormal at 5% Significance Level	

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.00827	Mean in Log Scale	-6.097
SD in Original Scale	0.0169	SD in Log Scale	1.686
95% t UCL (assumes normality of ROS data)	0.012	95% Percentile Bootstrap UCL	0.0122
95% BCA Bootstrap UCL	0.0137	95% Bootstrap t UCL	0.015
95% H-UCL (Log ROS)	0.0197		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-4.938	KM Geo Mean	0.00717
KM SD (logged)	0.706	95% Critical H Value (KM-Log)	2.042
KM Standard Error of Mean (logged)	0.0967	95% H-UCL (KM -Log)	0.0112
KM SD (logged)	0.706	95% Critical H Value (KM-Log)	2.042
KM Standard Error of Mean (logged)	0.0967		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.00902	Mean in Log Scale	-5.399
SD in Original Scale	0.0166	SD in Log Scale	0.977
95% t UCL (Assumes normality)	0.0127	95% H-Stat UCL	0.00985

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Gamma Distributed at 5% Significance Level

Suggested UCL to Use

95% KM Approximate Gamma UCL	0.0153	95% GROS Approximate Gamma UCL	0.0164

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

TABLE B.2
PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

result (outside cn row_so_surface soil 0-1.5m_methylnaphthalene, 2-_91-57-6)

General Statistics

Total Number of Observations	57	Number of Distinct Observations	12
Number of Detects	10	Number of Non-Detects	47
Number of Distinct Detects	9	Number of Distinct Non-Detects	3
Minimum Detect	0.0079	Minimum Non-Detect	0.005
Maximum Detect	0.031	Maximum Non-Detect	0.011
Variance Detects	5.2343E-5	Percent Non-Detects	82.46%
Mean Detects	0.0137	SD Detects	0.00723
Median Detects	0.0115	CV Detects	0.53
Skewness Detects	1.853	Kurtosis Detects	3.339
Mean of Logged Detects	-4.391	SD of Logged Detects	0.438

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.767	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.842	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.281	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.262	Detected Data Not Normal at 5% Significance Level	

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.00654	KM Standard Error of Mean	6.1141E-4
KM SD	0.00437	95% KM (BCA) UCL	0.00768
95% KM (t) UCL	0.00756	95% KM (Percentile Bootstrap) UCL	0.00762
95% KM (z) UCL	0.00754	95% KM Bootstrap t UCL	0.00828
90% KM Chebyshev UCL	0.00837	95% KM Chebyshev UCL	0.0092
97.5% KM Chebyshev UCL	0.0104	99% KM Chebyshev UCL	0.0126

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.697	**Anderson-Darling GOF Test**	
5% A-D Critical Value	0.729	Detected data appear Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.219	**Kolmogorov-Smirnov GOF**	
5% K-S Critical Value	0.267	Detected data appear Gamma Distributed at 5% Significance Level	

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	5.295	k star (bias corrected MLE)	3.773
Theta hat (MLE)	0.00258	Theta star (bias corrected MLE)	0.00362
nu hat (MLE)	105.9	nu star (bias corrected)	75.47
Mean (detects)	0.0137		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)
For such situations, GROS method may yield incorrect values of UCLs and BTVs
This is especially true when the sample size is small.
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0079	Mean	0.0106
Maximum	0.031	Median	0.01
SD	0.00322	CV	0.303
k hat (MLE)	20.52	k star (bias corrected MLE)	19.45
Theta hat (MLE)	5.1856E-4	Theta star (bias corrected MLE)	5.4704E-4
nu hat (MLE)	2339	nu star (bias corrected)	2217
Adjusted Level of Significance (β)	0.0458		
Approximate Chi Square Value (N/A, α)	2109	Adjusted Chi Square Value (N/A, β)	2106
95% Gamma Approximate UCL (use when n>=50)	0.0112	95% Gamma Adjusted UCL (use when n<50)	0.0112

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.00654	SD (KM)	0.00437
Variance (KM)	1.9105E-5	SE of Mean (KM)	6.1141E-4
k hat (KM)	2.237	k star (KM)	2.131
nu hat (KM)	255	nu star (KM)	242.9
theta hat (KM)	0.00292	theta star (KM)	0.00307
80% gamma percentile (KM)	0.00971	90% gamma percentile (KM)	0.0125
95% gamma percentile (KM)	0.0152	99% gamma percentile (KM)	0.0211

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (242.88, α)	207.8	Adjusted Chi Square Value (242.88, β)	207
95% Gamma Approximate KM-UCL (use when n>=50)	0.00764	95% Gamma Adjusted KM-UCL (use when n<50)	0.00767

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.873	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.842	Detected Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.19	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.262	Detected Data appear Lognormal at 5% Significance Level	

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.00444	Mean in Log Scale	-5.927
SD in Original Scale	0.00539	SD in Log Scale	1.017
95% t UCL (assumes normality of ROS data)	0.00563	95% Percentile Bootstrap UCL	0.00567
95% BCA Bootstrap UCL	0.00599	95% Bootstrap t UCL	0.00598
95% H-UCL (Log ROS)	0.00616		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-5.136	KM Geo Mean	0.00588
KM SD (logged)	0.387	95% Critical H Value (KM-Log)	1.795
KM Standard Error of Mean (logged)	0.0543	95% H-UCL (KM -Log)	0.00695

TABLE B.2
PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

KM SD (logged)	0.387	95% Critical H Value (KM-Log)	1.795
KM Standard Error of Mean (logged)	0.0543		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.0046	Mean in Log Scale	-5.672
SD in Original Scale	0.00515	SD in Log Scale	0.643
95% t UCL (Assumes normality)	0.00574	95% H-Stat UCL	0.00502

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Gamma Distributed at 5% Significance Level

Suggested UCL to Use

95% KM Approximate Gamma UCL	0.00764	95% GROS Approximate Gamma UCL	0.0112

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

result (outside cn row_so_surface soil 0-1.5m_naphthalene_91-20-3)

General Statistics

Total Number of Observations	57	Number of Distinct Observations	8
Number of Detects	5	Number of Non-Detects	52
Number of Distinct Detects	5	Number of Distinct Non-Detects	3
Minimum Detect	0.0072	Minimum Non-Detect	0.005
Maximum Detect	0.0097	Maximum Non-Detect	0.011
Variance Detects	9.4300E-7	Percent Non-Detects	91.23%
Mean Detects	0.00846	SD Detects	9.7108E-4
Median Detects	0.0083	CV Detects	0.115
Skewness Detects	0.0305	Kurtosis Detects	-0.834
Mean of Logged Detects	-4.778	SD of Logged Detects	0.116

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.984	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.762	Detected Data appear Normal at 5% Significance Level	
Lilliefors Test Statistic	0.165	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.343	Detected Data appear Normal at 5% Significance Level	

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.00532	KM Standard Error of Mean	1.5688E-4
KM SD	0.00103	95% KM (BCA) UCL	0.00559
95% KM (t) UCL	0.00558	95% KM (Percentile Bootstrap) UCL	0.00558
95% KM (z) UCL	0.00558	95% KM Bootstrap t UCL	0.00543
90% KM Chebyshev UCL	0.00579	95% KM Chebyshev UCL	0.006
97.5% KM Chebyshev UCL	0.0063	99% KM Chebyshev UCL	0.00688

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.192	**Anderson-Darling GOF Test**	
5% A-D Critical Value	0.678	Detected data appear Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.174	**Kolmogorov-Smirnov GOF**	
5% K-S Critical Value	0.357	Detected data appear Gamma Distributed at 5% Significance Level	

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	94.27	k star (bias corrected MLE)	37.84
Theta hat (MLE)	8.9746E-5	Theta star (bias corrected MLE)	2.2357E-4
nu hat (MLE)	942.7	nu star (bias corrected)	378.4
Mean (detects)	0.00846		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)
For such situations, GROS method may yield incorrect values of UCLs and BTVs
This is especially true when the sample size is small.
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0072	Mean	0.00986
Maximum	0.01	Median	0.01
SD	5.1042E-4	CV	0.0517
k hat (MLE)	325.9	k star (bias corrected MLE)	308.7
Theta hat (MLE)	3.0271E-5	Theta star (bias corrected MLE)	3.1952E-5
nu hat (MLE)	37151	nu star (bias corrected)	35197
Adjusted Level of Significance (β)	0.0458		
Approximate Chi Square Value (N/A, α)	34762	Adjusted Chi Square Value (N/A, β)	34751
95% Gamma Approximate UCL (use when n>=50)	0.00999	95% Gamma Adjusted UCL (use when n<50)	0.00999

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.00532	SD (KM)	0.00103
Variance (KM)	1.0695E-6	SE of Mean (KM)	1.5688E-4
k hat (KM)	26.45	k star (KM)	25.07
nu hat (KM)	3016	nu star (KM)	2858
theta hat (KM)	2.0107E-4	theta star (KM)	2.1215E-4
80% gamma percentile (KM)	0.00619	90% gamma percentile (KM)	0.00672
95% gamma percentile (KM)	0.00718	99% gamma percentile (KM)	0.0081

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (N/A, α)	2735	Adjusted Chi Square Value (N/A, β)	2732
95% Gamma Approximate KM-UCL (use when n>=50)	0.00556	95% Gamma Adjusted KM-UCL (use when n<50)	0.00556

TABLE B.2
PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.984	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.762	Detected Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.151	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.343	Detected Data appear Lognormal at 5% Significance Level	

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.00525	Mean in Log Scale	-5.286
SD in Original Scale	0.00147	SD in Log Scale	0.273
95% t UCL (assumes normality of ROS data)	0.00558	95% Percentile Bootstrap UCL	0.00558
95% BCA Bootstrap UCL	0.00563	95% Bootstrap t UCL	0.0056
95% H-UCL (Log ROS)	0.00559		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-5.25	KM Geo Mean	0.00525
KM SD (logged)	0.154	95% Critical H Value (KM-Log)	1.714
KM Standard Error of Mean (logged)	0.0233	95% H-UCL (KM -Log)	0.0055
KM SD (logged)	0.154	95% Critical H Value (KM-Log)	1.714
KM Standard Error of Mean (logged)	0.0233		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.00317	Mean in Log Scale	-5.846
SD in Original Scale	0.00179	SD in Log Scale	0.375
95% t UCL (Assumes normality)	0.00356	95% H-Stat UCL	0.00339

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL 0.00558

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

result (outside cn row_so_surface soil 0-1.5m_perylene_198-55-0)

General Statistics

Total Number of Observations	57	Number of Distinct Observations	31
Number of Detects	50	Number of Non-Detects	7
Number of Distinct Detects	30	Number of Distinct Non-Detects	1
Minimum Detect	0.0058	Minimum Non-Detect	0.005
Maximum Detect	0.26	Maximum Non-Detect	0.005
Variance Detects	0.00396	Percent Non-Detects	12.28%
Mean Detects	0.04	SD Detects	0.0629
Median Detects	0.0175	CV Detects	1.574
Skewness Detects	2.719	Kurtosis Detects	6.37
Mean of Logged Detects	-3.848	SD of Logged Detects	0.979

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.528	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.947	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.345	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.125	Detected Data Not Normal at 5% Significance Level	

Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.0357	KM Standard Error of Mean	0.00796
KM SD	0.0595	95% KM (BCA) UCL	0.0506
95% KM (t) UCL	0.049	95% KM (Percentile Bootstrap) UCL	0.0495
95% KM (z) UCL	0.0488	95% KM Bootstrap t UCL	0.0554
90% KM Chebyshev UCL	0.0596	95% KM Chebyshev UCL	0.0704
97.5% KM Chebyshev UCL	0.0854	99% KM Chebyshev UCL	0.115

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	4.405	**Anderson-Darling GOF Test**	
5% A-D Critical Value	0.784	Detected Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.23	**Kolmogorov-Smirnov GOF**	
5% K-S Critical Value	0.129	Detected Data Not Gamma Distributed at 5% Significance Level	

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.926	k star (bias corrected MLE)	0.884
Theta hat (MLE)	0.0432	Theta star (bias corrected MLE)	0.0453
nu hat (MLE)	92.58	nu star (bias corrected)	88.36
Mean (detects)	0.04		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)
For such situations, GROS method may yield incorrect values of UCLs and BTVs
This is especially true when the sample size is small.
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0058	Mean	0.0363
Maximum	0.26	Median	0.014
SD	0.0597	CV	1.644

TABLE B.2
PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

k hat (MLE)	0.931	k star (bias corrected MLE)	0.893
Theta hat (MLE)	0.039	Theta star (bias corrected MLE)	0.0407
nu hat (MLE)	106.1	nu star (bias corrected)	101.8
Adjusted Level of Significance (β)	0.0458		
Approximate Chi Square Value (101.84, α)	79.56	Adjusted Chi Square Value (101.84, β)	79.05
95% Gamma Approximate UCL (use when n>=50)	0.0465	95% Gamma Adjusted UCL (use when n<50)	0.0468

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.0357	SD (KM)	0.0595
Variance (KM)	0.00354	SE of Mean (KM)	0.00796
k hat (KM)	0.36	k star (KM)	0.353
nu hat (KM)	41.07	nu star (KM)	40.24
theta hat (KM)	0.0991	theta star (KM)	0.101
80% gamma percentile (KM)	0.0566	90% gamma percentile (KM)	0.103
95% gamma percentile (KM)	0.155	99% gamma percentile (KM)	0.287

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (40.24, α)	26.71	Adjusted Chi Square Value (40.24, β)	26.42
95% Gamma Approximate KM-UCL (use when n>=50)	0.0538	95% Gamma Adjusted KM-UCL (use when n<50)	0.0544

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.872	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.947	Detected Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.129	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.125	Detected Data Not Lognormal at 5% Significance Level	

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.0354	Mean in Log Scale	-4.118
SD in Original Scale	0.0602	SD in Log Scale	1.176
95% t UCL (assumes normality of ROS data)	0.0487	95% Percentile Bootstrap UCL	0.0494
95% BCA Bootstrap UCL	0.0517	95% Bootstrap t UCL	0.0564
95% H-UCL (Log ROS)	0.049		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-4.026	KM Geo Mean	0.0178
KM SD (logged)	1.025	95% Critical H Value (KM-Log)	2.372
KM Standard Error of Mean (logged)	0.137	95% H-UCL (KM -Log)	0.0417
KM SD (logged)	1.025	95% Critical H Value (KM-Log)	2.372
KM Standard Error of Mean (logged)	0.137		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.0354	Mean in Log Scale	-4.111
SD in Original Scale	0.0602	SD in Log Scale	1.158
95% t UCL (Assumes normality)	0.0487	95% H-Stat UCL	0.0478

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

95% KM (Chebyshev) UCL 0.0704

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

result (outside cn row_so_surface soil 0-1.5m_phenanthrene_85-01-8)

General Statistics

Total Number of Observations	57	Number of Distinct Observations	21
Number of Detects	24	Number of Non-Detects	33
Number of Distinct Detects	19	Number of Distinct Non-Detects	3
Minimum Detect	0.0056	Minimum Non-Detect	0.005
Maximum Detect	0.2	Maximum Non-Detect	0.011
Variance Detects	0.00152	Percent Non-Detects	57.89%
Mean Detects	0.0237	SD Detects	0.039
Median Detects	0.0135	CV Detects	1.641
Skewness Detects	4.379	Kurtosis Detects	20.25
Mean of Logged Detects	-4.173	SD of Logged Detects	0.758

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.408	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.916	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.361	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.177	Detected Data Not Normal at 5% Significance Level	

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.0129	KM Standard Error of Mean	0.00357
KM SD	0.0264	95% KM (BCA) UCL	0.0194
95% KM (t) UCL	0.0189	95% KM (Percentile Bootstrap) UCL	0.0192
95% KM (z) UCL	0.0188	95% KM Bootstrap t UCL	0.0333
90% KM Chebyshev UCL	0.0236	95% KM Chebyshev UCL	0.0285
97.5% KM Chebyshev UCL	0.0352	99% KM Chebyshev UCL	0.0485

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	2.388	**Anderson-Darling GOF Test**	
5% A-D Critical Value	0.766	Detected Data Not Gamma Distributed at 5% Significance Level	

TABLE B.2
PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

K-S Test Statistic	0.292	**Kolmogorov-Smirnov GOF**	
5% K-S Critical Value	0.182	Detected Data Not Gamma Distributed at 5% Significance Level	

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	1.298	k star (bias corrected MLE)	1.164
Theta hat (MLE)	0.0183	Theta star (bias corrected MLE)	0.0204
nu hat (MLE)	62.33	nu star (bias corrected)	55.87
Mean (detects)	0.0237		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)
For such situations, GROS method may yield incorrect values of UCLs and BTVs
This is especially true when the sample size is small.
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0056	Mean	0.0158
Maximum	0.2	Median	0.01
SD	0.0259	CV	1.64
k hat (MLE)	1.973	k star (bias corrected MLE)	1.881
Theta hat (MLE)	0.008	Theta star (bias corrected MLE)	0.00839
nu hat (MLE)	224.9	nu star (bias corrected)	214.4
Adjusted Level of Significance (β)	0.0458		
Approximate Chi Square Value (214.39, α)	181.5	Adjusted Chi Square Value (214.39, β)	180.7
95% Gamma Approximate UCL (use when n>=50)	0.0186	95% Gamma Adjusted UCL (use when n<50)	0.0187

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.0129	SD (KM)	0.0264
Variance (KM)	6.9793E-4	SE of Mean (KM)	0.00357
k hat (KM)	0.239	k star (KM)	0.238
nu hat (KM)	27.2	nu star (KM)	27.1
theta hat (KM)	0.0541	theta star (KM)	0.0543
80% gamma percentile (KM)	0.0184	90% gamma percentile (KM)	0.0389
95% gamma percentile (KM)	0.0634	99% gamma percentile (KM)	0.129

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (27.10, α)	16.23	Adjusted Chi Square Value (27.10, β)	16.01
95% Gamma Approximate KM-UCL (use when n>=50)	0.0215	95% Gamma Adjusted KM-UCL (use when n<50)	0.0218

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.853	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.916	Detected Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.21	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.177	Detected Data Not Lognormal at 5% Significance Level	

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.0113	Mean in Log Scale	-5.413
SD in Original Scale	0.0272	SD in Log Scale	1.316
95% t UCL (assumes normality of ROS data)	0.0174	95% Percentile Bootstrap UCL	0.0179
95% BCA Bootstrap UCL	0.0218	95% Bootstrap t UCL	0.0289
95% H-UCL (Log ROS)	0.0175		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-4.822	KM Geo Mean	0.00805
KM SD (logged)	0.735	95% Critical H Value (KM-Log)	2.067
KM Standard Error of Mean (logged)	0.0995	95% H-UCL (KM -Log)	0.0129
KM SD (logged)	0.735	95% Critical H Value (KM-Log)	2.067
KM Standard Error of Mean (logged)	0.0995		

DL/2 Statistics

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.0115	Mean in Log Scale	-5.201
SD in Original Scale	0.0271	SD in Log Scale	1.018
95% t UCL (Assumes normality)	0.0175	95% H-Stat UCL	0.0128

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

95% KM (Chebyshev) UCL	0.0285

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

result (outside cn row_so_surface soil 0-1.5m_pyrene_129-00-0)

General Statistics

Total Number of Observations	57	Number of Distinct Observations	22
Number of Detects	26	Number of Non-Detects	31
Number of Distinct Detects	21	Number of Distinct Non-Detects	2
Minimum Detect	0.0075	Minimum Non-Detect	0.005
Maximum Detect	0.2	Maximum Non-Detect	0.011
Variance Detects	0.00158	Percent Non-Detects	54.39%
Mean Detects	0.032	SD Detects	0.0397
Median Detects	0.019	CV Detects	1.24
Skewness Detects	3.452	Kurtosis Detects	13.36
Mean of Logged Detects	-3.798	SD of Logged Detects	0.747

TABLE B.2
PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.555	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.92	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.298	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.17	Detected Data Not Normal at 5% Significance Level	

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.0173	KM Standard Error of Mean	0.00399
KM SD	0.0296	95% KM (BCA) UCL	0.026
95% KM (t) UCL	0.024	95% KM (Percentile Bootstrap) UCL	0.0244
95% KM (z) UCL	0.0239	95% KM Bootstrap t UCL	0.0316
90% KM Chebyshev UCL	0.0293	95% KM Chebyshev UCL	0.0347
97.5% KM Chebyshev UCL	0.0423	99% KM Chebyshev UCL	0.0571

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	1.885	**Anderson-Darling GOF Test**	
5% A-D Critical Value	0.761	Detected Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.238	**Kolmogorov-Smirnov GOF**	
5% K-S Critical Value	0.174	Detected Data Not Gamma Distributed at 5% Significance Level	

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	1.546	k star (bias corrected MLE)	1.393
Theta hat (MLE)	0.0207	Theta star (bias corrected MLE)	0.023
nu hat (MLE)	80.4	nu star (bias corrected)	72.46
Mean (detects)	0.032		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)
For such situations, GROS method may yield incorrect values of UCLs and BTVs
This is especially true when the sample size is small.
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0075	Mean	0.0201
Maximum	0.2	Median	0.01
SD	0.0288	CV	1.434
k hat (MLE)	1.674	k star (bias corrected MLE)	1.597
Theta hat (MLE)	0.012	Theta star (bias corrected MLE)	0.0126
nu hat (MLE)	190.8	nu star (bias corrected)	182.1
Adjusted Level of Significance (β)	0.0458		
Approximate Chi Square Value (182.10, α)	151.9	Adjusted Chi Square Value (182.10, β)	151.2
95% Gamma Approximate UCL (use when n>=50)	0.024	95% Gamma Adjusted UCL (use when n<50)	0.0242

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.0173	SD (KM)	0.0296
Variance (KM)	8.7333E-4	SE of Mean (KM)	0.00399
k hat (KM)	0.344	k star (KM)	0.338
nu hat (KM)	39.24	nu star (KM)	38.51
theta hat (KM)	0.0504	theta star (KM)	0.0513
80% gamma percentile (KM)	0.0273	90% gamma percentile (KM)	0.0503
95% gamma percentile (KM)	0.0763	99% gamma percentile (KM)	0.143

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (38.51, α)	25.3	Adjusted Chi Square Value (38.51, β)	25.02
95% Gamma Approximate KM-UCL (use when n>=50)	0.0264	95% Gamma Adjusted KM-UCL (use when n<50)	0.0267

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.897	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.92	Detected Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.179	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.17	Detected Data Not Lognormal at 5% Significance Level	

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.0165	Mean in Log Scale	-4.959
SD in Original Scale	0.0302	SD in Log Scale	1.313
95% t UCL (assumes normality of ROS data)	0.0231	95% Percentile Bootstrap UCL	0.0238
95% BCA Bootstrap UCL	0.0269	95% Bootstrap t UCL	0.0296
95% H-UCL (Log ROS)	0.0274		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-4.613	KM Geo Mean	0.00992
KM SD (logged)	0.896	95% Critical H Value (KM-Log)	2.219
KM Standard Error of Mean (logged)	0.121	95% H-UCL (KM -Log)	0.0193
KM SD (logged)	0.896	95% Critical H Value (KM-Log)	2.219
KM Standard Error of Mean (logged)	0.121		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.016	Mean in Log Scale	-4.977
SD in Original Scale	0.0304	SD in Log Scale	1.203
	0.0228	95% H-Stat UCL	0.0218

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

95% KM (Chebyshev) UCL 0.0347

TABLE B.2

PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) OUTSIDE OF RIGHT-OF-WAY

CN MILE 197.4, RIVERS SUBDIVISION

SOUTHEAST OF ST. LAZARE, MANITOBA

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

TABLE B.3
PROUCL OUTPUT FOR SEDIMENT OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	ProUCL 5.14/2/2020 1:19:06 PM
From File	WorkSheet.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

result (outside cn row_se_na_acenaphthene_83-32-9)

General Statistics

Total Number of Observations	41	Number of Distinct Observations	4
Number of Detects	3	Number of Non-Detects	38
Number of Distinct Detects	3	Number of Distinct Non-Detects	1
Minimum Detect	0.009	Minimum Non-Detect	0.005
Maximum Detect	0.02	Maximum Non-Detect	0.005
Variance Detects	3.4333E-5	Percent Non-Detects	92.68%
Mean Detects	0.0133	SD Detects	0.00586
Median Detects	0.011	CV Detects	0.439
Skewness Detects	1.508	Kurtosis Detects	N/A
Mean of Logged Detects	-4.377	SD of Logged Detects	0.415

Warning: Data set has only 3 Detected Values.
This is not enough to compute meaningful or reliable statistics and estimates.

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.881	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.767	Detected Data appear Normal at 5% Significance Level	
Lilliefors Test Statistic	0.321	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.425	Detected Data appear Normal at 5% Significance Level	

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.00561	KM Standard Error of Mean	4.8329E-4
KM SD	0.00253	95% KM (BCA) UCL	N/A
95% KM (t) UCL	0.00642	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	0.0064	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	0.00706	95% KM Chebyshev UCL	0.00772
97.5% KM Chebyshev UCL	0.00863	99% KM Chebyshev UCL	0.0104

Gamma GOF Tests on Detected Observations Only

Not Enough Data to Perform GOF Test

Gamma Statistics on Detected Data Only

k hat (MLE)	8.499	k star (bias corrected MLE)	N/A
Theta hat (MLE)	0.00157	Theta star (bias corrected MLE)	N/A
nu hat (MLE)	50.99	nu star (bias corrected)	N/A
Mean (detects)	0.0133		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)
For such situations, GROS method may yield incorrect values of UCLs and BTVs
This is especially true when the sample size is small.
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.009	Mean	0.0102
Maximum	0.02	Median	0.01
SD	0.00158	CV	0.154
k hat (MLE)	67.4	k star (bias corrected MLE)	62.49
Theta hat (MLE)	1.5198E-4	Theta star (bias corrected MLE)	1.6394E-4
nu hat (MLE)	5527	nu star (bias corrected)	5124
Adjusted Level of Significance (β)	0.0441		
Approximate Chi Square Value (N/A, α)	4958	Adjusted Chi Square Value (N/A, β)	4953
95% Gamma Approximate UCL (use when n>=50)	0.0106	95% Gamma Adjusted UCL (use when n<50)	N/A

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.00561	SD (KM)	0.00253
Variance (KM)	6.3843E-6	SE of Mean (KM)	4.8329E-4
k hat (KM)	4.929	k star (KM)	4.585
nu hat (KM)	404.2	nu star (KM)	376
theta hat (KM)	0.00114	theta star (KM)	0.00122
80% gamma percentile (KM)	0.00761	90% gamma percentile (KM)	0.00912
95% gamma percentile (KM)	0.0105	99% gamma percentile (KM)	0.0134

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (375.95, α)	332	Adjusted Chi Square Value (375.95, β)	330.5
95% Gamma Approximate KM-UCL (use when n>=50)	0.00635	95% Gamma Adjusted KM-UCL (use when n<50)	0.00638

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.924	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.767	Detected Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.292	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.425	Detected Data appear Lognormal at 5% Significance Level	

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.00193	Mean in Log Scale	-7.397
SD in Original Scale	0.0037	SD in Log Scale	1.575
95% t UCL (assumes normality of ROS data)	0.0029	95% Percentile Bootstrap UCL	0.00289

TABLE B.3
PROUCL OUTPUT FOR SEDIMENT OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

95% BCA Bootstrap UCL	0.00323	95% Bootstrap t UCL	0.00388
95% H-UCL (Log ROS)	0.00453		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-5.231	KM Geo Mean	0.00535
KM SD (logged)	0.257	95% Critical H Value (KM-Log)	1.752
KM Standard Error of Mean (logged)	0.0491	95% H-UCL (KM -Log)	0.00594
KM SD (logged)	0.257	95% Critical H Value (KM-Log)	1.752
KM Standard Error of Mean (logged)	0.0491		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.00329	Mean in Log Scale	-5.873
SD in Original Scale	0.00314	SD in Log Scale	0.436
95% t UCL (Assumes normality)	0.00412	95% H-Stat UCL	0.00351

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL 0.00642

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

result (outside cn row_se_na_acenaphthylene_208-96-8)

General Statistics

Total Number of Observations	41	Number of Distinct Observations	2
Number of Detects	1	Number of Non-Detects	40
Number of Distinct Detects	1	Number of Distinct Non-Detects	1

Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!
It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable result (outside cn row_se_na_acenaphthylene_208-96-8) was not processed!

result (outside cn row_se_na_acridine_260-94-6)

General Statistics

Total Number of Observations	41	Number of Distinct Observations	3
Number of Detects	3	Number of Non-Detects	38
Number of Distinct Detects	2	Number of Distinct Non-Detects	1
Minimum Detect	0.012	Minimum Non-Detect	0.01
Maximum Detect	0.015	Maximum Non-Detect	0.01
Variance Detects	3.0000E-6	Percent Non-Detects	92.68%
Mean Detects	0.013	SD Detects	0.00173
Median Detects	0.012	CV Detects	0.133
Skewness Detects	1.732	Kurtosis Detects	N/A
Mean of Logged Detects	-4.348	SD of Logged Detects	0.129

Warning: Data set has only 3 Detected Values.
This is not enough to compute meaningful or reliable statistics and estimates.

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.75	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.767	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.385	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.425	Detected Data appear Normal at 5% Significance Level	

Detected Data appear Approximate Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.0102	KM Standard Error of Mean	1.6638E-4
KM SD	8.6988E-4	95% KM (BCA) UCL	N/A
95% KM (t) UCL	0.0105	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	0.0105	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	0.0107	95% KM Chebyshev UCL	0.0109
97.5% KM Chebyshev UCL	0.0113	99% KM Chebyshev UCL	0.0119

Gamma GOF Tests on Detected Observations Only

Not Enough Data to Perform GOF Test

Gamma Statistics on Detected Data Only

k hat (MLE)	88.48	k star (bias corrected MLE)	N/A
Theta hat (MLE)	1.4692E-4	Theta star (bias corrected MLE)	N/A
nu hat (MLE)	530.9	nu star (bias corrected)	N/A
Mean (detects)	0.013		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)
For such situations, GROS method may yield incorrect values of UCLs and BTVs
This is especially true when the sample size is small.
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	0.0102
Maximum	0.015	Median	0.01

TABLE B.3
PROUCL OUTPUT FOR SEDIMENT OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

SD	8.8069E-4	CV	0.0862
k hat (MLE)	170.8	k star (bias corrected MLE)	158.3
Theta hat (MLE)	5.9841E-5	Theta star (bias corrected MLE)	6.4559E-5
nu hat (MLE)	14004	nu star (bias corrected)	12980
Adjusted Level of Significance (β)	0.0441		
Approximate Chi Square Value (N/A, α)	12717	Adjusted Chi Square Value (N/A, β)	12707
95% Gamma Approximate UCL (use when n>=50)	0.0104	95% Gamma Adjusted UCL (use when n<50)	N/A

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.0102	SD (KM)	8.6988E-4
Variance (KM)	7.5669E-7	SE of Mean (KM)	1.6638E-4
k hat (KM)	138	k star (KM)	127.9
nu hat (KM)	11318	nu star (KM)	10491
theta hat (KM)	7.4044E-5	theta star (KM)	7.9879E-5
80% gamma percentile (KM)	0.011	90% gamma percentile (KM)	0.0114
95% gamma percentile (KM)	0.0117	99% gamma percentile (KM)	0.0124

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (N/A, α)	10254	Adjusted Chi Square Value (N/A, β)	10245
95% Gamma Approximate KM-UCL (use when n>=50)	0.0105	95% Gamma Adjusted KM-UCL (use when n<50)	0.0105

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.75	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.767	Detected Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.385	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.425	Detected Data appear Lognormal at 5% Significance Level	

Detected Data appear Approximate Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.00597	Mean in Log Scale	-5.222
SD in Original Scale	0.00284	SD in Log Scale	0.456
95% t UCL (assumes normality of ROS data)	0.00672	95% Percentile Bootstrap UCL	0.00673
95% BCA Bootstrap UCL	0.00679	95% Bootstrap t UCL	0.00684
95% H-UCL (Log ROS)	0.00685		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-4.586	KM Geo Mean	0.0102
KM SD (logged)	0.0727	95% Critical H Value (KM-Log)	N/A
KM Standard Error of Mean (logged)	0.0139	95% H-UCL (KM -Log)	N/A
KM SD (logged)	0.0727	95% Critical H Value (KM-Log)	N/A
KM Standard Error of Mean (logged)	0.0139		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.00559	Mean in Log Scale	-5.229
SD in Original Scale	0.00214	SD in Log Scale	0.252
95% t UCL (Assumes normality)	0.00615	95% H-Stat UCL	0.00593

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Approximate Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL 0.0105

When a data set follows an approximate (e.g., normal) distribution passing one of the GOF test
When applicable, it is suggested to use a UCL based upon a distribution (e.g., gamma) passing both GOF tests in ProUCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

result (outside cn row_se_na_anthracene_120-12-7)

General Statistics

Total Number of Observations	41	Number of Distinct Observations	5
Number of Detects	4	Number of Non-Detects	37
Number of Distinct Detects	4	Number of Distinct Non-Detects	1
Minimum Detect	0.0079	Minimum Non-Detect	0.004
Maximum Detect	0.033	Maximum Non-Detect	0.004
Variance Detects	1.4743E-4	Percent Non-Detects	90.24%
Mean Detects	0.0148	SD Detects	0.0121
Median Detects	0.0092	CV Detects	0.819
Skewness Detects	1.975	Kurtosis Detects	3.915
Mean of Logged Detects	-4.408	SD of Logged Detects	0.671

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.688	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.748	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.411	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.375	Detected Data Not Normal at 5% Significance Level	

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.00506	KM Standard Error of Mean	8.2845E-4
KM SD	0.00459	95% KM (BCA) UCL	N/A
95% KM (t) UCL	0.00645	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	0.00642	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	0.00754	95% KM Chebyshev UCL	0.00867
97.5% KM Chebyshev UCL	0.0102	99% KM Chebyshev UCL	0.0133

TABLE B.3
PROUCL OUTPUT FOR SEDIMENT OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.735	**Anderson-Darling GOF Test**	
5% A-D Critical Value	0.66	Detected Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.415	**Kolmogorov-Smirnov GOF**	
5% K-S Critical Value	0.397	Detected Data Not Gamma Distributed at 5% Significance Level	

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	2.694	k star (bias corrected MLE)	0.84
Theta hat (MLE)	0.0055	Theta star (bias corrected MLE)	0.0176
nu hat (MLE)	21.55	nu star (bias corrected)	6.721
Mean (detects)	0.0148		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)
For such situations, GROS method may yield incorrect values of UCLs and BTVs
This is especially true when the sample size is small.
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0079	Mean	0.0105
Maximum	0.033	Median	0.01
SD	0.00363	CV	0.346
k hat (MLE)	18.82	k star (bias corrected MLE)	17.46
Theta hat (MLE)	5.5629E-4	Theta star (bias corrected MLE)	5.9965E-4
nu hat (MLE)	1543	nu star (bias corrected)	1432
Adjusted Level of Significance (β)	0.0441		
Approximate Chi Square Value (N/A, α)	1345	Adjusted Chi Square Value (N/A, β)	1342
95% Gamma Approximate UCL (use when n>=50)	0.0111	95% Gamma Adjusted UCL (use when n<50)	N/A

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.00506	SD (KM)	0.00459
Variance (KM)	2.1104E-5	SE of Mean (KM)	8.2845E-4
k hat (KM)	1.211	k star (KM)	1.139
nu hat (KM)	99.33	nu star (KM)	93.39
theta hat (KM)	0.00417	theta star (KM)	0.00444
80% gamma percentile (KM)	0.00805	90% gamma percentile (KM)	0.0113
95% gamma percentile (KM)	0.0145	99% gamma percentile (KM)	0.0218

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (93.39, α)	72.11	Adjusted Chi Square Value (93.39, β)	71.42
95% Gamma Approximate KM-UCL (use when n>=50)	0.00655	95% Gamma Adjusted KM-UCL (use when n<50)	0.00661

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.748	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.748	Detected Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.377	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.375	Detected Data Not Lognormal at 5% Significance Level	

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.00199	Mean in Log Scale	-8.172
SD in Original Scale	0.00548	SD in Log Scale	2.107
95% t UCL (assumes normality of ROS data)	0.00343	95% Percentile Bootstrap UCL	0.00352
95% BCA Bootstrap UCL	0.00471	95% Bootstrap t UCL	0.00599
95% H-UCL (Log ROS)	0.00919		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-5.413	KM Geo Mean	0.00446
KM SD (logged)	0.377	95% Critical H Value (KM-Log)	1.816
KM Standard Error of Mean (logged)	0.068	95% H-UCL (KM -Log)	0.00533
KM SD (logged)	0.377	95% Critical H Value (KM-Log)	1.816
KM Standard Error of Mean (logged)	0.068		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.00325	Mean in Log Scale	-6.038
SD in Original Scale	0.00509	SD in Log Scale	0.573
95% t UCL (Assumes normality)	0.00459	95% H-Stat UCL	0.00335

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

95% KM (Chebyshev) UCL 0.00867

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

result (outside cn row_se_na_benzo(a)anthracene_56-55-3)

General Statistics

Total Number of Observations	41	Number of Distinct Observations	6
Number of Detects	5	Number of Non-Detects	36
Number of Distinct Detects	5	Number of Distinct Non-Detects	1
Minimum Detect	0.0081	Minimum Non-Detect	0.005
Maximum Detect	0.044	Maximum Non-Detect	0.005
Variance Detects	2.0908E-4	Percent Non-Detects	87.8%

TABLE B.3
PROUCL OUTPUT FOR SEDIMENT OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Mean Detects	0.0215	SD Detects	0.0145
Median Detects	0.022	CV Detects	0.672
Skewness Detects	0.995	Kurtosis Detects	0.828
Mean of Logged Detects	-4.028	SD of Logged Detects	0.701

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.895	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.762	Detected Data appear Normal at 5% Significance Level	
Lilliefors Test Statistic	0.232	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.343	Detected Data appear Normal at 5% Significance Level	

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.00701	KM Standard Error of Mean	0.00123
KM SD	0.00704	95% KM (BCA) UCL	0.00895
95% KM (t) UCL	0.00909	95% KM (Percentile Bootstrap) UCL	0.00895
95% KM (z) UCL	0.00904	95% KM Bootstrap t UCL	0.00947
90% KM Chebyshev UCL	0.0107	95% KM Chebyshev UCL	0.0124
97.5% KM Chebyshev UCL	0.0147	99% KM Chebyshev UCL	0.0193

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.322	**Anderson-Darling GOF Test**	
5% A-D Critical Value	0.683	Detected data appear Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.239	**Kolmogorov-Smirnov GOF**	
5% K-S Critical Value	0.36	Detected data appear Gamma Distributed at 5% Significance Level	

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	2.791	k star (bias corrected MLE)	1.25
Theta hat (MLE)	0.00771	Theta star (bias corrected MLE)	0.0172
nu hat (MLE)	27.91	nu star (bias corrected)	12.5
Mean (detects)	0.0215		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)
For such situations, GROS method may yield incorrect values of UCLs and BTVs
This is especially true when the sample size is small.
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0081	Mean	0.0114
Maximum	0.044	Median	0.01
SD	0.00596	CV	0.522
k hat (MLE)	8.343	k star (bias corrected MLE)	7.749
Theta hat (MLE)	0.00137	Theta star (bias corrected MLE)	0.00147
nu hat (MLE)	684.1	nu star (bias corrected)	635.4
Adjusted Level of Significance (β)	0.0441		
Approximate Chi Square Value (635.40, α)	577.9	Adjusted Chi Square Value (635.40, β)	575.9
95% Gamma Approximate UCL (use when n>=50)	0.0125	95% Gamma Adjusted UCL (use when n<50)	0.0126

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.00701	SD (KM)	0.00704
Variance (KM)	4.9621E-5	SE of Mean (KM)	0.00123
k hat (KM)	0.992	k star (KM)	0.935
nu hat (KM)	81.31	nu star (KM)	76.7
theta hat (KM)	0.00707	theta star (KM)	0.0075
80% gamma percentile (KM)	0.0113	90% gamma percentile (KM)	0.0164
95% gamma percentile (KM)	0.0215	99% gamma percentile (KM)	0.0334

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (76.70, α)	57.52	Adjusted Chi Square Value (76.70, β)	56.92
95% Gamma Approximate KM-UCL (use when n>=50)	0.00935	95% Gamma Adjusted KM-UCL (use when n<50)	0.00945

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.924	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.762	Detected Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.219	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.343	Detected Data appear Lognormal at 5% Significance Level	

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.00345	Mean in Log Scale	-7.553
SD in Original Scale	0.0083	SD in Log Scale	2.097
95% t UCL (assumes normality of ROS data)	0.00563	95% Percentile Bootstrap UCL	0.00586
95% BCA Bootstrap UCL	0.00672	95% Bootstrap t UCL	0.00769
95% H-UCL (Log ROS)	0.0166		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-5.143	KM Geo Mean	0.00584
KM SD (logged)	0.47	95% Critical H Value (KM-Log)	1.875
KM Standard Error of Mean (logged)	0.082	95% H-UCL (KM -Log)	0.00749
KM SD (logged)	0.47	95% Critical H Value (KM-Log)	1.875
KM Standard Error of Mean (logged)	0.082		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.00482	Mean in Log Scale	-5.752
SD in Original Scale	0.00779	SD in Log Scale	0.687
95% t UCL (Assumes normality)	0.00687	95% H-Stat UCL	0.00502

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

TABLE B.3
PROUCL OUTPUT FOR SEDIMENT OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Detected Data appear Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL 0.00909

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

result (outside cn row_se_na_benzo(a)pyrene_50-32-8)

General Statistics

Total Number of Observations	41	Number of Distinct Observations	5
Number of Detects	4	Number of Non-Detects	37
Number of Distinct Detects	4	Number of Distinct Non-Detects	1
Minimum Detect	0.011	Minimum Non-Detect	0.005
Maximum Detect	0.047	Maximum Non-Detect	0.005
Variance Detects	2.1958E-4	Percent Non-Detects	90.24%
Mean Detects	0.0278	SD Detects	0.0148
Median Detects	0.0265	CV Detects	0.534
Skewness Detects	0.494	Kurtosis Detects	1.439
Mean of Logged Detects	-3.708	SD of Logged Detects	0.601

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.967	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.748	Detected Data appear Normal at 5% Significance Level	
Lilliefors Test Statistic	0.243	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.375	Detected Data appear Normal at 5% Significance Level	

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.00722	KM Standard Error of Mean	0.00142
KM SD	0.00785	95% KM (BCA) UCL	N/A
95% KM (t) UCL	0.0096	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	0.00955	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	0.0115	95% KM Chebyshev UCL	0.0134
97.5% KM Chebyshev UCL	0.0161	99% KM Chebyshev UCL	0.0213

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.262	**Anderson-Darling GOF Test**	
5% A-D Critical Value	0.659	Detected data appear Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.232	**Kolmogorov-Smirnov GOF**	
5% K-S Critical Value	0.396	Detected data appear Gamma Distributed at 5% Significance Level	

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	4.21	k star (bias corrected MLE)	1.219
Theta hat (MLE)	0.00659	Theta star (bias corrected MLE)	0.0228
nu hat (MLE)	33.68	nu star (bias corrected)	9.752
Mean (detects)	0.0278		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)
For such situations, GROS method may yield incorrect values of UCLs and BTVs
This is especially true when the sample size is small.
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	0.0117
Maximum	0.047	Median	0.01
SD	0.0067	CV	0.571
k hat (MLE)	7.09	k star (bias corrected MLE)	6.587
Theta hat (MLE)	0.00165	Theta star (bias corrected MLE)	0.00178
nu hat (MLE)	581.4	nu star (bias corrected)	540.2
Adjusted Level of Significance (β)	0.0441		
Approximate Chi Square Value (540.16, α)	487.3	Adjusted Chi Square Value (540.16, β)	485.4
95% Gamma Approximate UCL (use when n>=50)	0.013	95% Gamma Adjusted UCL (use when n<50)	N/A

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.00722	SD (KM)	0.00785
Variance (KM)	6.1635E-5	SE of Mean (KM)	0.00142
k hat (KM)	0.846	k star (KM)	0.8
nu hat (KM)	69.34	nu star (KM)	65.6
theta hat (KM)	0.00854	theta star (KM)	0.00902
80% gamma percentile (KM)	0.0118	90% gamma percentile (KM)	0.0176
95% gamma percentile (KM)	0.0234	99% gamma percentile (KM)	0.0373

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (65.60, α)	47.97	Adjusted Chi Square Value (65.60, β)	47.41
95% Gamma Approximate KM-UCL (use when n>=50)	0.00987	95% Gamma Adjusted KM-UCL (use when n<50)	0.00999

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.954	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.748	Detected Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.263		
5% Lilliefors Critical Value	0.375	Detected Data appear Lognormal at 5% Significance Level	

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.00406	Mean in Log Scale	-7.114
SD in Original Scale	0.00907	SD in Log Scale	1.907

TABLE B.3
PROUCL OUTPUT FOR SEDIMENT OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

95% t UCL (assumes normality of ROS data)	0.00644	95% Percentile Bootstrap UCL	0.00661
95% BCA Bootstrap UCL	0.00729	95% Bootstrap t UCL	0.00945
95% H-UCL (Log ROS)	0.0144		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-5.143	KM Geo Mean	0.00584
KM SD (logged)	0.499	95% Critical H Value (KM-Log)	1.895
KM Standard Error of Mean (logged)	0.09	95% H-UCL (KM -Log)	0.00768
KM SD (logged)	0.499	95% Critical H Value (KM-Log)	1.895
KM Standard Error of Mean (logged)	0.09		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.00496	Mean in Log Scale	-5.769
SD in Original Scale	0.0086	SD in Log Scale	0.705
95% t UCL (Assumes normality)	0.00723	95% H-Stat UCL	0.00504

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL 0.0096

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

result (outside cn row_se_na_benzo(b&j)fluoranthene_205-99-2_205-82-3)

General Statistics

Total Number of Observations	41	Number of Distinct Observations	14
Number of Detects	15	Number of Non-Detects	26
Number of Distinct Detects	13	Number of Distinct Non-Detects	1
Minimum Detect	0.0072	Minimum Non-Detect	0.005
Maximum Detect	0.074	Maximum Non-Detect	0.005
Variance Detects	5.6307E-4	Percent Non-Detects	63.41%
Mean Detects	0.0252	SD Detects	0.0237
Median Detects	0.014	CV Detects	0.941
Skewness Detects	1.489	Kurtosis Detects	0.547
Mean of Logged Detects	-4	SD of Logged Detects	0.768

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.679	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.881	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.369	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.22	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.0124	KM Standard Error of Mean	0.00274
KM SD	0.0169	95% KM (BCA) UCL	0.0176
95% KM (t) UCL	0.017	95% KM (Percentile Bootstrap) UCL	0.017
95% KM (z) UCL	0.0169	95% KM Bootstrap t UCL	0.0197
90% KM Chebyshev UCL	0.0206	95% KM Chebyshev UCL	0.0243
97.5% KM Chebyshev UCL	0.0295	99% KM Chebyshev UCL	0.0396

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	1.56	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.751	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.32	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.225	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	1.714	k star (bias corrected MLE)	1.416
Theta hat (MLE)	0.0147	Theta star (bias corrected MLE)	0.0178
nu hat (MLE)	51.42	nu star (bias corrected)	42.47
Mean (detects)	0.0252		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)
For such situations, GROS method may yield incorrect values of UCLs and BTVs
This is especially true when the sample size is small.
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0072	Mean	0.0156
Maximum	0.074	Median	0.01
SD	0.0159	CV	1.02
k hat (MLE)	2.416	k star (bias corrected MLE)	2.256
Theta hat (MLE)	0.00644	Theta star (bias corrected MLE)	0.0069
nu hat (MLE)	198.1	nu star (bias corrected)	185
Adjusted Level of Significance (β)	0.0441		
Approximate Chi Square Value (184.98, α)	154.5	Adjusted Chi Square Value (184.98, β)	153.5
95% Gamma Approximate UCL (use when n>=50)	0.0186	95% Gamma Adjusted UCL (use when n<50)	0.0188

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.0124	SD (KM)	0.0169
Variance (KM)	2.8706E-4	SE of Mean (KM)	0.00274
k hat (KM)	0.535	k star (KM)	0.512

TABLE B.3
PROUCL OUTPUT FOR SEDIMENT OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

nu hat (KM)	43.89	nu star (KM)	42.01
theta hat (KM)	0.0232	theta star (KM)	0.0242
80% gamma percentile (KM)	0.0204	90% gamma percentile (KM)	0.0334
95% gamma percentile (KM)	0.0472	99% gamma percentile (KM)	0.0812

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (42.01, α)	28.15	Adjusted Chi Square Value (42.01, β)	27.74
95% Gamma Approximate KM-UCL (use when n>=50)	0.0185	95% Gamma Adjusted KM-UCL (use when n<50)	0.0188

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.834	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.881	Detected Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.272	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.22	Detected Data Not Lognormal at 5% Significance Level	

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.0107	Mean in Log Scale	-5.55
SD in Original Scale	0.018	SD in Log Scale	1.483
95% t UCL (assumes normality of ROS data)	0.0154	95% Percentile Bootstrap UCL	0.0159
95% BCA Bootstrap UCL	0.0167	95% Bootstrap t UCL	0.0178
95% H-UCL (Log ROS)	0.0232		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-4.823	KM Geo Mean	0.00804
KM SD (logged)	0.77	95% Critical H Value (KM-Log)	2.118
KM Standard Error of Mean (logged)	0.124	95% H-UCL (KM -Log)	0.014
KM SD (logged)	0.77	95% Critical H Value (KM-Log)	2.118
KM Standard Error of Mean (logged)	0.124		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.0108	Mean in Log Scale	-5.263
SD in Original Scale	0.0179	SD in Log Scale	1.072
95% t UCL (Assumes normality)	0.0155	95% H-Stat UCL	0.0139

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

95% KM (Chebyshev) UCL 0.0243

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

result (outside cn row_se_na_benzo(c)phenanthrene_195-19-7)

General Statistics

Total Number of Observations	41	Number of Distinct Observations	3
Number of Detects	2	Number of Non-Detects	39
Number of Distinct Detects	2	Number of Distinct Non-Detects	1
Minimum Detect	0.0082	Minimum Non-Detect	0.005
Maximum Detect	0.0088	Maximum Non-Detect	0.005
Variance Detects	1.8000E-7	Percent Non-Detects	95.12%
Mean Detects	0.0085	SD Detects	4.2426E-4
Median Detects	0.0085	CV Detects	0.0499
Skewness Detects	N/A	Kurtosis Detects	N/A
Mean of Logged Detects	-4.768	SD of Logged Detects	0.0499

Warning: Data set has only 2 Detected Values.
This is not enough to compute meaningful or reliable statistics and estimates.

Normal GOF Test on Detects Only

Not Enough Data to Perform GOF Test

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.00517	KM Standard Error of Mean	1.6716E-4
KM SD	7.5684E-4	95% KM (BCA) UCL	N/A
95% KM (t) UCL	0.00545	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	0.00545	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	0.00567	95% KM Chebyshev UCL	0.0059
97.5% KM Chebyshev UCL	0.00621	99% KM Chebyshev UCL	0.00683

Gamma GOF Tests on Detected Observations Only

Not Enough Data to Perform GOF Test

Gamma Statistics on Detected Data Only

k hat (MLE)	802.4	k star (bias corrected MLE)	N/A
Theta hat (MLE)	1.0593E-5	Theta star (bias corrected MLE)	N/A
nu hat (MLE)	3210	nu star (bias corrected)	N/A
Mean (detects)	0.0085		

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.00517	SD (KM)	7.5684E-4
Variance (KM)	5.7280E-7	SE of Mean (KM)	1.6716E-4
k hat (KM)	46.68	k star (KM)	43.28
nu hat (KM)	3827	nu star (KM)	3549

TABLE B.3
PROUCL OUTPUT FOR SEDIMENT OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

theta hat (KM)	1.1078E-4	theta star (KM)	1.1948E-4
80% gamma percentile (KM)	0.00582	90% gamma percentile (KM)	0.0062
95% gamma percentile (KM)	0.00653	99% gamma percentile (KM)	0.00717

Gamma Kaplan-Meier (KM) Statistics

		Adjusted Level of Significance (β)	0.0441
Approximate Chi Square Value (N/A, α)	3411	Adjusted Chi Square Value (N/A, β)	3406
95% Gamma Approximate KM-UCL (use when n>=50)	0.00538	95% Gamma Adjusted KM-UCL (use when n<50)	0.00539

Lognormal GOF Test on Detected Observations Only

Not Enough Data to Perform GOF Test

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.0054	Mean in Log Scale	-5.247
SD in Original Scale	0.00126	SD in Log Scale	0.229
95% t UCL (assumes normality of ROS data)	0.00573	95% Percentile Bootstrap UCL	0.00572
95% BCA Bootstrap UCL	0.00576	95% Bootstrap t UCL	0.00574
95% H-UCL (Log ROS)	0.00575		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-5.272	KM Geo Mean	0.00513
KM SD (logged)	0.114	95% Critical H Value (KM-Log)	1.695
KM Standard Error of Mean (logged)	0.0253	95% H-UCL (KM -Log)	0.00533
KM SD (logged)	0.114	95% Critical H Value (KM-Log)	1.695
KM Standard Error of Mean (logged)	0.0253		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.00279	Mean in Log Scale	-5.932
SD in Original Scale	0.00131	SD in Log Scale	0.267
95% t UCL (Assumes normality)	0.00314	95% H-Stat UCL	0.00296

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	0.00545	KM H-UCL	0.00533
95% KM (BCA) UCL	N/A		

Warning: One or more Recommended UCL(s) not available!

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

result (outside cn row_se_na_benzo(e)pyrene_192-97-2)

General Statistics

Total Number of Observations	41	Number of Distinct Observations	11
Number of Detects	10	Number of Non-Detects	31
Number of Distinct Detects	10	Number of Distinct Non-Detects	1
Minimum Detect	0.0074	Minimum Non-Detect	0.005
Maximum Detect	0.041	Maximum Non-Detect	0.005
Variance Detects	1.8875E-4	Percent Non-Detects	75.61%
Mean Detects	0.0187	SD Detects	0.0137
Median Detects	0.00985	CV Detects	0.734
Skewness Detects	0.898	Kurtosis Detects	-1.253
Mean of Logged Detects	-4.206	SD of Logged Detects	0.691

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.747	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.842	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.337	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.262	Detected Data Not Normal at 5% Significance Level	

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.00834	KM Standard Error of Mean	0.00144
KM SD	0.00872	95% KM (BCA) UCL	0.0106
95% KM (t) UCL	0.0108	95% KM (Percentile Bootstrap) UCL	0.0108
95% KM (z) UCL	0.0107	95% KM Bootstrap t UCL	0.0118
90% KM Chebyshev UCL	0.0127	95% KM Chebyshev UCL	0.0146
97.5% KM Chebyshev UCL	0.0173	99% KM Chebyshev UCL	0.0226

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	1.118	**Anderson-Darling GOF Test**	
5% A-D Critical Value	0.734	Detected Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.34	**Kolmogorov-Smirnov GOF**	
5% K-S Critical Value	0.269	Detected Data Not Gamma Distributed at 5% Significance Level	

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	2.353	k star (bias corrected MLE)	1.713
Theta hat (MLE)	0.00795	Theta star (bias corrected MLE)	0.0109
nu hat (MLE)	47.05	nu star (bias corrected)	34.27
Mean (detects)	0.0187		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

TABLE B.3
PROUCL OUTPUT FOR SEDIMENT OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

For such situations, GROS method may yield incorrect values of UCLs and BTVs
This is especially true when the sample size is small.
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0074	Mean	0.0121
Maximum	0.041	Median	0.01
SD	0.00754	CV	0.622
k hat (MLE)	5.409	k star (bias corrected MLE)	5.029
Theta hat (MLE)	0.00224	Theta star (bias corrected MLE)	0.00241
nu hat (MLE)	443.5	nu star (bias corrected)	412.4
Adjusted Level of Significance (β)	0.0441		
Approximate Chi Square Value (412.39, α)	366.3	Adjusted Chi Square Value (412.39, β)	364.7
95% Gamma Approximate UCL (use when n>=50)	0.0136	95% Gamma Adjusted UCL (use when n<50)	0.0137

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.00834	SD (KM)	0.00872
Variance (KM)	7.6095E-5	SE of Mean (KM)	0.00144
k hat (KM)	0.915	k star (KM)	0.864
nu hat (KM)	75.02	nu star (KM)	70.87
theta hat (KM)	0.00912	theta star (KM)	0.00965
80% gamma percentile (KM)	0.0136	90% gamma percentile (KM)	0.0199
95% gamma percentile (KM)	0.0263	99% gamma percentile (KM)	0.0414

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (70.87, α)	52.49	Adjusted Chi Square Value (70.87, β)	51.91
95% Gamma Approximate KM-UCL (use when n>=50)	0.0113	95% Gamma Adjusted KM-UCL (use when n<50)	0.0114

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.797	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.842	Detected Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.318	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.262	Detected Data Not Lognormal at 5% Significance Level	

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.00583	Mean in Log Scale	-6.223
SD in Original Scale	0.00995	SD in Log Scale	1.544
95% t UCL (assumes normality of ROS data)	0.00845	95% Percentile Bootstrap UCL	0.00858
95% BCA Bootstrap UCL	0.00938	95% Bootstrap t UCL	0.00969
95% H-UCL (Log ROS)	0.0136		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-5.032	KM Geo Mean	0.00653
KM SD (logged)	0.57	95% Critical H Value (KM-Log)	1.947
KM Standard Error of Mean (logged)	0.0938	95% H-UCL (KM -Log)	0.00915
KM SD (logged)	0.57	95% Critical H Value (KM-Log)	1.947
KM Standard Error of Mean (logged)	0.0938		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.00645	Mean in Log Scale	-5.556
SD in Original Scale	0.0096	SD in Log Scale	0.843
95% t UCL (Assumes normality)	0.00898	95% H-Stat UCL	0.00738

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

95% KM (Chebyshev) UCL 0.0146

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

result (outside cn row_se_na_benzo(g,h,i)perylene_191-24-2)

General Statistics

Total Number of Observations	41	Number of Distinct Observations	6
Number of Detects	5	Number of Non-Detects	36
Number of Distinct Detects	5	Number of Distinct Non-Detects	1
Minimum Detect	0.0075	Minimum Non-Detect	0.005
Maximum Detect	0.034	Maximum Non-Detect	0.005
Variance Detects	1.1595E-4	Percent Non-Detects	87.8%
Mean Detects	0.0207	SD Detects	0.0108
Median Detects	0.021	CV Detects	0.52
Skewness Detects	-0.00495	Kurtosis Detects	-1.677
Mean of Logged Detects	-4.011	SD of Logged Detects	0.611

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.972	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.762	Detected Data appear Normal at 5% Significance Level	
Lilliefors Test Statistic	0.163	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.343	Detected Data appear Normal at 5% Significance Level	

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.00691	KM Standard Error of Mean	0.00107
KM SD	0.00614	95% KM (BCA) UCL	0.00868
95% KM (t) UCL	0.00872	95% KM (Percentile Bootstrap) UCL	0.00856
95% KM (z) UCL	0.00868	95% KM Bootstrap t UCL	0.0083

TABLE B.3
PROUCL OUTPUT FOR SEDIMENT OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

90% KM Chebyshev UCL	0.0101	95% KM Chebyshev UCL	0.0116
97.5% KM Chebyshev UCL	0.0136	99% KM Chebyshev UCL	0.0176

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.231	**Anderson-Darling GOF Test**	
5% A-D Critical Value	0.681	Detected data appear Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.186	**Kolmogorov-Smirnov GOF**	
5% K-S Critical Value	0.359	Detected data appear Gamma Distributed at 5% Significance Level	

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	3.903	k star (bias corrected MLE)	1.694
Theta hat (MLE)	0.0053	Theta star (bias corrected MLE)	0.0122
nu hat (MLE)	39.03	nu star (bias corrected)	16.94
Mean (detects)	0.0207		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)
For such situations, GROS method may yield incorrect values of UCLs and BTVs
This is especially true when the sample size is small.
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0075	Mean	0.0113
Maximum	0.034	Median	0.01
SD	0.00492	CV	0.435
k hat (MLE)	10.12	k star (bias corrected MLE)	9.398
Theta hat (MLE)	0.00112	Theta star (bias corrected MLE)	0.0012
nu hat (MLE)	830	nu star (bias corrected)	770.6
Adjusted Level of Significance (β)	0.0441		
Approximate Chi Square Value (770.61, α)	707.2	Adjusted Chi Square Value (770.61, β)	705
95% Gamma Approximate UCL (use when n>=50)	0.0123	95% Gamma Adjusted UCL (use when n<50)	0.0124

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.00691	SD (KM)	0.00614
Variance (KM)	3.7706E-5	SE of Mean (KM)	0.00107
k hat (KM)	1.268	k star (KM)	1.191
nu hat (KM)	104	nu star (KM)	97.7
theta hat (KM)	0.00545	theta star (KM)	0.0058
80% gamma percentile (KM)	0.011	90% gamma percentile (KM)	0.0152
95% gamma percentile (KM)	0.0195	99% gamma percentile (KM)	0.0292

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (97.70, α)	75.9	Adjusted Chi Square Value (97.70, β)	75.2
95% Gamma Approximate KM-UCL (use when n>=50)	0.0089	95% Gamma Adjusted KM-UCL (use when n<50)	0.00898

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.946	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.762	Detected Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.196	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.343	Detected Data appear Lognormal at 5% Significance Level	

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.00373	Mean in Log Scale	-6.98
SD in Original Scale	0.00741	SD in Log Scale	1.768
95% t UCL (assumes normality of ROS data)	0.00568	95% Percentile Bootstrap UCL	0.00577
95% BCA Bootstrap UCL	0.00644	95% Bootstrap t UCL	0.00724
95% H-UCL (Log ROS)	0.0112		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-5.141	KM Geo Mean	0.00585
KM SD (logged)	0.462	95% Critical H Value (KM-Log)	1.87
KM Standard Error of Mean (logged)	0.0808	95% H-UCL (KM -Log)	0.00746
KM SD (logged)	0.462	95% Critical H Value (KM-Log)	1.87
KM Standard Error of Mean (logged)	0.0808		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.00472	Mean in Log Scale	-5.75
SD in Original Scale	0.00692	SD in Log Scale	0.684
95% t UCL (Assumes normality)	0.00654	95% H-Stat UCL	0.00501

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL 0.00872

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

result (outside cn row_se_na_benzo(k)fluoranthene_207-08-9)

General Statistics

Total Number of Observations	41	Number of Distinct Observations	5
Number of Detects	4	Number of Non-Detects	37
Number of Distinct Detects	4	Number of Distinct Non-Detects	1
Minimum Detect	0.0098	Minimum Non-Detect	0.005

TABLE B.3
PROUCL OUTPUT FOR SEDIMENT OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Maximum Detect	0.026	Maximum Non-Detect	0.005
Variance Detects	4.8227E-5	Percent Non-Detects	90.24%
Mean Detects	0.0197	SD Detects	0.00694
Median Detects	0.0215	CV Detects	0.353
Skewness Detects	-1.405	Kurtosis Detects	2.569
Mean of Logged Detects	-3.989	SD of Logged Detects	0.434

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.883	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.748	Detected Data appear Normal at 5% Significance Level	
Lilliefors Test Statistic	0.324	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.375	Detected Data appear Normal at 5% Significance Level	

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.00643	KM Standard Error of Mean	8.5642E-4
KM SD	0.00475	95% KM (BCA) UCL	N/A
95% KM (t) UCL	0.00788	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	0.00784	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	0.009	95% KM Chebyshev UCL	0.0102
97.5% KM Chebyshev UCL	0.0118	99% KM Chebyshev UCL	0.015

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.516	**Anderson-Darling GOF Test**	
5% A-D Critical Value	0.658	Detected data appear Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.368	**Kolmogorov-Smirnov GOF**	
5% K-S Critical Value	0.395	Detected data appear Gamma Distributed at 5% Significance Level	

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	8.279	k star (bias corrected MLE)	2.236
Theta hat (MLE)	0.00238	Theta star (bias corrected MLE)	0.00881
nu hat (MLE)	66.23	nu star (bias corrected)	17.89
Mean (detects)	0.0197		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)
For such situations, GROS method may yield incorrect values of UCLs and BTVs
This is especially true when the sample size is small.
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0098	Mean	0.0109
Maximum	0.026	Median	0.01
SD	0.00348	CV	0.318
k hat (MLE)	16.68	k star (bias corrected MLE)	15.47
Theta hat (MLE)	6.5638E-4	Theta star (bias corrected MLE)	7.0745E-4
nu hat (MLE)	1368	nu star (bias corrected)	1269
Adjusted Level of Significance (β)	0.0441		
Approximate Chi Square Value (N/A, α)	1187	Adjusted Chi Square Value (N/A, β)	1184
95% Gamma Approximate UCL (use when n>=50)	0.0117	95% Gamma Adjusted UCL (use when n<50)	N/A

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.00643	SD (KM)	0.00475
Variance (KM)	2.2554E-5	SE of Mean (KM)	8.5642E-4
k hat (KM)	1.836	k star (KM)	1.717
nu hat (KM)	150.5	nu star (KM)	140.8
theta hat (KM)	0.00351	theta star (KM)	0.00375
80% gamma percentile (KM)	0.00981	90% gamma percentile (KM)	0.013
95% gamma percentile (KM)	0.016	99% gamma percentile (KM)	0.0229

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (140.83, α)	114.4	Adjusted Chi Square Value (140.83, β)	113.5
95% Gamma Approximate KM-UCL (use when n>=50)	0.00792	95% Gamma Adjusted KM-UCL (use when n<50)	0.00798

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.813	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.748	Detected Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.364	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.375	Detected Data appear Lognormal at 5% Significance Level	

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.00428	Mean in Log Scale	-6.147
SD in Original Scale	0.00591	SD in Log Scale	1.21
95% t UCL (assumes normality of ROS data)	0.00584	95% Percentile Bootstrap UCL	0.00586
95% BCA Bootstrap UCL	0.00624	95% Bootstrap t UCL	0.00637
95% H-UCL (Log ROS)	0.0073		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-5.171	KM Geo Mean	0.00568
KM SD (logged)	0.406	95% Critical H Value (KM-Log)	1.834
KM Standard Error of Mean (logged)	0.0732	95% H-UCL (KM -Log)	0.00694
KM SD (logged)	0.406	95% Critical H Value (KM-Log)	1.834
KM Standard Error of Mean (logged)	0.0732		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.00418	Mean in Log Scale	-5.796
SD in Original Scale	0.00551	SD in Log Scale	0.613
95% t UCL (Assumes normality)	0.00563	95% H-Stat UCL	0.00445

DL/2 is not a recommended method, provided for comparisons and historical reasons

TABLE B.3
PROUCL OUTPUT FOR SEDIMENT OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL 0.00788

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

result (outside cn row_se_na_chrysene_218-01-9)

General Statistics

Total Number of Observations	41	Number of Distinct Observations	9
Number of Detects	8	Number of Non-Detects	33
Number of Distinct Detects	8	Number of Distinct Non-Detects	1
Minimum Detect	0.0083	Minimum Non-Detect	0.005
Maximum Detect	0.049	Maximum Non-Detect	0.005
Variance Detects	3.2584E-4	Percent Non-Detects	80.49%
Mean Detects	0.0238	SD Detects	0.0181
Median Detects	0.013	CV Detects	0.759
Skewness Detects	0.645	Kurtosis Detects	-2.055
Mean of Logged Detects	-4.001	SD of Logged Detects	0.769

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.757	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.818	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.312	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.283	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.00866	KM Standard Error of Mean	0.00176
KM SD	0.0105	95% KM (BCA) UCL	0.0119
95% KM (t) UCL	0.0116	95% KM (Percentile Bootstrap) UCL	0.0115
95% KM (z) UCL	0.0116	95% KM Bootstrap t UCL	0.0122
90% KM Chebyshev UCL	0.0139	95% KM Chebyshev UCL	0.0163
97.5% KM Chebyshev UCL	0.0196	99% KM Chebyshev UCL	0.0262

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.906	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.724	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.27	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.297	Detected data appear Gamma Distributed at 5% Significance Level

Detected data follow Appr. Gamma Distribution at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	2.06	k star (bias corrected MLE)	1.371
Theta hat (MLE)	0.0115	Theta star (bias corrected MLE)	0.0173
nu hat (MLE)	32.96	nu star (bias corrected)	21.93
Mean (detects)	0.0238		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)
For such situations, GROS method may yield incorrect values of UCLs and BTVs
This is especially true when the sample size is small.
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0083	Mean	0.0127
Maximum	0.049	Median	0.01
SD	0.00936	CV	0.738
k hat (MLE)	4.32	k star (bias corrected MLE)	4.02
Theta hat (MLE)	0.00294	Theta star (bias corrected MLE)	0.00316
nu hat (MLE)	354.2	nu star (bias corrected)	329.7
Adjusted Level of Significance (β)	0.0441		
Approximate Chi Square Value (329.65, α)	288.6	Adjusted Chi Square Value (329.65, β)	287.2
95% Gamma Approximate UCL (use when n>=50)	0.0145	95% Gamma Adjusted UCL (use when n<50)	0.0146

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.00866	SD (KM)	0.0105
Variance (KM)	1.1099E-4	SE of Mean (KM)	0.00176
k hat (KM)	0.676	k star (KM)	0.643
nu hat (KM)	55.45	nu star (KM)	52.73
theta hat (KM)	0.0128	theta star (KM)	0.0135
80% gamma percentile (KM)	0.0143	90% gamma percentile (KM)	0.0222
95% gamma percentile (KM)	0.0304	99% gamma percentile (KM)	0.0502

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (52.73, α)	37.05	Adjusted Chi Square Value (52.73, β)	36.57
95% Gamma Approximate KM-UCL (use when n>=50)	0.0123	95% Gamma Adjusted KM-UCL (use when n<50)	0.0125

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.802	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.818	Detected Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.246	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.283	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Approximate Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

TABLE B.3
PROUCL OUTPUT FOR SEDIMENT OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Mean in Original Scale	0.00576	Mean in Log Scale	-6.663
SD in Original Scale	0.0118	SD in Log Scale	1.856
95% t UCL (assumes normality of ROS data)	0.00887	95% Percentile Bootstrap UCL	0.00902
95% BCA Bootstrap UCL	0.00994	95% Bootstrap t UCL	0.0105
95% H-UCL (Log ROS)	0.0196		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-5.045	KM Geo Mean	0.00644
KM SD (logged)	0.604	95% Critical H Value (KM-Log)	1.974
KM Standard Error of Mean (logged)	0.101	95% H-UCL (KM -Log)	0.00934
KM SD (logged)	0.604	95% Critical H Value (KM-Log)	1.974
KM Standard Error of Mean (logged)	0.101		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.00665	Mean in Log Scale	-5.603
SD in Original Scale	0.0114	SD in Log Scale	0.861
95% t UCL (Assumes normality)	0.00965	95% H-Stat UCL	0.00721

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Approximate Gamma Distributed at 5% Significance Level

Suggested UCL to Use

95% KM Adjusted Gamma UCL	0.0125	95% GROS Adjusted Gamma UCL	0.0146

When a data set follows an approximate (e.g., normal) distribution passing one of the GOF test
When applicable, it is suggested to use a UCL based upon a distribution (e.g., gamma) passing both GOF tests in ProUCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

result (outside cn row_se_na_fluoranthene_206-44-0)

General Statistics

Total Number of Observations	41	Number of Distinct Observations	15
Number of Detects	17	Number of Non-Detects	24
Number of Distinct Detects	14	Number of Distinct Non-Detects	1
Minimum Detect	0.0074	Minimum Non-Detect	0.005
Maximum Detect	0.15	Maximum Non-Detect	0.005
Variance Detects	0.0014	Percent Non-Detects	58.54%
Mean Detects	0.0305	SD Detects	0.0374
Median Detects	0.016	CV Detects	1.226
Skewness Detects	2.53	Kurtosis Detects	6.572
Mean of Logged Detects	-3.927	SD of Logged Detects	0.868

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.635	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.892	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.306	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.207	Detected Data Not Normal at 5% Significance Level	

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.0156	KM Standard Error of Mean	0.00427
KM SD	0.0265	95% KM (BCA) UCL	0.0232
95% KM (t) UCL	0.0228	95% KM (Percentile Bootstrap) UCL	0.0229
95% KM (z) UCL	0.0226	95% KM Bootstrap t UCL	0.0328
90% KM Chebyshev UCL	0.0284	95% KM Chebyshev UCL	0.0342
97.5% KM Chebyshev UCL	0.0422	99% KM Chebyshev UCL	0.0581

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	1.251	**Anderson-Darling GOF Test**	
5% A-D Critical Value	0.76	Detected Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.263	**Kolmogorov-Smirnov GOF**	
5% K-S Critical Value	0.214	Detected Data Not Gamma Distributed at 5% Significance Level	

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	1.286	k star (bias corrected MLE)	1.098
Theta hat (MLE)	0.0237	Theta star (bias corrected MLE)	0.0278
nu hat (MLE)	43.71	nu star (bias corrected)	37.33
Mean (detects)	0.0305		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)
For such situations, GROS method may yield incorrect values of UCLs and BTVs
This is especially true when the sample size is small.
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0074	Mean	0.0185
Maximum	0.15	Median	0.01
SD	0.0258	CV	1.393
k hat (MLE)	1.644	k star (bias corrected MLE)	1.54
Theta hat (MLE)	0.0113	Theta star (bias corrected MLE)	0.012
nu hat (MLE)	134.8	nu star (bias corrected)	126.3
Adjusted Level of Significance (β)	0.0441		
Approximate Chi Square Value (126.29, α)	101.3	Adjusted Chi Square Value (126.29, β)	100.5
95% Gamma Approximate UCL (use when n>=50)	0.0231	95% Gamma Adjusted UCL (use when n<50)	0.0232

TABLE B.3
PROUCL OUTPUT FOR SEDIMENT OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.0156	SD (KM)	0.0265
Variance (KM)	7.0378E-4	SE of Mean (KM)	0.00427
k hat (KM)	0.345	k star (KM)	0.336
nu hat (KM)	28.26	nu star (KM)	27.52
theta hat (KM)	0.0452	theta star (KM)	0.0464
80% gamma percentile (KM)	0.0245	90% gamma percentile (KM)	0.0453
95% gamma percentile (KM)	0.0687	99% gamma percentile (KM)	0.129

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (27.52, α)	16.56	Adjusted Chi Square Value (27.52, β)	16.25
95% Gamma Approximate KM-UCL (use when n>=50)	0.0259	95% Gamma Adjusted KM-UCL (use when n<50)	0.0264

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.889	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.892	Detected Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.215	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.207	Detected Data Not Lognormal at 5% Significance Level	

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.0138	Mean in Log Scale	-5.495
SD in Original Scale	0.0276	SD in Log Scale	1.635
95% t UCL (assumes normality of ROS data)	0.0211	95% Percentile Bootstrap UCL	0.0222
95% BCA Bootstrap UCL	0.0248	95% Bootstrap t UCL	0.0298
95% H-UCL (Log ROS)	0.0352		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-4.73	KM Geo Mean	0.00883
KM SD (logged)	0.866	95% Critical H Value (KM-Log)	2.211
KM Standard Error of Mean (logged)	0.139	95% H-UCL (KM -Log)	0.0174
KM SD (logged)	0.866	95% Critical H Value (KM-Log)	2.211
KM Standard Error of Mean (logged)	0.139		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.0141	Mean in Log Scale	-5.135
SD in Original Scale	0.0275	SD in Log Scale	1.167
95% t UCL (Assumes normality)	0.0213	95% H-Stat UCL	0.0186

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

95% KM (Chebyshev) UCL 0.0342

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

result (outside cn row_se_na_fluorene_86-73-7)

General Statistics

Total Number of Observations	41	Number of Distinct Observations	6
Number of Detects	7	Number of Non-Detects	34
Number of Distinct Detects	5	Number of Distinct Non-Detects	1
Minimum Detect	0.0079	Minimum Non-Detect	0.005
Maximum Detect	0.02	Maximum Non-Detect	0.005
Variance Detects	1.6616E-5	Percent Non-Detects	82.93%
Mean Detects	0.0121	SD Detects	0.00408
Median Detects	0.011	CV Detects	0.336
Skewness Detects	1.425	Kurtosis Detects	1.819
Mean of Logged Detects	-4.455	SD of Logged Detects	0.306

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.849	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.803	Detected Data appear Normal at 5% Significance Level	
Lilliefors Test Statistic	0.323	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.304	Detected Data Not Normal at 5% Significance Level	

Detected Data appear Approximate Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.00622	KM Standard Error of Mean	5.2337E-4
KM SD	0.0031	95% KM (BCA) UCL	0.00707
95% KM (t) UCL	0.0071	95% KM (Percentile Bootstrap) UCL	0.00707
95% KM (z) UCL	0.00708	95% KM Bootstrap t UCL	0.00718
90% KM Chebyshev UCL	0.00779	95% KM Chebyshev UCL	0.0085
97.5% KM Chebyshev UCL	0.00949	99% KM Chebyshev UCL	0.0114

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.487	**Anderson-Darling GOF Test**	
5% A-D Critical Value	0.708	Detected data appear Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.307	**Kolmogorov-Smirnov GOF**	
5% K-S Critical Value	0.312	Detected data appear Gamma Distributed at 5% Significance Level	

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	11.94	k star (bias corrected MLE)	6.915

TABLE B.3
PROUCL OUTPUT FOR SEDIMENT OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Theta hat (MLE)	0.00102	Theta star (bias corrected MLE)	0.00175
nu hat (MLE)	167.1	nu star (bias corrected)	96.82
Mean (detects)	0.0121		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)
For such situations, GROS method may yield incorrect values of UCLs and BTVs
This is especially true when the sample size is small.
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0079	Mean	0.0104
Maximum	0.02	Median	0.01
SD	0.00177	CV	0.171
k hat (MLE)	50.16	k star (bias corrected MLE)	46.51
Theta hat (MLE)	2.0661E-4	Theta star (bias corrected MLE)	2.2284E-4
nu hat (MLE)	4113	nu star (bias corrected)	3813
Adjusted Level of Significance (β)	0.0441		
Approximate Chi Square Value (N/A, α)	3671	Adjusted Chi Square Value (N/A, β)	3666
95% Gamma Approximate UCL (use when n>=50)	0.0108	95% Gamma Adjusted UCL (use when n<50)	0.0108

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.00622	SD (KM)	0.0031
Variance (KM)	9.6263E-6	SE of Mean (KM)	5.2337E-4
k hat (KM)	4.015	k star (KM)	3.738
nu hat (KM)	329.3	nu star (KM)	306.5
theta hat (KM)	0.00155	theta star (KM)	0.00166
80% gamma percentile (KM)	0.00864	90% gamma percentile (KM)	0.0105
95% gamma percentile (KM)	0.0123	99% gamma percentile (KM)	0.016

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (306.49, α)	266.9	Adjusted Chi Square Value (306.49, β)	265.6
95% Gamma Approximate KM-UCL (use when n>=50)	0.00714	95% Gamma Adjusted KM-UCL (use when n<50)	0.00717

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.913	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.803	Detected Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.286	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.304	Detected Data appear Lognormal at 5% Significance Level	

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.0047	Mean in Log Scale	-5.676
SD in Original Scale	0.00409	SD in Log Scale	0.809
95% t UCL (assumes normality of ROS data)	0.00578	95% Percentile Bootstrap UCL	0.00571
95% BCA Bootstrap UCL	0.00604	95% Bootstrap t UCL	0.00599
95% H-UCL (Log ROS)	0.00627		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-5.154	KM Geo Mean	0.00577
KM SD (logged)	0.338	95% Critical H Value (KM-Log)	1.794
KM Standard Error of Mean (logged)	0.0571	95% H-UCL (KM -Log)	0.00673
KM SD (logged)	0.338	95% Critical H Value (KM-Log)	1.794
KM Standard Error of Mean (logged)	0.0571		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.00414	Mean in Log Scale	-5.729
SD in Original Scale	0.00399	SD in Log Scale	0.597
95% t UCL (Assumes normality)	0.00519	95% H-Stat UCL	0.00468

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Approximate Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL 0.0071

When a data set follows an approximate (e.g., normal) distribution passing one of the GOF test
When applicable, it is suggested to use a UCL based upon a distribution (e.g., gamma) passing both GOF tests in ProUCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

result (outside cn row_se_na_indeno(1,2,3-cd)pyrene_193-39-5)

General Statistics

Total Number of Observations	41	Number of Distinct Observations	5
Number of Detects	4	Number of Non-Detects	37
Number of Distinct Detects	4	Number of Distinct Non-Detects	1
Minimum Detect	0.015	Minimum Non-Detect	0.005
Maximum Detect	0.033	Maximum Non-Detect	0.005
Variance Detects	7.3667E-5	Percent Non-Detects	90.24%
Mean Detects	0.0255	SD Detects	0.00858
Median Detects	0.027	CV Detects	0.337
Skewness Detects	-0.531	Kurtosis Detects	-2.902
Mean of Logged Detects	-3.717	SD of Logged Detects	0.371

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.893	**Shapiro Wilk GOF Test**	

TABLE B.3
PROUCL OUTPUT FOR SEDIMENT OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

5% Shapiro Wilk Critical Value	0.748	Detected Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.276	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.375	Detected Data appear Normal at 5% Significance Level

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.007	KM Standard Error of Mean	0.00117
KM SD	0.00651	95% KM (BCA) UCL	N/A
95% KM (t) UCL	0.00898	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	0.00893	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	0.0105	95% KM Chebyshev UCL	0.0121
97.5% KM Chebyshev UCL	0.0143	99% KM Chebyshev UCL	0.0187

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.383	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.657	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.307	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.395	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	10.51	k star (bias corrected MLE)	2.793
Theta hat (MLE)	0.00243	Theta star (bias corrected MLE)	0.00913
nu hat (MLE)	84.05	nu star (bias corrected)	22.35
Mean (detects)	0.0255		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)
For such situations, GROS method may yield incorrect values of UCLs and BTVs
This is especially true when the sample size is small.
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	0.0115
Maximum	0.033	Median	0.01
SD	0.00521	CV	0.451
k hat (MLE)	9.425	k star (bias corrected MLE)	8.752
Theta hat (MLE)	0.00122	Theta star (bias corrected MLE)	0.00132
nu hat (MLE)	772.9	nu star (bias corrected)	717.7
Adjusted Level of Significance (β)	0.0441		
Approximate Chi Square Value (717.66, α)	656.5	Adjusted Chi Square Value (717.66, β)	654.4
95% Gamma Approximate UCL (use when n>=50)	0.0126	95% Gamma Adjusted UCL (use when n<50)	N/A

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.007	SD (KM)	0.00651
Variance (KM)	4.2390E-5	SE of Mean (KM)	0.00117
k hat (KM)	1.156	k star (KM)	1.088
nu hat (KM)	94.79	nu star (KM)	89.18
theta hat (KM)	0.00606	theta star (KM)	0.00644
80% gamma percentile (KM)	0.0112	90% gamma percentile (KM)	0.0158
95% gamma percentile (KM)	0.0204	99% gamma percentile (KM)	0.0309

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (89.18, α)	68.41	Adjusted Chi Square Value (89.18, β)	67.75
95% Gamma Approximate KM-UCL (use when n>=50)	0.00913	95% Gamma Adjusted KM-UCL (use when n<50)	0.00922

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.887	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.748	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.271	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.375	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.00593	Mean in Log Scale	-5.737
SD in Original Scale	0.00758	SD in Log Scale	1.131
95% t UCL (assumes normality of ROS data)	0.00792	95% Percentile Bootstrap UCL	0.00787
95% BCA Bootstrap UCL	0.00851	95% Bootstrap t UCL	0.0088
95% H-UCL (Log ROS)	0.00955		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-5.144	KM Geo Mean	0.00583
KM SD (logged)	0.48	95% Critical H Value (KM-Log)	1.882
KM Standard Error of Mean (logged)	0.0865	95% H-UCL (KM -Log)	0.00755
KM SD (logged)	0.48	95% Critical H Value (KM-Log)	1.882
KM Standard Error of Mean (logged)	0.0865		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.00474	Mean in Log Scale	-5.77
SD in Original Scale	0.0073	SD in Log Scale	0.691
95% t UCL (Assumes normality)	0.00666	95% H-Stat UCL	0.00495

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL 0.00898

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.

TABLE B.3
PROUCL OUTPUT FOR SEDIMENT OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

result (outside cn row_se_na_methylnaphthalene, 2-_91-57-6)

General Statistics

Total Number of Observations	41	Number of Distinct Observations	9
Number of Detects	11	Number of Non-Detects	30
Number of Distinct Detects	8	Number of Distinct Non-Detects	1
Minimum Detect	0.008	Minimum Non-Detect	0.005
Maximum Detect	0.024	Maximum Non-Detect	0.005
Variance Detects	1.7164E-5	Percent Non-Detects	73.17%
Mean Detects	0.014	SD Detects	0.00414
Median Detects	0.014	CV Detects	0.296
Skewness Detects	1.236	Kurtosis Detects	3.13
Mean of Logged Detects	-4.307	SD of Logged Detects	0.284

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.899	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.85	Detected Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.222	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.251	Detected Data appear Normal at 5% Significance Level

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.00741	KM Standard Error of Mean	7.3295E-4
KM SD	0.00447	95% KM (BCA) UCL	0.00856
95% KM (t) UCL	0.00864	95% KM (Percentile Bootstrap) UCL	0.00868
95% KM (z) UCL	0.00862	95% KM Bootstrap t UCL	0.0089
90% KM Chebyshev UCL	0.00961	95% KM Chebyshev UCL	0.0106
97.5% KM Chebyshev UCL	0.012	99% KM Chebyshev UCL	0.0147

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.328	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.729	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.184	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.255	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	13.6	k star (bias corrected MLE)	9.952
Theta hat (MLE)	0.00103	Theta star (bias corrected MLE)	0.0014
nu hat (MLE)	299.2	nu star (bias corrected)	218.9
Mean (detects)	0.014		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)
For such situations, GROS method may yield incorrect values of UCLs and BTVs
This is especially true when the sample size is small.
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.008	Mean	0.0111
Maximum	0.024	Median	0.01
SD	0.00274	CV	0.247
k hat (MLE)	23.36	k star (bias corrected MLE)	21.66
Theta hat (MLE)	4.7387E-4	Theta star (bias corrected MLE)	5.1089E-4
nu hat (MLE)	1915	nu star (bias corrected)	1776
Adjusted Level of Significance (β)	0.0441		
Approximate Chi Square Value (N/A, α)	1680	Adjusted Chi Square Value (N/A, β)	1676
95% Gamma Approximate UCL (use when n>=50)	0.0117	95% Gamma Adjusted UCL (use when n<50)	0.0117

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.00741	SD (KM)	0.00447
Variance (KM)	2.0023E-5	SE of Mean (KM)	7.3295E-4
k hat (KM)	2.742	k star (KM)	2.558
nu hat (KM)	224.8	nu star (KM)	209.7
theta hat (KM)	0.0027	theta star (KM)	0.0029
80% gamma percentile (KM)	0.0108	90% gamma percentile (KM)	0.0136
95% gamma percentile (KM)	0.0163	99% gamma percentile (KM)	0.0221

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (209.73, α)	177.2	Adjusted Chi Square Value (209.73, β)	176.1
95% Gamma Approximate KM-UCL (use when n>=50)	0.00877	95% Gamma Adjusted KM-UCL (use when n<50)	0.00882

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.958	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.85	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.182	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.251	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.00753	Mean in Log Scale	-5.068
SD in Original Scale	0.00478	SD in Log Scale	0.61
95% t UCL (assumes normality of ROS data)	0.00879	95% Percentile Bootstrap UCL	0.00883
95% BCA Bootstrap UCL	0.00903	95% Bootstrap t UCL	0.0091
95% H-UCL (Log ROS)	0.00917		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-5.032	KM Geo Mean	0.00652
KM SD (logged)	0.461	95% Critical H Value (KM-Log)	1.869

TABLE B.3
PROUCL OUTPUT FOR SEDIMENT OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

KM Standard Error of Mean (logged)	0.0755	95% H-UCL (KM -Log)	0.00831
KM SD (logged)	0.461	95% Critical H Value (KM-Log)	1.869
KM Standard Error of Mean (logged)	0.0755		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.00558	Mean in Log Scale	-5.54
SD in Original Scale	0.00555	SD in Log Scale	0.769
95% t UCL (Assumes normality)	0.00704	95% H-Stat UCL	0.00683

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL 0.00864

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

result (outside cn row_se_na_naphthalene_91-20-3)

General Statistics

Total Number of Observations	41	Number of Distinct Observations	7
Number of Detects	6	Number of Non-Detects	35
Number of Distinct Detects	6	Number of Distinct Non-Detects	1
Minimum Detect	0.0085	Minimum Non-Detect	0.005
Maximum Detect	0.068	Maximum Non-Detect	0.005
Variance Detects	5.6825E-4	Percent Non-Detects	85.37%
Mean Detects	0.0196	SD Detects	0.0238
Median Detects	0.0088	CV Detects	1.215
Skewness Detects	2.39	Kurtosis Detects	5.755
Mean of Logged Detects	-4.313	SD of Logged Detects	0.826

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.565	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.788	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.41	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.325	Detected Data Not Normal at 5% Significance Level	

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.00714	KM Standard Error of Mean	0.00168
KM SD	0.0098	95% KM (BCA) UCL	0.0101
95% KM (t) UCL	0.00996	95% KM (Percentile Bootstrap) UCL	0.01
95% KM (z) UCL	0.0099	95% KM Bootstrap t UCL	0.0203
90% KM Chebyshev UCL	0.0122	95% KM Chebyshev UCL	0.0144
97.5% KM Chebyshev UCL	0.0176	99% KM Chebyshev UCL	0.0238

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	1.224	**Anderson-Darling GOF Test**	
5% A-D Critical Value	0.708	Detected Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.375	**Kolmogorov-Smirnov GOF**	
5% K-S Critical Value	0.338	Detected Data Not Gamma Distributed at 5% Significance Level	

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	1.455	k star (bias corrected MLE)	0.838
Theta hat (MLE)	0.0135	Theta star (bias corrected MLE)	0.0234
nu hat (MLE)	17.45	nu star (bias corrected)	10.06
Mean (detects)	0.0196		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)
For such situations, GROS method may yield incorrect values of UCLs and BTVs
This is especially true when the sample size is small.
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0085	Mean	0.0114
Maximum	0.068	Median	0.01
SD	0.0091	CV	0.798
k hat (MLE)	5.785	k star (bias corrected MLE)	5.378
Theta hat (MLE)	0.00197	Theta star (bias corrected MLE)	0.00212
nu hat (MLE)	474.4	nu star (bias corrected)	441
Adjusted Level of Significance (β)	0.0441		
Approximate Chi Square Value (441.02, α)	393.3	Adjusted Chi Square Value (441.02, β)	391.7
95% Gamma Approximate UCL (use when n>=50)	0.0128	95% Gamma Adjusted UCL (use when n<50)	0.0128

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.00714	SD (KM)	0.0098
Variance (KM)	9.5988E-5	SE of Mean (KM)	0.00168
k hat (KM)	0.531	k star (KM)	0.508
nu hat (KM)	43.54	nu star (KM)	41.69
theta hat (KM)	0.0134	theta star (KM)	0.014
80% gamma percentile (KM)	0.0117	90% gamma percentile (KM)	0.0192
95% gamma percentile (KM)	0.0273	99% gamma percentile (KM)	0.0469

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (41.69, α)	27.89	Adjusted Chi Square Value (41.69, β)	27.47

TABLE B.3
PROUCL OUTPUT FOR SEDIMENT OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

95% Gamma Approximate KM-UCL (use when n>=50)	0.0107	95% Gamma Adjusted KM-UCL (use when n<50)	0.0108

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.656	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.788	Detected Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.356	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.325	Detected Data Not Lognormal at 5% Significance Level	

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.00349	Mean in Log Scale	-7.691
SD in Original Scale	0.0108	SD in Log Scale	2.129
95% t UCL (assumes normality of ROS data)	0.00634	95% Percentile Bootstrap UCL	0.00684
95% BCA Bootstrap UCL	0.00868	95% Bootstrap t UCL	0.0126
95% H-UCL (Log ROS)	0.0159		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-5.154	KM Geo Mean	0.00578
KM SD (logged)	0.452	95% Critical H Value (KM-Log)	1.863
KM Standard Error of Mean (logged)	0.0774	95% H-UCL (KM -Log)	0.00731
KM SD (logged)	0.452	95% Critical H Value (KM-Log)	1.863
KM Standard Error of Mean (logged)	0.0774		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.005	Mean in Log Scale	-5.746
SD in Original Scale	0.0104	SD in Log Scale	0.668
95% t UCL (Assumes normality)	0.00774	95% H-Stat UCL	0.00495

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

95% KM (Chebyshev) UCL	0.0144

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

result (outside cn row_se_na_perylene_198-55-0)

General Statistics

Total Number of Observations	41	Number of Distinct Observations	21
Number of Detects	35	Number of Non-Detects	6
Number of Distinct Detects	20	Number of Distinct Non-Detects	1
Minimum Detect	0.0066	Minimum Non-Detect	0.005
Maximum Detect	0.33	Maximum Non-Detect	0.005
Variance Detects	0.00382	Percent Non-Detects	14.63%
Mean Detects	0.0339	SD Detects	0.0618
Median Detects	0.016	CV Detects	1.825
Skewness Detects	4.132	Kurtosis Detects	17.52
Mean of Logged Detects	-3.894	SD of Logged Detects	0.778

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.388	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.934	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.43	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.148	Detected Data Not Normal at 5% Significance Level	

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.0296	KM Standard Error of Mean	0.00907
KM SD	0.0572	95% KM (BCA) UCL	0.0488
95% KM (t) UCL	0.0449	95% KM (Percentile Bootstrap) UCL	0.0467
95% KM (z) UCL	0.0446	95% KM Bootstrap t UCL	0.103
90% KM Chebyshev UCL	0.0568	95% KM Chebyshev UCL	0.0692
97.5% KM Chebyshev UCL	0.0863	99% KM Chebyshev UCL	0.12

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	5.187	**Anderson-Darling GOF Test**	
5% A-D Critical Value	0.774	Detected Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.349	**Kolmogorov-Smirnov GOF**	
5% K-S Critical Value	0.153	Detected Data Not Gamma Distributed at 5% Significance Level	

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	1.12	k star (bias corrected MLE)	1.043
Theta hat (MLE)	0.0302	Theta star (bias corrected MLE)	0.0325
nu hat (MLE)	78.41	nu star (bias corrected)	73.02
Mean (detects)	0.0339		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)
For such situations, GROS method may yield incorrect values of UCLs and BTVs
This is especially true when the sample size is small.
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0066	Mean	0.0304
Maximum	0.33	Median	0.016

TABLE B.3
PROUCL OUTPUT FOR SEDIMENT OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

SD	0.0576	CV	1.897
k hat (MLE)	1.13	k star (bias corrected MLE)	1.063
Theta hat (MLE)	0.0269	Theta star (bias corrected MLE)	0.0286
nu hat (MLE)	92.63	nu star (bias corrected)	87.19
Adjusted Level of Significance (β)	0.0441		
Approximate Chi Square Value (87.19, α)	66.66	Adjusted Chi Square Value (87.19, β)	66.01
95% Gamma Approximate UCL (use when n>=50)	0.0397	95% Gamma Adjusted UCL (use when n<50)	0.0401

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.0296	SD (KM)	0.0572
Variance (KM)	0.00327	SE of Mean (KM)	0.00907
k hat (KM)	0.268	k star (KM)	0.265
nu hat (KM)	22.01	nu star (KM)	21.74
theta hat (KM)	0.11	theta star (KM)	0.112
80% gamma percentile (KM)	0.0439	90% gamma percentile (KM)	0.0886
95% gamma percentile (KM)	0.141	99% gamma percentile (KM)	0.279

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (21.74, α)	12.14	Adjusted Chi Square Value (21.74, β)	11.88
95% Gamma Approximate KM-UCL (use when n>=50)	0.0531	95% Gamma Adjusted KM-UCL (use when n<50)	0.0542

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.77	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.934	Detected Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.253	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.148	Detected Data Not Lognormal at 5% Significance Level	

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.0295	Mean in Log Scale	-4.129
SD in Original Scale	0.058	SD in Log Scale	0.926
95% t UCL (assumes normality of ROS data)	0.0448	95% Percentile Bootstrap UCL	0.0453
95% BCA Bootstrap UCL	0.0537	95% Bootstrap t UCL	0.101
95% H-UCL (Log ROS)	0.0345		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-4.1	KM Geo Mean	0.0166
KM SD (logged)	0.865	95% Critical H Value (KM-Log)	2.21
KM Standard Error of Mean (logged)	0.137	95% H-UCL (KM -Log)	0.0326
KM SD (logged)	0.865	95% Critical H Value (KM-Log)	2.21
KM Standard Error of Mean (logged)	0.137		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.0293	Mean in Log Scale	-4.201
SD in Original Scale	0.0581	SD in Log Scale	1.038
95% t UCL (Assumes normality)	0.0446	95% H-Stat UCL	0.038

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

95% KM (Chebyshev) UCL 0.0692

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

result (outside cn row_se_na_phenanthrene_85-01-8)

result (outside cn row_se_na_phenanthrene_85-01-8)

General Statistics

Total Number of Observations	41	Number of Distinct Observations	14
Number of Detects	15	Number of Non-Detects	26
Number of Distinct Detects	13	Number of Distinct Non-Detects	1
Minimum Detect	0.01	Minimum Non-Detect	0.005
Maximum Detect	0.13	Maximum Non-Detect	0.005
Variance Detects	9.1778E-4	Percent Non-Detects	63.41%
Mean Detects	0.0303	SD Detects	0.0303
Median Detects	0.02	CV Detects	1.001
Skewness Detects	2.882	Kurtosis Detects	9.263
Mean of Logged Detects	-3.771	SD of Logged Detects	0.691

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.631	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.881	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.317	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.22	Detected Data Not Normal at 5% Significance Level	

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.0142	KM Standard Error of Mean	0.00347
KM SD	0.0215	95% KM (BCA) UCL	0.0203
95% KM (t) UCL	0.0201	95% KM (Percentile Bootstrap) UCL	0.0203
95% KM (z) UCL	0.02	95% KM Bootstrap t UCL	0.0259
90% KM Chebyshev UCL	0.0247	95% KM Chebyshev UCL	0.0294
97.5% KM Chebyshev UCL	0.0359	99% KM Chebyshev UCL	0.0488

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.849	**Anderson-Darling GOF Test**	

TABLE B.3
PROUCL OUTPUT FOR SEDIMENT OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

5% A-D Critical Value	0.747	Detected Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.228	**Kolmogorov-Smirnov GOF**	
5% K-S Critical Value	0.224	Detected Data Not Gamma Distributed at 5% Significance Level	

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	1.978	k star (bias corrected MLE)	1.626
Theta hat (MLE)	0.0153	Theta star (bias corrected MLE)	0.0186
nu hat (MLE)	59.33	nu star (bias corrected)	48.79
Mean (detects)	0.0303		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)
For such situations, GROS method may yield incorrect values of UCLs and BTVs
This is especially true when the sample size is small.
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	0.0174
Maximum	0.13	Median	0.01
SD	0.0205	CV	1.175
k hat (MLE)	2.154	k star (bias corrected MLE)	2.013
Theta hat (MLE)	0.00808	Theta star (bias corrected MLE)	0.00865
nu hat (MLE)	176.7	nu star (bias corrected)	165.1
Adjusted Level of Significance (β)	0.0441		
Approximate Chi Square Value (165.07, α)	136.4	Adjusted Chi Square Value (165.07, β)	135.4
95% Gamma Approximate UCL (use when n>=50)	0.0211	95% Gamma Adjusted UCL (use when n<50)	0.0212

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.0142	SD (KM)	0.0215
Variance (KM)	4.6150E-4	SE of Mean (KM)	0.00347
k hat (KM)	0.44	k star (KM)	0.424
nu hat (KM)	36.05	nu star (KM)	34.75
theta hat (KM)	0.0324	theta star (KM)	0.0336
80% gamma percentile (KM)	0.0231	90% gamma percentile (KM)	0.0398
95% gamma percentile (KM)	0.058	99% gamma percentile (KM)	0.103

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (34.75, α)	22.26	Adjusted Chi Square Value (34.75, β)	21.89
95% Gamma Approximate KM-UCL (use when n>=50)	0.0222	95% Gamma Adjusted KM-UCL (use when n<50)	0.0226

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.912	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.881	Detected Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.169	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.22	Detected Data appear Lognormal at 5% Significance Level	

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.0132	Mean in Log Scale	-5.204
SD in Original Scale	0.0223	SD in Log Scale	1.367
95% t UCL (assumes normality of ROS data)	0.019	95% Percentile Bootstrap UCL	0.0195
95% BCA Bootstrap UCL	0.0218	95% Bootstrap t UCL	0.0243
95% H-UCL (Log ROS)	0.0255		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-4.74	KM Geo Mean	0.00874
KM SD (logged)	0.839	95% Critical H Value (KM-Log)	2.184
KM Standard Error of Mean (logged)	0.136	95% H-UCL (KM -Log)	0.0166
KM SD (logged)	0.839	95% Critical H Value (KM-Log)	2.184
KM Standard Error of Mean (logged)	0.136		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.0127	Mean in Log Scale	-5.179
SD in Original Scale	0.0225	SD in Log Scale	1.157
95% t UCL (Assumes normality)	0.0186	95% H-Stat UCL	0.0175

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Lognormal Distributed at 5% Significance Level

Suggested UCL to Use

KM H-UCL 0.0166

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

result (outside cn row_se_na_pyrene_129-00-0)

General Statistics

Total Number of Observations	41	Number of Distinct Observations	15
Number of Detects	18	Number of Non-Detects	23
Number of Distinct Detects	14	Number of Distinct Non-Detects	1
Minimum Detect	0.0082	Minimum Non-Detect	0.005
Maximum Detect	0.12	Maximum Non-Detect	0.005
Variance Detects	7.8138E-4	Percent Non-Detects	56.1%
Mean Detects	0.0243	SD Detects	0.028
Median Detects	0.014	CV Detects	1.149
Skewness Detects	2.811	Kurtosis Detects	8.401

TABLE B.3
PROUCL OUTPUT FOR SEDIMENT OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Mean of Logged Detects	-4.06	SD of Logged Detects	0.746

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.596	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.897	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.312	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.202	Detected Data Not Normal at 5% Significance Level	

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.0135	KM Standard Error of Mean	0.00328
KM SD	0.0204	95% KM (BCA) UCL	0.0201
95% KM (t) UCL	0.019	95% KM (Percentile Bootstrap) UCL	0.0193
95% KM (z) UCL	0.0189	95% KM Bootstrap t UCL	0.0264
90% KM Chebyshev UCL	0.0233	95% KM Chebyshev UCL	0.0278
97.5% KM Chebyshev UCL	0.034	99% KM Chebyshev UCL	0.0461

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	1.663	**Anderson-Darling GOF Test**	
5% A-D Critical Value	0.756	Detected Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.281	**Kolmogorov-Smirnov GOF**	
5% K-S Critical Value	0.207	Detected Data Not Gamma Distributed at 5% Significance Level	

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	1.601	k star (bias corrected MLE)	1.371
Theta hat (MLE)	0.0152	Theta star (bias corrected MLE)	0.0178
nu hat (MLE)	57.62	nu star (bias corrected)	49.35
Mean (detects)	0.0243		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)
For such situations, GROS method may yield incorrect values of UCLs and BTVs
This is especially true when the sample size is small.
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0082	Mean	0.0163
Maximum	0.12	Median	0.01
SD	0.0196	CV	1.203
k hat (MLE)	2.163	k star (bias corrected MLE)	2.021
Theta hat (MLE)	0.00753	Theta star (bias corrected MLE)	0.00806
nu hat (MLE)	177.3	nu star (bias corrected)	165.7
Adjusted Level of Significance (β)	0.0441		
Approximate Chi Square Value (165.69, α)	136.9	Adjusted Chi Square Value (165.69, β)	136
95% Gamma Approximate UCL (use when n>=50)	0.0197	95% Gamma Adjusted UCL (use when n<50)	0.0199

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.0135	SD (KM)	0.0204
Variance (KM)	4.1604E-4	SE of Mean (KM)	0.00328
k hat (KM)	0.437	k star (KM)	0.422
nu hat (KM)	35.86	nu star (KM)	34.57
theta hat (KM)	0.0308	theta star (KM)	0.032
80% gamma percentile (KM)	0.0219	90% gamma percentile (KM)	0.0377
95% gamma percentile (KM)	0.055	99% gamma percentile (KM)	0.0983

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (34.57, α)	22.12	Adjusted Chi Square Value (34.57, β)	21.75
95% Gamma Approximate KM-UCL (use when n>=50)	0.0211	95% Gamma Adjusted KM-UCL (use when n<50)	0.0214

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.839	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.897	Detected Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.241	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.202	Detected Data Not Lognormal at 5% Significance Level	

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.0121	Mean in Log Scale	-5.295
SD in Original Scale	0.0213	SD in Log Scale	1.351
95% t UCL (assumes normality of ROS data)	0.0177	95% Percentile Bootstrap UCL	0.0175
95% BCA Bootstrap UCL	0.02	95% Bootstrap t UCL	0.0247
95% H-UCL (Log ROS)	0.0226		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-4.755	KM Geo Mean	0.00861
KM SD (logged)	0.78	95% Critical H Value (KM-Log)	2.127
KM Standard Error of Mean (logged)	0.125	95% H-UCL (KM -Log)	0.0152
KM SD (logged)	0.78	95% Critical H Value (KM-Log)	2.127
KM Standard Error of Mean (logged)	0.125		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.0121	Mean in Log Scale	-5.143
SD in Original Scale	0.0213	SD in Log Scale	1.085
95% t UCL (Assumes normality)	0.0177	95% H-Stat UCL	0.016

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

TABLE B.3
PROUCL OUTPUT FOR SEDIMENT OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

95% KM (Chebyshev) UCL 0.0278

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

result (outside cn row_se_na_quinoline_91-22-5)

General Statistics

Total Number of Observations	41	Number of Distinct Observations	3
Number of Detects	2	Number of Non-Detects	39
Number of Distinct Detects	2	Number of Distinct Non-Detects	1
Minimum Detect	0.021	Minimum Non-Detect	0.01
Maximum Detect	0.033	Maximum Non-Detect	0.01
Variance Detects	7.2000E-5	Percent Non-Detects	95.12%
Mean Detects	0.027	SD Detects	0.00849
Median Detects	0.027	CV Detects	0.314
Skewness Detects	N/A	Kurtosis Detects	N/A
Mean of Logged Detects	-3.637	SD of Logged Detects	0.32

Warning: Data set has only 2 Detected Values.
This is not enough to compute meaningful or reliable statistics and estimates.

Normal GOF Test on Detects Only
Not Enough Data to Perform GOF Test

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.0108	KM Standard Error of Mean	8.6012E-4
KM SD	0.00389	95% KM (BCA) UCL	N/A
95% KM (t) UCL	0.0123	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	0.0122	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	0.0134	95% KM Chebyshev UCL	0.0146
97.5% KM Chebyshev UCL	0.0162	99% KM Chebyshev UCL	0.0194

Gamma GOF Tests on Detected Observations Only
Not Enough Data to Perform GOF Test

Gamma Statistics on Detected Data Only

k hat (MLE)	19.91	k star (bias corrected MLE)	N/A
Theta hat (MLE)	0.00136	Theta star (bias corrected MLE)	N/A
nu hat (MLE)	79.64	nu star (bias corrected)	N/A
Mean (detects)	0.027		

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.0108	SD (KM)	0.00389
Variance (KM)	1.5166E-5	SE of Mean (KM)	8.6012E-4
k hat (KM)	7.733	k star (KM)	7.183
nu hat (KM)	634.1	nu star (KM)	589
theta hat (KM)	0.0014	theta star (KM)	0.00151
80% gamma percentile (KM)	0.014	90% gamma percentile (KM)	0.0162
95% gamma percentile (KM)	0.0182	99% gamma percentile (KM)	0.0224

Gamma Kaplan-Meier (KM) Statistics

		Adjusted Level of Significance (β)	0.0441
Approximate Chi Square Value (589.01, α)	533.7	Adjusted Chi Square Value (589.01, β)	531.8
95% Gamma Approximate KM-UCL (use when n>=50)	0.012	95% Gamma Adjusted KM-UCL (use when n<50)	0.012

Lognormal GOF Test on Detected Observations Only
Not Enough Data to Perform GOF Test

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.00338	Mean in Log Scale	-6.7
SD in Original Scale	0.00615	SD in Log Scale	1.465
95% t UCL (assumes normality of ROS data)	0.005	95% Percentile Bootstrap UCL	0.00506
95% BCA Bootstrap UCL	0.00582	95% Bootstrap t UCL	0.00684
95% H-UCL (Log ROS)	0.00706		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-4.558	KM Geo Mean	0.0105
KM SD (logged)	0.214	95% Critical H Value (KM-Log)	1.733
KM Standard Error of Mean (logged)	0.0474	95% H-UCL (KM -Log)	0.0114
KM SD (logged)	0.214	95% Critical H Value (KM-Log)	1.733
KM Standard Error of Mean (logged)	0.0474		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.00607	Mean in Log Scale	-5.217
SD in Original Scale	0.00498	SD in Log Scale	0.366
95% t UCL (Assumes normality)	0.00738	95% H-Stat UCL	0.00644

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	0.0123	KM H-UCL	0.0114
95% KM (BCA) UCL	N/A		

Warning: One or more Recommended UCL(s) not available!

TABLE B.3

PROUCL OUTPUT FOR SEDIMENT OUTSIDE OF RIGHT-OF-WAY

CN MILE 197.4, RIVERS SUBDIVISION

SOUTHEAST OF ST. LAZARE, MANITOBA

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

TABLE B.4

PROUCL OUTPUT FOR CULVERT SEDIMENT OUTSIDE OF RIGHT-OF-WAY

CN MILE 197.4, RIVERS SUBDIVISION

SOUTHEAST OF ST. LAZARE, MANITOBA

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	ProUCL 5.111/15/2019 7:51:09 AM
From File	WorkSheet.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

result (outside cn row_se_culvert_acenaphthene_83-32-9)

General Statistics

Total Number of Observations	1	Number of Distinct Observations	1
Number of Detects	0	Number of Non-Detects	1
Number of Distinct Detects	0	Number of Distinct Non-Detects	1

Warning: This data set only has 1 observations!

Data set is too small to compute reliable and meaningful statistics and estimates!

The data set for variable result (outside cn row_se_culvert_acenaphthene_83-32-9) was not processed!

It is suggested to collect at least 8 to 10 observations before using these statistical methods!

If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.

result (outside cn row_se_culvert_acenaphthylene_208-96-8)

General Statistics

Total Number of Observations	1	Number of Distinct Observations	1
Number of Detects	0	Number of Non-Detects	1
Number of Distinct Detects	0	Number of Distinct Non-Detects	1

Warning: This data set only has 1 observations!

Data set is too small to compute reliable and meaningful statistics and estimates!

The data set for variable result (outside cn row_se_culvert_acenaphthylene_208-96-8) was not processed!

It is suggested to collect at least 8 to 10 observations before using these statistical methods!

If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.

result (outside cn row_se_culvert_acridine_260-94-6)

General Statistics

Total Number of Observations	1	Number of Distinct Observations	1
Number of Detects	0	Number of Non-Detects	1
Number of Distinct Detects	0	Number of Distinct Non-Detects	1

Warning: This data set only has 1 observations!

Data set is too small to compute reliable and meaningful statistics and estimates!

The data set for variable result (outside cn row_se_culvert_acridine_260-94-6) was not processed!

It is suggested to collect at least 8 to 10 observations before using these statistical methods!

If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.

result (outside cn row_se_culvert_anthracene_120-12-7)

General Statistics

Total Number of Observations	1	Number of Distinct Observations	1
Number of Detects	0	Number of Non-Detects	1
Number of Distinct Detects	0	Number of Distinct Non-Detects	1

Warning: This data set only has 1 observations!

Data set is too small to compute reliable and meaningful statistics and estimates!

The data set for variable result (outside cn row_se_culvert_anthracene_120-12-7) was not processed!

It is suggested to collect at least 8 to 10 observations before using these statistical methods!

If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.

result (outside cn row_se_culvert_benzo(a)anthracene_56-55-3)

General Statistics

Total Number of Observations	1	Number of Distinct Observations	1
Number of Detects	0	Number of Non-Detects	1
Number of Distinct Detects	0	Number of Distinct Non-Detects	1

Warning: This data set only has 1 observations!

Data set is too small to compute reliable and meaningful statistics and estimates!

The data set for variable result (outside cn row_se_culvert_benzo(a)anthracene_56-55-3) was not processed!

It is suggested to collect at least 8 to 10 observations before using these statistical methods!

If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.

result (outside cn row_se_culvert_benzo(a)pyrene_50-32-8)

General Statistics

Total Number of Observations	1	Number of Distinct Observations	1
Number of Detects	0	Number of Non-Detects	1

TABLE B.4
PROUCL OUTPUT FOR CULVERT SEDIMENT OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Number of Distinct Detects	0	Number of Distinct Non-Detects	1

Warning: This data set only has 1 observations!
Data set is too small to compute reliable and meaningful statistics and estimates!
The data set for variable result (outside cn row_se_culvert_benzo(a)pyrene_50-32-8) was not processed!

It is suggested to collect at least 8 to 10 observations before using these statistical methods!
If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.

result (outside cn row_se_culvert_benzo(b&j)fluoranthene_205-99-2_205-82-3)

General Statistics

Total Number of Observations	1	Number of Distinct Observations	1
Number of Detects	0	Number of Non-Detects	1
Number of Distinct Detects	0	Number of Distinct Non-Detects	1

Warning: This data set only has 1 observations!
Data set is too small to compute reliable and meaningful statistics and estimates!
The data set for variable result (outside cn row_se_culvert_benzo(b&j)fluoranthene_205-99-2_205-82-3) was not processed!

It is suggested to collect at least 8 to 10 observations before using these statistical methods!
If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.

result (outside cn row_se_culvert_benzo(c)phenanthrene_195-19-7)

General Statistics

Total Number of Observations	1	Number of Distinct Observations	1
Number of Detects	0	Number of Non-Detects	1
Number of Distinct Detects	0	Number of Distinct Non-Detects	1

Warning: This data set only has 1 observations!
Data set is too small to compute reliable and meaningful statistics and estimates!
The data set for variable result (outside cn row_se_culvert_benzo(c)phenanthrene_195-19-7) was not processed!

It is suggested to collect at least 8 to 10 observations before using these statistical methods!
If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.

result (outside cn row_se_culvert_benzo(e)pyrene_192-97-2)

General Statistics

Total Number of Observations	1	Number of Distinct Observations	1
Number of Detects	0	Number of Non-Detects	1
Number of Distinct Detects	0	Number of Distinct Non-Detects	1

Warning: This data set only has 1 observations!
Data set is too small to compute reliable and meaningful statistics and estimates!
The data set for variable result (outside cn row_se_culvert_benzo(e)pyrene_192-97-2) was not processed!

It is suggested to collect at least 8 to 10 observations before using these statistical methods!
If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.

result (outside cn row_se_culvert_benzo(g,h,i)perylene_191-24-2)

General Statistics

Total Number of Observations	1	Number of Distinct Observations	1
Number of Detects	0	Number of Non-Detects	1
Number of Distinct Detects	0	Number of Distinct Non-Detects	1

Warning: This data set only has 1 observations!
Data set is too small to compute reliable and meaningful statistics and estimates!
The data set for variable result (outside cn row_se_culvert_benzo(g,h,i)perylene_191-24-2) was not processed!

It is suggested to collect at least 8 to 10 observations before using these statistical methods!
If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.

result (outside cn row_se_culvert_benzo(k)fluoranthene_207-08-9)

General Statistics

Total Number of Observations	1	Number of Distinct Observations	1
Number of Detects	0	Number of Non-Detects	1
Number of Distinct Detects	0	Number of Distinct Non-Detects	1

Warning: This data set only has 1 observations!
Data set is too small to compute reliable and meaningful statistics and estimates!
The data set for variable result (outside cn row_se_culvert_benzo(k)fluoranthene_207-08-9) was not processed!

It is suggested to collect at least 8 to 10 observations before using these statistical methods!
If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.

result (outside cn row_se_culvert_chrysene_218-01-9)

General Statistics

Total Number of Observations	1	Number of Distinct Observations	1

TABLE B.4
PROUCL OUTPUT FOR CULVERT SEDIMENT OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Number of Detects	0	Number of Non-Detects	1
Number of Distinct Detects	0	Number of Distinct Non-Detects	1

Warning: This data set only has 1 observations!
Data set is too small to compute reliable and meaningful statistics and estimates!
The data set for variable result (outside cn row_se_culvert_chrysene_218-01-9) was not processed!

It is suggested to collect at least 8 to 10 observations before using these statistical methods!
If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.

result (outside cn row_se_culvert_dibenz(a,h)anthracene_53-70-3)

General Statistics

Total Number of Observations	1	Number of Distinct Observations	1
Number of Detects	0	Number of Non-Detects	1
Number of Distinct Detects	0	Number of Distinct Non-Detects	1

Warning: This data set only has 1 observations!
Data set is too small to compute reliable and meaningful statistics and estimates!
The data set for variable result (outside cn row_se_culvert_dibenz(a,h)anthracene_53-70-3) was not processed!

It is suggested to collect at least 8 to 10 observations before using these statistical methods!
If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.

result (outside cn row_se_culvert_fluoranthene_206-44-0)

General Statistics

Total Number of Observations	1	Number of Distinct Observations	1
		Number of Missing Observations	0
Minimum	0.017	Mean	0.017
Maximum	0.017	Median	0.017

Warning: This data set only has 1 observations!
Data set is too small to compute reliable and meaningful statistics and estimates!
The data set for variable result (outside cn row_se_culvert_fluoranthene_206-44-0) was not processed!

It is suggested to collect at least 8 to 10 observations before using these statistical methods!
If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.

result (outside cn row_se_culvert_fluorene_86-73-7)

General Statistics

Total Number of Observations	1	Number of Distinct Observations	1
Number of Detects	0	Number of Non-Detects	1
Number of Distinct Detects	0	Number of Distinct Non-Detects	1

Warning: This data set only has 1 observations!
Data set is too small to compute reliable and meaningful statistics and estimates!
The data set for variable result (outside cn row_se_culvert_fluorene_86-73-7) was not processed!

It is suggested to collect at least 8 to 10 observations before using these statistical methods!
If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.

result (outside cn row_se_culvert_indeno(1,2,3-cd)pyrene_193-39-5)

result (outside cn row_se_culvert_indeno(1,2,3-cd)pyrene_193-39-5)

General Statistics

Total Number of Observations	1	Number of Distinct Observations	1
Number of Detects	0	Number of Non-Detects	1
Number of Distinct Detects	0	Number of Distinct Non-Detects	1

Warning: This data set only has 1 observations!
Data set is too small to compute reliable and meaningful statistics and estimates!
The data set for variable result (outside cn row_se_culvert_indeno(1,2,3-cd)pyrene_193-39-5) was not processed!

It is suggested to collect at least 8 to 10 observations before using these statistical methods!
If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.

result (outside cn row_se_culvert_methylnaphthalene, 2-_91-57-6)

General Statistics

Total Number of Observations	1	Number of Distinct Observations	1
Number of Detects	0	Number of Non-Detects	1
Number of Distinct Detects	0	Number of Distinct Non-Detects	1

Warning: This data set only has 1 observations!
Data set is too small to compute reliable and meaningful statistics and estimates!
The data set for variable result (outside cn row_se_culvert_methylnaphthalene, 2-_91-57-6) was not processed!

It is suggested to collect at least 8 to 10 observations before using these statistical methods!
If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.

result (outside cn row_se_culvert_naphthalene_91-20-3)

TABLE B.4
PROUCL OUTPUT FOR CULVERT SEDIMENT OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

General Statistics

Total Number of Observations	1	Number of Distinct Observations	1
Number of Detects	0	Number of Non-Detects	1
Number of Distinct Detects	0	Number of Distinct Non-Detects	1

Warning: This data set only has 1 observations!
Data set is too small to compute reliable and meaningful statistics and estimates!
The data set for variable result (outside cn row_se_culvert_naphthalene_91-20-3) was not processed!

It is suggested to collect at least 8 to 10 observations before using these statistical methods!
If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.

result (outside cn row_se_culvert_perylene_198-55-0)

General Statistics

Total Number of Observations	1	Number of Distinct Observations	1
		Number of Missing Observations	0
Minimum	0.029	Mean	0.029
Maximum	0.029	Median	0.029

Warning: This data set only has 1 observations!
Data set is too small to compute reliable and meaningful statistics and estimates!
The data set for variable result (outside cn row_se_culvert_perylene_198-55-0) was not processed!

It is suggested to collect at least 8 to 10 observations before using these statistical methods!
If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.

result (outside cn row_se_culvert_phenanthrene_85-01-8)

General Statistics

Total Number of Observations	1	Number of Distinct Observations	1
		Number of Missing Observations	0
Minimum	0.017	Mean	0.017
Maximum	0.017	Median	0.017

Warning: This data set only has 1 observations!
Data set is too small to compute reliable and meaningful statistics and estimates!
The data set for variable result (outside cn row_se_culvert_phenanthrene_85-01-8) was not processed!

It is suggested to collect at least 8 to 10 observations before using these statistical methods!
If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.

result (outside cn row_se_culvert_pyrene_129-00-0)

General Statistics

Total Number of Observations	1	Number of Distinct Observations	1
Number of Detects	0	Number of Non-Detects	1
Number of Distinct Detects	0	Number of Distinct Non-Detects	1

Warning: This data set only has 1 observations!
Data set is too small to compute reliable and meaningful statistics and estimates!
The data set for variable result (outside cn row_se_culvert_pyrene_129-00-0) was not processed!

It is suggested to collect at least 8 to 10 observations before using these statistical methods!
If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.

result (outside cn row_se_culvert_quinoline_91-22-5)

General Statistics

Total Number of Observations	1	Number of Distinct Observations	1
Number of Detects	0	Number of Non-Detects	1
Number of Distinct Detects	0	Number of Distinct Non-Detects	1

Warning: This data set only has 1 observations!
Data set is too small to compute reliable and meaningful statistics and estimates!
The data set for variable result (outside cn row_se_culvert_quinoline_91-22-5) was not processed!

It is suggested to collect at least 8 to 10 observations before using these statistical methods!
If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.

TABLE B.5
DATA INPUT FOR PROUCL SOFTWARE
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Notes:
The maximum of the field duplicate and parent sample pairs were applied and a detect was chosen over a non-detect value.

ProUCL Group	ProUCL Result	ProUCL Flag	Medium	Soil Zone	Location	Sample ID	Sample Type	Sample Date	Start Depth (m)	End Depth (m)	COPC	CASRN	Qualifier	Detection Limit for Non-Detects	Unit
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	S-065A	S-065A_20190227_SO	N	2/27/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	S-023B	S-023B_20190227_SO	N	2/27/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	S-098	S-098_20190227_SO	N	2/27/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	S-025	S-025_20190227_SO	N	2/27/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	S-073	S-073_20190227_SO	N	2/27/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	S323F	S323F_20190302_SO	N	3/2/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	S-054A	S-054A_20190227_SO	N	2/27/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	S-022	S-022_20190227_SO	N	2/27/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	S-097	S-097_20190227_SO	N	2/27/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	S-051B	S-051B_20190227_SO	N	2/27/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	S-212W-C	S-212W-C_20190307_SO	N	3/7/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	SLOT2-1	SLOT2-1_20190606_SO	N	6/6/2019	1.34	1.34	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	S-093B	S-093B_20190227_SO	N	2/27/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	S-074B	S-074B_20190227_SO	N	2/27/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	S-075	S-075_20190227_SO	N	2/27/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	S-088	S-088_20190227_SO	N	2/27/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	S-085	S-085_20190227_SO	N	2/27/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	S-063	S-063_20190227_SO	N	2/27/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	S-101-C	S-101-C_20190308_SO	N	3/8/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	S-017	S-017_20190227_SO	N	2/27/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	S-019A	S-019A_20190227_SO	N	2/27/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	S-014	S-014_20190227_SO	N	2/27/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	C-2136C	C-2136C_20200224_SO	N	2/24/2020	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	BH19-120-2	BH19-120-2_20191205_SO	N	12/5/2019	1.22	1.52	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	C-2509B	C-2509B_20191016_SO	N	10/16/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	19-H6-001B	19-H6-001B_20191016_SO	N	10/16/2019	0	0.15	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	19-H1-001	19-H1-001_20190609_SO	N	6/9/2019	0	0.15	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	19-H5-002	19-H5-002_20190609_SO	N	6/9/2019	1	1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	C-1002WC	C-1002WC_20191016_SO	N	10/16/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	19-H4-002	19-H4-002_20190609_SO	N	6/9/2019	1	1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	19-H2-001	19-H2-001_20190609_SO	N	6/9/2019	0	0.15	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	DB-110-C	DB-110-C_20190311_SO	N	3/11/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.0088	1	SO	Surface Soil 0-1.5m	19-H1-002B	19-H1-002B_20191016_SO	N	10/16/2019	1	1	Acenaphthene	83-32-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	19-H9-002	19-H9-002_20190609_SO	N	6/9/2019	1	1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	19-H5-001B	19-H5-001B_20191016_SO	N	10/16/2019	0	0.15	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	19-H10-001	19-H10-001_20190609_SO	N	6/9/2019	0	0.15	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	C-2106B	C-2106B_20191016_SO	N	10/16/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	C-2180B	C-2180B_20191016_SO	N	10/16/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	19-H10-002	19-H10-002_20190609_SO	N	6/9/2019	1	1.00	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.012	1	SO	Surface Soil 0-1.5m	19-H2-002B	19-H2-002B_20191016_SO	N	10/16/2019	1	1	Acenaphthene	83-32-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	19-H4-001B	19-H4-001B_20191016_SO	N	10/16/2019	0	0.15	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	NSERIESDIL-4	NSERIESDIL-4_20191016_SO	N	10/16/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	19-H7-001	19-H7-001_20190609_SO	N	6/9/2019	0	0.15	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	S-094B	S-094B_20191016_SO	N	10/16/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	19-H6-002B	19-H6-002B_20191016_SO	N	10/16/2019	1	1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	NSERIESDIL-3	NSERIESDIL-3_20191016_SO	N	10/16/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	19-H8-002	19-H8-002_20190609_SO	N	6/9/2019	1	1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	C-2028B	C-2028B_20191016_SO	N	10/16/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	19-H3-001	19-H3-001_20190609_SO	N	6/9/2019	0	0.15	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.0085	1	SO	Surface Soil 0-1.5m	19-H9-001	19-H9-001_20190609_SO	N	6/9/2019	0	0.15	Acenaphthene	83-32-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	C-2058C	C-2058C_20191016_SO	N	10/16/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	NSERIESDIL-1	NSERIESDIL-1_20191016_SO	N	10/16/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	S202WB	S202WB_20191016_SO	N	10/16/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	C-2080B	C-2080B_20191016_SO	N	10/16/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	C-2074B	C-2074B_20191016_SO	N	10/16/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	19-H3-002	19-H3-002_20190609_SO	N	6/9/2019	1	1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	19-H7-002	19-H7-002_20190609_SO	N	6/9/2019	1	1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	19-H8-001	19-H8-001_20190609_SO	N	6/9/2019	0	0.15	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	NSERIESDIL-2	NSERIESDIL-2_20191016_SO	N	10/16/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.027	1	SO	Surface Soil 0-1.5m	E_BH19-16	E_BH19-16_20190507_SO	N	5/7/2019	0	0.15	Acenaphthene	83-32-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	C-2178	C-2178_20190306_SO	N	3/6/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	C-2176	C-2176_20190306_SO	N	3/6/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.077	1	SO	Surface Soil 0-1.5m	N-021	N-021_20190226_SO	N	2/26/2019	0	0.1	Acenaphthene	83-32-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	DB-004	DB-004_20190302_SO	N	3/2/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.029	1	SO	Surface Soil 0-1.5m	EXW2-3	EXW2-3_20190605_SO	N	6/5/2019	1.385	1.385	Acenaphthene	83-32-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.036	1	SO	Surface Soil 0-1.5m	N-007	N-007_20190226_SO	N	2/26/2019	0	0.1	Acenaphthene	83-32-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.016	1	SO	Surface Soil 0-1.5m	N-009	N-009_20190226_SO	N	2/26/2019	0	0.1	Acenaphthene	83-32-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	C-2100	C-2100_20190305_SO	N	3/5/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.053	1	SO	Surface Soil 0-1.5m	N-006	N-006_20190226_SO	N	2/26/2019	0	0.1	Acenaphthene	83-32-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	C-2311	C-2311_20190307_SO	N	3/7/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	N-027	N-027_20190226_SO	N	2/26/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.017	1	SO	Surface Soil 0-1.5m	N-001	N-001_20190226_SO	N	2/26/2019	0	0.1	Acenaphthene	83-32-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	C-2017	C-2017_20190305_SO	N	3/5/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	N-010	N-010_20190226_SO	N	2/26/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.052	1	SO	Surface Soil 0-1.5m	N-013	N-013_20190226_SO	N	2/26/2019	0	0.1	Acenaphthene	83-32-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	N-036	N-036_20190226_SO	N	2/26/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	C-2071	C-2071_20190305_SO	N	3/5/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.087	1	SO	Surface Soil 0-1.5m	N-016	N-016_20190226_SO	N	2/26/2019	0	0.1	Acenaphthene	83-32-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	C-2082	C-2082_20190305_SO	N	3/5/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.094	1	SO	Surface Soil 0-1.5m	C-2033	C-2033_20190305_SO	N	3/5/2019	0	0.1	Acenaphthene	83-32-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.39	1	SO	Surface Soil 0-1.5m	D_BH19-15	D_BH19-15_20190507_SO	N	5/7/2019	0	0.15	Acenaphthene	83-32-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	C-2160	C-2160_20190306_SO	N	3/6/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.011	1	SO	Surface Soil 0-1.5m	N-015	N-015_20190226_SO	N	2/26/2019	0	0.1	Acenaphthene	83-32-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	C-1004W	C-1004W_20190303_SO	N	3/3/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.016	1	SO	Surface Soil 0-1.5m	N-031	N-031_20190226_SO	N	2/26/2019	0	0.1	Acenaphthene	83-32-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	S-054A	S-054A_20190227_SO	N	2/27/2019	0	0.1	Acenaphthylene	208-96-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	S-074B	S-074B_20190227_SO	N	2/27/2019	0	0.1	Acenaphthylene	208-96-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	S-065A	S-065A_20190227_SO	N	2/27/2019	0	0.1	Acenaphthylene	208-96-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	S-075	S-075_20190227_SO	N	2/27/2019	0	0.1	Acenaphthylene	208-96-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	S-017	S-017_20190227_SO	N	2/27/2019	0	0.1	Acenaphthylene	208-96-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	S-073	S-073_20190227_SO	N	2/27/2019	0	0.1	Acenaphthylene	208-96-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	S323F	S323F_20190302_SO	N	3/2/2019	0	0.1	Acenaphthylene	208-96-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	S-212W-C	S-212W-C_20190307_SO	N	3/7/2019	0	0.1	Acenaphthylene	208-96-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	SLOT2-1	SLOT2-1_20190606_SO	N	6/6/2019	1.34	1.34	Acenaphthylene	208-96-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	S-088	S-088_20190227_SO	N	2/27/2019	0	0.1	Acenaphthylene	208-96-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	S-097	S-097_20190227_SO	N	2/27/2019	0	0.1	Acenaphthylene	208-96-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	S-019A	S-019A_20190227_SO	N	2/27/2019	0	0.1	Acenaphthylene	208-96-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	S-063	S-063_20190227_SO	N	2/27/2019	0	0.1	Acenaphthylene	208-96-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	S-025	S-025_20190227_SO	N	2/27/2019	0	0.1	Acenaphthylene	208-96-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	S-022	S-022_20190227_SO	N	2/27/2019	0	0.1	Acenaphthylene	208-96-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	S-101-C	S-101-C_20190308_SO	N	3/8/2019	0	0.1	Acenaphthylene	208-96-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	S-023B	S-023B_20190227_SO	N	2/27/2019	0	0.1	Acenaphthylene	208-96-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	S-014	S-014_20190227_SO	N	2/27/2019	0	0.1	Acenaphthylene	208-96-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	S-093B	S-093B_20190227_SO	N	2/27/2019	0	0.1	Acenaphthylene	208-96-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	S-085	S-085_20190227_SO	N	2/27/2019	0	0.1	Acenaphthylene	208-96-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	S-098	S-098_20190227_SO	N	2/27/2019	0	0.1	Acenaphthylene	208-96-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	S-051B	S-051B_20190227_SO	N	2/27/2019	0	0.1	Acenaphthylene	208-96-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	BH19-120-2	BH19-120-2_20191205_SO	N	12/5/2019	1.22	1.52	Acenaphthylene	208-96-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	C-2136C	C-2136C_20200224_SO	N	2/24/2020	0	0.1	Acenaphthylene	208-96-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	NSERIESDIL-4	NSERIESDIL-4_20191016_SO	N	10/16/2019	0	0.1	Acenaphthylene	208-96-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	19-H1-001	19-H1-001_20190609_SO	N	6/9/2019	0	0.15	Acenaphthylene	208-96-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	19-H4-001B	19-H4-001B_20191016_SO	N	10/16/2019	0	0.15	Acenaphthylene	208-96-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	C-2080B	C-2080B_20191016_SO	N	10/16/2019	0	0.10	Acenaphthylene	208-96-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	19-H4-002	19-H4-002_20190609_SO	N	6/9/2019	1	1	Acenaphthylene	208-96-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	19-H5-001B	19-H5-001B_20191016_SO	N	10/16/2019	0	0.15	Acenaphthylene	208-96-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	19-H5-002	19-H5-002_20190609_SO	N	6/9/2019	1	1	Acenaphthylene	208-96-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	C-2074B	C-2074B_20191016_SO	N	10/16/2019	0	0.1	Acenaphthylene	208-96-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	19-H3-001	19-H3-001_20190609_SO	N	6/9/2019	0	0.15	Acenaphthylene	208-96-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	C-2509B	C-2509B_20191016_SO	N	10/16/2019	0	0.1	Acenaphthylene	208-96-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	19-H6-001B	19-H6-001B_20191016_SO	N	10/16/2019	0	0.15	Acenaphthylene	208-96-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	19-H10-001	19-H10-001_20190609_SO	N	6/9/2019	0	0.15	Acenaphthylene	208-96-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	NSERIESDIL-3	NSERIESDIL-3_20191016_SO	N	10/16/2019	0	0.1	Acenaphthylene	208-96-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	DB-110-C	DB-110-C_20190311_SO	N	3/11/2019	0	0.1	Acenaphthylene	208-96-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	19-H3-002	19-H3-002_20190609_SO	N	6/9/2019	1	1	Acenaphthylene	208-96-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	19-H8-002	19-H8-002_20190609_SO	N	6/9/2019	1	1	Acenaphthylene	208-96-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.015	1	SO	Surface Soil 0-1.5m	C-2028B	C-2028B_20191016_SO	N	10/16/2019	0	0.1	Acenaphthylene	208-96-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	NSERIESDIL-1	NSERIESDIL-1_20191016_SO	N	10/16/2019	0	0.1	Acenaphthylene	208-96-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	S-094B	S-094B_20191016_SO	N	10/16/2019	0	0.1	Acenaphthylene	208-96-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	C-2058C	C-2058C_20191016_SO	N	10/16/2019	0	0.1	Acenaphthylene	208-96-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	19-H2-001	19-H2-001_20190609_SO	N	6/9/2019	0	0.15	Acenaphthylene	208-96-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.071	1	SO	Surface Soil 0-1.5m	NSERIESDIL-2	NSERIESDIL-2_20191016_SO	N	10/16/2019	0	0.1	Acenaphthylene	208-96-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	19-H8-001	19-H8-001_20190609_SO	N	6/9/2019	0	0.15	Acenaphthylene	208-96-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	19-H7-002	19-H7-002_20190609_SO	N	6/9/2019	1	1	Acenaphthylene	208-96-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	S202WB	S202WB_20191016_SO	N	10/16/2019	0	0.1	Acenaphthylene	208-96-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	19-H9-002	19-H9-002_20190609_SO	N	6/9/2019	1	1	Acenaphthylene	208-96-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	19-H7-001	19-H7-001_20190609_SO	N	6/9/2019	0	0.15	Acenaphthylene	208-96-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	19-H10-002	19-H10-002_20190609_SO	N	6/9/2019	1	1	Acenaphthylene	208-96-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	19-H1-002B	19-H1-002B_20191016_SO	N	10/16/2019	1	1	Acenaphthylene	208-96-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	C-2180B	C-2180B_20191016_SO	N	10/16/2019	0	0.1	Acenaphthylene	208-96-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	19-H2-002B	19-H2-002B_20191016_SO	N	10/16/2019	1	1	Acenaphthylene	208-96-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	19-H9-001	19-H9-001_20190609_SO	N	6/9/2019	0	0.15	Acenaphthylene	208-96-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	C-1002WC	C-1002WC_20191016_SO	N	10/16/2019	0	0.1	Acenaphthylene	208-96-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	C-2106B	C-2106B_20191016_SO	N	10/16/2019	0	0.1	Acenaphthylene	208-96-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	19-H6-002B	19-H6-002B_20191016_SO	N	10/16/2019	1	1	Acenaphthylene	208-96-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	C-2160	C-2160_20190306_SO	N	3/6/2019	0	0.1	Acenaphthylene	208-96-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	C-2176	C-2176_20190306_SO	N	3/6/2019	0	0.1	Acenaphthylene	208-96-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	C-1004W	C-1004W_20190303_SO	N	3/3/2019	0	0.1	Acenaphthylene	208-96-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	C-2178	C-2178_20190306_SO	N	3/6/2019	0	0.1	Acenaphthylene	208-96-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.01	1	SO	Surface Soil 0-1.5m	N-006	N-006_20190226_SO	N	2/26/2019	0	0.1	Acenaphthylene	208-96-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.0057	1	SO	Surface Soil 0-1.5m	E_BH19-16	E_BH19-16_20190507_SO	N	5/7/2019	0	0.15	Acenaphthylene	208-96-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	N-001	N-001_20190226_SO	N	2/26/2019	0	0.1	Acenaphthylene	208-96-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	EXW2-3	EXW2-3_20190605_SO	N	6/5/2019	1.385	1.385	Acenaphthylene	208-96-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.014	1	SO	Surface Soil 0-1.5m	N-031	N-031_20190226_SO	N	2/26/2019	0	0.1	Acenaphthylene	208-96-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	DB-004	DB-004_20190302_SO	N	3/2/2019	0	0.1	Acenaphthylene	208-96-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.0064	1	SO	Surface Soil 0-1.5m	C-2033	C-2033_20190305_SO	N	3/5/2019	0	0.1	Acenaphthylene	208-96-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	C-2082	C-2082_20190305_SO	N	3/5/2019	0	0.1	Acenaphthylene	208-96-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.0062	1	SO	Surface Soil 0-1.5m	N-013	N-013_20190226_SO	N	2/26/2019	0	0.1	Acenaphthylene	208-96-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	C-2071	C-2071_20190305_SO	N	3/5/2019	0	0.1	Acenaphthylene	208-96-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	N-010	N-010_20190226_SO	N	2/26/2019	0	0.1	Acenaphthylene	208-96-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.013	1	SO	Surface Soil 0-1.5m	N-016	N-016_20190226_SO	N	2/26/2019	0	0.1	Acenaphthylene	208-96-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.006	1	SO	Surface Soil 0-1.5m	N-021	N-021_20190226_SO	N	2/26/2019	0	0.1	Acenaphthylene	208-96-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	C-2100	C-2100_20190305_SO	N	3/5/2019	0	0.1	Acenaphthylene	208-96-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.12	1	SO	Surface Soil 0-1.5m	N-009	N-009_20190226_SO	N	2/26/2019	0	0.1	Acenaphthylene	208-96-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	C-2017	C-2017_20190305_SO	N	3/5/2019	0	0.1	Acenaphthylene	208-96-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	C-2311	C-2311_20190307_SO	N	3/7/2019	0	0.1	Acenaphthylene	208-96-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.031	1	SO	Surface Soil 0-1.5m	N-036	N-036_20190226_SO	N	2/26/2019	0	0.1	Acenaphthylene	208-96-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	N-027	N-027_20190226_SO	N	2/26/2019	0	0.1	Acenaphthylene	208-96-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.0073	1	SO	Surface Soil 0-1.5m	N-015	N-015_20190226_SO	N	2/26/2019	0	0.1	Acenaphthylene	208-96-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.033	1	SO	Surface Soil 0-1.5m	D_BH19-15	D_BH19-15_20190507_SO	N	5/7/2019	0	0.15	Acenaphthylene	208-96-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	N-007	N-007_20190226_SO	N	2/26/2019	0	0.1	Acenaphthylene	208-96-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	S-085	S-085_20190227_SO	N	2/27/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	S-014	S-014_20190227_SO	N	2/27/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	S-075	S-075_20190227_SO	N	2/27/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	SLOT2-1	SLOT2-1_20190606_SO	N	6/6/2019	1.34	1.34	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	S-093B	S-093B_20190227_SO	N	2/27/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	S-073	S-073_20190227_SO	N	2/27/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	S-088	S-088_20190227_SO	N	2/27/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	S-074B	S-074B_20190227_SO	N	2/27/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	S-054A	S-054A_20190227_SO	N	2/27/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	S-101-C	S-101-C_20190308_SO	N	3/8/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	S-023B	S-023B_20190227_SO	N	2/27/2019	0	0.10	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.017	1	SO	Surface Soil 0-1.5m	S-025	S-025_20190227_SO	N	2/27/2019	0	0.1	Acridine	260-94-6			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	S-098	S-098_20190227_SO	N	2/27/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	S-051B	S-051B_20190227_SO	N	2/27/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	S-019A	S-019A_20190227_SO	N	2/27/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	S-017	S-017_20190227_SO	N	2/27/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	S323F	S323F_20190302_SO	N	3/2/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	S-063	S-063_20190227_SO	N	2/27/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	S-022	S-022_20190227_SO	N	2/27/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	S-212W-C	S-212W-C_20190307_SO	N	3/7/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	S-065A	S-065A_20190227_SO	N	2/27/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	S-097	S-097_20190227_SO	N	2/27/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	BH19-120-2	BH19-120-2_20191205_SO	N	12/5/2019	1.22	1.52	Acridine	260-94-6	U	0.01	mg/kg

TABLE B.5
DATA INPUT FOR PROUCL SOFTWARE
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Notes:
The maximum of the field duplicate and parent sample pairs were applied and a detect was chosen over a non-detect value.

ProUCL Group	ProUCL Result	ProUCL Flag	Medium	Soil Zone	Location	Sample ID	Sample Type	Sample Date	Start Depth (m)	End Depth (m)	COPC	CASRN	Qualifier	Detection Limit for Non-Detects	Unit
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	C-2136C	C-2136C_20200224_SO	N	2/24/2020	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	19-H10-002	19-H10-002_20190609_SO	N	6/9/2019	1	1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	19-H3-002	19-H3-002_20190609_SO	N	6/9/2019	1	1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	C-2106B	C-2106B_20191016_SO	N	10/16/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	C-2080B	C-2080B_20191016_SO	N	10/16/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	19-H9-001	19-H9-001_20190609_SO	N	6/9/2019	0	0.15	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	NSERIESDIL-2	NSERIESDIL-2_20191016_SO	N	10/16/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	19-H1-001	19-H1-001_20190609_SO	N	6/9/2019	0	0.15	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	19-H10-001	19-H10-001_20190609_SO	N	6/9/2019	0	0.15	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	19-H4-002	19-H4-002_20190609_SO	N	6/9/2019	1	1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	NSERIESDIL-4	NSERIESDIL-4_20191016_SO	N	10/16/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	19-H8-002	19-H8-002_20190609_SO	N	6/9/2019	1	1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	C-2028B	C-2028B_20191016_SO	N	10/16/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	S-094B	S-094B_20191016_SO	N	10/16/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	19-H8-001	19-H8-001_20190609_SO	N	6/9/2019	0	0.15	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	19-H7-002	19-H7-002_20190609_SO	N	6/9/2019	1	1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	C-2058C	C-2058C_20191016_SO	N	10/16/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	19-H2-001	19-H2-001_20190609_SO	N	6/9/2019	0	0.15	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	S202WB	S202WB_20191016_SO	N	10/16/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	DB-110-C	DB-110-C_20190311_SO	N	3/11/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	19-H9-002	19-H9-002_20190609_SO	N	6/9/2019	1	1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	19-H1-002B	19-H1-002B_20191016_SO	N	10/16/2019	1	1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	19-H7-001	19-H7-001_20190609_SO	N	6/9/2019	0	0.15	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	C-1002WC	C-1002WC_20191016_SO	N	10/16/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	C-2074B	C-2074B_20191016_SO	N	10/16/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	19-H5-001B	19-H5-001B_20191016_SO	N	10/16/2019	0	0.15	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	NSERIESDIL-3	NSERIESDIL-3_20191016_SO	N	10/16/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	19-H3-001	19-H3-001_20190609_SO	N	6/9/2019	0	0.15	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	C-2180B	C-2180B_20191016_SO	N	10/16/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	19-H6-002B	19-H6-002B_20191016_SO	N	10/16/2019	1	1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	19-H4-001B	19-H4-001B_20191016_SO	N	10/16/2019	0	0.15	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	NSERIESDIL-1	NSERIESDIL-1_20191016_SO	N	10/16/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	19-H2-002B	19-H2-002B_20191016_SO	N	10/16/2019	1	1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	19-H5-002	19-H5-002_20190609_SO	N	6/9/2019	1	1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	19-H6-001B	19-H6-001B_20191016_SO	N	10/16/2019	0	0.15	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	C-2509B	C-2509B_20191016_SO	N	10/16/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	N-021	N-021_20190226_SO	N	2/26/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.017	1	SO	Surface Soil 0-1.5m	N-009	N-009_20190226_SO	N	2/26/2019	0	0.1	Acridine	260-94-6			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	N-016	N-016_20190226_SO	N	2/26/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	N-013	N-013_20190226_SO	N	2/26/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	DB-004	DB-004_20190302_SO	N	3/2/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	D_BH19-15	D_BH19-15_20190507_SO	N	5/7/2019	0	0.15	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	EXW2-3	EXW2-3_20190605_SO	N	6/5/2019	1.385	1.385	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	N-001	N-001_20190226_SO	N	2/26/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	N-007	N-007_20190226_SO	N	2/26/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	N-027	N-027_20190226_SO	N	2/26/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	E_BH19-16	E_BH19-16_20190507_SO	N	5/7/2019	0	0.15	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	N-015	N-015_20190226_SO	N	2/26/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	N-031	N-031_20190226_SO	N	2/26/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.023	1	SO	Surface Soil 0-1.5m	N-006	N-006_20190226_SO	N	2/26/2019	0	0.1	Acridine	260-94-6			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	N-010	N-010_20190226_SO	N	2/26/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	C-2178	C-2178_20190306_SO	N	3/6/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	C-2176	C-2176_20190306_SO	N	3/6/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	C-2311	C-2311_20190307_SO	N	3/7/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.017	1	SO	Surface Soil 0-1.5m	C-2033	C-2033_20190305_SO	N	3/5/2019	0	0.1	Acridine	260-94-6			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	N-036	N-036_20190226_SO	N	2/26/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	C-2017	C-2017_20190305_SO	N	3/5/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	C-1004W	C-1004W_20190303_SO	N	3/3/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.012	1	SO	Surface Soil 0-1.5m	C-2100	C-2100_20190305_SO	N	3/5/2019	0	0.1	Acridine	260-94-6			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	C-2071	C-2071_20190305_SO	N	3/5/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	C-2160	C-2160_20190306_SO	N	3/6/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	C-2082	C-2082_20190305_SO	N	3/5/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	S-098	S-098_20190227_SO	N	2/27/2019	0	0.1	Anthracene	120-12-7	U	0.004	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	S-212W-C	S-212W-C_20190307_SO	N	3/7/2019	0	0.1	Anthracene	120-12-7	U	0.004	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	S-093B	S-093B_20190227_SO	N	2/27/2019	0	0.1	Anthracene	120-12-7	U	0.004	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.023	1	SO	Surface Soil 0-1.5m	S323F	S323F_20190302_SO	N	3/2/2019	0	0.1	Anthracene	120-12-7			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	S-097	S-097_20190227_SO	N	2/27/2019	0	0.1	Anthracene	120-12-7	U	0.004	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	S-101-C	S-101-C_20190308_SO	N	3/8/2019	0	0.10	Anthracene	120-12-7	U	0.004	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	SLOT2-1	SLOT2-1_20190606_SO	N	6/6/2019	1.34	1.34	Anthracene	120-12-7	U	0.004	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	S-054A	S-054A_20190227_SO	N	2/27/2019	0	0.1	Anthracene	120-12-7	U	0.004	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	S-014	S-014_20190227_SO	N	2/27/2019	0	0.1	Anthracene	120-12-7	U	0.004	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	S-017	S-017_20190227_SO	N	2/27/2019	0	0.1	Anthracene	120-12-7	U	0.004	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	S-019A	S-019A_20190227_SO	N	2/27/2019	0	0.1	Anthracene	120-12-7	U	0.004	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	S-022	S-022_20190227_SO	N	2/27/2019	0	0.1	Anthracene	120-12-7	U	0.004	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	S-023B	S-023B_20190227_SO	N	2/27/2019	0	0.1	Anthracene	120-12-7	U	0.004	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	S-025	S-025_20190227_SO	N	2/27/2019	0	0.1	Anthracene	120-12-7	U	0.004	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	S-051B	S-051B_20190227_SO	N	2/27/2019	0	0.1	Anthracene	120-12-7	U	0.004	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	S-088	S-088_20190227_SO	N	2/27/2019	0	0.1	Anthracene	120-12-7	U	0.004	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	S-063	S-063_20190227_SO	N	2/27/2019	0	0.1	Anthracene	120-12-7	U	0.004	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	S-065A	S-065A_20190227_SO	N	2/27/2019	0	0.1	Anthracene	120-12-7	U	0.004	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	S-075	S-075_20190227_SO	N	2/27/2019	0	0.1	Anthracene	120-12-7	U	0.004	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	S-073	S-073_20190227_SO	N	2/27/2019	0	0.1	Anthracene	120-12-7	U	0.004	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	S-074B	S-074B_20190227_SO	N	2/27/2019	0	0.1	Anthracene	120-12-7	U	0.004	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	S-085	S-085_20190227_SO	N	2/27/2019	0	0.1	Anthracene	120-12-7	U	0.004	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	BH19-120-2	BH19-120-2_20191205_SO	N	12/5/2019	1.22	1.52	Anthracene	120-12-7	U	0.004	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.0092	1	SO	Surface Soil 0-1.5m	C-2136C	C-2136C_20200224_SO	N	2/24/2020	0	0.1	Anthracene	120-12-7			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.0044	1	SO	Surface Soil 0-1.5m	C-2074B	C-2074B_20191016_SO	N	10/16/2019	0	0.1	Anthracene	120-12-7			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.028	1	SO	Surface Soil 0-1.5m	C-2028B	C-2028B_20191016_SO	N	10/16/2019	0	0.1	Anthracene	120-12-7			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	C-2509B	C-2509B_20191016_SO	N	10/16/2019	0	0.1	Anthracene	120-12-7	U	0.004	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.0058	1	SO	Surface Soil 0-1.5m	C-1002WC	C-1002WC_20191016_SO	N	10/16/2019	0	0.1	Anthracene	120-12-7			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	C-2058C	C-2058C_20191016_SO	N	10/16/2019	0	0.1	Anthracene	120-12-7	U	0.004	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	C-2180B	C-2180B_20191016_SO	N	10/16/2019	0	0.1	Anthracene	120-12-7	U	0.004	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.0095	1	SO	Surface Soil 0-1.5m	C-2080B	C-2080B_20191016_SO	N	10/16/2019	0	0.1	Anthracene	120-12-7			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	19-H3-001	19-H3-001_20190609_SO	N	6/9/2019	0	0.15	Anthracene	120-12-7	U	0.004	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	19-H3-002	19-H3-002_20190609_SO	N	6/9/2019	1	1	Anthracene	120-12-7	U	0.004	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	C-2106B	C-2106B_20191016_SO	N	10/16/2019	0	0.1	Anthracene	120-12-7	U	0.004	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	DB-110-C	DB-110-C_20190311_SO	N	3/11/2019	0	0.1	Anthracene	120-12-7	U	0.004	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	19-H6-001B	19-H6-001B_20191016_SO	N	10/16/2019	0	0.15	Anthracene	120-12-7	U	0.004	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	19-H9-002	19-H9-002_20190609_SO	N	6/9/2019	1	1	Anthracene	120-12-7	U	0.004	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	19-H4-001B	19-H4-001B_20191016_SO	N	10/16/2019	0	0.15	Anthracene	120-12-7	U	0.004	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	19-H7-001	19-H7-001_20190609_SO	N	6/9/2019	0	0.15	Anthracene	120-12-7	U	0.004	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.0053	1	SO	Surface Soil 0-1.5m	19-H2-002B	19-H2-002B_20191016_SO	N	10/16/2019	1	1	Anthracene	120-12-7			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	NSERIESDIL-4	NSERIESDIL-4_20191016_SO	N	10/16/2019	0	0.1	Anthracene	120-12-7	U	0.004	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	NSERIESDIL-3	NSERIESDIL-3_20191016_SO	N	10/16/2019	0	0.1	Anthracene	120-12-7	U	0.004	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	19-H7-002	19-H7-002_20190609_SO	N	6/9/2019	1	1	Anthracene	120-12-7	U	0.004	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	19-H5-001B	19-H5-001B_20191016_SO	N	10/16/2019	0	0.15	Anthracene	120-12-7	U	0.004	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	S202WB	S202WB_20191016_SO	N	10/16/2019	0	0.1	Anthracene	120-12-7	U	0.004	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	19-H8-002	19-H8-002_20190609_SO	N	6/9/2019	1	1	Anthracene	120-12-7	U	0.004	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	S-094B	S-094B_20191016_SO	N	10/16/2019	0	0.1	Anthracene	120-12-7	U	0.004	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	19-H8-001	19-H8-001_20190609_SO	N	6/9/2019	0	0.15	Anthracene	120-12-7	U	0.004	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.0065	1	SO	Surface Soil 0-1.5m	19-H9-001	19-H9-001_20190609_SO	N	6/9/2019	0	0.15	Anthracene	120-12-7			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	19-H1-002B	19-H1-002B_20191016_SO	N	10/16/2019	1	1	Anthracene	120-12-7	U	0.004	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	19-H2-001	19-H2-001_20190609_SO	N	6/9/2019	0	0.15	Anthracene	120-12-7	U	0.004	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.0099	1	SO	Surface Soil 0-1.5m	NSERIESDIL-1	NSERIESDIL-1_20191016_SO	N	10/16/2019	0	0.1	Anthracene	120-12-7			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	19-H1-001	19-H1-001_20190609_SO	N	6/9/2019	0	0.15	Anthracene	120-12-7	U	0.004	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.15	1	SO	Surface Soil 0-1.5m	NSERIESDIL-2	NSERIESDIL-2_20191016_SO	N	10/16/2019	0	0.1	Anthracene	120-12-7			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	19-H5-002	19-H5-002_20190609_SO	N	6/9/2019	1	1	Anthracene	120-12-7	U	0.004	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	19-H10-002	19-H10-002_20190609_SO	N	6/9/2019	1	1	Anthracene	120-12-7	U	0.004	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	19-H4-002	19-H4-002_20190609_SO	N	6/9/2019	1	1	Anthracene	120-12-7	U	0.004	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	19-H6-002B	19-H6-002B_20191016_SO	N	10/16/2019	1	1	Anthracene	120-12-7	U	0.004	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	19-H10-001	19-H10-001_20190609_SO	N	6/9/2019	0	0.15	Anthracene	120-12-7	U	0.004	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	C-1004W	C-1004W_20190303_SO	N	3/3/2019	0	0.1	Anthracene	120-12-7	U	0.004	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	C-2311	C-2311_20190307_SO	N	3/7/2019	0	0.1	Anthracene	120-12-7	U	0.004	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.013	1	SO	Surface Soil 0-1.5m	N-001	N-001_20190226_SO	N	2/26/2019	0	0.1	Anthracene	120-12-7			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	C-2160	C-2160_20190306_SO	N	3/6/2019	0	0.1	Anthracene	120-12-7	U	0.004	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.043	1	SO	Surface Soil 0-1.5m	N-006	N-006_20190226_SO	N	2/26/2019	0	0.1	Anthracene	120-12-7			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.0083	1	SO	Surface Soil 0-1.5m	C-2017	C-2017_20190305_SO	N	3/5/2019	0	0.1	Anthracene	120-12-7			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.053	1	SO	Surface Soil 0-1.5m	N-007	N-007_20190226_SO	N	2/26/2019	0	0.1	Anthracene	120-12-7			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.0097	1	SO	Surface Soil 0-1.5m	N-027	N-027_20190226_SO	N	2/26/2019	0	0.1	Anthracene	120-12-7			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.041	1	SO	Surface Soil 0-1.5m	N-031	N-031_20190226_SO	N	2/26/2019	0	0.1	Anthracene	120-12-7			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.093	1	SO	Surface Soil 0-1.5m	C-2033	C-2033_20190305_SO	N	3/5/2019	0	0.1	Anthracene	120-12-7			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	C-2071	C-2071_20190305_SO	N	3/5/2019	0	0.1	Anthracene	120-12-7	U	0.004	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.061	1	SO	Surface Soil 0-1.5m	N-016	N-016_20190226_SO	N	2/26/2019	0	0.1	Anthracene	120-12-7			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.009	1	SO	Surface Soil 0-1.5m	N-010	N-010_20190226_SO	N	2/26/2019	0	0.1	Anthracene	120-12-7			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	C-2100	C-2100_20190305_SO	N	3/5/2019	0	0.1	Anthracene	120-12-7	U	0.004	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.023	1	SO	Surface Soil 0-1.5m	N-021	N-021_20190226_SO	N	2/26/2019	0	0.1	Anthracene	120-12-7			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.078	1	SO	Surface Soil 0-1.5m	N-013	N-013_20190226_SO	N	2/26/2019	0	0.1	Anthracene	120-12-7			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.0064	1	SO	Surface Soil 0-1.5m	C-2082	C-2082_20190305_SO	N	3/5/2019	0	0.1	Anthracene	120-12-7			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.2	1	SO	Surface Soil 0-1.5m	N-009	N-009_20190226_SO	N	2/26/2019	0	0.1	Anthracene	120-12-7			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.019	1	SO	Surface Soil 0-1.5m	N-015	N-015_20190226_SO	N	2/26/2019	0	0.1	Anthracene	120-12-7			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	C-2178	C-2178_20190306_SO	N	3/6/2019	0	0.1	Anthracene	120-12-7	U	0.004	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	C-2176	C-2176_20190306_SO	N	3/6/2019	0	0.1	Anthracene	120-12-7	U	0.004	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	DB-004	DB-004_20190302_SO	N	3/2/2019	0	0.1	Anthracene	120-12-7	U	0.004	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.065	1	SO	Surface Soil 0-1.5m	N-036	N-036_20190226_SO	N	2/26/2019	0	0.1	Anthracene	120-12-7			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.023	1	SO	Surface Soil 0-1.5m	EXW2-3	EXW2-3_20190605_SO	N	6/5/2019	1.385	1.385	Anthracene	120-12-7			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.29	1	SO	Surface Soil 0-1.5m	D_BH19-15	D_BH19-15_20190507_SO	N	5/7/2019	0	0.15	Anthracene	120-12-7			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.017	1	SO	Surface Soil 0-1.5m	E_BH19-16	E_BH19-16_20190507_SO	N	5/7/2019	0	0.15	Anthracene	120-12-7			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	SLOT2-1	SLOT2-1_20190606_SO	N	6/6/2019	1.34	1.34	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	S-088	S-088_20190227_SO	N	2/27/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	S-014	S-014_20190227_SO	N	2/27/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	S-085	S-085_20190227_SO	N	2/27/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	S-212W-C	S-212W-C_20190307_SO	N	3/7/2019	0	0.10	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	S-017	S-017_20190227_SO	N	2/27/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	S-019A	S-019A_20190227_SO	N	2/27/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	S-075	S-075_20190227_SO	N	2/27/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	S-101-C	S-101-C_20190308_SO	N	3/8/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	S-051B	S-051B_20190227_SO	N	2/27/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	S-023B	S-023B_20190227_SO	N	2/27/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	S-097	S-097_20190227_SO	N	2/27/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	S-093B	S-093B_20190227_SO	N	2/27/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	S-098	S-098_20190227_SO	N	2/27/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	S-025	S-025_20190227_SO	N	2/27/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	S-073	S-073_20190227_SO	N	2/27/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	S-074B	S-074B_20190227_SO	N	2/27/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.02	1	SO	Surface Soil 0-1.5m	S323F	S323F_20190302_SO	N	3/2/2019	0	0.1	Benzo(a)anthracene	56-55-3			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	S-054A	S-054A_20190227_SO	N	2/27/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	S-063	S-063_20190227_SO	N	2/27/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	S-065A	S-065A_20190227_SO	N	2/27/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	S-022	S-022_20190227_SO	N	2/27/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	BH19-120-2	BH19-120-2_20191205_SO	N	12/5/2019	1.22	1.52	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	C-2058C	C-2058C_20191016_SO	N	10/16/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	S202WB	S202WB_20191016_SO	N	10/16/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	19-H10-002	19-H10-002_20190609_SO	N	6/9/2019	1	1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	19-H1-001	19-H1-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	NSERIESDIL-4	NSERIESDIL-4_20191016_SO	N	10/16/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.25	1	SO	Surface Soil 0-1.5m	NSERIESDIL-2	NSERIESDIL-2_20191016_SO	N	10/16/2019	0	0.1	Benzo(a)anthracene	56-55-3			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.014	1	SO	Surface Soil 0-1.5m	C-2028B	C-2028B_20191016_SO	N	10/16/2019	0	0.1	Benzo(a)anthracene	56-55-3			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	C-2106B	C-2106B_20191016_SO	N	10/16/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	S-094B	S-094B_20191016_SO	N	10/16/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	19-H8-002	19-H8-002_20190609_SO	N	6/9/2019	1	1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	19-H8-001	19-H8-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	DB-110-C	DB-110-C_20190311_SO	N	3/11/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	19-H4-001B	19-H4-001B_20191016_SO	N	10/16/2019	0	0.15	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	19-H1-002B	19-H1-002B_20191016_SO	N	10/16/2019	1	1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	19-H10-001	19-H10-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	19-H2-002B	19-H2-002B_20191016_SO	N	10/16/2019	1	1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	C-2180B	C-2180B_20191016_SO	N	10/16/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	19-H6-002B	19-H6-002B_20191016_SO	N	10/16/2019	1	1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.015	1	SO	Surface Soil 0-1.5m	NSERIESDIL-1	NSERIESDIL-1_20191016_SO	N	10/16/2019	0	0.1	Benzo(a)anthracene	56-55-3			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	19-H5-001B	19-H5-001B_20191016_SO	N	10/16/2019	0	0.15	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	C-2509B	C-2509B_20191016_SO	N	10/16/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	C-2074B	C-2074B_20191016_SO	N	10/16/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	19-H6-001B	19-H6-001B_20191016_SO	N	10/16/2019	0	0.15	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg

TABLE B.5
DATA INPUT FOR PROUCL SOFTWARE
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Notes:
The maximum of the field duplicate and parent sample pairs were applied and a detect was chosen over a non-detect value.

ProUCL Group	ProUCL Result	ProUCL Flag	Medium	Soil Zone	Location	Sample ID	Sample Type	Sample Date	Start Depth (m)	End Depth (m)	COPC	CASRN	Qualifier	Detection Limit for Non-Detects	Unit
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	NSERIESDIL-3	NSERIESDIL-3_20191016_SO	N	10/16/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.017	1	SO	Surface Soil 0-1.5m	C-2080B	C-2080B_20191016_SO	N	10/16/2019	0	0.1	Benzo(a)anthracene	56-55-3			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	19-H9-002	19-H9-002_20190609_SO	N	6/9/2019	1	1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	19-H7-001	19-H7-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	19-H4-002	19-H4-002_20190609_SO	N	6/9/2019	1	1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	19-H2-001	19-H2-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.019	1	SO	Surface Soil 0-1.5m	C-2136C	C-2136C_20200224_SO	N	2/24/2020	0	0.1	Benzo(a)anthracene	56-55-3			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	19-H3-002	19-H3-002_20190609_SO	N	6/9/2019	1	1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	19-H3-001	19-H3-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.0067	1	SO	Surface Soil 0-1.5m	19-H9-001	19-H9-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(a)anthracene	56-55-3			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	19-H5-002	19-H5-002_20190609_SO	N	6/9/2019	1	1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.01	1	SO	Surface Soil 0-1.5m	C-1002WC	C-1002WC_20191016_SO	N	10/16/2019	0	0.1	Benzo(a)anthracene	56-55-3			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	19-H7-002	19-H7-002_20190609_SO	N	6/9/2019	1	1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.049	1	SO	Surface Soil 0-1.5m	C-2033	C-2033_20190305_SO	N	3/5/2019	0	0.1	Benzo(a)anthracene	56-55-3			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.026	1	SO	Surface Soil 0-1.5m	N-013	N-013_20190226_SO	N	2/26/2019	0	0.1	Benzo(a)anthracene	56-55-3			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.014	1	SO	Surface Soil 0-1.5m	N-021	N-021_20190226_SO	N	2/26/2019	0	0.1	Benzo(a)anthracene	56-55-3			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.018	1	SO	Surface Soil 0-1.5m	C-2082	C-2082_20190305_SO	N	3/5/2019	0	0.1	Benzo(a)anthracene	56-55-3			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.4	1	SO	Surface Soil 0-1.5m	N-009	N-009_20190226_SO	N	2/26/2019	0	0.1	Benzo(a)anthracene	56-55-3			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.14	1	SO	Surface Soil 0-1.5m	D_BH19-15	D_BH19-15_20190507_SO	N	5/7/2019	0	0.15	Benzo(a)anthracene	56-55-3			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	C-1004W	C-1004W_20190303_SO	N	3/3/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.014	1	SO	Surface Soil 0-1.5m	N-015	N-015_20190226_SO	N	2/26/2019	0	0.1	Benzo(a)anthracene	56-55-3			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.043	1	SO	Surface Soil 0-1.5m	N-016	N-016_20190226_SO	N	2/26/2019	0	0.1	Benzo(a)anthracene	56-55-3			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	C-2100	C-2100_20190305_SO	N	3/5/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	C-2071	C-2071_20190305_SO	N	3/5/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.042	1	SO	Surface Soil 0-1.5m	N-036	N-036_20190226_SO	N	2/26/2019	0	0.1	Benzo(a)anthracene	56-55-3			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	DB-004	DB-004_20190302_SO	N	3/2/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	N-010	N-010_20190226_SO	N	2/26/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	C-2160	C-2160_20190306_SO	N	3/6/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	C-2178	C-2178_20190306_SO	N	3/6/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.017	1	SO	Surface Soil 0-1.5m	E_BH19-16	E_BH19-16_20190507_SO	N	5/7/2019	0	0.15	Benzo(a)anthracene	56-55-3			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	C-2176	C-2176_20190306_SO	N	3/6/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	N-027	N-027_20190226_SO	N	2/26/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.0082	1	SO	Surface Soil 0-1.5m	N-001	N-001_20190226_SO	N	2/26/2019	0	0.1	Benzo(a)anthracene	56-55-3			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	C-2017	C-2017_20190305_SO	N	3/5/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.017	1	SO	Surface Soil 0-1.5m	EXW2-3	EXW2-3_20190605_SO	N	6/5/2019	1.385	1.385	Benzo(a)anthracene	56-55-3			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	C-2311	C-2311_20190307_SO	N	3/7/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.05	1	SO	Surface Soil 0-1.5m	N-031	N-031_20190226_SO	N	2/26/2019	0	0.1	Benzo(a)anthracene	56-55-3			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.039	1	SO	Surface Soil 0-1.5m	N-007	N-007_20190226_SO	N	2/26/2019	0	0.1	Benzo(a)anthracene	56-55-3			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.029	1	SO	Surface Soil 0-1.5m	N-006	N-006_20190226_SO	N	2/26/2019	0	0.1	Benzo(a)anthracene	56-55-3			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.005	0	SO	Surface Soil 0-1.5m	S-051B	S-051B_20190227_SO	N	2/27/2019	0	0.1	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.005	0	SO	Surface Soil 0-1.5m	S-065A	S-065A_20190227_SO	N	2/27/2019	0	0.1	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.016	1	SO	Surface Soil 0-1.5m	S323F	S323F_20190302_SO	N	3/2/2019	0	0.1	Benzo(a)pyrene	50-32-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.005	0	SO	Surface Soil 0-1.5m	S-073	S-073_20190227_SO	N	2/27/2019	0	0.1	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.005	0	SO	Surface Soil 0-1.5m	S-063	S-063_20190227_SO	N	2/27/2019	0	0.1	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.005	0	SO	Surface Soil 0-1.5m	S-212W-C	S-212W-C_20190307_SO	N	3/7/2019	0	0.1	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.005	0	SO	Surface Soil 0-1.5m	S-017	S-017_20190227_SO	N	2/27/2019	0	0.1	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.005	0	SO	Surface Soil 0-1.5m	S-022	S-022_20190227_SO	N	2/27/2019	0	0.1	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.005	0	SO	Surface Soil 0-1.5m	S-074B	S-074B_20190227_SO	N	2/27/2019	0	0.1	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.005	0	SO	Surface Soil 0-1.5m	S-093B	S-093B_20190227_SO	N	2/27/2019	0	0.1	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.005	0	SO	Surface Soil 0-1.5m	S-019A	S-019A_20190227_SO	N	2/27/2019	0	0.1	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.005	0	SO	Surface Soil 0-1.5m	S-098	S-098_20190227_SO	N	2/27/2019	0	0.1	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.005	0	SO	Surface Soil 0-1.5m	S-097	S-097_20190227_SO	N	2/27/2019	0	0.1	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.005	0	SO	Surface Soil 0-1.5m	S-025	S-025_20190227_SO	N	2/27/2019	0	0.1	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.005	0	SO	Surface Soil 0-1.5m	S-075	S-075_20190227_SO	N	2/27/2019	0	0.1	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.005	0	SO	Surface Soil 0-1.5m	S-014	S-014_20190227_SO	N	2/27/2019	0	0.1	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.005	0	SO	Surface Soil 0-1.5m	S-101-C	S-101-C_20190308_SO	N	3/8/2019	0	0.1	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.005	0	SO	Surface Soil 0-1.5m	S-023B	S-023B_20190227_SO	N	2/27/2019	0	0.1	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.005	0	SO	Surface Soil 0-1.5m	SLOT2-1	SLOT2-1_20190606_SO	N	6/6/2019	1.34	1.34	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.005	0	SO	Surface Soil 0-1.5m	S-088	S-088_20190227_SO	N	2/27/2019	0	0.1	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.005	0	SO	Surface Soil 0-1.5m	S-085	S-085_20190227_SO	N	2/27/2019	0	0.1	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.005	0	SO	Surface Soil 0-1.5m	S-054A	S-054A_20190227_SO	N	2/27/2019	0	0.1	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.005	0	SO	Surface Soil 0-1.5m	BH19-120-2	BH19-120-2_20191205_SO	N	12/5/2019	1.22	1.52	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.005	0	SO	Surface Soil 0-1.5m	19-H3-001	19-H3-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.005	0	SO	Surface Soil 0-1.5m	DB-110-C	DB-110-C_20190311_SO	N	3/11/2019	0	0.1	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.005	0	SO	Surface Soil 0-1.5m	19-H9-002	19-H9-002_20190609_SO	N	6/9/2019	1	1	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.012	1	SO	Surface Soil 0-1.5m	C-2074B	C-2074B_20191016_SO	N	10/16/2019	0	0.1	Benzo(a)pyrene	50-32-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.012	1	SO	Surface Soil 0-1.5m	C-1002WC	C-1002WC_20191016_SO	N	10/16/2019	0	0.1	Benzo(a)pyrene	50-32-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.005	0	SO	Surface Soil 0-1.5m	C-2509B	C-2509B_20191016_SO	N	10/16/2019	0	0.1	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.26	1	SO	Surface Soil 0-1.5m	NSERIESDIL-2	NSERIESDIL-2_20191016_SO	N	10/16/2019	0	0.1	Benzo(a)pyrene	50-32-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.005	0	SO	Surface Soil 0-1.5m	NSERIESDIL-4	NSERIESDIL-4_20191016_SO	N	10/16/2019	0	0.1	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.005	0	SO	Surface Soil 0-1.5m	19-H5-001B	19-H5-001B_20191016_SO	N	10/16/2019	0	0.15	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.005	0	SO	Surface Soil 0-1.5m	S202WB	S202WB_20191016_SO	N	10/16/2019	0	0.1	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.005	0	SO	Surface Soil 0-1.5m	S-094B	S-094B_20191016_SO	N	10/16/2019	0	0.1	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.005	0	SO	Surface Soil 0-1.5m	19-H2-002B	19-H2-002B_20191016_SO	N	10/16/2019	1	1	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.005	0	SO	Surface Soil 0-1.5m	19-H9-001	19-H9-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.005	0	SO	Surface Soil 0-1.5m	19-H7-001	19-H7-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.005	0	SO	Surface Soil 0-1.5m	C-2058C	C-2058C_20191016_SO	N	10/16/2019	0	0.1	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.033	1	SO	Surface Soil 0-1.5m	C-2136C	C-2136C_20200224_SO	N	2/24/2020	0	0.1	Benzo(a)pyrene	50-32-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.0074	1	SO	Surface Soil 0-1.5m	19-H4-001B	19-H4-001B_20191016_SO	N	10/16/2019	0	0.15	Benzo(a)pyrene	50-32-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.005	0	SO	Surface Soil 0-1.5m	19-H5-002	19-H5-002_20190609_SO	N	6/9/2019	1	1	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.005	0	SO	Surface Soil 0-1.5m	19-H1-001	19-H1-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.005	0	SO	Surface Soil 0-1.5m	C-2180B	C-2180B_20191016_SO	N	10/16/2019	0	0.1	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.023	1	SO	Surface Soil 0-1.5m	C-2028B	C-2028B_20191016_SO	N	10/16/2019	0	0.1	Benzo(a)pyrene	50-32-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.005	0	SO	Surface Soil 0-1.5m	C-2106B	C-2106B_20191016_SO	N	10/16/2019	0	0.1	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.005	0	SO	Surface Soil 0-1.5m	19-H8-002	19-H8-002_20190609_SO	N	6/9/2019	1	1	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.005	0	SO	Surface Soil 0-1.5m	19-H4-002	19-H4-002_20190609_SO	N	6/9/2019	1	1	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.005	0	SO	Surface Soil 0-1.5m	19-H10-001	19-H10-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.005	0	SO	Surface Soil 0-1.5m	19-H8-001	19-H8-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.005	0	SO	Surface Soil 0-1.5m	19-H10-002	19-H10-002_20190609_SO	N	6/9/2019	1	1	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.005	0	SO	Surface Soil 0-1.5m	19-H7-002	19-H7-002_20190609_SO	N	6/9/2019	1	1	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.005	0	SO	Surface Soil 0-1.5m	19-H6-002B	19-H6-002B_20191016_SO	N	10/16/2019	1	1	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.005	0	SO	Surface Soil 0-1.5m	NSERIESDIL-3	NSERIESDIL-3_20191016_SO	N	10/16/2019	0	0.1	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.005	0	SO	Surface Soil 0-1.5m	19-H1-002B	19-H1-002B_20191016_SO	N	10/16/2019	1	1	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.005	0	SO	Surface Soil 0-1.5m	19-H3-002	19-H3-002_20190609_SO	N	6/9/2019	1	1	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.015	1	SO	Surface Soil 0-1.5m	C-2080B	C-2080B_20191016_SO	N	10/16/2019	0	0.10	Benzo(a)pyrene	50-32-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.005	0	SO	Surface Soil 0-1.5m	19-H2-001	19-H2-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.026	1	SO	Surface Soil 0-1.5m	NSERIESDIL-1	NSERIESDIL-1_20191016_SO	N	10/16/2019	0	0.1	Benzo(a)pyrene	50-32-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.005	0	SO	Surface Soil 0-1.5m	19-H6-001B	19-H6-001B_20191016_SO	N	10/16/2019	0	0.15	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.005	0	SO	Surface Soil 0-1.5m	C-2160	C-2160_20190306_SO	N	3/6/2019	0	0.1	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.011	1	SO	Surface Soil 0-1.5m	E_BH19-16	E_BH19-16_20190507_SO	N	5/7/2019	0	0.15	Benzo(a)pyrene	50-32-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.018	1	SO	Surface Soil 0-1.5m	N-013	N-013_20190226_SO	N	2/26/2019	0	0.1	Benzo(a)pyrene	50-32-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.005	0	SO	Surface Soil 0-1.5m	C-1004W	C-1004W_20190303_SO	N	3/3/2019	0	0.1	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.016	1	SO	Surface Soil 0-1.5m	C-2082	C-2082_20190305_SO	N	3/5/2019	0	0.1	Benzo(a)pyrene	50-32-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.005	0	SO	Surface Soil 0-1.5m	DB-004	DB-004_20190302_SO	N	3/2/2019	0	0.1	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.018	1	SO	Surface Soil 0-1.5m	N-007	N-007_20190226_SO	N	2/26/2019	0	0.1	Benzo(a)pyrene	50-32-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.005	0	SO	Surface Soil 0-1.5m	C-2071	C-2071_20190305_SO	N	3/5/2019	0	0.1	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.005	0	SO	Surface Soil 0-1.5m	C-2176	C-2176_20190306_SO	N	3/6/2019	0	0.1	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.005	0	SO	Surface Soil 0-1.5m	N-010	N-010_20190226_SO	N	2/26/2019	0	0.1	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.005	0	SO	Surface Soil 0-1.5m	C-2178	C-2178_20190306_SO	N	3/6/2019	0	0.1	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.005	0	SO	Surface Soil 0-1.5m	C-2017	C-2017_20190305_SO	N	3/5/2019	0	0.1	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.005	0	SO	Surface Soil 0-1.5m	C-2100	C-2100_20190305_SO	N	3/5/2019	0	0.1	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.005	0	SO	Surface Soil 0-1.5m	C-2311	C-2311_20190307_SO	N	3/7/2019	0	0.1	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.37	1	SO	Surface Soil 0-1.5m	N-009	N-009_20190226_SO	N	2/26/2019	0	0.1	Benzo(a)pyrene	50-32-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.081	1	SO	Surface Soil 0-1.5m	D_BH19-15	D_BH19-15_20190507_SO	N	5/7/2019	0	0.15	Benzo(a)pyrene	50-32-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.018	1	SO	Surface Soil 0-1.5m	N-015	N-015_20190226_SO	N	2/26/2019	0	0.1	Benzo(a)pyrene	50-32-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.0071	1	SO	Surface Soil 0-1.5m	EXW2-3	EXW2-3_20190605_SO	N	6/5/2019	1.385	1.385	Benzo(a)pyrene	50-32-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.019	1	SO	Surface Soil 0-1.5m	C-2033	C-2033_20190305_SO	N	3/5/2019	0	0.1	Benzo(a)pyrene	50-32-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.025	1	SO	Surface Soil 0-1.5m	N-006	N-006_20190226_SO	N	2/26/2019	0	0.1	Benzo(a)pyrene	50-32-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.0082	1	SO	Surface Soil 0-1.5m	N-001	N-001_20190226_SO	N	2/26/2019	0	0.1	Benzo(a)pyrene	50-32-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.074	1	SO	Surface Soil 0-1.5m	N-036	N-036_20190226_SO	N	2/26/2019	0	0.1	Benzo(a)pyrene	50-32-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.024	1	SO	Surface Soil 0-1.5m	N-016	N-016_20190226_SO	N	2/26/2019	0	0.1	Benzo(a)pyrene	50-32-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.014	1	SO	Surface Soil 0-1.5m	N-021	N-021_20190226_SO	N	2/26/2019	0	0.1	Benzo(a)pyrene	50-32-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.1	1	SO	Surface Soil 0-1.5m	N-031	N-031_20190226_SO	N	2/26/2019	0	0.1	Benzo(a)pyrene	50-32-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.0074	1	SO	Surface Soil 0-1.5m	N-027	N-027_20190226_SO	N	2/26/2019	0	0.1	Benzo(a)pyrene	50-32-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SO	Surface Soil 0-1.5m	S-025	S-025_20190227_SO	N	2/27/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SO	Surface Soil 0-1.5m	S-065A	S-065A_20190227_SO	N	2/27/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SO	Surface Soil 0-1.5m	S-063	S-063_20190227_SO	N	2/27/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SO	Surface Soil 0-1.5m	S-098	S-098_20190227_SO	N	2/27/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SO	Surface Soil 0-1.5m	S-212W-C	S-212W-C_20190307_SO	N	3/7/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SO	Surface Soil 0-1.5m	S-101-C	S-101-C_20190308_SO	N	3/8/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SO	Surface Soil 0-1.5m	S-051B	S-051B_20190227_SO	N	2/27/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SO	Surface Soil 0-1.5m	S-023B	S-023B_20190227_SO	N	2/27/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SO	Surface Soil 0-1.5m	S-022	S-022_20190227_SO	N	2/27/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SO	Surface Soil 0-1.5m	S-097	S-097_20190227_SO	N	2/27/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SO	Surface Soil 0-1.5m	SLOT2-1	SLOT2-1_20190606_SO	N	6/6/2019	1.34	1.34	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SO	Surface Soil 0-1.5m	S-093B	S-093B_20190227_SO	N	2/27/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SO	Surface Soil 0-1.5m	S-074B	S-074B_20190227_SO	N	2/27/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SO	Surface Soil 0-1.5m	S-075	S-075_20190227_SO	N	2/27/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SO	Surface Soil 0-1.5m	S-014	S-014_20190227_SO	N	2/27/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SO	Surface Soil 0-1.5m	S-017	S-017_20190227_SO	N	2/27/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.043	1	SO	Surface Soil 0-1.5m	S323F	S323F_20190302_SO	N	3/2/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SO	Surface Soil 0-1.5m	S-019A	S-019A_20190227_SO	N	2/27/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SO	Surface Soil 0-1.5m	S-088	S-088_20190227_SO	N	2/27/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SO	Surface Soil 0-1.5m	S-054A	S-054A_20190227_SO	N	2/27/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SO	Surface Soil 0-1.5m	S-073	S-073_20190227_SO	N	2/27/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SO	Surface Soil 0-1.5m	S-085	S-085_20190227_SO	N	2/27/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SO	Surface Soil 0-1.5m	BH19-120-2	BH19-120-2_20191205_SO	N	12/5/2019	1.22	1.52	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.0092	1	SO	Surface Soil 0-1.5m	C-2106B	C-2106B_20191016_SO	N	10/16/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SO	Surface Soil 0-1.5m	19-H6-001B	19-H6-001B_20191016_SO	N	10/16/2019	0	0.15	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.032	1	SO	Surface Soil 0-1.5m	C-1002WC	C-1002WC_20191016_SO	N	10/16/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.014	1	SO	Surface Soil 0-1.5m	19-H4-001B	19-H4-001B_20191016_SO	N	10/16/2019	0	0.15	Benzo(b&j)fluoranthene	205-99-2_205-82-3			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SO	Surface Soil 0-1.5m	19-H1-001	19-H1-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SO	Surface Soil 0-1.5m	19-H6-002B	19-H6-002B_20191016_SO	N	10/16/2019	1	1	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SO	Surface Soil 0-1.5m	S-094B	S-094B_20191016_SO	N	10/16/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.0076	1	SO	Surface Soil 0-1.5m	19-H9-001	19-H9-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(b&j)fluoranthene	205-99-2_205-82-3			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.0073	1	SO	Surface Soil 0-1.5m	19-H5-001B	19-H5-001B_20191016_SO	N	10/16/2019	0	0.15	Benzo(b&j)fluoranthene	205-99-2_205-82-3			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SO	Surface Soil 0-1.5m	DB-110-C	DB-110-C_20190311_SO	N	3/11/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SO	Surface Soil 0-1.5m	NSERIESDIL-3	NSERIESDIL-3_20191016_SO	N	10/16/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SO	Surface Soil 0-1.5m	19-H3-002	19-H3-002_20190609_SO	N	6/9/2019	1	1	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SO	Surface Soil 0-1.5m	19-H7-002	19-H7-002_20190609_SO	N	6/9/2019	1	1	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.043	1	SO	Surface Soil 0-1.5m	C-2080B	C-2080B_20191016_SO	N	10/16/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.032	1	SO	Surface Soil 0-1.5m	C-2074B	C-2074B_20191016_SO	N	10/16/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SO	Surface Soil 0-1.5m	19-H5-002	19-H5-002_20190609_SO	N	6/9/2019	1	1	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SO	Surface Soil 0-1.5m	S202WB	S202WB_20191016_SO	N	10/16/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.01	1	SO	Surface Soil 0-1.5m	NSERIESDIL-4	NSERIESDIL-4_20191016_SO	N	10/16/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SO	Surface Soil 0-1.5m	19-H10-002	19-H10-002_20190609_SO	N	6/9/2019	1	1	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SO	Surface Soil 0-1.5m	19-H4-002	19-H4-002_20190609_SO	N	6/9/2019	1	1	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.0074	1	SO	Surface Soil 0-1.5m	19-H8-002	19-H8-002_20190609_SO	N	6/9/2019	1	1	Benzo(b&j)fluoranthene	205-99-2_205-82-3			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.0088	1	SO	Surface Soil 0-1.5m	19-H2-002B	19-H2-002B_20191016_SO	N	10/16/2019	1	1	Benzo(b&j)fluoranthene	205-99-2_205-82-3			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SO	Surface Soil 0-1.5m	19-H10-001	19-H10-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.047	1	SO	Surface Soil 0-1.5m	C-2028B	C-2028B_20191016_SO	N	10/16/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SO	Surface Soil 0-1.5m	C-2180B	C-2180B_20191016_SO	N	10/16/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.39	1	SO	Surface Soil 0-1.5m	NSERIESDIL-2	NSERIESDIL-2_20191016_SO	N	10/16/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SO	Surface Soil 0-1.5m	19-H9-002	19-H9-002_20190609_SO	N	6/9/2019	1	1	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SO	Surface Soil 0-1.5m	19-H7-001	19-H7-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.058	1	SO	Surface Soil 0-1.5m	NSERIESDIL-1	NSERIESDIL-1_20191016_SO	N	10/16/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SO	Surface Soil 0-1.5m	19-H8-001	19-H8-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SO	Surface Soil 0-1.5m	19-H3-001	19-H3-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SO	Surface Soil 0-1.5m	19-H1-002B	19-H1-002B_20191016_SO	N	10/16/2019	1	1	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.015	1	SO	Surface Soil 0-1.5m	C-2509B	C-2509B_20191016_SO	N	10/16/2019	0	0.10	Benzo(b&j)fluoranthene	205-99-2_205-82-3			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SO	Surface Soil 0-1.5m	C-2058C	C-2058C_20191016_SO	N	10/16/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SO	Surface Soil 0-1.5m	19-H2-001	19-H2-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.0082	1	SO	Surface Soil 0-1.5m	N-010	N-010_20190226_SO	N	2/26/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.032	1	SO	Surface Soil 0-1.5m	C-2033	C-2033_20190305_SO	N	3/5/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SO	Surface Soil 0-1.5m	DB-004	DB-004_20190302_SO	N	3/2/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.015	1	SO	Surface Soil 0-1.5m	N-027	N-027_20190226_SO	N	2/26/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.28	1	SO	Surface Soil 0-1.5m	N-031	N-031_20190226_SO	N	2/26/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.012	1	SO	Surface Soil 0-1.5m	EXW2-3	EXW2-3_20190605_SO	N	6/5/2019	1.385	1.385	Benzo(b&j)fluoranthene	205-99-2_205-82-3			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.079	1	SO	Surface Soil 0-1.5m	N-006	N-006_20190226_SO	N	2/26/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.022	1	SO	Surface Soil 0-1.5m	C-2082	C-2082_20190305_SO	N	3/5/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.13	1	SO	Surface Soil 0-1.5m	N-036	N-036_20190226_SO	N	2/26/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.049	1	SO	Surface Soil 0-1.5m	N-016	N-016_20190226_SO	N	2/26/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SO	Surface Soil 0-1.5m	C-1004W	C-1004W_20190303_SO	N	3/3/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg

TABLE B.5
DATA INPUT FOR PROUCL SOFTWARE
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Notes:
The maximum of the field duplicate and parent sample pairs were applied and a detect was chosen over a non-detect value.

ProUCL Group	ProUCL Result	ProUCL Flag	Medium	Soil Zone	Location	Sample ID	Sample Type	Sample Date	Start Depth (m)	End Depth (m)	COPC	CASRN	Qualifier	Detection Limit for Non-Detects	Unit
CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.036	1	SO	Surface Soil 0-1.5m	N-021	N-021_20190226_SO	N	2/26/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.046	1	SO	Surface Soil 0-1.5m	N-015	N-015_20190226_SO	N	2/26/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SO	Surface Soil 0-1.5m	C-2311	C-2311_20190307_SO	N	3/7/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.12	1	SO	Surface Soil 0-1.5m	D_BH19-15	D_BH19-15_20190507_SO	N	5/7/2019	0	0.15	Benzo(b&j)fluoranthene	205-99-2_205-82-3			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SO	Surface Soil 0-1.5m	C-2017	C-2017_20190305_SO	N	3/5/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.078	1	SO	Surface Soil 0-1.5m	C-2136C	C-2136C_20200224_SO	N	2/24/2020	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SO	Surface Soil 0-1.5m	C-2100	C-2100_20190305_SO	N	3/5/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.65	1	SO	Surface Soil 0-1.5m	N-009	N-009_20190226_SO	N	2/26/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.048	1	SO	Surface Soil 0-1.5m	N-007	N-007_20190226_SO	N	2/26/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SO	Surface Soil 0-1.5m	C-2071	C-2071_20190305_SO	N	3/5/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SO	Surface Soil 0-1.5m	C-2160	C-2160_20190306_SO	N	3/6/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.019	1	SO	Surface Soil 0-1.5m	N-001	N-001_20190226_SO	N	2/26/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SO	Surface Soil 0-1.5m	C-2176	C-2176_20190306_SO	N	3/6/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.022	1	SO	Surface Soil 0-1.5m	E_BH19-16	E_BH19-16_20190507_SO	N	5/7/2019	0	0.15	Benzo(b&j)fluoranthene	205-99-2_205-82-3			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SO	Surface Soil 0-1.5m	C-2178	C-2178_20190306_SO	N	3/6/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.045	1	SO	Surface Soil 0-1.5m	N-013	N-013_20190226_SO	N	2/26/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	S-088	S-088_20190227_SO	N	2/27/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	S-085	S-085_20190227_SO	N	2/27/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	S-051B	S-051B_20190227_SO	N	2/27/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	S-093B	S-093B_20190227_SO	N	2/27/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	S-101-C	S-101-C_20190308_SO	N	3/8/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	S-073	S-073_20190227_SO	N	2/27/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	S-075	S-075_20190227_SO	N	2/27/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	S-025	S-025_20190227_SO	N	2/27/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	S-074B	S-074B_20190227_SO	N	2/27/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	S-063	S-063_20190227_SO	N	2/27/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	S-097	S-097_20190227_SO	N	2/27/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	S-098	S-098_20190227_SO	N	2/27/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	S-065A	S-065A_20190227_SO	N	2/27/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	S-054A	S-054A_20190227_SO	N	2/27/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	S-014	S-014_20190227_SO	N	2/27/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	S-023B	S-023B_20190227_SO	N	2/27/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	S-212W-C	S-212W-C_20190307_SO	N	3/7/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	S-017	S-017_20190227_SO	N	2/27/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	S-019A	S-019A_20190227_SO	N	2/27/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	SLOT2-1	SLOT2-1_20190606_SO	N	6/6/2019	1.34	1.34	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	S323F	S323F_20190302_SO	N	3/2/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	S-022	S-022_20190227_SO	N	2/27/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	C-2136C	C-2136C_20200224_SO	N	2/24/2020	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	BH19-120-2	BH19-120-2_20191205_SO	N	12/5/2019	1.22	1.52	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	19-H8-002	19-H8-002_20190609_SO	N	6/9/2019	1	1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	19-H7-001	19-H7-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.0058	1	SO	Surface Soil 0-1.5m	NSERIESDIL-1	NSERIESDIL-1_20191016_SO	N	10/16/2019	0	0.1	Benzo(c)phenanthrene	195-19-7			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.0052	1	SO	Surface Soil 0-1.5m	C-2080B	C-2080B_20191016_SO	N	10/16/2019	0	0.1	Benzo(c)phenanthrene	195-19-7			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	19-H8-001	19-H8-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	NSERIESDIL-3	NSERIESDIL-3_20191016_SO	N	10/16/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	C-2028B	C-2028B_20191016_SO	N	10/16/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	19-H6-001B	19-H6-001B_20191016_SO	N	10/16/2019	0	0.15	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	19-H1-002B	19-H1-002B_20191016_SO	N	10/16/2019	1	1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	19-H3-002	19-H3-002_20190609_SO	N	6/9/2019	1	1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	19-H2-001	19-H2-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	C-2106B	C-2106B_20191016_SO	N	10/16/2019	0	0.10	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	19-H7-002	19-H7-002_20190609_SO	N	6/9/2019	1	1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	19-H10-002	19-H10-002_20190609_SO	N	6/9/2019	1	1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	C-1002WC	C-1002WC_20191016_SO	N	10/16/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	19-H9-002	19-H9-002_20190609_SO	N	6/9/2019	1	1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	NSERIESDIL-4	NSERIESDIL-4_20191016_SO	N	10/16/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	19-H9-001	19-H9-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	S-094B	S-094B_20191016_SO	N	10/16/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	C-2058C	C-2058C_20191016_SO	N	10/16/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	19-H3-001	19-H3-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	19-H5-001B	19-H5-001B_20191016_SO	N	10/16/2019	0	0.15	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	C-2180B	C-2180B_20191016_SO	N	10/16/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	S202WB	S202WB_20191016_SO	N	10/16/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	19-H1-001	19-H1-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.064	1	SO	Surface Soil 0-1.5m	NSERIESDIL-2	NSERIESDIL-2_20191016_SO	N	10/16/2019	0	0.1	Benzo(c)phenanthrene	195-19-7			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	DB-110-C	DB-110-C_20190311_SO	N	3/11/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	C-2074B	C-2074B_20191016_SO	N	10/16/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	19-H4-002	19-H4-002_20190609_SO	N	6/9/2019	1	1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	19-H5-002	19-H5-002_20190609_SO	N	6/9/2019	1	1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	19-H4-001B	19-H4-001B_20191016_SO	N	10/16/2019	0	0.15	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	19-H6-002B	19-H6-002B_20191016_SO	N	10/16/2019	1	1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	19-H10-001	19-H10-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	C-2509B	C-2509B_20191016_SO	N	10/16/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	19-H2-002B	19-H2-002B_20191016_SO	N	10/16/2019	1	1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.0059	1	SO	Surface Soil 0-1.5m	N-036	N-036_20190226_SO	N	2/26/2019	0	0.1	Benzo(c)phenanthrene	195-19-7			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.0064	1	SO	Surface Soil 0-1.5m	N-013	N-013_20190226_SO	N	2/26/2019	0	0.1	Benzo(c)phenanthrene	195-19-7			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	N-027	N-027_20190226_SO	N	2/26/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	N-021	N-021_20190226_SO	N	2/26/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	C-2082	C-2082_20190305_SO	N	3/5/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.0084	1	SO	Surface Soil 0-1.5m	N-016	N-016_20190226_SO	N	2/26/2019	0	0.1	Benzo(c)phenanthrene	195-19-7			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	E_BH19-16	E_BH19-16_20190507_SO	N	5/7/2019	0	0.15	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	N-001	N-001_20190226_SO	N	2/26/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	N-015	N-015_20190226_SO	N	2/26/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.026	1	SO	Surface Soil 0-1.5m	D_BH19-15	D_BH19-15_20190507_SO	N	5/7/2019	0	0.15	Benzo(c)phenanthrene	195-19-7			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	C-2017	C-2017_20190305_SO	N	3/5/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.0095	1	SO	Surface Soil 0-1.5m	N-007	N-007_20190226_SO	N	2/26/2019	0	0.1	Benzo(c)phenanthrene	195-19-7			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	C-2071	C-2071_20190305_SO	N	3/5/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.064	1	SO	Surface Soil 0-1.5m	N-009	N-009_20190226_SO	N	2/26/2019	0	0.1	Benzo(c)phenanthrene	195-19-7			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	DB-004	DB-004_20190302_SO	N	3/2/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	EXW2-3	EXW2-3_20190605_SO	N	6/5/2019	1.385	1.385	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	C-2100	C-2100_20190305_SO	N	3/5/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	N-010	N-010_20190226_SO	N	2/26/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	C-1004W	C-1004W_20190303_SO	N	3/3/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	C-2178	C-2178_20190306_SO	N	3/6/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.026	1	SO	Surface Soil 0-1.5m	N-031	N-031_20190226_SO	N	2/26/2019	0	0.1	Benzo(c)phenanthrene	195-19-7			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	C-2311	C-2311_20190307_SO	N	3/7/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	C-2160	C-2160_20190306_SO	N	3/6/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.0074	1	SO	Surface Soil 0-1.5m	C-2033	C-2033_20190305_SO	N	3/5/2019	0	0.1	Benzo(c)phenanthrene	195-19-7			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	C-2176	C-2176_20190306_SO	N	3/6/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.0099	1	SO	Surface Soil 0-1.5m	N-006	N-006_20190226_SO	N	2/26/2019	0	0.1	Benzo(c)phenanthrene	195-19-7			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	S-063	S-063_20190227_SO	N	2/27/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	S-073	S-073_20190227_SO	N	2/27/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	S-098	S-098_20190227_SO	N	2/27/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	S-074B	S-074B_20190227_SO	N	2/27/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	SLOT2-1	SLOT2-1_20190606_SO	N	6/6/2019	1.34	1.34	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.025	1	SO	Surface Soil 0-1.5m	S323F	S323F_20190302_SO	N	3/2/2019	0	0.1	Benzo(e)pyrene	192-97-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	S-022	S-022_20190227_SO	N	2/27/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	S-097	S-097_20190227_SO	N	2/27/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	S-065A	S-065A_20190227_SO	N	2/27/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	S-054A	S-054A_20190227_SO	N	2/27/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	S-019A	S-019A_20190227_SO	N	2/27/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	S-051B	S-051B_20190227_SO	N	2/27/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	S-025	S-025_20190227_SO	N	2/27/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	S-014	S-014_20190227_SO	N	2/27/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	S-088	S-088_20190227_SO	N	2/27/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	S-212W-C	S-212W-C_20190307_SO	N	3/7/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	S-075	S-075_20190227_SO	N	2/27/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	S-093B	S-093B_20190227_SO	N	2/27/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	S-101-C	S-101-C_20190308_SO	N	3/8/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	S-085	S-085_20190227_SO	N	2/27/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	S-017	S-017_20190227_SO	N	2/27/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	S-023B	S-023B_20190227_SO	N	2/27/2019	0	0.10	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	BH19-120-2	BH19-120-2_20191205_SO	N	12/5/2019	1.22	1.52	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.047	1	SO	Surface Soil 0-1.5m	C-2136C	C-2136C_20200224_SO	N	2/24/2020	0	0.1	Benzo(e)pyrene	192-97-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.28	1	SO	Surface Soil 0-1.5m	NSERIESDIL-2	NSERIESDIL-2_20191016_SO	N	10/16/2019	0	0.1	Benzo(e)pyrene	192-97-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	19-H10-002	19-H10-002_20190609_SO	N	6/9/2019	1	1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	19-H4-002	19-H4-002_20190609_SO	N	6/9/2019	1	1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	19-H6-002B	19-H6-002B_20191016_SO	N	10/16/2019	1	1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	DB-110-C	DB-110-C_20190311_SO	N	3/11/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	19-H1-001	19-H1-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.0074	1	SO	Surface Soil 0-1.5m	NSERIESDIL-4	NSERIESDIL-4_20191016_SO	N	10/16/2019	0	0.1	Benzo(e)pyrene	192-97-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	19-H5-002	19-H5-002_20190609_SO	N	6/9/2019	1	1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	19-H10-001	19-H10-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	19-H7-002	19-H7-002_20190609_SO	N	6/9/2019	1	1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.052	1	SO	Surface Soil 0-1.5m	NSERIESDIL-1	NSERIESDIL-1_20191016_SO	N	10/16/2019	0	0.1	Benzo(e)pyrene	192-97-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	S202WB	S202WB_20191016_SO	N	10/16/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	19-H6-001B	19-H6-001B_20191016_SO	N	10/16/2019	0	0.15	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	19-H8-001	19-H8-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	NSERIESDIL-3	NSERIESDIL-3_20191016_SO	N	10/16/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	S-094B	S-094B_20191016_SO	N	10/16/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	C-2058C	C-2058C_20191016_SO	N	10/16/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.012	1	SO	Surface Soil 0-1.5m	19-H4-001B	19-H4-001B_20191016_SO	N	10/16/2019	0	0.15	Benzo(e)pyrene	192-97-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.0091	1	SO	Surface Soil 0-1.5m	C-2509B	C-2509B_20191016_SO	N	10/16/2019	0	0.1	Benzo(e)pyrene	192-97-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	19-H2-002B	19-H2-002B_20191016_SO	N	10/16/2019	1	1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.027	1	SO	Surface Soil 0-1.5m	C-2074B	C-2074B_20191016_SO	N	10/16/2019	0	0.1	Benzo(e)pyrene	192-97-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	19-H9-001	19-H9-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	19-H9-002	19-H9-002_20190609_SO	N	6/9/2019	1	1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	C-2180B	C-2180B_20191016_SO	N	10/16/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	19-H3-001	19-H3-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.019	1	SO	Surface Soil 0-1.5m	C-1002WC	C-1002WC_20191016_SO	N	10/16/2019	0	0.1	Benzo(e)pyrene	192-97-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	19-H7-001	19-H7-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	19-H1-002B	19-H1-002B_20191016_SO	N	10/16/2019	1	1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.038	1	SO	Surface Soil 0-1.5m	C-2028B	C-2028B_20191016_SO	N	10/16/2019	0	0.1	Benzo(e)pyrene	192-97-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	19-H2-001	19-H2-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	19-H3-002	19-H3-002_20190609_SO	N	6/9/2019	1	1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	C-2106B	C-2106B_20191016_SO	N	10/16/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	19-H8-002	19-H8-002_20190609_SO	N	6/9/2019	1	1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	19-H5-001B	19-H5-001B_20191016_SO	N	10/16/2019	0	0.15	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.03	1	SO	Surface Soil 0-1.5m	C-2080B	C-2080B_20191016_SO	N	10/16/2019	0	0.1	Benzo(e)pyrene	192-97-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.03	1	SO	Surface Soil 0-1.5m	N-013	N-013_20190226_SO	N	2/26/2019	0	0.1	Benzo(e)pyrene	192-97-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.012	1	SO	Surface Soil 0-1.5m	N-001	N-001_20190226_SO	N	2/26/2019	0	0.1	Benzo(e)pyrene	192-97-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.24	1	SO	Surface Soil 0-1.5m	N-031	N-031_20190226_SO	N	2/26/2019	0	0.1	Benzo(e)pyrene	192-97-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.012	1	SO	Surface Soil 0-1.5m	N-027	N-027_20190226_SO	N	2/26/2019	0	0.1	Benzo(e)pyrene	192-97-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.016	1	SO	Surface Soil 0-1.5m	E_BH19-16	E_BH19-16_20190507_SO	N	5/7/2019	0	0.15	Benzo(e)pyrene	192-97-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.089	1	SO	Surface Soil 0-1.5m	D_BH19-15	D_BH19-15_20190507_SO	N	5/7/2019	0	0.15	Benzo(e)pyrene	192-97-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	C-1004W	C-1004W_20190303_SO	N	3/3/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.03	1	SO	Surface Soil 0-1.5m	N-016	N-016_20190226_SO	N	2/26/2019	0	0.1	Benzo(e)pyrene	192-97-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	DB-004	DB-004_20190302_SO	N	3/2/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.42	1	SO	Surface Soil 0-1.5m	N-009	N-009_20190226_SO	N	2/26/2019	0	0.1	Benzo(e)pyrene	192-97-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	C-2160	C-2160_20190306_SO	N	3/6/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.026	1	SO	Surface Soil 0-1.5m	N-007	N-007_20190226_SO	N	2/26/2019	0	0.1	Benzo(e)pyrene	192-97-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	C-2100	C-2100_20190305_SO	N	3/5/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	C-2311	C-2311_20190307_SO	N	3/7/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.042	1	SO	Surface Soil 0-1.5m	N-006	N-006_20190226_SO	N	2/26/2019	0	0.1	Benzo(e)pyrene	192-97-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.026	1	SO	Surface Soil 0-1.5m	N-021	N-021_20190226_SO	N	2/26/2019	0	0.1	Benzo(e)pyrene	192-97-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.011	1	SO	Surface Soil 0-1.5m	C-2082	C-2082_20190305_SO	N	3/5/2019	0	0.1	Benzo(e)pyrene	192-97-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	C-2176	C-2176_20190306_SO	N	3/6/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	C-2071	C-2071_20190305_SO	N	3/5/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	C-2017	C-2017_20190305_SO	N	3/5/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.0064	1	SO	Surface Soil 0-1.5m	N-010	N-010_20190226_SO	N	2/26/2019	0	0.1	Benzo(e)pyrene	192-97-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	C-2178	C-2178_20190306_SO	N	3/6/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.019	1	SO	Surface Soil 0-1.5m	C-2033	C-2033_20190305_SO	N	3/5/2019	0	0.1	Benzo(e)pyrene	192-97-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.0067	1	SO	Surface Soil 0-1.5m	EXW2-3	EXW2-3_20190605_SO	N	6/5/2019	1.385	1.385	Benzo(e)pyrene	192-97-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.037	1	SO	Surface Soil 0-1.5m	N-015	N-015_20190226_SO	N	2/26/2019	0	0.1	Benzo(e)pyrene	192-97-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.098	1	SO	Surface Soil 0-1.5m	N-036	N-036_20190226_SO	N	2/26/2019	0	0.1	Benzo(e)pyrene	192-97-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	SLOT2-1	SLOT2-1_20190606_SO	N	6/6/2019	1.34	1.34	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	S-019A	S-019A_20190227_SO	N	2/27/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	S-085	S-085_20190227_SO	N	2/27/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	S-017	S-017_20190227_SO	N	2/27/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	S-097	S-097_20190227_SO	N	2/27/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	S-075	S-075_20190227_SO	N	2/27/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	S-088	S-088_20190227_SO	N	2/27/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg

TABLE B.5
DATA INPUT FOR PROUCL SOFTWARE
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Notes:
The maximum of the field duplicate and parent sample pairs were applied and a detect was chosen over a non-detect value.

ProUCL Group	ProUCL Result	ProUCL Flag	Medium	Soil Zone	Location	Sample ID	Sample Type	Sample Date	Start Depth (m)	End Depth (m)	COPC	CASRN	Qualifier	Detection Limit for Non-Detects	Unit
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	S-073	S-073_20190227_SO	N	2/27/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	S-014	S-014_20190227_SO	N	2/27/2019	0	0.10	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.017	1	SO	Surface Soil 0-1.5m	S323F	S323F_20190302_SO	N	3/2/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	S-022	S-022_20190227_SO	N	2/27/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	S-098	S-098_20190227_SO	N	2/27/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	S-093B	S-093B_20190227_SO	N	2/27/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	S-025	S-025_20190227_SO	N	2/27/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	S-212W-C	S-212W-C_20190307_SO	N	3/7/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	S-065A	S-065A_20190227_SO	N	2/27/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	S-051B	S-051B_20190227_SO	N	2/27/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	S-063	S-063_20190227_SO	N	2/27/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	S-023B	S-023B_20190227_SO	N	2/27/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	S-074B	S-074B_20190227_SO	N	2/27/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	S-054A	S-054A_20190227_SO	N	2/27/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	S-101-C	S-101-C_20190308_SO	N	3/8/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	BH19-120-2	BH19-120-2_20191205_SO	N	12/5/2019	1.22	1.52	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.036	1	SO	Surface Soil 0-1.5m	C-2136C	C-2136C_20200224_SO	N	2/24/2020	0	0.1	Benzo(g,h,i)perylene	191-24-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	19-H4-002	19-H4-002_20190609_SO	N	6/9/2019	1	1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	C-2180B	C-2180B_20191016_SO	N	10/16/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	S202WB	S202WB_20191016_SO	N	10/16/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.2	1	SO	Surface Soil 0-1.5m	NSERIESDIL-2	NSERIESDIL-2_20191016_SO	N	10/16/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	19-H3-002	19-H3-002_20190609_SO	N	6/9/2019	1	1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	19-H10-001	19-H10-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	19-H3-001	19-H3-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	19-H7-002	19-H7-002_20190609_SO	N	6/9/2019	1	1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	C-2058C	C-2058C_20191016_SO	N	10/16/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	19-H1-001	19-H1-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	19-H7-001	19-H7-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	19-H6-001B	19-H6-001B_20191016_SO	N	10/16/2019	0	0.15	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	C-2106B	C-2106B_20191016_SO	N	10/16/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.044	1	SO	Surface Soil 0-1.5m	C-2028B	C-2028B_20191016_SO	N	10/16/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	19-H1-002B	19-H1-002B_20191016_SO	N	10/16/2019	1	1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	19-H10-002	19-H10-002_20190609_SO	N	6/9/2019	1	1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	19-H2-001	19-H2-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	19-H2-002B	19-H2-002B_20191016_SO	N	10/16/2019	1	1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.008	1	SO	Surface Soil 0-1.5m	19-H4-001B	19-H4-001B_20191016_SO	N	10/16/2019	0	0.15	Benzo(g,h,i)perylene	191-24-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	19-H5-001B	19-H5-001B_20191016_SO	N	10/16/2019	0	0.15	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.014	1	SO	Surface Soil 0-1.5m	C-2074B	C-2074B_20191016_SO	N	10/16/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	19-H8-001	19-H8-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	19-H5-002	19-H5-002_20190609_SO	N	6/9/2019	1	1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	S-094B	S-094B_20191016_SO	N	10/16/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.0055	1	SO	Surface Soil 0-1.5m	NSERIESDIL-4	NSERIESDIL-4_20191016_SO	N	10/16/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.021	1	SO	Surface Soil 0-1.5m	C-2080B	C-2080B_20191016_SO	N	10/16/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.033	1	SO	Surface Soil 0-1.5m	NSERIESDIL-1	NSERIESDIL-1_20191016_SO	N	10/16/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	NSERIESDIL-3	NSERIESDIL-3_20191016_SO	N	10/16/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	19-H6-002B	19-H6-002B_20191016_SO	N	10/16/2019	1	1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	19-H9-002	19-H9-002_20190609_SO	N	6/9/2019	1	1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	C-2509B	C-2509B_20191016_SO	N	10/16/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	19-H9-001	19-H9-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	19-H8-002	19-H8-002_20190609_SO	N	6/9/2019	1	1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	DB-110-C	DB-110-C_20190311_SO	N	3/11/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.014	1	SO	Surface Soil 0-1.5m	C-1002WC	C-1002WC_20191016_SO	N	10/16/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.011	1	SO	Surface Soil 0-1.5m	N-027	N-027_20190226_SO	N	2/26/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.12	1	SO	Surface Soil 0-1.5m	N-031	N-031_20190226_SO	N	2/26/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.018	1	SO	Surface Soil 0-1.5m	E_BH19-16	E_BH19-16_20190507_SO	N	5/7/2019	0	0.15	Benzo(g,h,i)perylene	191-24-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.0096	1	SO	Surface Soil 0-1.5m	N-001	N-001_20190226_SO	N	2/26/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	C-2071	C-2071_20190305_SO	N	3/5/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	C-2100	C-2100_20190305_SO	N	3/5/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.013	1	SO	Surface Soil 0-1.5m	C-2033	C-2033_20190305_SO	N	3/5/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.023	1	SO	Surface Soil 0-1.5m	N-006	N-006_20190226_SO	N	2/26/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.014	1	SO	Surface Soil 0-1.5m	N-007	N-007_20190226_SO	N	2/26/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	C-2160	C-2160_20190306_SO	N	3/6/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	C-2311	C-2311_20190307_SO	N	3/7/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.0091	1	SO	Surface Soil 0-1.5m	N-010	N-010_20190226_SO	N	2/26/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.078	1	SO	Surface Soil 0-1.5m	D_BH19-15	D_BH19-15_20190507_SO	N	5/7/2019	0	0.15	Benzo(g,h,i)perylene	191-24-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.026	1	SO	Surface Soil 0-1.5m	N-016	N-016_20190226_SO	N	2/26/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	C-2178	C-2178_20190306_SO	N	3/6/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.02	1	SO	Surface Soil 0-1.5m	N-021	N-021_20190226_SO	N	2/26/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.0083	1	SO	Surface Soil 0-1.5m	C-2082	C-2082_20190305_SO	N	3/5/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.042	1	SO	Surface Soil 0-1.5m	N-015	N-015_20190226_SO	N	2/26/2019	0	0.10	Benzo(g,h,i)perylene	191-24-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	DB-004	DB-004_20190302_SO	N	3/2/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.24	1	SO	Surface Soil 0-1.5m	N-009	N-009_20190226_SO	N	2/26/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	C-1004W	C-1004W_20190303_SO	N	3/3/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	C-2176	C-2176_20190306_SO	N	3/6/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.0059	1	SO	Surface Soil 0-1.5m	C-2017	C-2017_20190305_SO	N	3/5/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	EXW2-3	EXW2-3_20190605_SO	N	6/5/2019	1.385	1.385	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.021	1	SO	Surface Soil 0-1.5m	N-013	N-013_20190226_SO	N	2/26/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.073	1	SO	Surface Soil 0-1.5m	N-036	N-036_20190226_SO	N	2/26/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	S-093B	S-093B_20190227_SO	N	2/27/2019	0	0.1	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	S-212W-C	S-212W-C_20190307_SO	N	3/7/2019	0	0.1	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	S-074B	S-074B_20190227_SO	N	2/27/2019	0	0.1	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	S-088	S-088_20190227_SO	N	2/27/2019	0	0.1	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	S-054A	S-054A_20190227_SO	N	2/27/2019	0	0.1	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	S-051B	S-051B_20190227_SO	N	2/27/2019	0	0.1	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	S-017	S-017_20190227_SO	N	2/27/2019	0	0.1	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	SLOT2-1	SLOT2-1_20190606_SO	N	6/6/2019	1.34	1.34	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	S-023B	S-023B_20190227_SO	N	2/27/2019	0	0.1	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	S-014	S-014_20190227_SO	N	2/27/2019	0	0.1	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	S-085	S-085_20190227_SO	N	2/27/2019	0	0.1	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	S-101-C	S-101-C_20190308_SO	N	3/8/2019	0	0.1	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	S-025	S-025_20190227_SO	N	2/27/2019	0	0.1	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	S-075	S-075_20190227_SO	N	2/27/2019	0	0.1	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	S-073	S-073_20190227_SO	N	2/27/2019	0	0.1	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	S-063	S-063_20190227_SO	N	2/27/2019	0	0.1	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.016	1	SO	Surface Soil 0-1.5m	S323F	S323F_20190302_SO	N	3/2/2019	0	0.1	Benzo(k)fluoranthene	207-08-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	S-097	S-097_20190227_SO	N	2/27/2019	0	0.1	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	S-065A	S-065A_20190227_SO	N	2/27/2019	0	0.1	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	S-098	S-098_20190227_SO	N	2/27/2019	0	0.1	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	S-022	S-022_20190227_SO	N	2/27/2019	0	0.1	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	S-019A	S-019A_20190227_SO	N	2/27/2019	0	0.1	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	BH19-120-2	BH19-120-2_20191205_SO	N	12/5/2019	1.22	1.52	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.024	1	SO	Surface Soil 0-1.5m	C-2136C	C-2136C_20200224_SO	N	2/24/2020	0	0.1	Benzo(k)fluoranthene	207-08-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	NSERIESDIL-4	NSERIESDIL-4_20191016_SO	N	10/16/2019	0	0.1	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	19-H9-002	19-H9-002_20190609_SO	N	6/9/2019	1	1	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	19-H1-002B	19-H1-002B_20191016_SO	N	10/16/2019	1	1	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	19-H5-001B	19-H5-001B_20191016_SO	N	10/16/2019	0	0.15	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	19-H6-002B	19-H6-002B_20191016_SO	N	10/16/2019	1	1	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	19-H6-001B	19-H6-001B_20191016_SO	N	10/16/2019	0	0.15	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	19-H4-001B	19-H4-001B_20191016_SO	N	10/16/2019	0	0.15	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	19-H10-001	19-H10-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	19-H7-001	19-H7-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	NSERIESDIL-3	NSERIESDIL-3_20191016_SO	N	10/16/2019	0	0.1	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	19-H5-002	19-H5-002_20190609_SO	N	6/9/2019	1	1	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	19-H2-002B	19-H2-002B_20191016_SO	N	10/16/2019	1	1	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	DB-110-C	DB-110-C_20190311_SO	N	3/11/2019	0	0.1	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	C-2509B	C-2509B_20191016_SO	N	10/16/2019	0	0.1	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.15	1	SO	Surface Soil 0-1.5m	NSERIESDIL-2	NSERIESDIL-2_20191016_SO	N	10/16/2019	0	0.1	Benzo(k)fluoranthene	207-08-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	19-H2-001	19-H2-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	19-H1-001	19-H1-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	19-H9-001	19-H9-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	C-2058C	C-2058C_20191016_SO	N	10/16/2019	0	0.1	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	C-2180B	C-2180B_20191016_SO	N	10/16/2019	0	0.1	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	19-H8-002	19-H8-002_20190609_SO	N	6/9/2019	1	1	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	S-094B	S-094B_20191016_SO	N	10/16/2019	0	0.1	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	19-H8-001	19-H8-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.016	1	SO	Surface Soil 0-1.5m	NSERIESDIL-1	NSERIESDIL-1_20191016_SO	N	10/16/2019	0	0.1	Benzo(k)fluoranthene	207-08-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	19-H3-002	19-H3-002_20190609_SO	N	6/9/2019	1	1	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	C-2106B	C-2106B_20191016_SO	N	10/16/2019	0	0.1	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	19-H3-001	19-H3-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.012	1	SO	Surface Soil 0-1.5m	C-2080B	C-2080B_20191016_SO	N	10/16/2019	0	0.1	Benzo(k)fluoranthene	207-08-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.0098	1	SO	Surface Soil 0-1.5m	C-2074B	C-2074B_20191016_SO	N	10/16/2019	0	0.1	Benzo(k)fluoranthene	207-08-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.0098	1	SO	Surface Soil 0-1.5m	C-1002WC	C-1002WC_20191016_SO	N	10/16/2019	0	0.1	Benzo(k)fluoranthene	207-08-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	19-H7-002	19-H7-002_20190609_SO	N	6/9/2019	1	1	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	S202WB	S202WB_20191016_SO	N	10/16/2019	0	0.1	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.014	1	SO	Surface Soil 0-1.5m	C-2028B	C-2028B_20191016_SO	N	10/16/2019	0	0.1	Benzo(k)fluoranthene	207-08-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	19-H10-002	19-H10-002_20190609_SO	N	6/9/2019	1	1	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	19-H4-002	19-H4-002_20190609_SO	N	6/9/2019	1	1	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	N-010	N-010_20190226_SO	N	2/26/2019	0	0.1	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	EXW2-3	EXW2-3_20190605_SO	N	6/5/2019	1.385	1.385	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.016	1	SO	Surface Soil 0-1.5m	N-016	N-016_20190226_SO	N	2/26/2019	0	0.1	Benzo(k)fluoranthene	207-08-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.013	1	SO	Surface Soil 0-1.5m	N-013	N-013_20190226_SO	N	2/26/2019	0	0.1	Benzo(k)fluoranthene	207-08-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	C-2176	C-2176_20190306_SO	N	3/6/2019	0	0.1	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	C-1004W	C-1004W_20190303_SO	N	3/3/2019	0	0.1	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	C-2100	C-2100_20190305_SO	N	3/5/2019	0	0.1	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.076	1	SO	Surface Soil 0-1.5m	N-031	N-031_20190226_SO	N	2/26/2019	0	0.1	Benzo(k)fluoranthene	207-08-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.01	1	SO	Surface Soil 0-1.5m	C-2033	C-2033_20190305_SO	N	3/5/2019	0	0.1	Benzo(k)fluoranthene	207-08-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.0087	1	SO	Surface Soil 0-1.5m	C-2082	C-2082_20190305_SO	N	3/5/2019	0	0.1	Benzo(k)fluoranthene	207-08-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	C-2178	C-2178_20190306_SO	N	3/6/2019	0	0.1	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.014	1	SO	Surface Soil 0-1.5m	N-015	N-015_20190226_SO	N	2/26/2019	0	0.10	Benzo(k)fluoranthene	207-08-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	C-2071	C-2071_20190305_SO	N	3/5/2019	0	0.1	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.015	1	SO	Surface Soil 0-1.5m	N-007	N-007_20190226_SO	N	2/26/2019	0	0.1	Benzo(k)fluoranthene	207-08-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.2	1	SO	Surface Soil 0-1.5m	N-009	N-009_20190226_SO	N	2/26/2019	0	0.1	Benzo(k)fluoranthene	207-08-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	C-2311	C-2311_20190307_SO	N	3/7/2019	0	0.1	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.033	1	SO	Surface Soil 0-1.5m	D_BH19-15	D_BH19-15_20190507_SO	N	5/7/2019	0	0.15	Benzo(k)fluoranthene	207-08-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	C-2017	C-2017_20190305_SO	N	3/5/2019	0	0.1	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	N-027	N-027_20190226_SO	N	2/26/2019	0	0.1	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.052	1	SO	Surface Soil 0-1.5m	N-036	N-036_20190226_SO	N	2/26/2019	0	0.1	Benzo(k)fluoranthene	207-08-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.011	1	SO	Surface Soil 0-1.5m	N-021	N-021_20190226_SO	N	2/26/2019	0	0.1	Benzo(k)fluoranthene	207-08-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	C-2160	C-2160_20190306_SO	N	3/6/2019	0	0.1	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	DB-004	DB-004_20190302_SO	N	3/2/2019	0	0.1	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.007	1	SO	Surface Soil 0-1.5m	E_BH19-16	E_BH19-16_20190507_SO	N	5/7/2019	0	0.15	Benzo(k)fluoranthene	207-08-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.0061	1	SO	Surface Soil 0-1.5m	N-001	N-001_20190226_SO	N	2/26/2019	0	0.1	Benzo(k)fluoranthene	207-08-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.024	1	SO	Surface Soil 0-1.5m	N-006	N-006_20190226_SO	N	2/26/2019	0	0.1	Benzo(k)fluoranthene	207-08-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.073	1	SO	Surface Soil 0-1.5m	S323F	S323F_20190302_SO	N	3/2/2019	0	0.1	Chrysene	218-01-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	S-023B	S-023B_20190227_SO	N	2/27/2019	0	0.1	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	SLOT2-1	SLOT2-1_20190606_SO	N	6/6/2019	1.34	1.34	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	S-014	S-014_20190227_SO	N	2/27/2019	0	0.1	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	S-054A	S-054A_20190227_SO	N	2/27/2019	0	0.1	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	S-065A	S-065A_20190227_SO	N	2/27/2019	0	0.1	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	S-085	S-085_20190227_SO	N	2/27/2019	0	0.1	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	S-101-C	S-101-C_20190308_SO	N	3/8/2019	0	0.1	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	S-063	S-063_20190227_SO	N	2/27/2019	0	0.1	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	S-025	S-025_20190227_SO	N	2/27/2019	0	0.1	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	S-019A	S-019A_20190227_SO	N	2/27/2019	0	0.1	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	S-093B	S-093B_20190227_SO	N	2/27/2019	0	0.1	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	S-051B	S-051B_20190227_SO	N	2/27/2019	0	0.1	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	S-022	S-022_20190227_SO	N	2/27/2019	0	0.1	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	S-097	S-097_20190227_SO	N	2/27/2019	0	0.1	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	S-088	S-088_20190227_SO	N	2/27/2019	0	0.1	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	S-073	S-073_20190227_SO	N	2/27/2019	0	0.1	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	S-074B	S-074B_20190227_SO	N	2/27/2019	0	0.1	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	S-098	S-098_20190227_SO	N	2/27/2019	0	0.1	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	S-017	S-017_20190227_SO	N	2/27/2019	0	0.1	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	S-212W-C	S-212W-C_20190307_SO	N	3/7/2019	0	0.1	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	S-075	S-075_20190227_SO	N	2/27/2019	0	0.1	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	BH19-120-2	BH19-120-2_20191205_SO	N	12/5/2019	1.22	1.52	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.051	1	SO	Surface Soil 0-1.5m	C-2136C	C-2136C_20200224_SO	N	2/24/2020	0	0.1	Chrysene	218-01-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.36	1	SO	Surface Soil 0-1.5m	NSERIESDIL-2	NSERIESDIL-2_20191016_SO	N	10/16/2019	0	0.1	Chrysene	218-01-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	19-H10-001	19-H10-001_20190609_SO	N	6/9/2019	0	0.15	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.038	1	SO	Surface Soil 0-1.5m	NSERIESDIL-1	NSERIESDIL-1_20191016_SO	N	10/16/2019	0	0.1	Chrysene	218-01-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	19-H4-002	19-H4-002_20190609_SO	N	6/9/2019	1	1	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.031	1	SO	Surface Soil 0-1.5m	C-2080B	C-2080B_20191016_SO	N	10/16/2019	0	0.1	Chrysene	218-01-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	19-H7-002	19-H7-002_20190609_SO	N	6/9/2019	1	1	Chrysene	218-01-9	U	0.005	mg/kg

TABLE B.5
DATA INPUT FOR PROUCL SOFTWARE
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Notes:
The maximum of the field duplicate and parent sample pairs were applied and a detect was chosen over a non-detect value.

ProUCL Group	ProUCL Result	ProUCL Flag	Medium	Soil Zone	Location	Sample ID	Sample Type	Sample Date	Start Depth (m)	End Depth (m)	COPC	CASRN	Qualifier	Detection Limit for Non-Detects	Unit
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	19-H2-002B	19-H2-002B_20191016_SO	N	10/16/2019	1	1	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	19-H3-002	19-H3-002_20190609_SO	N	6/9/2019	1	1	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	19-H8-001	19-H8-001_20190609_SO	N	6/9/2019	0	0.15	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	S-094B	S-094B_20191016_SO	N	10/16/2019	0	0.1	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	19-H4-001B	19-H4-001B_20191016_SO	N	10/16/2019	0	0.15	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	C-2058C	C-2058C_20191016_SO	N	10/16/2019	0	0.1	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	19-H5-002	19-H5-002_20190609_SO	N	6/9/2019	1	1	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.012	1	SO	Surface Soil 0-1.5m	C-2106B	C-2106B_20191016_SO	N	10/16/2019	0	0.1	Chrysene	218-01-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	19-H3-001	19-H3-001_20190609_SO	N	6/9/2019	0	0.15	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	19-H8-002	19-H8-002_20190609_SO	N	6/9/2019	1	1	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	NSERIESDIL-3	NSERIESDIL-3_20191016_SO	N	10/16/2019	0	0.1	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	19-H6-001B	19-H6-001B_20191016_SO	N	10/16/2019	0	0.15	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	19-H7-001	19-H7-001_20190609_SO	N	6/9/2019	0	0.15	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.0071	1	SO	Surface Soil 0-1.5m	19-H9-001	19-H9-001_20190609_SO	N	6/9/2019	0	0.15	Chrysene	218-01-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	NSERIESDIL-4	NSERIESDIL-4_20191016_SO	N	10/16/2019	0	0.1	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	19-H1-002B	19-H1-002B_20191016_SO	N	10/16/2019	1	1	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	19-H9-002	19-H9-002_20190609_SO	N	6/9/2019	1	1	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	19-H2-001	19-H2-001_20190609_SO	N	6/9/2019	0	0.15	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	19-H1-001	19-H1-001_20190609_SO	N	6/9/2019	0	0.15	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.0096	1	SO	Surface Soil 0-1.5m	C-2509B	C-2509B_20191016_SO	N	10/16/2019	0	0.1	Chrysene	218-01-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	19-H10-002	19-H10-002_20190609_SO	N	6/9/2019	1	1	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	19-H5-001B	19-H5-001B_20191016_SO	N	10/16/2019	0	0.15	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	S202WB	S202WB_20191016_SO	N	10/16/2019	0	0.1	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.021	1	SO	Surface Soil 0-1.5m	C-1002WC	C-1002WC_20191016_SO	N	10/16/2019	0	0.10	Chrysene	218-01-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.021	1	SO	Surface Soil 0-1.5m	C-2028B	C-2028B_20191016_SO	N	10/16/2019	0	0.1	Chrysene	218-01-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	C-2180B	C-2180B_20191016_SO	N	10/16/2019	0	0.1	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.017	1	SO	Surface Soil 0-1.5m	C-2074B	C-2074B_20191016_SO	N	10/16/2019	0	0.1	Chrysene	218-01-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	DB-110-C	DB-110-C_20190311_SO	N	3/11/2019	0	0.1	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	19-H6-002B	19-H6-002B_20191016_SO	N	10/16/2019	1	1	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	C-2176	C-2176_20190306_SO	N	3/6/2019	0	0.1	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.019	1	SO	Surface Soil 0-1.5m	E_BH19-16	E_BH19-16_20190507_SO	N	5/7/2019	0	0.15	Chrysene	218-01-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.048	1	SO	Surface Soil 0-1.5m	C-2033	C-2033_20190305_SO	N	3/5/2019	0	0.1	Chrysene	218-01-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	C-1004W	C-1004W_20190303_SO	N	3/3/2019	0	0.1	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	C-2100	C-2100_20190305_SO	N	3/5/2019	0	0.1	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	C-2178	C-2178_20190306_SO	N	3/6/2019	0	0.1	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.17	1	SO	Surface Soil 0-1.5m	D_BH19-15	D_BH19-15_20190507_SO	N	5/7/2019	0	0.15	Chrysene	218-01-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.089	1	SO	Surface Soil 0-1.5m	N-036	N-036_20190226_SO	N	2/26/2019	0	0.1	Chrysene	218-01-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	DB-004	DB-004_20190302_SO	N	3/2/2019	0	0.1	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	C-2017	C-2017_20190305_SO	N	3/5/2019	0	0.1	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	C-2311	C-2311_20190307_SO	N	3/7/2019	0	0.1	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.2	1	SO	Surface Soil 0-1.5m	N-031	N-031_20190226_SO	N	2/26/2019	0	0.1	Chrysene	218-01-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.018	1	SO	Surface Soil 0-1.5m	EXW2-3	EXW2-3_20190605_SO	N	6/5/2019	1.385	1.385	Chrysene	218-01-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	C-2160	C-2160_20190306_SO	N	3/6/2019	0	0.1	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.056	1	SO	Surface Soil 0-1.5m	N-016	N-016_20190226_SO	N	2/26/2019	0	0.1	Chrysene	218-01-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.057	1	SO	Surface Soil 0-1.5m	N-006	N-006_20190226_SO	N	2/26/2019	0	0.1	Chrysene	218-01-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.36	1	SO	Surface Soil 0-1.5m	N-009	N-009_20190226_SO	N	2/26/2019	0	0.1	Chrysene	218-01-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.04	1	SO	Surface Soil 0-1.5m	N-013	N-013_20190226_SO	N	2/26/2019	0	0.1	Chrysene	218-01-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.0053	1	SO	Surface Soil 0-1.5m	N-027	N-027_20190226_SO	N	2/26/2019	0	0.1	Chrysene	218-01-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.016	1	SO	Surface Soil 0-1.5m	C-2082	C-2082_20190305_SO	N	3/5/2019	0	0.1	Chrysene	218-01-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.058	1	SO	Surface Soil 0-1.5m	N-007	N-007_20190226_SO	N	2/26/2019	0	0.1	Chrysene	218-01-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	N-010	N-010_20190226_SO	N	2/26/2019	0	0.1	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	C-2071	C-2071_20190305_SO	N	3/5/2019	0	0.1	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.032	1	SO	Surface Soil 0-1.5m	N-015	N-015_20190226_SO	N	2/26/2019	0	0.1	Chrysene	218-01-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.012	1	SO	Surface Soil 0-1.5m	N-001	N-001_20190226_SO	N	2/26/2019	0	0.1	Chrysene	218-01-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.02	1	SO	Surface Soil 0-1.5m	N-021	N-021_20190226_SO	N	2/26/2019	0	0.1	Chrysene	218-01-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	S323F	S323F_20190302_SO	N	3/2/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	SLOT2-1	SLOT2-1_20190606_SO	N	6/6/2019	1.34	1.34	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	S-212W-C	S-212W-C_20190307_SO	N	3/7/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	S-088	S-088_20190227_SO	N	2/27/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	S-093B	S-093B_20190227_SO	N	2/27/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	S-098	S-098_20190227_SO	N	2/27/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	S-097	S-097_20190227_SO	N	2/27/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	S-101-C	S-101-C_20190308_SO	N	3/8/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	S-073	S-073_20190227_SO	N	2/27/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	S-054A	S-054A_20190227_SO	N	2/27/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	S-025	S-025_20190227_SO	N	2/27/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	S-063	S-063_20190227_SO	N	2/27/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	S-023B	S-023B_20190227_SO	N	2/27/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	S-065A	S-065A_20190227_SO	N	2/27/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	S-051B	S-051B_20190227_SO	N	2/27/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	S-022	S-022_20190227_SO	N	2/27/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	S-074B	S-074B_20190227_SO	N	2/27/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	S-019A	S-019A_20190227_SO	N	2/27/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	S-017	S-017_20190227_SO	N	2/27/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	S-014	S-014_20190227_SO	N	2/27/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	S-085	S-085_20190227_SO	N	2/27/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	S-075	S-075_20190227_SO	N	2/27/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	BH19-120-2	BH19-120-2_20191205_SO	N	12/5/2019	1.22	1.52	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.009	1	SO	Surface Soil 0-1.5m	C-2136C	C-2136C_20200224_SO	N	2/24/2020	0	0.1	Dibenz(a,h)anthracene	53-70-3			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	19-H8-002	19-H8-002_20190609_SO	N	6/9/2019	1	1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	19-H9-002	19-H9-002_20190609_SO	N	6/9/2019	1	1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	19-H3-001	19-H3-001_20190609_SO	N	6/9/2019	0	0.15	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	DB-110-C	DB-110-C_20190311_SO	N	3/11/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	C-2074B	C-2074B_20191016_SO	N	10/16/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	NSERIESDIL-3	NSERIESDIL-3_20191016_SO	N	10/16/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	C-2058C	C-2058C_20191016_SO	N	10/16/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	19-H4-001B	19-H4-001B_20191016_SO	N	10/16/2019	0	0.15	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	C-2509B	C-2509B_20191016_SO	N	10/16/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	19-H7-001	19-H7-001_20190609_SO	N	6/9/2019	0	0.15	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	C-1002WC	C-1002WC_20191016_SO	N	10/16/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	C-2180B	C-2180B_20191016_SO	N	10/16/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	19-H2-002B	19-H2-002B_20191016_SO	N	10/16/2019	1	1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.0072	1	SO	Surface Soil 0-1.5m	C-2028B	C-2028B_20191016_SO	N	10/16/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	19-H2-001	19-H2-001_20190609_SO	N	6/9/2019	0	0.15	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	19-H1-002B	19-H1-002B_20191016_SO	N	10/16/2019	1	1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	S-094B	S-094B_20191016_SO	N	10/16/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	NSERIESDIL-4	NSERIESDIL-4_20191016_SO	N	10/16/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.0076	1	SO	Surface Soil 0-1.5m	NSERIESDIL-1	NSERIESDIL-1_20191016_SO	N	10/16/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	S202WB	S202WB_20191016_SO	N	10/16/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	19-H1-001	19-H1-001_20190609_SO	N	6/9/2019	0	0.15	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	19-H6-002B	19-H6-002B_20191016_SO	N	10/16/2019	1	1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	19-H6-001B	19-H6-001B_20191016_SO	N	10/16/2019	0	0.15	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	19-H8-001	19-H8-001_20190609_SO	N	6/9/2019	0	0.15	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	19-H9-001	19-H9-001_20190609_SO	N	6/9/2019	0	0.15	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	19-H7-002	19-H7-002_20190609_SO	N	6/9/2019	1	1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	19-H3-002	19-H3-002_20190609_SO	N	6/9/2019	1	1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	C-2106B	C-2106B_20191016_SO	N	10/16/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	19-H5-002	19-H5-002_20190609_SO	N	6/9/2019	1	1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.039	1	SO	Surface Soil 0-1.5m	NSERIESDIL-2	NSERIESDIL-2_20191016_SO	N	10/16/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	19-H4-002	19-H4-002_20190609_SO	N	6/9/2019	1	1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	19-H5-001B	19-H5-001B_20191016_SO	N	10/16/2019	0	0.15	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.0055	1	SO	Surface Soil 0-1.5m	C-2080B	C-2080B_20191016_SO	N	10/16/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	19-H10-002	19-H10-002_20190609_SO	N	6/9/2019	1	1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	19-H10-001	19-H10-001_20190609_SO	N	6/9/2019	0	0.15	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	N-021	N-021_20190226_SO	N	2/26/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.017	1	SO	Surface Soil 0-1.5m	D_BH19-15	D_BH19-15_20190507_SO	N	5/7/2019	0	0.15	Dibenz(a,h)anthracene	53-70-3			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	C-2311	C-2311_20190307_SO	N	3/7/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.027	1	SO	Surface Soil 0-1.5m	N-031	N-031_20190226_SO	N	2/26/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	EXW2-3	EXW2-3_20190605_SO	N	6/5/2019	1.385	1.385	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	C-2017	C-2017_20190305_SO	N	3/5/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	C-2100	C-2100_20190305_SO	N	3/5/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	N-006	N-006_20190226_SO	N	2/26/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	N-007	N-007_20190226_SO	N	2/26/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.064	1	SO	Surface Soil 0-1.5m	N-009	N-009_20190226_SO	N	2/26/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	C-2071	C-2071_20190305_SO	N	3/5/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	C-2082	C-2082_20190305_SO	N	3/5/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	DB-004	DB-004_20190302_SO	N	3/2/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.016	1	SO	Surface Soil 0-1.5m	N-036	N-036_20190226_SO	N	2/26/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	C-2178	C-2178_20190306_SO	N	3/6/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	C-2160	C-2160_20190306_SO	N	3/6/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	C-1004W	C-1004W_20190303_SO	N	3/3/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	N-010	N-010_20190226_SO	N	2/26/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	N-016	N-016_20190226_SO	N	2/26/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	C-2176	C-2176_20190306_SO	N	3/6/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	N-013	N-013_20190226_SO	N	2/26/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	N-015	N-015_20190226_SO	N	2/26/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	E_BH19-16	E_BH19-16_20190507_SO	N	5/7/2019	0	0.15	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	N-001	N-001_20190226_SO	N	2/26/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	N-027	N-027_20190226_SO	N	2/26/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	C-2033	C-2033_20190305_SO	N	3/5/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.005	0	SO	Surface Soil 0-1.5m	S-085	S-085_20190227_SO	N	2/27/2019	0	0.1	Fluoranthene	206-44-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.005	0	SO	Surface Soil 0-1.5m	S-051B	S-051B_20190227_SO	N	2/27/2019	0	0.1	Fluoranthene	206-44-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.005	0	SO	Surface Soil 0-1.5m	S-101-C	S-101-C_20190308_SO	N	3/8/2019	0	0.1	Fluoranthene	206-44-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.005	0	SO	Surface Soil 0-1.5m	S-088	S-088_20190227_SO	N	2/27/2019	0	0.1	Fluoranthene	206-44-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.005	0	SO	Surface Soil 0-1.5m	S-014	S-014_20190227_SO	N	2/27/2019	0	0.1	Fluoranthene	206-44-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.0083	1	SO	Surface Soil 0-1.5m	S-098	S-098_20190227_SO	N	2/27/2019	0	0.1	Fluoranthene	206-44-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.005	0	SO	Surface Soil 0-1.5m	S-025	S-025_20190227_SO	N	2/27/2019	0	0.1	Fluoranthene	206-44-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.005	0	SO	Surface Soil 0-1.5m	S-063	S-063_20190227_SO	N	2/27/2019	0	0.1	Fluoranthene	206-44-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.005	0	SO	Surface Soil 0-1.5m	S-023B	S-023B_20190227_SO	N	2/27/2019	0	0.1	Fluoranthene	206-44-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.005	0	SO	Surface Soil 0-1.5m	S-073	S-073_20190227_SO	N	2/27/2019	0	0.1	Fluoranthene	206-44-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.044	1	SO	Surface Soil 0-1.5m	S323F	S323F_20190302_SO	N	3/2/2019	0	0.1	Fluoranthene	206-44-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.005	0	SO	Surface Soil 0-1.5m	S-022	S-022_20190227_SO	N	2/27/2019	0	0.1	Fluoranthene	206-44-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.005	0	SO	Surface Soil 0-1.5m	S-075	S-075_20190227_SO	N	2/27/2019	0	0.1	Fluoranthene	206-44-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.005	0	SO	Surface Soil 0-1.5m	SLOT2-1	SLOT2-1_20190606_SO	N	6/6/2019	1.34	1.34	Fluoranthene	206-44-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.005	0	SO	Surface Soil 0-1.5m	S-017	S-017_20190227_SO	N	2/27/2019	0	0.1	Fluoranthene	206-44-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.005	0	SO	Surface Soil 0-1.5m	S-054A	S-054A_20190227_SO	N	2/27/2019	0	0.1	Fluoranthene	206-44-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.005	0	SO	Surface Soil 0-1.5m	S-097	S-097_20190227_SO	N	2/27/2019	0	0.1	Fluoranthene	206-44-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.005	0	SO	Surface Soil 0-1.5m	S-212W-C	S-212W-C_20190307_SO	N	3/7/2019	0	0.1	Fluoranthene	206-44-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.005	0	SO	Surface Soil 0-1.5m	S-019A	S-019A_20190227_SO	N	2/27/2019	0	0.1	Fluoranthene	206-44-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.005	0	SO	Surface Soil 0-1.5m	S-065A	S-065A_20190227_SO	N	2/27/2019	0	0.1	Fluoranthene	206-44-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.005	0	SO	Surface Soil 0-1.5m	S-093B	S-093B_20190227_SO	N	2/27/2019	0	0.1	Fluoranthene	206-44-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.005	0	SO	Surface Soil 0-1.5m	S-074B	S-074B_20190227_SO	N	2/27/2019	0	0.1	Fluoranthene	206-44-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.005	0	SO	Surface Soil 0-1.5m	BH19-120-2	BH19-120-2_20191205_SO	N	12/5/2019	1.22	1.52	Fluoranthene	206-44-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.051	1	SO	Surface Soil 0-1.5m	C-2136C	C-2136C_20200224_SO	N	2/24/2020	0	0.1	Fluoranthene	206-44-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.014	1	SO	Surface Soil 0-1.5m	19-H2-001	19-H2-001_20190609_SO	N	6/9/2019	0	0.15	Fluoranthene	206-44-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.005	0	SO	Surface Soil 0-1.5m	S202WB	S202WB_20191016_SO	N	10/16/2019	0	0.1	Fluoranthene	206-44-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.005	0	SO	Surface Soil 0-1.5m	19-H8-001	19-H8-001_20190609_SO	N	6/9/2019	0	0.15	Fluoranthene	206-44-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.005	0	SO	Surface Soil 0-1.5m	19-H7-002	19-H7-002_20190609_SO	N	6/9/2019	1	1	Fluoranthene	206-44-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.024	1	SO	Surface Soil 0-1.5m	19-H9-001	19-H9-001_20190609_SO	N	6/9/2019	0	0.15	Fluoranthene	206-44-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.005	0	SO	Surface Soil 0-1.5m	19-H6-002B	19-H6-002B_20191016_SO	N	10/16/2019	1	1	Fluoranthene	206-44-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.017	1	SO	Surface Soil 0-1.5m	C-2028B	C-2028B_20191016_SO	N	10/16/2019	0	0.1	Fluoranthene	206-44-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.016	1	SO	Surface Soil 0-1.5m	19-H7-001	19-H7-001_20190609_SO	N	6/9/2019	0	0.15	Fluoranthene	206-44-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.0095	1	SO	Surface Soil 0-1.5m	19-H8-002	19-H8-002_20190609_SO	N	6/9/2019	1	1	Fluoranthene	206-44-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.005	0	SO	Surface Soil 0-1.5m	19-H10-002	19-H10-002_20190609_SO	N	6/9/2019	1	1	Fluoranthene	206-44-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.005	0	SO	Surface Soil 0-1.5m	19-H10-001	19-H10-001_20190609_SO	N	6/9/2019	0	0.15	Fluoranthene	206-44-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.02	1	SO	Surface Soil 0-1.5m	19-H4-002	19-H4-002_20190609_SO	N	6/9/2019	1	1	Fluoranthene	206-44-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.0074	1	SO	Surface Soil 0-1.5m	NSERIESDIL-4	NSERIESDIL-4_20191016_SO	N	10/16/2019	0	0.1	Fluoranthene	206-44-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.023	1	SO	Surface Soil 0-1.5m	19-H1-002B	19-H1-002B_20191016_SO	N	10/16/2019	1	1	Fluoranthene	206-44-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.024	1	SO	Surface Soil 0-1.5m	C-1002WC	C-1002WC_20191016_SO	N	10/16/2019	0	0.1	Fluoranthene	206-44-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.0095	1	SO	Surface Soil 0-1.5m	19-H3-002	19-H3-002_20190609_SO	N	6/9/2019	1	1	Fluoranthene	206-44-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.0071	1	SO	Surface Soil 0-1.5m	19-H1-001	19-H1-001_20190609_SO	N	6/9/2019	0	0.15	Fluoranthene	206-44-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.14	1	SO	Surface Soil 0-1.5m	NSERIESDIL-2	NSERIESDIL-2_20191016_SO	N	10/16/2019	0	0.1	Fluoranthene	206-44-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.03	1	SO	Surface Soil 0-1.5m	C-2080B	C-2080B_20191016_SO	N	10/16/2019	0	0.1	Fluoranthene	206-44-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.005	0	SO	Surface Soil 0-1.5m	NSERIESDIL-3	NSERIESDIL-3_20191016_SO	N	10/16/2019	0	0.1	Fluoranthene	206-44-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.008	1	SO	Surface Soil 0-1.5m	C-2058C	C-2058C_20191016_SO	N	10/16/2019	0	0.10	Fluoranthene	206-44-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.0064	1	SO	Surface Soil 0-1.5m	C-2106B	C-2106B_20191016_SO	N	10/16/2019	0	0.1	Fluoranthene	206-44-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.023	1	SO	Surface Soil 0-1.5m	19-H2-002B	19-H2-002B_20191016_SO	N	10/16/2019	1	1	Fluoranthene	206-44-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.0062	1	SO	Surface Soil 0-1.5m	19-H4-001B	19-H4-001B_20191016_SO	N	10/16/2019	0	0.15	Fluoranthene	206-44-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.005	0	SO	Surface Soil 0-1.5m	19-H9-002	19-H9-002_20190609_SO	N	6/9/2019	1	1	Fluoranthene	206-44-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.005	0	SO	Surface Soil 0-1.5m	S-094B	S-094B_20191016_SO	N	10/16/2019	0	0.1	Fluoranthene	206-44-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.005	0	SO	Surface Soil 0-1.5m	19-H6-001B	19-H6-001B_20191016_SO	N	10/16/2019	0	0.15	Fluoranthene	206-44-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.005	0	SO	Surface Soil 0-1.5m	DB-110-C	DB-110-C_20190311_SO	N	3/11/2019	0	0.1	Fluoranthene	206-44-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.005	0	SO	Surface Soil 0-1.5m	19-H5-001B	19-H5-001B_20191016_SO	N	10/16/2019	0	0.15	Fluoranthene	206-44-0	U	0.005	mg/kg

TABLE B.5
DATA INPUT FOR PROUCL SOFTWARE
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Notes:
The maximum of the field duplicate and parent sample pairs were applied and a detect was chosen over a non-detect value.

ProUCL Group	ProUCL Result	ProUCL Flag	Medium	Soil Zone	Location	Sample ID	Sample Type	Sample Date	Start Depth (m)	End Depth (m)	COPC	CASRN	Qualifier	Detection Limit for Non-Detects	Unit
CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.005	0	SO	Surface Soil 0-1.5m	19-H5-002	19-H5-002_20190609_SO	N	6/9/2019	1	1	Fluoranthene	206-44-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.005	0	SO	Surface Soil 0-1.5m	19-H3-001	19-H3-001_20190609_SO	N	6/9/2019	0	0.15	Fluoranthene	206-44-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.011	1	SO	Surface Soil 0-1.5m	C-2180B	C-2180B_20191016_SO	N	10/16/2019	0	0.1	Fluoranthene	206-44-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.014	1	SO	Surface Soil 0-1.5m	C-2509B	C-2509B_20191016_SO	N	10/16/2019	0	0.1	Fluoranthene	206-44-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.05	1	SO	Surface Soil 0-1.5m	NSERIESDIL-1	NSERIESDIL-1_20191016_SO	N	10/16/2019	0	0.1	Fluoranthene	206-44-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.014	1	SO	Surface Soil 0-1.5m	C-2074B	C-2074B_20191016_SO	N	10/16/2019	0	0.1	Fluoranthene	206-44-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.081	1	SO	Surface Soil 0-1.5m	EXW2-3	EXW2-3_20190605_SO	N	6/5/2019	1.385	1.385	Fluoranthene	206-44-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.005	0	SO	Surface Soil 0-1.5m	C-2178	C-2178_20190306_SO	N	3/6/2019	0	0.1	Fluoranthene	206-44-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.0093	1	SO	Surface Soil 0-1.5m	N-010	N-010_20190226_SO	N	2/26/2019	0	0.1	Fluoranthene	206-44-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.27	1	SO	Surface Soil 0-1.5m	N-031	N-031_20190226_SO	N	2/26/2019	0	0.1	Fluoranthene	206-44-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.005	0	SO	Surface Soil 0-1.5m	C-2071	C-2071_20190305_SO	N	3/5/2019	0	0.1	Fluoranthene	206-44-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.005	0	SO	Surface Soil 0-1.5m	C-1004W	C-1004W_20190303_SO	N	3/3/2019	0	0.1	Fluoranthene	206-44-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.04	1	SO	Surface Soil 0-1.5m	N-001	N-001_20190226_SO	N	2/26/2019	0	0.1	Fluoranthene	206-44-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.24	1	SO	Surface Soil 0-1.5m	N-007	N-007_20190226_SO	N	2/26/2019	0	0.1	Fluoranthene	206-44-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.22	1	SO	Surface Soil 0-1.5m	N-009	N-009_20190226_SO	N	2/26/2019	0	0.1	Fluoranthene	206-44-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.068	1	SO	Surface Soil 0-1.5m	E_BH19-16	E_BH19-16_20190507_SO	N	5/7/2019	0	0.15	Fluoranthene	206-44-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.005	0	SO	Surface Soil 0-1.5m	C-2160	C-2160_20190306_SO	N	3/6/2019	0	0.1	Fluoranthene	206-44-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.025	1	SO	Surface Soil 0-1.5m	N-036	N-036_20190226_SO	N	2/26/2019	0	0.1	Fluoranthene	206-44-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.69	1	SO	Surface Soil 0-1.5m	D_BH19-15	D_BH19-15_20190507_SO	N	5/7/2019	0	0.15	Fluoranthene	206-44-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.22	1	SO	Surface Soil 0-1.5m	C-2033	C-2033_20190305_SO	N	3/5/2019	0	0.1	Fluoranthene	206-44-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.005	0	SO	Surface Soil 0-1.5m	C-2311	C-2311_20190307_SO	N	3/7/2019	0	0.1	Fluoranthene	206-44-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.047	1	SO	Surface Soil 0-1.5m	N-015	N-015_20190226_SO	N	2/26/2019	0	0.1	Fluoranthene	206-44-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.065	1	SO	Surface Soil 0-1.5m	N-021	N-021_20190226_SO	N	2/26/2019	0	0.1	Fluoranthene	206-44-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.21	1	SO	Surface Soil 0-1.5m	N-016	N-016_20190226_SO	N	2/26/2019	0	0.1	Fluoranthene	206-44-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.005	0	SO	Surface Soil 0-1.5m	C-2176	C-2176_20190306_SO	N	3/6/2019	0	0.1	Fluoranthene	206-44-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.0094	1	SO	Surface Soil 0-1.5m	N-027	N-027_20190226_SO	N	2/26/2019	0	0.1	Fluoranthene	206-44-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.14	1	SO	Surface Soil 0-1.5m	N-006	N-006_20190226_SO	N	2/26/2019	0	0.1	Fluoranthene	206-44-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.005	0	SO	Surface Soil 0-1.5m	DB-004	DB-004_20190302_SO	N	3/2/2019	0	0.1	Fluoranthene	206-44-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.005	0	SO	Surface Soil 0-1.5m	C-2100	C-2100_20190305_SO	N	3/5/2019	0	0.1	Fluoranthene	206-44-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.14	1	SO	Surface Soil 0-1.5m	N-013	N-013_20190226_SO	N	2/26/2019	0	0.1	Fluoranthene	206-44-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.013	1	SO	Surface Soil 0-1.5m	C-2017	C-2017_20190305_SO	N	3/5/2019	0	0.1	Fluoranthene	206-44-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.038	1	SO	Surface Soil 0-1.5m	C-2082	C-2082_20190305_SO	N	3/5/2019	0	0.1	Fluoranthene	206-44-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	S-017	S-017_20190227_SO	N	2/27/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.01	1	SO	Surface Soil 0-1.5m	S-025	S-025_20190227_SO	N	2/27/2019	0	0.1	Fluorene	86-73-7			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	S-019A	S-019A_20190227_SO	N	2/27/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	S-101-C	S-101-C_20190308_SO	N	3/8/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	S-023B	S-023B_20190227_SO	N	2/27/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	S-014	S-014_20190227_SO	N	2/27/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	S-022	S-022_20190227_SO	N	2/27/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	S-212W-C	S-212W-C_20190307_SO	N	3/7/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	S-085	S-085_20190227_SO	N	2/27/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	S-097	S-097_20190227_SO	N	2/27/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	S-075	S-075_20190227_SO	N	2/27/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	S-093B	S-093B_20190227_SO	N	2/27/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	SLOT2-1	SLOT2-1_20190606_SO	N	6/6/2019	1.34	1.34	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	S-065A	S-065A_20190227_SO	N	2/27/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	S-088	S-088_20190227_SO	N	2/27/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	S-063	S-063_20190227_SO	N	2/27/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	S-054A	S-054A_20190227_SO	N	2/27/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	S-098	S-098_20190227_SO	N	2/27/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	S-073	S-073_20190227_SO	N	2/27/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	S-074B	S-074B_20190227_SO	N	2/27/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	S-051B	S-051B_20190227_SO	N	2/27/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	S323F	S323F_20190302_SO	N	3/2/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	BH19-120-2	BH19-120-2_20191205_SO	N	12/5/2019	1.22	1.52	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	C-2136C	C-2136C_20200224_SO	N	2/24/2020	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	DB-110-C	DB-110-C_20190311_SO	N	3/11/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	19-H7-002	19-H7-002_20190609_SO	N	6/9/2019	1	1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	19-H9-002	19-H9-002_20190609_SO	N	6/9/2019	1	1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	19-H8-001	19-H8-001_20190609_SO	N	6/9/2019	0	0.15	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	S202WB	S202WB_20191016_SO	N	10/16/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	19-H7-001	19-H7-001_20190609_SO	N	6/9/2019	0	0.15	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	NSERIESDIL-4	NSERIESDIL-4_20191016_SO	N	10/16/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.0087	1	SO	Surface Soil 0-1.5m	19-H2-002B	19-H2-002B_20191016_SO	N	10/16/2019	1	1.00	Fluorene	86-73-7			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	S-094B	S-094B_20191016_SO	N	10/16/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	19-H8-002	19-H8-002_20190609_SO	N	6/9/2019	1	1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	C-2106B	C-2106B_20191016_SO	N	10/16/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.0073	1	SO	Surface Soil 0-1.5m	19-H9-001	19-H9-001_20190609_SO	N	6/9/2019	0	0.15	Fluorene	86-73-7			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	NSERIESDIL-1	NSERIESDIL-1_20191016_SO	N	10/16/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	C-2074B	C-2074B_20191016_SO	N	10/16/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	19-H10-002	19-H10-002_20190609_SO	N	6/9/2019	1	1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	19-H6-001B	19-H6-001B_20191016_SO	N	10/16/2019	0	0.15	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	19-H3-001	19-H3-001_20190609_SO	N	6/9/2019	0	0.15	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	19-H5-002	19-H5-002_20190609_SO	N	6/9/2019	1	1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	19-H6-002B	19-H6-002B_20191016_SO	N	10/16/2019	1	1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	19-H5-001B	19-H5-001B_20191016_SO	N	10/16/2019	0	0.15	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	19-H4-002	19-H4-002_20190609_SO	N	6/9/2019	1	1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.0084	1	SO	Surface Soil 0-1.5m	19-H1-002B	19-H1-002B_20191016_SO	N	10/16/2019	1	1	Fluorene	86-73-7			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	19-H3-002	19-H3-002_20190609_SO	N	6/9/2019	1	1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	19-H1-001	19-H1-001_20190609_SO	N	6/9/2019	0	0.15	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.0064	1	SO	Surface Soil 0-1.5m	NSERIESDIL-2	NSERIESDIL-2_20191016_SO	N	10/16/2019	0	0.1	Fluorene	86-73-7			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	19-H10-001	19-H10-001_20190609_SO	N	6/9/2019	0	0.15	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	C-2080B	C-2080B_20191016_SO	N	10/16/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	C-2180B	C-2180B_20191016_SO	N	10/16/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	C-1002WC	C-1002WC_20191016_SO	N	10/16/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	C-2028B	C-2028B_20191016_SO	N	10/16/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	19-H2-001	19-H2-001_20190609_SO	N	6/9/2019	0	0.15	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	C-2058C	C-2058C_20191016_SO	N	10/16/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	19-H4-001B	19-H4-001B_20191016_SO	N	10/16/2019	0	0.15	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	C-2509B	C-2509B_20191016_SO	N	10/16/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	NSERIESDIL-3	NSERIESDIL-3_20191016_SO	N	10/16/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.0057	1	SO	Surface Soil 0-1.5m	C-2017	C-2017_20190305_SO	N	3/5/2019	0	0.1	Fluorene	86-73-7			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.044	1	SO	Surface Soil 0-1.5m	N-007	N-007_20190226_SO	N	2/26/2019	0	0.1	Fluorene	86-73-7			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.38	1	SO	Surface Soil 0-1.5m	D_BH19-15	D_BH19-15_20190507_SO	N	5/7/2019	0	0.15	Fluorene	86-73-7			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.063	1	SO	Surface Soil 0-1.5m	N-021	N-021_20190226_SO	N	2/26/2019	0	0.1	Fluorene	86-73-7			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	C-2178	C-2178_20190306_SO	N	3/6/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.018	1	SO	Surface Soil 0-1.5m	N-001	N-001_20190226_SO	N	2/26/2019	0	0.1	Fluorene	86-73-7			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	C-2311	C-2311_20190307_SO	N	3/7/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.049	1	SO	Surface Soil 0-1.5m	N-013	N-013_20190226_SO	N	2/26/2019	0	0.1	Fluorene	86-73-7			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	C-2176	C-2176_20190306_SO	N	3/6/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	C-2082	C-2082_20190305_SO	N	3/5/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.029	1	SO	Surface Soil 0-1.5m	N-009	N-009_20190226_SO	N	2/26/2019	0	0.1	Fluorene	86-73-7			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.011	1	SO	Surface Soil 0-1.5m	N-015	N-015_20190226_SO	N	2/26/2019	0	0.1	Fluorene	86-73-7			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	N-027	N-027_20190226_SO	N	2/26/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.043	1	SO	Surface Soil 0-1.5m	N-006	N-006_20190226_SO	N	2/26/2019	0	0.1	Fluorene	86-73-7			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	C-2071	C-2071_20190305_SO	N	3/5/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	DB-004	DB-004_20190302_SO	N	3/2/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.035	1	SO	Surface Soil 0-1.5m	EXW2-3	EXW2-3_20190605_SO	N	6/5/2019	1.385	1.385	Fluorene	86-73-7			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.0065	1	SO	Surface Soil 0-1.5m	C-2100	C-2100_20190305_SO	N	3/5/2019	0	0.1	Fluorene	86-73-7			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	N-036	N-036_20190226_SO	N	2/26/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	N-010	N-010_20190226_SO	N	2/26/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.017	1	SO	Surface Soil 0-1.5m	E_BH19-16	E_BH19-16_20190507_SO	N	5/7/2019	0	0.15	Fluorene	86-73-7			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	C-2160	C-2160_20190306_SO	N	3/6/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.097	1	SO	Surface Soil 0-1.5m	C-2033	C-2033_20190305_SO	N	3/5/2019	0	0.1	Fluorene	86-73-7			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	C-1004W	C-1004W_20190303_SO	N	3/3/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.013	1	SO	Surface Soil 0-1.5m	N-031	N-031_20190226_SO	N	2/26/2019	0	0.1	Fluorene	86-73-7			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.068	1	SO	Surface Soil 0-1.5m	N-016	N-016_20190226_SO	N	2/26/2019	0	0.1	Fluorene	86-73-7			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SO	Surface Soil 0-1.5m	S-019A	S-019A_20190227_SO	N	2/27/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SO	Surface Soil 0-1.5m	S-075	S-075_20190227_SO	N	2/27/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SO	Surface Soil 0-1.5m	SLOT2-1	SLOT2-1_20190606_SO	N	6/6/2019	1.34	1.34	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SO	Surface Soil 0-1.5m	S-085	S-085_20190227_SO	N	2/27/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SO	Surface Soil 0-1.5m	S-093B	S-093B_20190227_SO	N	2/27/2019	0	0.10	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SO	Surface Soil 0-1.5m	S-088	S-088_20190227_SO	N	2/27/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SO	Surface Soil 0-1.5m	S-014	S-014_20190227_SO	N	2/27/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SO	Surface Soil 0-1.5m	S-017	S-017_20190227_SO	N	2/27/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.017	1	SO	Surface Soil 0-1.5m	S323F	S323F_20190302_SO	N	3/2/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SO	Surface Soil 0-1.5m	S-097	S-097_20190227_SO	N	2/27/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SO	Surface Soil 0-1.5m	S-054A	S-054A_20190227_SO	N	2/27/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SO	Surface Soil 0-1.5m	S-022	S-022_20190227_SO	N	2/27/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SO	Surface Soil 0-1.5m	S-101-C	S-101-C_20190308_SO	N	3/8/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SO	Surface Soil 0-1.5m	S-073	S-073_20190227_SO	N	2/27/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SO	Surface Soil 0-1.5m	S-023B	S-023B_20190227_SO	N	2/27/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SO	Surface Soil 0-1.5m	S-065A	S-065A_20190227_SO	N	2/27/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SO	Surface Soil 0-1.5m	S-212W-C	S-212W-C_20190307_SO	N	3/7/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SO	Surface Soil 0-1.5m	S-098	S-098_20190227_SO	N	2/27/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SO	Surface Soil 0-1.5m	S-025	S-025_20190227_SO	N	2/27/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SO	Surface Soil 0-1.5m	S-063	S-063_20190227_SO	N	2/27/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SO	Surface Soil 0-1.5m	S-051B	S-051B_20190227_SO	N	2/27/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SO	Surface Soil 0-1.5m	S-074B	S-074B_20190227_SO	N	2/27/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.035	1	SO	Surface Soil 0-1.5m	C-2136C	C-2136C_20200224_SO	N	2/24/2020	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SO	Surface Soil 0-1.5m	BH19-120-2	BH19-120-2_20191205_SO	N	12/5/2019	1.22	1.52	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SO	Surface Soil 0-1.5m	19-H8-001	19-H8-001_20190609_SO	N	6/9/2019	0	0.15	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SO	Surface Soil 0-1.5m	19-H4-002	19-H4-002_20190609_SO	N	6/9/2019	1	1	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SO	Surface Soil 0-1.5m	C-2509B	C-2509B_20191016_SO	N	10/16/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.014	1	SO	Surface Soil 0-1.5m	C-1002WC	C-1002WC_20191016_SO	N	10/16/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SO	Surface Soil 0-1.5m	19-H1-001	19-H1-001_20190609_SO	N	6/9/2019	0	0.15	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SO	Surface Soil 0-1.5m	19-H2-001	19-H2-001_20190609_SO	N	6/9/2019	0	0.15	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.032	1	SO	Surface Soil 0-1.5m	C-2028B	C-2028B_20191016_SO	N	10/16/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.02	1	SO	Surface Soil 0-1.5m	NSERIESDIL-1	NSERIESDIL-1_20191016_SO	N	10/16/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SO	Surface Soil 0-1.5m	19-H3-002	19-H3-002_20190609_SO	N	6/9/2019	1	1	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SO	Surface Soil 0-1.5m	C-2106B	C-2106B_20191016_SO	N	10/16/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SO	Surface Soil 0-1.5m	19-H3-001	19-H3-001_20190609_SO	N	6/9/2019	0	0.15	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.0092	1	SO	Surface Soil 0-1.5m	C-2074B	C-2074B_20191016_SO	N	10/16/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SO	Surface Soil 0-1.5m	C-2058C	C-2058C_20191016_SO	N	10/16/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SO	Surface Soil 0-1.5m	S202WB	S202WB_20191016_SO	N	10/16/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.015	1	SO	Surface Soil 0-1.5m	C-2080B	C-2080B_20191016_SO	N	10/16/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SO	Surface Soil 0-1.5m	C-2180B	C-2180B_20191016_SO	N	10/16/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SO	Surface Soil 0-1.5m	19-H8-002	19-H8-002_20190609_SO	N	6/9/2019	1	1	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SO	Surface Soil 0-1.5m	S-094B	S-094B_20191016_SO	N	10/16/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SO	Surface Soil 0-1.5m	19-H9-001	19-H9-001_20190609_SO	N	6/9/2019	0	0.15	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SO	Surface Soil 0-1.5m	19-H6-002B	19-H6-002B_20191016_SO	N	10/16/2019	1	1	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SO	Surface Soil 0-1.5m	19-H6-001B	19-H6-001B_20191016_SO	N	10/16/2019	0	0.15	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SO	Surface Soil 0-1.5m	19-H4-001B	19-H4-001B_20191016_SO	N	10/16/2019	0	0.15	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SO	Surface Soil 0-1.5m	19-H10-002	19-H10-002_20190609_SO	N	6/9/2019	1	1	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SO	Surface Soil 0-1.5m	DB-110-C	DB-110-C_20190311_SO	N	3/11/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SO	Surface Soil 0-1.5m	19-H5-002	19-H5-002_20190609_SO	N	6/9/2019	1	1	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SO	Surface Soil 0-1.5m	NSERIESDIL-3	NSERIESDIL-3_20191016_SO	N	10/16/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SO	Surface Soil 0-1.5m	19-H10-001	19-H10-001_20190609_SO	N	6/9/2019	0	0.15	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SO	Surface Soil 0-1.5m	NSERIESDIL-4	NSERIESDIL-4_20191016_SO	N	10/16/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SO	Surface Soil 0-1.5m	19-H9-002	19-H9-002_20190609_SO	N	6/9/2019	1	1	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SO	Surface Soil 0-1.5m	19-H7-001	19-H7-001_20190609_SO	N	6/9/2019	0	0.15	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SO	Surface Soil 0-1.5m	19-H2-002B	19-H2-002B_20191016_SO	N	10/16/2019	1	1	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SO	Surface Soil 0-1.5m	19-H5-001B	19-H5-001B_20191016_SO	N	10/16/2019	0	0.15	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.16	1	SO	Surface Soil 0-1.5m	NSERIESDIL-2	NSERIESDIL-2_20191016_SO	N	10/16/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SO	Surface Soil 0-1.5m	19-H7-002	19-H7-002_20190609_SO	N	6/9/2019	1	1	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SO	Surface Soil 0-1.5m	19-H1-002B	19-H1-002B_20191016_SO	N	10/16/2019	1	1	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SO	Surface Soil 0-1.5m	C-1004W	C-1004W_20190303_SO	N	3/3/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.089	1	SO	Surface Soil 0-1.5m	N-031	N-031_20190226_SO	N	2/26/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SO	Surface Soil 0-1.5m	C-2311	C-2311_20190307_SO	N	3/7/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.073	1	SO	Surface Soil 0-1.5m	N-036	N-036_20190226_SO	N	2/26/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.0098	1	SO	Surface Soil 0-1.5m	C-2082	C-2082_20190305_SO	N	3/5/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SO	Surface Soil 0-1.5m	C-2160	C-2160_20190306_SO	N	3/6/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.016	1	SO	Surface Soil 0-1.5m	N-013	N-013_20190226_SO	N	2/26/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.012	1	SO	Surface Soil 0-1.5m	E_BH19-16	E_BH19-16_20190507_SO	N	5/7/2019	0	0.15	Indeno (1,2,3-cd)pyrene	193-39-5			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SO	Surface Soil 0-1.5m	C-2178	C-2178_20190306_SO	N	3/6/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.009	1	SO	Surface Soil 0-1.5m	N-001	N-001_20190226_SO	N	2/26/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.017	1	SO	Surface Soil 0-1.5m	N-021	N-021_20190226_SO	N	2/26/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.02	1	SO	Surface Soil 0-1.5m	N-016	N-016_20190226_SO	N	2/26/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.0062	1	SO	Surface Soil 0-1.5m	N-010	N-010_20190226_SO	N	2/26/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.025	1	SO	Surface Soil 0-1.5m	N-015	N-015_20190226_SO	N	2/26/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SO	Surface Soil 0-1.5m	C-2176	C-2176_20190306_SO	N	3/6/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.0085	1	SO	Surface Soil 0-1.5m	N-027	N-027_20190226_SO	N	2/26/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SO	Surface Soil 0-1.5m	DB-004	DB-004_20190302_SO	N	3/2/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg

TABLE B.5
DATA INPUT FOR PROUCL SOFTWARE
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Notes:
The maximum of the field duplicate and parent sample pairs were applied and a detect was chosen over a non-detect value.

ProUCL Group	ProUCL Result	ProUCL Flag	Medium	Soil Zone	Location	Sample ID	Sample Type	Sample Date	Start Depth (m)	End Depth (m)	COPC	CASRN	Qualifier	Detection Limit for Non-Detects	Unit
CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SO	Surface Soil 0-1.5m	C-2017	C-2017_20190305_SO	N	3/5/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.0089	1	SO	Surface Soil 0-1.5m	C-2033	C-2033_20190305_SO	N	3/5/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.2	1	SO	Surface Soil 0-1.5m	N-009	N-009_20190226_SO	N	2/26/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.013	1	SO	Surface Soil 0-1.5m	N-007	N-007_20190226_SO	N	2/26/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SO	Surface Soil 0-1.5m	EXW2-3	EXW2-3_20190605_SO	N	6/5/2019	1.385	1.385	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SO	Surface Soil 0-1.5m	C-2071	C-2071_20190305_SO	N	3/5/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.024	1	SO	Surface Soil 0-1.5m	N-006	N-006_20190226_SO	N	2/26/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.055	1	SO	Surface Soil 0-1.5m	D_BH19-15	D_BH19-15_20190507_SO	N	5/7/2019	0	0.15	Indeno (1,2,3-cd)pyrene	193-39-5			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SO	Surface Soil 0-1.5m	C-2100	C-2100_20190305_SO	N	3/5/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	S-088	S-088_20190227_SO	N	2/27/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	S-073	S-073_20190227_SO	N	2/27/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	S-075	S-075_20190227_SO	N	2/27/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	S-098	S-098_20190227_SO	N	2/27/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	S-017	S-017_20190227_SO	N	2/27/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	S-101-C	S-101-C_20190308_SO	N	3/8/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	S-065A	S-065A_20190227_SO	N	2/27/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.014	1	SO	Surface Soil 0-1.5m	S323F	S323F_20190302_SO	N	3/2/2019	0	0.1	Methylnaphthalene, 2-	91-57-6			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	S-093B	S-093B_20190227_SO	N	2/27/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	S-063	S-063_20190227_SO	N	2/27/2019	0	0.10	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	S-074B	S-074B_20190227_SO	N	2/27/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	S-085	S-085_20190227_SO	N	2/27/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	S-014	S-014_20190227_SO	N	2/27/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	SLOT2-1	SLOT2-1_20190606_SO	N	6/6/2019	1.34	1.34	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	S-051B	S-051B_20190227_SO	N	2/27/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.037	1	SO	Surface Soil 0-1.5m	S-025	S-025_20190227_SO	N	2/27/2019	0	0.1	Methylnaphthalene, 2-	91-57-6			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	S-023B	S-023B_20190227_SO	N	2/27/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	S-054A	S-054A_20190227_SO	N	2/27/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	S-019A	S-019A_20190227_SO	N	2/27/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	S-097	S-097_20190227_SO	N	2/27/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	S-212W-C	S-212W-C_20190307_SO	N	3/7/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	S-022	S-022_20190227_SO	N	2/27/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	BH19-120-2	BH19-120-2_20191205_SO	N	12/5/2019	1.22	1.52	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.0083	1	SO	Surface Soil 0-1.5m	C-2136C	C-2136C_20200224_SO	N	2/24/2020	0	0.1	Methylnaphthalene, 2-	91-57-6			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	19-H9-001	19-H9-001_20190609_SO	N	6/9/2019	0	0.15	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	19-H7-001	19-H7-001_20190609_SO	N	6/9/2019	0	0.15	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	19-H8-002	19-H8-002_20190609_SO	N	6/9/2019	1	1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	C-2074B	C-2074B_20191016_SO	N	10/16/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.0098	1	SO	Surface Soil 0-1.5m	C-2509B	C-2509B_20191016_SO	N	10/16/2019	0	0.1	Methylnaphthalene, 2-	91-57-6			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	C-2058C	C-2058C_20191016_SO	N	10/16/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	19-H5-002	19-H5-002_20190609_SO	N	6/9/2019	1	1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	19-H4-001B	19-H4-001B_20191016_SO	N	10/16/2019	0	0.15	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	S-094B	S-094B_20191016_SO	N	10/16/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	C-2180B	C-2180B_20191016_SO	N	10/16/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	19-H7-002	19-H7-002_20190609_SO	N	6/9/2019	1	1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	19-H2-001	19-H2-001_20190609_SO	N	6/9/2019	0	0.15	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	NSERIESDIL-3	NSERIESDIL-3_20191016_SO	N	10/16/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	C-2028B	C-2028B_20191016_SO	N	10/16/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.0066	1	SO	Surface Soil 0-1.5m	19-H2-002B	19-H2-002B_20191016_SO	N	10/16/2019	1	1	Methylnaphthalene, 2-	91-57-6			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.0074	1	SO	Surface Soil 0-1.5m	C-1002WC	C-1002WC_20191016_SO	N	10/16/2019	0	0.1	Methylnaphthalene, 2-	91-57-6			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.0067	1	SO	Surface Soil 0-1.5m	19-H1-002B	19-H1-002B_20191016_SO	N	10/16/2019	1	1	Methylnaphthalene, 2-	91-57-6			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	DB-110-C	DB-110-C_20190311_SO	N	3/11/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	19-H6-002B	19-H6-002B_20191016_SO	N	10/16/2019	1	1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	19-H10-002	19-H10-002_20190609_SO	N	6/9/2019	1	1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	19-H10-001	19-H10-001_20190609_SO	N	6/9/2019	0	0.15	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	19-H3-002	19-H3-002_20190609_SO	N	6/9/2019	1	1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	19-H1-001	19-H1-001_20190609_SO	N	6/9/2019	0	0.15	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	NSERIESDIL-1	NSERIESDIL-1_20191016_SO	N	10/16/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	NSERIESDIL-4	NSERIESDIL-4_20191016_SO	N	10/16/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	C-2106B	C-2106B_20191016_SO	N	10/16/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.0069	1	SO	Surface Soil 0-1.5m	19-H5-001B	19-H5-001B_20191016_SO	N	10/16/2019	0	0.15	Methylnaphthalene, 2-	91-57-6			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	NSERIESDIL-2	NSERIESDIL-2_20191016_SO	N	10/16/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	19-H9-002	19-H9-002_20190609_SO	N	6/9/2019	1	1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	19-H4-002	19-H4-002_20190609_SO	N	6/9/2019	1	1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	19-H8-001	19-H8-001_20190609_SO	N	6/9/2019	0	0.15	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	C-2080B	C-2080B_20191016_SO	N	10/16/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	19-H3-001	19-H3-001_20190609_SO	N	6/9/2019	0	0.15	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	S202WB	S202WB_20191016_SO	N	10/16/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	19-H6-001B	19-H6-001B_20191016_SO	N	10/16/2019	0	0.15	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.017	1	SO	Surface Soil 0-1.5m	N-016	N-016_20190226_SO	N	2/26/2019	0	0.1	Methylnaphthalene, 2-	91-57-6			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.024	1	SO	Surface Soil 0-1.5m	C-2100	C-2100_20190305_SO	N	3/5/2019	0	0.1	Methylnaphthalene, 2-	91-57-6			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.02	1	SO	Surface Soil 0-1.5m	N-021	N-021_20190226_SO	N	2/26/2019	0	0.1	Methylnaphthalene, 2-	91-57-6			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	C-1004W	C-1004W_20190303_SO	N	3/3/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	C-2160	C-2160_20190306_SO	N	3/6/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.034	1	SO	Surface Soil 0-1.5m	N-013	N-013_20190226_SO	N	2/26/2019	0	0.1	Methylnaphthalene, 2-	91-57-6			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	C-2082	C-2082_20190305_SO	N	3/5/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	C-2017	C-2017_20190305_SO	N	3/5/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	N-010	N-010_20190226_SO	N	2/26/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	EXW2-3	EXW2-3_20190605_SO	N	6/5/2019	1.385	1.385	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.017	1	SO	Surface Soil 0-1.5m	N-001	N-001_20190226_SO	N	2/26/2019	0	0.1	Methylnaphthalene, 2-	91-57-6			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	C-2176	C-2176_20190306_SO	N	3/6/2019	0	0.10	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.055	1	SO	Surface Soil 0-1.5m	N-006	N-006_20190226_SO	N	2/26/2019	0	0.1	Methylnaphthalene, 2-	91-57-6			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.034	1	SO	Surface Soil 0-1.5m	C-2033	C-2033_20190305_SO	N	3/5/2019	0	0.1	Methylnaphthalene, 2-	91-57-6			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	C-2311	C-2311_20190307_SO	N	3/7/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.019	1	SO	Surface Soil 0-1.5m	N-007	N-007_20190226_SO	N	2/26/2019	0	0.1	Methylnaphthalene, 2-	91-57-6			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.011	1	SO	Surface Soil 0-1.5m	N-015	N-015_20190226_SO	N	2/26/2019	0	0.1	Methylnaphthalene, 2-	91-57-6			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.031	1	SO	Surface Soil 0-1.5m	N-031	N-031_20190226_SO	N	2/26/2019	0	0.1	Methylnaphthalene, 2-	91-57-6			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	C-2071	C-2071_20190305_SO	N	3/5/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.071	1	SO	Surface Soil 0-1.5m	D_BH19-15	D_BH19-15_20190507_SO	N	5/7/2019	0	0.15	Methylnaphthalene, 2-	91-57-6			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	C-2178	C-2178_20190306_SO	N	3/6/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	N-027	N-027_20190226_SO	N	2/26/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	DB-004	DB-004_20190302_SO	N	3/2/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.011	1	SO	Surface Soil 0-1.5m	E_BH19-16	E_BH19-16_20190507_SO	N	5/7/2019	0	0.15	Methylnaphthalene, 2-	91-57-6			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	N-036	N-036_20190226_SO	N	2/26/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.042	1	SO	Surface Soil 0-1.5m	N-009	N-009_20190226_SO	N	2/26/2019	0	0.1	Methylnaphthalene, 2-	91-57-6			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	S-014	S-014_20190227_SO	N	2/27/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	S-075	S-075_20190227_SO	N	2/27/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	S-022	S-022_20190227_SO	N	2/27/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	S-017	S-017_20190227_SO	N	2/27/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	S-088	S-088_20190227_SO	N	2/27/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	S-019A	S-019A_20190227_SO	N	2/27/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.0099	1	SO	Surface Soil 0-1.5m	S323F	S323F_20190302_SO	N	3/2/2019	0	0.1	Naphthalene	91-20-3			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	S-093B	S-093B_20190227_SO	N	2/27/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	S-085	S-085_20190227_SO	N	2/27/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	S-097	S-097_20190227_SO	N	2/27/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	S-023B	S-023B_20190227_SO	N	2/27/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.0089	1	SO	Surface Soil 0-1.5m	S-025	S-025_20190227_SO	N	2/27/2019	0	0.1	Naphthalene	91-20-3			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	S-098	S-098_20190227_SO	N	2/27/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	S-073	S-073_20190227_SO	N	2/27/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	S-054A	S-054A_20190227_SO	N	2/27/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	S-212W-C	S-212W-C_20190307_SO	N	3/7/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	S-074B	S-074B_20190227_SO	N	2/27/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	S-051B	S-051B_20190227_SO	N	2/27/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	S-063	S-063_20190227_SO	N	2/27/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	S-065A	S-065A_20190227_SO	N	2/27/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	SLOT2-1	SLOT2-1_20190606_SO	N	6/6/2019	1.34	1.34	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	S-101-C	S-101-C_20190308_SO	N	3/8/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	BH19-120-2	BH19-120-2_20191205_SO	N	12/5/2019	1.22	1.52	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	C-2136C	C-2136C_20200224_SO	N	2/24/2020	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	19-H9-001	19-H9-001_20190609_SO	N	6/9/2019	0	0.15	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	19-H9-002	19-H9-002_20190609_SO	N	6/9/2019	1	1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	C-2074B	C-2074B_20191016_SO	N	10/16/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	C-2058C	C-2058C_20191016_SO	N	10/16/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	C-1002WC	C-1002WC_20191016_SO	N	10/16/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	NSERIESDIL-4	NSERIESDIL-4_20191016_SO	N	10/16/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	NSERIESDIL-1	NSERIESDIL-1_20191016_SO	N	10/16/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	NSERIESDIL-2	NSERIESDIL-2_20191016_SO	N	10/16/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	NSERIESDIL-3	NSERIESDIL-3_20191016_SO	N	10/16/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	C-2106B	C-2106B_20191016_SO	N	10/16/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	19-H8-002	19-H8-002_20190609_SO	N	6/9/2019	1	1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	C-2509B	C-2509B_20191016_SO	N	10/16/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	S202WB	S202WB_20191016_SO	N	10/16/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	C-2180B	C-2180B_20191016_SO	N	10/16/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	C-2080B	C-2080B_20191016_SO	N	10/16/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	S-094B	S-094B_20191016_SO	N	10/16/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	C-2028B	C-2028B_20191016_SO	N	10/16/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	19-H10-002	19-H10-002_20190609_SO	N	6/9/2019	1	1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.013	1	SO	Surface Soil 0-1.5m	19-H2-002B	19-H2-002B_20191016_SO	N	10/16/2019	1	1	Naphthalene	91-20-3			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	DB-110-C	DB-110-C_20190311_SO	N	3/11/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	19-H2-001	19-H2-001_20190609_SO	N	6/9/2019	0	0.15	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	19-H3-001	19-H3-001_20190609_SO	N	6/9/2019	0	0.15	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	19-H1-001	19-H1-001_20190609_SO	N	6/9/2019	0	0.15	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.0084	1	SO	Surface Soil 0-1.5m	19-H3-002	19-H3-002_20190609_SO	N	6/9/2019	1	1	Naphthalene	91-20-3			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.011	1	SO	Surface Soil 0-1.5m	19-H1-002B	19-H1-002B_20191016_SO	N	10/16/2019	1	1	Naphthalene	91-20-3			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	19-H4-001B	19-H4-001B_20191016_SO	N	10/16/2019	0	0.15	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	19-H4-002	19-H4-002_20190609_SO	N	6/9/2019	1	1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	19-H8-001	19-H8-001_20190609_SO	N	6/9/2019	0	0.15	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	19-H5-002	19-H5-002_20190609_SO	N	6/9/2019	1	1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	19-H6-001B	19-H6-001B_20191016_SO	N	10/16/2019	0	0.15	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	19-H6-002B	19-H6-002B_20191016_SO	N	10/16/2019	1	1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	19-H7-001	19-H7-001_20190609_SO	N	6/9/2019	0	0.15	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	19-H7-002	19-H7-002_20190609_SO	N	6/9/2019	1	1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	19-H10-001	19-H10-001_20190609_SO	N	6/9/2019	0	0.15	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	19-H5-001B	19-H5-001B_20191016_SO	N	10/16/2019	0	0.15	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	C-2017	C-2017_20190305_SO	N	3/5/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	C-2071	C-2071_20190305_SO	N	3/5/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.0065	1	SO	Surface Soil 0-1.5m	C-2100	C-2100_20190305_SO	N	3/5/2019	0	0.1	Naphthalene	91-20-3			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.012	1	SO	Surface Soil 0-1.5m	N-001	N-001_20190226_SO	N	2/26/2019	0	0.1	Naphthalene	91-20-3			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.011	1	SO	Surface Soil 0-1.5m	E_BH19-16	E_BH19-16_20190507_SO	N	5/7/2019	0	0.15	Naphthalene	91-20-3			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	C-2176	C-2176_20190306_SO	N	3/6/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.007	1	SO	Surface Soil 0-1.5m	N-015	N-015_20190226_SO	N	2/26/2019	0	0.1	Naphthalene	91-20-3			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.031	1	SO	Surface Soil 0-1.5m	N-009	N-009_20190226_SO	N	2/26/2019	0	0.1	Naphthalene	91-20-3			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	N-027	N-027_20190226_SO	N	2/26/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.019	1	SO	Surface Soil 0-1.5m	N-013	N-013_20190226_SO	N	2/26/2019	0	0.1	Naphthalene	91-20-3			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.026	1	SO	Surface Soil 0-1.5m	N-006	N-006_20190226_SO	N	2/26/2019	0	0.1	Naphthalene	91-20-3			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	C-2178	C-2178_20190306_SO	N	3/6/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.01	1	SO	Surface Soil 0-1.5m	N-016	N-016_20190226_SO	N	2/26/2019	0	0.10	Naphthalene	91-20-3			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.013	1	SO	Surface Soil 0-1.5m	N-007	N-007_20190226_SO	N	2/26/2019	0	0.1	Naphthalene	91-20-3			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	N-036	N-036_20190226_SO	N	2/26/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	C-2033	C-2033_20190305_SO	N	3/5/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	C-2160	C-2160_20190306_SO	N	3/6/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	C-2082	C-2082_20190305_SO	N	3/5/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	C-1004W	C-1004W_20190303_SO	N	3/3/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.01	1	SO	Surface Soil 0-1.5m	N-021	N-021_20190226_SO	N	2/26/2019	0	0.1	Naphthalene	91-20-3			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	DB-004	DB-004_20190302_SO	N	3/2/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	N-010	N-010_20190226_SO	N	2/26/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	EXW2-3	EXW2-3_20190605_SO	N	6/5/2019	1.385	1.385	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	C-2311	C-2311_20190307_SO	N	3/7/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.088	1	SO	Surface Soil 0-1.5m	N-031	N-031_20190226_SO	N	2/26/2019	0	0.1	Naphthalene	91-20-3			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.014	1	SO	Surface Soil 0-1.5m	D_BH19-15	D_BH19-15_20190507_SO	N	5/7/2019	0	0.15	Naphthalene	91-20-3			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	S-065A	S-065A_20190227_SO	N	2/27/2019	0	0.1	Perylene	198-55-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	S-088	S-088_20190227_SO	N	2/27/2019	0	0.1	Perylene	198-55-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	S-097	S-097_20190227_SO	N	2/27/2019	0	0.1	Perylene	198-55-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	S-063	S-063_20190227_SO	N	2/27/2019	0	0.1	Perylene	198-55-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.0068	1	SO	Surface Soil 0-1.5m	S-093B	S-093B_20190227_SO	N	2/27/2019	0	0.1	Perylene	198-55-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	S-025	S-025_20190227_SO	N	2/27/2019	0	0.1	Perylene	198-55-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	S-051B	S-051B_20190227_SO	N	2/27/2019	0	0.1	Perylene	198-55-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.011	1	SO	Surface Soil 0-1.5m	S323F	S323F_20190302_SO	N	3/2/2019	0	0.1	Perylene	198-55-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	S-023B	S-023B_20190227_SO	N	2/27/2019	0	0.1	Perylene	198-55-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	S-054A	S-054A_20190227_SO	N	2/27/2019	0	0.1	Perylene	198-55-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	S-022	S-022_20190227_SO	N	2/27/2019	0	0.1	Perylene	198-55-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	SLOT2-1	SLOT2-1_20190606_SO	N	6/6/2019	1.34	1.34	Perylene	198-55-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	S-019A	S-019A_20190227_SO	N	2/27/2019	0	0.1	Perylene	198-55-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	S-212W-C	S-212W-C_20190307_SO	N	3/7/2019	0	0.1	Perylene	198-55-0	U	0.005	mg/kg

TABLE B.5
DATA INPUT FOR PROUCL SOFTWARE
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Notes:
The maximum of the field duplicate and parent sample pairs were applied and a detect was chosen over a non-detect value.

ProUCL Group	ProUCL Result	ProUCL Flag	Medium	Soil Zone	Location	Sample ID	Sample Type	Sample Date	Start Depth (m)	End Depth (m)	COPC	CASRN	Qualifier	Detection Limit for Non-Detects	Unit
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	S-074B	S-074B_20190227_SO	N	2/27/2019	0	0.1	Perylene	198-55-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	S-085	S-085_20190227_SO	N	2/27/2019	0	0.1	Perylene	198-55-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.0059	1	SO	Surface Soil 0-1.5m	S-073	S-073_20190227_SO	N	2/27/2019	0	0.1	Perylene	198-55-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	S-017	S-017_20190227_SO	N	2/27/2019	0	0.1	Perylene	198-55-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	S-098	S-098_20190227_SO	N	2/27/2019	0	0.1	Perylene	198-55-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	S-014	S-014_20190227_SO	N	2/27/2019	0	0.1	Perylene	198-55-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	S-075	S-075_20190227_SO	N	2/27/2019	0	0.1	Perylene	198-55-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	S-101-C	S-101-C_20190308_SO	N	3/8/2019	0	0.1	Perylene	198-55-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	BH19-120-2	BH19-120-2_20191205_SO	N	12/5/2019	1.22	1.52	Perylene	198-55-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.021	1	SO	Surface Soil 0-1.5m	C-2136C	C-2136C_20200224_SO	N	2/24/2020	0	0.1	Perylene	198-55-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.0067	1	SO	Surface Soil 0-1.5m	19-H6-001B	19-H6-001B_20191016_SO	N	10/16/2019	0	0.15	Perylene	198-55-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.024	1	SO	Surface Soil 0-1.5m	19-H1-002B	19-H1-002B_20191016_SO	N	10/16/2019	1	1	Perylene	198-55-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.015	1	SO	Surface Soil 0-1.5m	C-2058C	C-2058C_20191016_SO	N	10/16/2019	0	0.1	Perylene	198-55-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	C-2074B	C-2074B_20191016_SO	N	10/16/2019	0	0.1	Perylene	198-55-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.028	1	SO	Surface Soil 0-1.5m	NSERIESDIL-3	NSERIESDIL-3_20191016_SO	N	10/16/2019	0	0.1	Perylene	198-55-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	C-2080B	C-2080B_20191016_SO	N	10/16/2019	0	0.1	Perylene	198-55-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.026	1	SO	Surface Soil 0-1.5m	C-2509B	C-2509B_20191016_SO	N	10/16/2019	0	0.1	Perylene	198-55-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.012	1	SO	Surface Soil 0-1.5m	19-H1-001	19-H1-001_20190609_SO	N	6/9/2019	0	0.15	Perylene	198-55-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.0074	1	SO	Surface Soil 0-1.5m	NSERIESDIL-1	NSERIESDIL-1_20191016_SO	N	10/16/2019	0	0.1	Perylene	198-55-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.074	1	SO	Surface Soil 0-1.5m	NSERIESDIL-2	NSERIESDIL-2_20191016_SO	N	10/16/2019	0	0.1	Perylene	198-55-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.032	1	SO	Surface Soil 0-1.5m	19-H2-002B	19-H2-002B_20191016_SO	N	10/16/2019	1	1	Perylene	198-55-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.011	1	SO	Surface Soil 0-1.5m	C-2180B	C-2180B_20191016_SO	N	10/16/2019	0	0.1	Perylene	198-55-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.017	1	SO	Surface Soil 0-1.5m	19-H4-001B	19-H4-001B_20191016_SO	N	10/16/2019	0	0.15	Perylene	198-55-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	19-H10-001	19-H10-001_20190609_SO	N	6/9/2019	0	0.15	Perylene	198-55-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	19-H10-002	19-H10-002_20190609_SO	N	6/9/2019	1	1	Perylene	198-55-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.008	1	SO	Surface Soil 0-1.5m	S-094B	S-094B_20191016_SO	N	10/16/2019	0	0.1	Perylene	198-55-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.0083	1	SO	Surface Soil 0-1.5m	19-H9-001	19-H9-001_20190609_SO	N	6/9/2019	0	0.15	Perylene	198-55-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	19-H8-001	19-H8-001_20190609_SO	N	6/9/2019	0	0.15	Perylene	198-55-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	19-H8-002	19-H8-002_20190609_SO	N	6/9/2019	1	1	Perylene	198-55-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	19-H7-002	19-H7-002_20190609_SO	N	6/9/2019	1	1.00	Perylene	198-55-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.0099	1	SO	Surface Soil 0-1.5m	S202WB	S202WB_20191016_SO	N	10/16/2019	0	0.1	Perylene	198-55-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.021	1	SO	Surface Soil 0-1.5m	19-H7-001	19-H7-001_20190609_SO	N	6/9/2019	0	0.15	Perylene	198-55-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	19-H9-002	19-H9-002_20190609_SO	N	6/9/2019	1	1	Perylene	198-55-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	19-H5-002	19-H5-002_20190609_SO	N	6/9/2019	1	1	Perylene	198-55-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.0087	1	SO	Surface Soil 0-1.5m	19-H6-002B	19-H6-002B_20191016_SO	N	10/16/2019	1	1	Perylene	198-55-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	NSERIESDIL-4	NSERIESDIL-4_20191016_SO	N	10/16/2019	0	0.1	Perylene	198-55-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.013	1	SO	Surface Soil 0-1.5m	19-H3-002	19-H3-002_20190609_SO	N	6/9/2019	1	1	Perylene	198-55-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.0067	1	SO	Surface Soil 0-1.5m	19-H3-001	19-H3-001_20190609_SO	N	6/9/2019	0	0.15	Perylene	198-55-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.012	1	SO	Surface Soil 0-1.5m	19-H5-001B	19-H5-001B_20191016_SO	N	10/16/2019	0	0.15	Perylene	198-55-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.015	1	SO	Surface Soil 0-1.5m	DB-110-C	DB-110-C_20190311_SO	N	3/11/2019	0	0.1	Perylene	198-55-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.009	1	SO	Surface Soil 0-1.5m	C-2028B	C-2028B_20191016_SO	N	10/16/2019	0	0.1	Perylene	198-55-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.008	1	SO	Surface Soil 0-1.5m	19-H2-001	19-H2-001_20190609_SO	N	6/9/2019	0	0.15	Perylene	198-55-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.013	1	SO	Surface Soil 0-1.5m	C-2106B	C-2106B_20191016_SO	N	10/16/2019	0	0.1	Perylene	198-55-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	19-H4-002	19-H4-002_20190609_SO	N	6/9/2019	1	1	Perylene	198-55-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.015	1	SO	Surface Soil 0-1.5m	C-1002WC	C-1002WC_20191016_SO	N	10/16/2019	0	0.1	Perylene	198-55-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.011	1	SO	Surface Soil 0-1.5m	C-2033	C-2033_20190305_SO	N	3/5/2019	0	0.1	Perylene	198-55-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	C-2017	C-2017_20190305_SO	N	3/5/2019	0	0.1	Perylene	198-55-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.0077	1	SO	Surface Soil 0-1.5m	C-2100	C-2100_20190305_SO	N	3/5/2019	0	0.1	Perylene	198-55-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.067	1	SO	Surface Soil 0-1.5m	C-2311	C-2311_20190307_SO	N	3/7/2019	0	0.1	Perylene	198-55-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	C-2071	C-2071_20190305_SO	N	3/5/2019	0	0.1	Perylene	198-55-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.007	1	SO	Surface Soil 0-1.5m	C-2082	C-2082_20190305_SO	N	3/5/2019	0	0.1	Perylene	198-55-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	C-1004W	C-1004W_20190303_SO	N	3/3/2019	0	0.1	Perylene	198-55-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	C-2178	C-2178_20190306_SO	N	3/6/2019	0	0.1	Perylene	198-55-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	N-015	N-015_20190226_SO	N	2/26/2019	0	0.1	Perylene	198-55-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	EXW2-3	EXW2-3_20190605_SO	N	6/5/2019	1.385	1.385	Perylene	198-55-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.084	1	SO	Surface Soil 0-1.5m	D_BH19-15	D_BH19-15_20190507_SO	N	5/7/2019	0	0.15	Perylene	198-55-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.029	1	SO	Surface Soil 0-1.5m	N-036	N-036_20190226_SO	N	2/26/2019	0	0.1	Perylene	198-55-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.0076	1	SO	Surface Soil 0-1.5m	N-016	N-016_20190226_SO	N	2/26/2019	0	0.1	Perylene	198-55-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	C-2176	C-2176_20190306_SO	N	3/6/2019	0	0.1	Perylene	198-55-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.0086	1	SO	Surface Soil 0-1.5m	N-006	N-006_20190226_SO	N	2/26/2019	0	0.1	Perylene	198-55-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	N-010	N-010_20190226_SO	N	2/26/2019	0	0.1	Perylene	198-55-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	N-007	N-007_20190226_SO	N	2/26/2019	0	0.1	Perylene	198-55-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	N-021	N-021_20190226_SO	N	2/26/2019	0	0.1	Perylene	198-55-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	N-001	N-001_20190226_SO	N	2/26/2019	0	0.1	Perylene	198-55-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	N-027	N-027_20190226_SO	N	2/26/2019	0	0.1	Perylene	198-55-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.1	1	SO	Surface Soil 0-1.5m	N-009	N-009_20190226_SO	N	2/26/2019	0	0.1	Perylene	198-55-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.0052	1	SO	Surface Soil 0-1.5m	E_BH19-16	E_BH19-16_20190507_SO	N	5/7/2019	0	0.15	Perylene	198-55-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	DB-004	DB-004_20190302_SO	N	3/2/2019	0	0.1	Perylene	198-55-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	N-013	N-013_20190226_SO	N	2/26/2019	0	0.1	Perylene	198-55-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.021	1	SO	Surface Soil 0-1.5m	N-031	N-031_20190226_SO	N	2/26/2019	0	0.1	Perylene	198-55-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	C-2160	C-2160_20190306_SO	N	3/6/2019	0	0.1	Perylene	198-55-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	S-075	S-075_20190227_SO	N	2/27/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	S-054A	S-054A_20190227_SO	N	2/27/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	S-051B	S-051B_20190227_SO	N	2/27/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	S-074B	S-074B_20190227_SO	N	2/27/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	S-023B	S-023B_20190227_SO	N	2/27/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	S-097	S-097_20190227_SO	N	2/27/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	S-022	S-022_20190227_SO	N	2/27/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.025	1	SO	Surface Soil 0-1.5m	S323F	S323F_20190302_SO	N	3/2/2019	0	0.1	Phenanthrene	85-01-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	S-101-C	S-101-C_20190308_SO	N	3/8/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	SLOT2-1	SLOT2-1_20190606_SO	N	6/6/2019	1.34	1.34	Phenanthrene	85-01-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	S-073	S-073_20190227_SO	N	2/27/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	S-093B	S-093B_20190227_SO	N	2/27/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	S-063	S-063_20190227_SO	N	2/27/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	S-088	S-088_20190227_SO	N	2/27/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.015	1	SO	Surface Soil 0-1.5m	S-098	S-098_20190227_SO	N	2/27/2019	0	0.1	Phenanthrene	85-01-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	S-212W-C	S-212W-C_20190307_SO	N	3/7/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	S-085	S-085_20190227_SO	N	2/27/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	S-065A	S-065A_20190227_SO	N	2/27/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.033	1	SO	Surface Soil 0-1.5m	S-025	S-025_20190227_SO	N	2/27/2019	0	0.1	Phenanthrene	85-01-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	S-017	S-017_20190227_SO	N	2/27/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	S-019A	S-019A_20190227_SO	N	2/27/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	S-014	S-014_20190227_SO	N	2/27/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	BH19-120-2	BH19-120-2_20191205_SO	N	12/5/2019	1.22	1.52	Phenanthrene	85-01-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.021	1	SO	Surface Soil 0-1.5m	C-2136C	C-2136C_20200224_SO	N	2/24/2020	0	0.1	Phenanthrene	85-01-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	S202WB	S202WB_20191016_SO	N	10/16/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	S-094B	S-094B_20191016_SO	N	10/16/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.036	1	SO	Surface Soil 0-1.5m	19-H2-002B	19-H2-002B_20191016_SO	N	10/16/2019	1	1	Phenanthrene	85-01-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	19-H4-001B	19-H4-001B_20191016_SO	N	10/16/2019	0	0.15	Phenanthrene	85-01-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	NSERIESDIL-4	NSERIESDIL-4_20191016_SO	N	10/16/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	19-H8-001	19-H8-001_20190609_SO	N	6/9/2019	0	0.15	Phenanthrene	85-01-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	NSERIESDIL-3	NSERIESDIL-3_20191016_SO	N	10/16/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.049	1	SO	Surface Soil 0-1.5m	19-H1-002B	19-H1-002B_20191016_SO	N	10/16/2019	1	1	Phenanthrene	85-01-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	DB-110-C	DB-110-C_20190311_SO	N	3/11/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.013	1	SO	Surface Soil 0-1.5m	C-2180B	C-2180B_20191016_SO	N	10/16/2019	0	0.1	Phenanthrene	85-01-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	19-H7-002	19-H7-002_20190609_SO	N	6/9/2019	1	1	Phenanthrene	85-01-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	19-H9-002	19-H9-002_20190609_SO	N	6/9/2019	1	1	Phenanthrene	85-01-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.011	1	SO	Surface Soil 0-1.5m	19-H7-001	19-H7-001_20190609_SO	N	6/9/2019	0	0.15	Phenanthrene	85-01-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.0077	1	SO	Surface Soil 0-1.5m	19-H5-002	19-H5-002_20190609_SO	N	6/9/2019	1	1	Phenanthrene	85-01-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.034	1	SO	Surface Soil 0-1.5m	19-H9-001	19-H9-001_20190609_SO	N	6/9/2019	0	0.15	Phenanthrene	85-01-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.022	1	SO	Surface Soil 0-1.5m	19-H4-002	19-H4-002_20190609_SO	N	6/9/2019	1	1	Phenanthrene	85-01-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.018	1	SO	Surface Soil 0-1.5m	19-H3-002	19-H3-002_20190609_SO	N	6/9/2019	1	1	Phenanthrene	85-01-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	19-H3-001	19-H3-001_20190609_SO	N	6/9/2019	0	0.15	Phenanthrene	85-01-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.013	1	SO	Surface Soil 0-1.5m	19-H2-001	19-H2-001_20190609_SO	N	6/9/2019	0	0.15	Phenanthrene	85-01-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.017	1	SO	Surface Soil 0-1.5m	C-1002WC	C-1002WC_20191016_SO	N	10/16/2019	0	0.1	Phenanthrene	85-01-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.02	1	SO	Surface Soil 0-1.5m	NSERIESDIL-1	NSERIESDIL-1_20191016_SO	N	10/16/2019	0	0.1	Phenanthrene	85-01-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	19-H6-002B	19-H6-002B_20191016_SO	N	10/16/2019	1	1	Phenanthrene	85-01-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.007	1	SO	Surface Soil 0-1.5m	19-H5-001B	19-H5-001B_20191016_SO	N	10/16/2019	0	0.15	Phenanthrene	85-01-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.011	1	SO	Surface Soil 0-1.5m	C-2509B	C-2509B_20191016_SO	N	10/16/2019	0	0.1	Phenanthrene	85-01-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	C-2058C	C-2058C_20191016_SO	N	10/16/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	C-2074B	C-2074B_20191016_SO	N	10/16/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.011	1	SO	Surface Soil 0-1.5m	C-2080B	C-2080B_20191016_SO	N	10/16/2019	0	0.1	Phenanthrene	85-01-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	C-2106B	C-2106B_20191016_SO	N	10/16/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.0087	1	SO	Surface Soil 0-1.5m	19-H1-001	19-H1-001_20190609_SO	N	6/9/2019	0	0.15	Phenanthrene	85-01-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	19-H10-002	19-H10-002_20190609_SO	N	6/9/2019	1	1	Phenanthrene	85-01-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	19-H10-001	19-H10-001_20190609_SO	N	6/9/2019	0	0.15	Phenanthrene	85-01-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.01	1	SO	Surface Soil 0-1.5m	NSERIESDIL-2	NSERIESDIL-2_20191016_SO	N	10/16/2019	0	0.1	Phenanthrene	85-01-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	19-H6-001B	19-H6-001B_20191016_SO	N	10/16/2019	0	0.15	Phenanthrene	85-01-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.0078	1	SO	Surface Soil 0-1.5m	C-2028B	C-2028B_20191016_SO	N	10/16/2019	0	0.1	Phenanthrene	85-01-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.0077	1	SO	Surface Soil 0-1.5m	19-H8-002	19-H8-002_20190609_SO	N	6/9/2019	1	1	Phenanthrene	85-01-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.014	1	SO	Surface Soil 0-1.5m	N-036	N-036_20190226_SO	N	2/26/2019	0	0.1	Phenanthrene	85-01-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.24	1	SO	Surface Soil 0-1.5m	N-007	N-007_20190226_SO	N	2/26/2019	0	0.1	Phenanthrene	85-01-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.79	1	SO	Surface Soil 0-1.5m	D_BH19-15	D_BH19-15_20190507_SO	N	5/7/2019	0	0.15	Phenanthrene	85-01-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.11	1	SO	Surface Soil 0-1.5m	EXW2-3	EXW2-3_20190605_SO	N	6/5/2019	1.385	1.385	Phenanthrene	85-01-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	C-2311	C-2311_20190307_SO	N	3/7/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	C-2071	C-2071_20190305_SO	N	3/5/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.039	1	SO	Surface Soil 0-1.5m	N-015	N-015_20190226_SO	N	2/26/2019	0	0.1	Phenanthrene	85-01-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	C-2160	C-2160_20190306_SO	N	3/6/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.011	1	SO	Surface Soil 0-1.5m	C-2082	C-2082_20190305_SO	N	3/5/2019	0	0.1	Phenanthrene	85-01-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.077	1	SO	Surface Soil 0-1.5m	N-009	N-009_20190226_SO	N	2/26/2019	0	0.1	Phenanthrene	85-01-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	C-2178	C-2178_20190306_SO	N	3/6/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.092	1	SO	Surface Soil 0-1.5m	N-031	N-031_20190226_SO	N	2/26/2019	0	0.1	Phenanthrene	85-01-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.047	1	SO	Surface Soil 0-1.5m	E_BH19-16	E_BH19-16_20190507_SO	N	5/7/2019	0	0.15	Phenanthrene	85-01-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	DB-004	DB-004_20190302_SO	N	3/2/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.0056	1	SO	Surface Soil 0-1.5m	N-010	N-010_20190226_SO	N	2/26/2019	0	0.1	Phenanthrene	85-01-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.02	1	SO	Surface Soil 0-1.5m	C-2100	C-2100_20190305_SO	N	3/5/2019	0	0.1	Phenanthrene	85-01-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.22	1	SO	Surface Soil 0-1.5m	N-016	N-016_20190226_SO	N	2/26/2019	0	0.1	Phenanthrene	85-01-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	C-1004W	C-1004W_20190303_SO	N	3/3/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.0081	1	SO	Surface Soil 0-1.5m	N-027	N-027_20190226_SO	N	2/26/2019	0	0.1	Phenanthrene	85-01-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.29	1	SO	Surface Soil 0-1.5m	C-2033	C-2033_20190305_SO	N	3/5/2019	0	0.1	Phenanthrene	85-01-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.058	1	SO	Surface Soil 0-1.5m	N-001	N-001_20190226_SO	N	2/26/2019	0	0.1	Phenanthrene	85-01-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.17	1	SO	Surface Soil 0-1.5m	N-013	N-013_20190226_SO	N	2/26/2019	0	0.1	Phenanthrene	85-01-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.017	1	SO	Surface Soil 0-1.5m	C-2017	C-2017_20190305_SO	N	3/5/2019	0	0.1	Phenanthrene	85-01-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	C-2176	C-2176_20190306_SO	N	3/6/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.25	1	SO	Surface Soil 0-1.5m	N-006	N-006_20190226_SO	N	2/26/2019	0	0.1	Phenanthrene	85-01-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.13	1	SO	Surface Soil 0-1.5m	N-021	N-021_20190226_SO	N	2/26/2019	0	0.1	Phenanthrene	85-01-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	S-017	S-017_20190227_SO	N	2/27/2019	0	0.1	Pyrene	129-00-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	S-075	S-075_20190227_SO	N	2/27/2019	0	0.1	Pyrene	129-00-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	S-088	S-088_20190227_SO	N	2/27/2019	0	0.1	Pyrene	129-00-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	SLOT2-1	SLOT2-1_20190606_SO	N	6/6/2019	1.34	1.34	Pyrene	129-00-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	S-074B	S-074B_20190227_SO	N	2/27/2019	0	0.1	Pyrene	129-00-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	S-019A	S-019A_20190227_SO	N	2/27/2019	0	0.1	Pyrene	129-00-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.0065	1	SO	Surface Soil 0-1.5m	S-025	S-025_20190227_SO	N	2/27/2019	0	0.1	Pyrene	129-00-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	S-085	S-085_20190227_SO	N	2/27/2019	0	0.1	Pyrene	129-00-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	S-063	S-063_20190227_SO	N	2/27/2019	0	0.1	Pyrene	129-00-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	S-098	S-098_20190227_SO	N	2/27/2019	0	0.1	Pyrene	129-00-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	S-097	S-097_20190227_SO	N	2/27/2019	0	0.1	Pyrene	129-00-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	S-093B	S-093B_20190227_SO	N	2/27/2019	0	0.1	Pyrene	129-00-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	S-101-C	S-101-C_20190308_SO	N	3/8/2019	0	0.1	Pyrene	129-00-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	S-212W-C	S-212W-C_20190307_SO	N	3/7/2019	0	0.1	Pyrene	129-00-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	S-073	S-073_20190227_SO	N	2/27/2019	0	0.1	Pyrene	129-00-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	S-065A	S-065A_20190227_SO	N	2/27/2019	0	0.1	Pyrene	129-00-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.032	1	SO	Surface Soil 0-1.5m	S323F	S323F_20190302_SO	N	3/2/2019	0	0.1	Pyrene	129-00-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	S-022	S-022_20190227_SO	N	2/27/2019	0	0.1	Pyrene	129-00-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	S-023B	S-023B_20190227_SO	N	2/27/2019	0	0.1	Pyrene	129-00-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	S-054A	S-054A_20190227_SO	N	2/27/2019	0	0.1	Pyrene	129-00-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	S-014	S-014_20190227_SO	N	2/27/2019	0	0.1	Pyrene	129-00-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	S-051B	S-051B_20190227_SO	N	2/27/2019	0	0.1	Pyrene	129-00-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	BH19-120-2	BH19-120-2_20191205_SO	N	12/5/2019	1.22	1.52	Pyrene	129-00-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.037	1	SO	Surface Soil 0-1.5m	C-2136C	C-2136C_20200224_SO	N	2/24/2020	0	0.1	Pyrene	129-00-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	NSERIESDIL-3	NSERIESDIL-3_20191016_SO	N	10/16/2019	0	0.1	Pyrene	129-00-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	19-H6-002B	19-H6-002B_20191016_SO	N	10/16/2019	1	1	Pyrene	129-00-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	19-H5-001B	19-H5-001B_20191016_SO	N	10/16/2019	0	0.15	Pyrene	129-00-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.018	1	SO	Surface Soil 0-1.5m	C-2028B	C-2028B_20191016_SO	N	10/16/2019	0	0.1	Pyrene	129-00-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.0083	1	SO	Surface Soil 0-1.5m	19-H4-001B	19-H4-001B_20191016_SO	N	10/16/2019	0	0.15	Pyrene	129-00-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.018	1	SO	Surface Soil 0-1.5m	19-H2-002B	19-H2-002B_20191016_SO	N	10/16/2019	1	1	Pyrene	129-00-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.0058	1	SO	Surface Soil 0-1.5m	NSERIESDIL-4	NSERIESDIL-4_20191016_SO	N	10/16/2019	0	0.1	Pyrene	129-00-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.02	1	SO	Surface Soil 0-1.5m	C-1002WC	C-1002WC_20191016_SO	N	10/16/2019	0	0.1	Pyrene	129-00-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.0083	1	SO	Surface Soil 0-1.5m	C-2180B	C-2180B_20191016_SO	N	10/16/2019	0	0.1	Pyrene	129-00-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.017	1	SO	Surface Soil 0-1.5m	19-H1-002B	19-H1-002B_20191016_SO	N	10/16/2019	1	1	Pyrene	129-00-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	19-H8-001	19-H8-001_20190609_SO	N	6/9/2019	0	0.15	Pyrene	129-00-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	19-H3-001	19-H3-001_20190609_SO	N	6/9/2019	0	0.15	Pyrene	129-00-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	DB-110-C	DB-110-C_20190311_SO	N	3/11/2019	0	0.1	Pyrene	129-00-0	U	0.005	mg/kg

TABLE B.5
DATA INPUT FOR PROUCL SOFTWARE
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Notes:
The maximum of the field duplicate and parent sample pairs were applied and a detect was chosen over a non-detect value.

ProUCL Group	ProUCL Result	ProUCL Flag	Medium	Soil Zone	Location	Sample ID	Sample Type	Sample Date	Start Depth (m)	End Depth (m)	COPC	CASRN	Qualifier	Detection Limit for Non-Detects	Unit
CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.011	1	SO	Surface Soil 0-1.5m	C-2509B	C-2509B_20191016_SO	N	10/16/2019	0	0.1	Pyrene	129-00-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	19-H7-002	19-H7-002_20190609_SO	N	6/9/2019	1	1	Pyrene	129-00-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.0056	1	SO	Surface Soil 0-1.5m	C-2106B	C-2106B_20191016_SO	N	10/16/2019	0	0.1	Pyrene	129-00-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	19-H9-002	19-H9-002_20190609_SO	N	6/9/2019	1	1	Pyrene	129-00-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.021	1	SO	Surface Soil 0-1.5m	C-2080B	C-2080B_20191016_SO	N	10/16/2019	0	0.1	Pyrene	129-00-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.014	1	SO	Surface Soil 0-1.5m	19-H7-001	19-H7-001_20190609_SO	N	6/9/2019	0	0.15	Pyrene	129-00-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	19-H5-002	19-H5-002_20190609_SO	N	6/9/2019	1	1	Pyrene	129-00-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.018	1	SO	Surface Soil 0-1.5m	19-H9-001	19-H9-001_20190609_SO	N	6/9/2019	0	0.15	Pyrene	129-00-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	19-H6-001B	19-H6-001B_20191016_SO	N	10/16/2019	0	0.15	Pyrene	129-00-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.014	1	SO	Surface Soil 0-1.5m	19-H4-002	19-H4-002_20190609_SO	N	6/9/2019	1	1	Pyrene	129-00-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.26	1	SO	Surface Soil 0-1.5m	NSERIESDIL-2	NSERIESDIL-2_20191016_SO	N	10/16/2019	0	0.1	Pyrene	129-00-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.0072	1	SO	Surface Soil 0-1.5m	C-2058C	C-2058C_20191016_SO	N	10/16/2019	0	0.1	Pyrene	129-00-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.036	1	SO	Surface Soil 0-1.5m	NSERIESDIL-1	NSERIESDIL-1_20191016_SO	N	10/16/2019	0	0.1	Pyrene	129-00-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.0067	1	SO	Surface Soil 0-1.5m	19-H1-001	19-H1-001_20190609_SO	N	6/9/2019	0	0.15	Pyrene	129-00-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	19-H10-002	19-H10-002_20190609_SO	N	6/9/2019	1	1	Pyrene	129-00-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	19-H10-001	19-H10-001_20190609_SO	N	6/9/2019	0	0.15	Pyrene	129-00-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.011	1	SO	Surface Soil 0-1.5m	19-H2-001	19-H2-001_20190609_SO	N	6/9/2019	0	0.15	Pyrene	129-00-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.013	1	SO	Surface Soil 0-1.5m	C-2074B	C-2074B_20191016_SO	N	10/16/2019	0	0.1	Pyrene	129-00-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.0076	1	SO	Surface Soil 0-1.5m	19-H3-002	19-H3-002_20190609_SO	N	6/9/2019	1	1	Pyrene	129-00-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	S-094B	S-094B_20191016_SO	N	10/16/2019	0	0.1	Pyrene	129-00-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.0074	1	SO	Surface Soil 0-1.5m	19-H8-002	19-H8-002_20190609_SO	N	6/9/2019	1	1	Pyrene	129-00-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	S202WB	S202WB_20191016_SO	N	10/16/2019	0	0.1	Pyrene	129-00-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.26	1	SO	Surface Soil 0-1.5m	N-009	N-009_20190226_SO	N	2/26/2019	0	0.1	Pyrene	129-00-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.54	1	SO	Surface Soil 0-1.5m	D_BH19-15	D_BH19-15_20190507_SO	N	5/7/2019	0	0.15	Pyrene	129-00-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.052	1	SO	Surface Soil 0-1.5m	E_BH19-16	E_BH19-16_20190507_SO	N	5/7/2019	0	0.15	Pyrene	129-00-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.21	1	SO	Surface Soil 0-1.5m	N-031	N-031_20190226_SO	N	2/26/2019	0	0.1	Pyrene	129-00-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.0083	1	SO	Surface Soil 0-1.5m	N-027	N-027_20190226_SO	N	2/26/2019	0	0.1	Pyrene	129-00-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.028	1	SO	Surface Soil 0-1.5m	N-001	N-001_20190226_SO	N	2/26/2019	0	0.1	Pyrene	129-00-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	DB-004	DB-004_20190302_SO	N	3/2/2019	0	0.1	Pyrene	129-00-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.16	1	SO	Surface Soil 0-1.5m	C-2033	C-2033_20190305_SO	N	3/5/2019	0	0.1	Pyrene	129-00-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.11	1	SO	Surface Soil 0-1.5m	N-006	N-006_20190226_SO	N	2/26/2019	0	0.1	Pyrene	129-00-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.056	1	SO	Surface Soil 0-1.5m	EXW2-3	EXW2-3_20190605_SO	N	6/5/2019	1.385	1.385	Pyrene	129-00-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.0053	1	SO	Surface Soil 0-1.5m	C-2100	C-2100_20190305_SO	N	3/5/2019	0	0.1	Pyrene	129-00-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	C-2071	C-2071_20190305_SO	N	3/5/2019	0	0.1	Pyrene	129-00-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.16	1	SO	Surface Soil 0-1.5m	N-007	N-007_20190226_SO	N	2/26/2019	0	0.1	Pyrene	129-00-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.0097	1	SO	Surface Soil 0-1.5m	C-2017	C-2017_20190305_SO	N	3/5/2019	0	0.1	Pyrene	129-00-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	C-2178	C-2178_20190306_SO	N	3/6/2019	0	0.1	Pyrene	129-00-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	C-1004W	C-1004W_20190303_SO	N	3/3/2019	0	0.1	Pyrene	129-00-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	C-2176	C-2176_20190306_SO	N	3/6/2019	0	0.1	Pyrene	129-00-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.0076	1	SO	Surface Soil 0-1.5m	N-010	N-010_20190226_SO	N	2/26/2019	0	0.1	Pyrene	129-00-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.029	1	SO	Surface Soil 0-1.5m	C-2082	C-2082_20190305_SO	N	3/5/2019	0	0.1	Pyrene	129-00-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.032	1	SO	Surface Soil 0-1.5m	N-036	N-036_20190226_SO	N	2/26/2019	0	0.1	Pyrene	129-00-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.048	1	SO	Surface Soil 0-1.5m	N-021	N-021_20190226_SO	N	2/26/2019	0	0.1	Pyrene	129-00-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.15	1	SO	Surface Soil 0-1.5m	N-016	N-016_20190226_SO	N	2/26/2019	0	0.1	Pyrene	129-00-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	C-2160	C-2160_20190306_SO	N	3/6/2019	0	0.1	Pyrene	129-00-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	C-2311	C-2311_20190307_SO	N	3/7/2019	0	0.1	Pyrene	129-00-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.093	1	SO	Surface Soil 0-1.5m	N-013	N-013_20190226_SO	N	2/26/2019	0	0.1	Pyrene	129-00-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.038	1	SO	Surface Soil 0-1.5m	N-015	N-015_20190226_SO	N	2/26/2019	0	0.1	Pyrene	129-00-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	SLOT2-1	SLOT2-1_20190606_SO	N	6/6/2019	1.34	1.34	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	S-085	S-085_20190227_SO	N	2/27/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	S-054A	S-054A_20190227_SO	N	2/27/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	S-212W-C	S-212W-C_20190307_SO	N	3/7/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	S323F	S323F_20190302_SO	N	3/2/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	S-051B	S-051B_20190227_SO	N	2/27/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	S-017	S-017_20190227_SO	N	2/27/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	S-073	S-073_20190227_SO	N	2/27/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	S-075	S-075_20190227_SO	N	2/27/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	S-063	S-063_20190227_SO	N	2/27/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	S-014	S-014_20190227_SO	N	2/27/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	S-065A	S-065A_20190227_SO	N	2/27/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	S-074B	S-074B_20190227_SO	N	2/27/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	S-101-C	S-101-C_20190308_SO	N	3/8/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	S-098	S-098_20190227_SO	N	2/27/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	S-023B	S-023B_20190227_SO	N	2/27/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	S-093B	S-093B_20190227_SO	N	2/27/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	S-088	S-088_20190227_SO	N	2/27/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	S-019A	S-019A_20190227_SO	N	2/27/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	S-022	S-022_20190227_SO	N	2/27/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	S-025	S-025_20190227_SO	N	2/27/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	S-097	S-097_20190227_SO	N	2/27/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	BH19-120-2	BH19-120-2_20191205_SO	N	12/5/2019	1.22	1.52	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	C-2136C	C-2136C_20200224_SO	N	2/24/2020	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	C-2509B	C-2509B_20191016_SO	N	10/16/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	C-2080B	C-2080B_20191016_SO	N	10/16/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	19-H5-001B	19-H5-001B_20191016_SO	N	10/16/2019	0	0.15	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	C-2028B	C-2028B_20191016_SO	N	10/16/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	19-H4-001B	19-H4-001B_20191016_SO	N	10/16/2019	0	0.15	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	C-2058C	C-2058C_20191016_SO	N	10/16/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	19-H6-002B	19-H6-002B_20191016_SO	N	10/16/2019	1	1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	NSERIESDIL-2	NSERIESDIL-2_20191016_SO	N	10/16/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	S202WB	S202WB_20191016_SO	N	10/16/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	NSERIESDIL-3	NSERIESDIL-3_20191016_SO	N	10/16/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	19-H2-001	19-H2-001_20190609_SO	N	6/9/2019	0	0.15	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	19-H9-002	19-H9-002_20190609_SO	N	6/9/2019	1	1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	C-2106B	C-2106B_20191016_SO	N	10/16/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	19-H4-002	19-H4-002_20190609_SO	N	6/9/2019	1	1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	NSERIESDIL-1	NSERIESDIL-1_20191016_SO	N	10/16/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	19-H3-002	19-H3-002_20190609_SO	N	6/9/2019	1	1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	19-H1-001	19-H1-001_20190609_SO	N	6/9/2019	0	0.15	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	19-H7-001	19-H7-001_20190609_SO	N	6/9/2019	0	0.15	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	19-H8-002	19-H8-002_20190609_SO	N	6/9/2019	1	1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	C-1002WC	C-1002WC_20191016_SO	N	10/16/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	C-2074B	C-2074B_20191016_SO	N	10/16/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	19-H6-001B	19-H6-001B_20191016_SO	N	10/16/2019	0	0.15	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	19-H10-001	19-H10-001_20190609_SO	N	6/9/2019	0	0.15	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	19-H9-001	19-H9-001_20190609_SO	N	6/9/2019	0	0.15	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	19-H5-002	19-H5-002_20190609_SO	N	6/9/2019	1	1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	C-2180B	C-2180B_20191016_SO	N	10/16/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	S-094B	S-094B_20191016_SO	N	10/16/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	19-H2-002B	19-H2-002B_20191016_SO	N	10/16/2019	1	1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	19-H10-002	19-H10-002_20190609_SO	N	6/9/2019	1	1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	NSERIESDIL-4	NSERIESDIL-4_20191016_SO	N	10/16/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	19-H7-002	19-H7-002_20190609_SO	N	6/9/2019	1	1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	DB-110-C	DB-110-C_20190311_SO	N	3/11/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	19-H8-001	19-H8-001_20190609_SO	N	6/9/2019	0	0.15	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	19-H3-001	19-H3-001_20190609_SO	N	6/9/2019	0	0.15	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	19-H1-002B	19-H1-002B_20191016_SO	N	10/16/2019	1	1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	C-2082	C-2082_20190305_SO	N	3/5/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	N-015	N-015_20190226_SO	N	2/26/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	C-1004W	C-1004W_20190303_SO	N	3/3/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	N-006	N-006_20190226_SO	N	2/26/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	C-2033	C-2033_20190305_SO	N	3/5/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.08	1	SO	Surface Soil 0-1.5m	D_BH19-15	D_BH19-15_20190507_SO	N	5/7/2019	0	0.15	Quinoline	91-22-5			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	N-001	N-001_20190226_SO	N	2/26/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.013	1	SO	Surface Soil 0-1.5m	N-016	N-016_20190226_SO	N	2/26/2019	0	0.1	Quinoline	91-22-5			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	C-2017	C-2017_20190305_SO	N	3/5/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	C-2071	C-2071_20190305_SO	N	3/5/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	C-2311	C-2311_20190307_SO	N	3/7/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.015	1	SO	Surface Soil 0-1.5m	N-013	N-013_20190226_SO	N	2/26/2019	0	0.1	Quinoline	91-22-5			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	C-2160	C-2160_20190306_SO	N	3/6/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	N-027	N-027_20190226_SO	N	2/26/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	C-2176	C-2176_20190306_SO	N	3/6/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	DB-004	DB-004_20190302_SO	N	3/2/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.029	1	SO	Surface Soil 0-1.5m	N-021	N-021_20190226_SO	N	2/26/2019	0	0.1	Quinoline	91-22-5			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	N-031	N-031_20190226_SO	N	2/26/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	N-009	N-009_20190226_SO	N	2/26/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.013	1	SO	Surface Soil 0-1.5m	N-007	N-007_20190226_SO	N	2/26/2019	0	0.1	Quinoline	91-22-5			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	C-2178	C-2178_20190306_SO	N	3/6/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	EXW2-3	EXW2-3_20190605_SO	N	6/5/2019	1.385	1.385	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	N-010	N-010_20190226_SO	N	2/26/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	N-036	N-036_20190226_SO	N	2/26/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	E_BH19-16	E_BH19-16_20190507_SO	N	5/7/2019	0	0.15	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	C-2100	C-2100_20190305_SO	N	3/5/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
Outside CN RoW_SE_Culvert_Acenaphthene_83-32-9	0.012	0	SE	Culvert	BEFORE CULVERT	BEFORE CULVERT_20190828_SE	N	8/28/2019	0	0	Acenaphthene	83-32-9	U	0.012	mg/kg
Outside CN RoW_SE_Culvert_Acenaphthylene_208-96-8	0.012	0	SE	Culvert	BEFORE CULVERT	BEFORE CULVERT_20190828_SE	N	8/28/2019	0	0	Acenaphthylene	208-96-8	U	0.012	mg/kg
Outside CN RoW_SE_Culvert_Acridine_260-94-6	0.023	0	SE	Culvert	BEFORE CULVERT	BEFORE CULVERT_20190828_SE	N	8/28/2019	0	0	Acridine	260-94-6	U	0.023	mg/kg
Outside CN RoW_SE_Culvert_Anthracene_120-12-7	0.0092	0	SE	Culvert	BEFORE CULVERT	BEFORE CULVERT_20190828_SE	N	8/28/2019	0	0	Anthracene	120-12-7	U	0.0092	mg/kg
Outside CN RoW_SE_Culvert_Benzo(a)anthracene_56-55-3	0.012	0	SE	Culvert	BEFORE CULVERT	BEFORE CULVERT_20190828_SE	N	8/28/2019	0	0	Benzo(a)anthracene	56-55-3	U	0.012	mg/kg
Outside CN RoW_SE_Culvert_Benzo(a)pyrene_50-32-8	0.012	0	SE	Culvert	BEFORE CULVERT	BEFORE CULVERT_20190828_SE	N	8/28/2019	0	0	Benzo(a)pyrene	50-32-8	U	0.012	mg/kg
Outside CN RoW_SE_Culvert_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.012	0	SE	Culvert	BEFORE CULVERT	BEFORE CULVERT_20190828_SE	N	8/28/2019	0	0	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.012	mg/kg
Outside CN RoW_SE_Culvert_Benzo(c)phenanthrene_195-19-7	0.012	0	SE	Culvert	BEFORE CULVERT	BEFORE CULVERT_20190828_SE	N	8/28/2019	0	0	Benzo(c)phenanthrene	195-19-7	U	0.012	mg/kg
Outside CN RoW_SE_Culvert_Benzo(e)pyrene_192-97-2	0.012	0	SE	Culvert	BEFORE CULVERT	BEFORE CULVERT_20190828_SE	N	8/28/2019	0	0	Benzo(e)pyrene	192-97-2	U	0.012	mg/kg
Outside CN RoW_SE_Culvert_Benzo(g,h,i)perylene_191-24-2	0.012	0	SE	Culvert	BEFORE CULVERT	BEFORE CULVERT_20190828_SE	N	8/28/2019	0	0	Benzo(g,h,i)perylene	191-24-2	U	0.012	mg/kg
Outside CN RoW_SE_Culvert_Benzo(k)fluoranthene_207-08-9	0.012	0	SE	Culvert	BEFORE CULVERT	BEFORE CULVERT_20190828_SE	N	8/28/2019	0	0	Benzo(k)fluoranthene	207-08-9	U	0.012	mg/kg
Outside CN RoW_SE_Culvert_Chrysene_218-01-9	0.012	0	SE	Culvert	BEFORE CULVERT	BEFORE CULVERT_20190828_SE	N	8/28/2019	0	0	Chrysene	218-01-9	U	0.012	mg/kg
Outside CN RoW_SE_Culvert_Dibenz(a,h)anthracene_53-70-3	0.012	0	SE	Culvert	BEFORE CULVERT	BEFORE CULVERT_20190828_SE	N	8/28/2019	0	0	Dibenz(a,h)anthracene	53-70-3	U	0.012	mg/kg
Outside CN RoW_SE_Culvert_Fluoranthene_206-44-0	0.017	1	SE	Culvert	BEFORE CULVERT	BEFORE CULVERT_20190828_SE	N	8/28/2019	0	0	Fluoranthene	206-44-0			mg/kg
Outside CN RoW_SE_Culvert_Fluorene_86-73-7	0.012	0	SE	Culvert	BEFORE CULVERT	BEFORE CULVERT_20190828_SE	N	8/28/2019	0	0	Fluorene	86-73-7	U	0.012	mg/kg
Outside CN RoW_SE_Culvert_Indeno(1,2,3-cd)pyrene_193-39-5	0.012	0	SE	Culvert	BEFORE CULVERT	BEFORE CULVERT_20190828_SE	N	8/28/2019	0	0	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.012	mg/kg
Outside CN RoW_SE_Culvert_Methylnaphthalene, 2-_91-57-6	0.012	0	SE	Culvert	BEFORE CULVERT	BEFORE CULVERT_20190828_SE	N	8/28/2019	0	0	2-Methylnaphthalene	91-57-6	U	0.012	mg/kg
Outside CN RoW_SE_Culvert_Naphthalene_91-20-3	0.012	0	SE	Culvert	BEFORE CULVERT	BEFORE CULVERT_20190828_SE	N	8/28/2019	0	0	Naphthalene	91-20-3	U	0.012	mg/kg
Outside CN RoW_SE_Culvert_Perylene_198-55-0	0.029	1	SE	Culvert	BEFORE CULVERT	BEFORE CULVERT_20190828_SE	N	8/28/2019	0	0	Perylene	198-55-0			mg/kg
Outside CN RoW_SE_Culvert_Phenanthrene_85-01-8	0.017	1	SE	Culvert	BEFORE CULVERT	BEFORE CULVERT_20190828_SE	N	8/28/2019	0	0	Phenanthrene	85-01-8			mg/kg
Outside CN RoW_SE_Culvert_Pyrene_129-00-0	0.012	0	SE	Culvert	BEFORE CULVERT	BEFORE CULVERT_20190828_SE	N	8/28/2019	0	0	Pyrene	129-00-0	U	0.012	mg/kg
Outside CN RoW_SE_Culvert_Quinoline_91-22-5	0.023	0	SE	Culvert	BEFORE CULVERT	BEFORE CULVERT_20190828_SE	N	8/28/2019	0	0	Quinoline	91-22-5	U	0.023	mg/kg
Outside CN RoW_SE_NA_Acenaphthene_83-32-9	0.005	0	SE	NA	WA-SED-120	WA-SED-120_20190815_SE	N	8/15/2019	0	0	Acenaphthene	83-32-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Acenaphthene_83-32-9	0.005	0	SE	NA	WA-SED-108B	WA-SED-108B_20191016_SE	N	10/16/2019	0	0	Acenaphthene	83-32-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Acenaphthene_83-32-9	0.01	1	SE	NA	WA-SED-105B	WA-SED-105B_20191016_SE	N	10/16/2019	0	0	Acenaphthene	83-32-9			mg/kg
Outside CN RoW_SE_NA_Acenaphthene_83-32-9	0.005	0	SE	NA	WA-SED-116	WA-SED-116_20190813_SE	N	8/13/2019	0	0	Acenaphthene	83-32-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Acenaphthene_83-32-9	0.005	0	SE	NA	WA-SED-111B	WA-SED-111B_20191016_SE	N	10/16/2019	0	0	Acenaphthene	83-32-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Acenaphthene_83-32-9	0.005	0	SE	NA	WA-SED-114	WA-SED-114_20190813_SE	N	8/13/2019	0	0	Acenaphthene	83-32-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Acenaphthene_83-32-9	0.005	0	SE	NA	WA-SED-117	WA-SED-117_20190813_SE	N	8/13/2019	0	0	Acenaphthene	83-32-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Acenaphthene_83-32-9	0.005	0	SE	NA	WA-SED-118	WA-SED-118_20190813_SE	N	8/13/2019	0	0	Acenaphthene	83-32-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Acenaphthene_83-32-9	0.005	0	SE	NA	WA-SED-102B	WA-SED-102B_20191016_SE	N	10/16/2019	0	0	Acenaphthene	83-32-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Acenaphthene_83-32-9	0.005	0	SE	NA	WA-SED-109	WA-SED-109_20190813_SE	N	8/13/2019	0	0	Acenaphthene	83-32-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Acenaphthene_83-32-9	0.005	0	SE	NA	WA-SED-110B	WA-SED-110B_20191016_SE	N	10/16/2019	0	0	Acenaphthene	83-32-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Acenaphthene_83-32-9	0.005	0	SE	NA	WA-SED-119	WA-SED-119_20190813_SE	N	8/13/2019	0	0	Acenaphthene	83-32-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Acenaphthene_83-32-9	0.005	0	SE	NA	WA-SED-113	WA-SED-113_20190813_SE	N	8/13/2019	0	0	Acenaphthene	83-32-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Acenaphthene_83-32-9	0.005	0	SE	NA	C-2150C	C-2150C_20191016_SE	N	10/16/2019	0	0	Acenaphthene	83-32-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Acenaphthene_83-32-9	0.005	0	SE	NA	WA-SED-112B	WA-SED-112B_20191016_SE	N	10/16/2019	0	0	Acenaphthene	83-32-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Acenaphthene_83-32-9	0.005	0	SE	NA	WA-SED-106B	WA-SED-106B_20191016_SE	N	10/16/2019	0	0	Acenaphthene	83-32-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Acenaphthene_83-32-9	0.005	0	SE	NA	WA-SED-103	WA-SED-103_20190813_SE	N	8/13/2019	0	0	Acenaphthene	83-32-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Acenaphthene_83-32-9	0.005	0	SE	NA	S-079B	S-079B_20191016_SE	N	10/16/2019	0	0	Acenaphthene	83-32-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Acenaphthene_83-32-9	0.005	0	SE	NA	WA-SED-115B	WA-SED-115B_20191016_SE	N	10/16/2019	0	0	Acenaphthene	83-32-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Acenaphthene_83-32-9	0.005	0	SE	NA	WA-SED-101	WA-SED-101_20190813_SE	N	8/13/2019	0	0	Acenaphthene	83-32-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Acenaphthene_83-32-9	0.005	0	SE	NA	WA-SED-104	WA-SED-104_20190813_SE	N	8/13/2019	0	0	Acenaphthene	83-32-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Acenaphthene_83-32-9	0.005	0	SE	NA	WA-SED-107B	WA-SED-107B_20191016_SE	N	10/16/2019	0	0	Acenaphthene	83-32-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Acenaphthene_83-32-9	0.005	0	SE	NA	C-2140B	C-2140B_20191016_SE	N	10/16/2019	0	0	Acenaphthene	83-32-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Acenaphthylene_208-96-8	0.005	0	SE	NA	WA-SED-105B	WA-SED-105B_20191016_SE	N	10/16/2019	0	0	Acenaphthylene	208-96-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Acenaphthylene_208-96-8	0.005	0	SE	NA	WA-SED-111B	WA-SED-111B_20191016_SE	N	10/16/2019	0	0	Acenaphthylene	208-96-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Acenaphthylene_208-96-8	0.005	0	SE	NA	S-079B	S-079B_20191016_SE	N	10/16/2019	0	0	Acenaphthylene	208-96-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Acenaphthylene_208-96-8	0.005	0	SE	NA	WA-SED-102B	WA-SED-102B_20191016_SE	N	10/16/2019	0	0	Acenaphthylene	208-96-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Acenaphthylene_208-96-8	0.005	0	SE	NA	WA-SED-112B	WA-SED-112B_20191016_SE	N	10/16/2019	0	0	Acenaphthylene	208-96-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Acenaphthylene_208-96-8	0.005	0	SE	NA	WA-SED-106B	WA-SED-106B_20191016_SE	N	10/16/2019	0	0	Acenaphthylene	208-96-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Acenaphthylene_208-96-8	0.005	0	SE	NA	WA-SED-109	WA-SED-109_20190813_SE	N	8/13/2019	0	0	Acenaphthylene	208-96-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Acenaphthylene_208-96-8	0.005	0	SE	NA	WA-SED-113	WA-SED-113_20190813_SE	N	8/13/2019	0	0	Acenaphthylene	208-96-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Acenaphthylene_208-96-8	0.005	0	SE	NA	WA-SED-120	WA-SED-120_20190815_SE	N	8/15/2019	0	0	Acenaphthylene	208-96-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Acenaphthylene_208-96-8	0.005	0	SE	NA	WA-SED-103	WA-SED-103_20190813_SE	N	8/13/2019	0	0	Acenaphthylene	208-96-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Acenaphthylene_208-96-8	0.005	0	SE	NA	WA-SED-115B	WA-SED-115B_20191016_SE	N	10/16/2019	0	0	Acenaphthylene	208-96-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Acenaphthylene_208-96-8	0.01	1	SE	NA	WA-SED-110B	WA-SED-110B_20191016_SE	N	10/16/2019	0	0	Acenaphthylene	208-96-8			mg/kg
Outside CN RoW_SE_NA_Acenaphthylene_208-96-8	0.005	0	SE	NA	WA-SED-117	WA-SED-117_20190813_SE	N	8/13/2019	0	0	Acenaphthylene	208-96-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Acenaphthylene_208-96-8	0.005	0	SE	NA	WA-SED-114	WA-SED-114_20190813_SE	N	8/13/2019	0	0	Acenaphthylene	208-96-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Acenaphthylene_208-96-8	0.005	0	SE	NA	WA-SED-118	WA-SED-118_20190813_SE	N	8/13/2019	0	0	Acenaphthylene	208-96-8	U	0.005	mg/kg

TABLE B.5
DATA INPUT FOR PROUCL SOFTWARE
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Notes:
The maximum of the field duplicate and parent sample pairs were applied and a detect was chosen over a non-detect value.

ProUCL Group	ProUCL Result	ProUCL Flag	Medium	Soil Zone	Location	Sample ID	Sample Type	Sample Date	Start Depth (m)	End Depth (m)	COPC	CASRN	Qualifier	Detection Limit for Non-Detects	Unit
Outside CN RoW_SE_NA_Acenaphthylene_208-96-8	0.005	0	SE	NA	WA-SED-116	WA-SED-116_20190813_SE	N	8/13/2019	0	0	Acenaphthylene	208-96-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Acenaphthylene_208-96-8	0.005	0	SE	NA	C-2140B	C-2140B_20191016_SE	N	10/16/2019	0	0	Acenaphthylene	208-96-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Acenaphthylene_208-96-8	0.005	0	SE	NA	WA-SED-101	WA-SED-101_20190813_SE	N	8/13/2019	0	0	Acenaphthylene	208-96-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Acenaphthylene_208-96-8	0.005	0	SE	NA	C-2150C	C-2150C_20191016_SE	N	10/16/2019	0	0	Acenaphthylene	208-96-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Acenaphthylene_208-96-8	0.005	0	SE	NA	WA-SED-104	WA-SED-104_20190813_SE	N	8/13/2019	0	0	Acenaphthylene	208-96-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Acenaphthylene_208-96-8	0.005	0	SE	NA	WA-SED-119	WA-SED-119_20190813_SE	N	8/13/2019	0	0	Acenaphthylene	208-96-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Acenaphthylene_208-96-8	0.005	0	SE	NA	WA-SED-108B	WA-SED-108B_20191016_SE	N	10/16/2019	0	0	Acenaphthylene	208-96-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Acenaphthylene_208-96-8	0.005	0	SE	NA	WA-SED-107B	WA-SED-107B_20191016_SE	N	10/16/2019	0	0	Acenaphthylene	208-96-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Acridine_260-94-6	0.01	0	SE	NA	WA-SED-117	WA-SED-117_20190813_SE	N	8/13/2019	0	0	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SE_NA_Acridine_260-94-6	0.01	0	SE	NA	WA-SED-105B	WA-SED-105B_20191016_SE	N	10/16/2019	0	0	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SE_NA_Acridine_260-94-6	0.01	0	SE	NA	WA-SED-109	WA-SED-109_20190813_SE	N	8/13/2019	0	0	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SE_NA_Acridine_260-94-6	0.01	0	SE	NA	WA-SED-107B	WA-SED-107B_20191016_SE	N	10/16/2019	0	0	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SE_NA_Acridine_260-94-6	0.01	0	SE	NA	WA-SED-114	WA-SED-114_20190813_SE	N	8/13/2019	0	0	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SE_NA_Acridine_260-94-6	0.01	0	SE	NA	WA-SED-116	WA-SED-116_20190813_SE	N	8/13/2019	0	0	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SE_NA_Acridine_260-94-6	0.01	0	SE	NA	WA-SED-113	WA-SED-113_20190813_SE	N	8/13/2019	0	0	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SE_NA_Acridine_260-94-6	0.01	0	SE	NA	WA-SED-108B	WA-SED-108B_20191016_SE	N	10/16/2019	0	0	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SE_NA_Acridine_260-94-6	0.01	0	SE	NA	WA-SED-102B	WA-SED-102B_20191016_SE	N	10/16/2019	0	0	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SE_NA_Acridine_260-94-6	0.01	0	SE	NA	WA-SED-103	WA-SED-103_20190813_SE	N	8/13/2019	0	0	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SE_NA_Acridine_260-94-6	0.01	0	SE	NA	WA-SED-112B	WA-SED-112B_20191016_SE	N	10/16/2019	0	0	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SE_NA_Acridine_260-94-6	0.01	0	SE	NA	WA-SED-104	WA-SED-104_20190813_SE	N	8/13/2019	0	0	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SE_NA_Acridine_260-94-6	0.01	0	SE	NA	WA-SED-111B	WA-SED-111B_20191016_SE	N	10/16/2019	0	0	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SE_NA_Acridine_260-94-6	0.01	0	SE	NA	WA-SED-118	WA-SED-118_20190813_SE	N	8/13/2019	0	0	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SE_NA_Acridine_260-94-6	0.01	0	SE	NA	WA-SED-120	WA-SED-120_20190815_SE	N	8/15/2019	0	0	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SE_NA_Acridine_260-94-6	0.01	0	SE	NA	WA-SED-106B	WA-SED-106B_20191016_SE	N	10/16/2019	0	0	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SE_NA_Acridine_260-94-6	0.01	0	SE	NA	WA-SED-119	WA-SED-119_20190813_SE	N	8/13/2019	0	0	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SE_NA_Acridine_260-94-6	0.01	0	SE	NA	C-2140B	C-2140B_20191016_SE	N	10/16/2019	0	0	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SE_NA_Acridine_260-94-6	0.01	0	SE	NA	WA-SED-101	WA-SED-101_20190813_SE	N	8/13/2019	0	0	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SE_NA_Acridine_260-94-6	0.01	0	SE	NA	WA-SED-110B	WA-SED-110B_20191016_SE	N	10/16/2019	0	0	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SE_NA_Acridine_260-94-6	0.01	0	SE	NA	WA-SED-115B	WA-SED-115B_20191016_SE	N	10/16/2019	0	0	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SE_NA_Acridine_260-94-6	0.01	0	SE	NA	S-079B	S-079B_20191016_SE	N	10/16/2019	0	0	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SE_NA_Acridine_260-94-6	0.01	0	SE	NA	C-2150C	C-2150C_20191016_SE	N	10/16/2019	0	0	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SE_NA_Anthracene_120-12-7	0.004	0	SE	NA	WA-SED-101	WA-SED-101_20190813_SE	N	8/13/2019	0	0	Anthracene	120-12-7	U	0.004	mg/kg
Outside CN RoW_SE_NA_Anthracene_120-12-7	0.004	0	SE	NA	WA-SED-103	WA-SED-103_20190813_SE	N	8/13/2019	0	0	Anthracene	120-12-7	U	0.004	mg/kg
Outside CN RoW_SE_NA_Anthracene_120-12-7	0.004	0	SE	NA	WA-SED-108B	WA-SED-108B_20191016_SE	N	10/16/2019	0	0	Anthracene	120-12-7	U	0.004	mg/kg
Outside CN RoW_SE_NA_Anthracene_120-12-7	0.016	1	SE	NA	WA-SED-110B	WA-SED-110B_20191016_SE	N	10/16/2019	0	0	Anthracene	120-12-7			mg/kg
Outside CN RoW_SE_NA_Anthracene_120-12-7	0.004	0	SE	NA	WA-SED-107B	WA-SED-107B_20191016_SE	N	10/16/2019	0	0	Anthracene	120-12-7	U	0.004	mg/kg
Outside CN RoW_SE_NA_Anthracene_120-12-7	0.004	0	SE	NA	WA-SED-113	WA-SED-113_20190813_SE	N	8/13/2019	0	0	Anthracene	120-12-7	U	0.004	mg/kg
Outside CN RoW_SE_NA_Anthracene_120-12-7	0.004	0	SE	NA	WA-SED-109	WA-SED-109_20190813_SE	N	8/13/2019	0	0	Anthracene	120-12-7	U	0.004	mg/kg
Outside CN RoW_SE_NA_Anthracene_120-12-7	0.029	1	SE	NA	WA-SED-105B	WA-SED-105B_20191016_SE	N	10/16/2019	0	0	Anthracene	120-12-7			mg/kg
Outside CN RoW_SE_NA_Anthracene_120-12-7	0.004	0	SE	NA	WA-SED-104	WA-SED-104_20190813_SE	N	8/13/2019	0	0	Anthracene	120-12-7	U	0.004	mg/kg
Outside CN RoW_SE_NA_Anthracene_120-12-7	0.004	0	SE	NA	C-2140B	C-2140B_20191016_SE	N	10/16/2019	0	0	Anthracene	120-12-7	U	0.004	mg/kg
Outside CN RoW_SE_NA_Anthracene_120-12-7	0.004	0	SE	NA	WA-SED-120	WA-SED-120_20190815_SE	N	8/15/2019	0	0	Anthracene	120-12-7	U	0.004	mg/kg
Outside CN RoW_SE_NA_Anthracene_120-12-7	0.004	0	SE	NA	WA-SED-115B	WA-SED-115B_20191016_SE	N	10/16/2019	0	0	Anthracene	120-12-7	U	0.004	mg/kg
Outside CN RoW_SE_NA_Anthracene_120-12-7	0.004	0	SE	NA	WA-SED-119	WA-SED-119_20190813_SE	N	8/13/2019	0	0	Anthracene	120-12-7	U	0.004	mg/kg
Outside CN RoW_SE_NA_Anthracene_120-12-7	0.004	0	SE	NA	WA-SED-118	WA-SED-118_20190813_SE	N	8/13/2019	0	0	Anthracene	120-12-7	U	0.004	mg/kg
Outside CN RoW_SE_NA_Anthracene_120-12-7	0.004	0	SE	NA	WA-SED-117	WA-SED-117_20190813_SE	N	8/13/2019	0	0	Anthracene	120-12-7	U	0.004	mg/kg
Outside CN RoW_SE_NA_Anthracene_120-12-7	0.004	0	SE	NA	C-2150C	C-2150C_20191016_SE	N	10/16/2019	0	0	Anthracene	120-12-7	U	0.004	mg/kg
Outside CN RoW_SE_NA_Anthracene_120-12-7	0.004	0	SE	NA	WA-SED-106B	WA-SED-106B_20191016_SE	N	10/16/2019	0	0	Anthracene	120-12-7	U	0.004	mg/kg
Outside CN RoW_SE_NA_Anthracene_120-12-7	0.004	0	SE	NA	WA-SED-116	WA-SED-116_20190813_SE	N	8/13/2019	0	0	Anthracene	120-12-7	U	0.004	mg/kg
Outside CN RoW_SE_NA_Anthracene_120-12-7	0.004	0	SE	NA	WA-SED-114	WA-SED-114_20190813_SE	N	8/13/2019	0	0	Anthracene	120-12-7	U	0.004	mg/kg
Outside CN RoW_SE_NA_Anthracene_120-12-7	0.004	0	SE	NA	S-079B	S-079B_20191016_SE	N	10/16/2019	0	0	Anthracene	120-12-7	U	0.004	mg/kg
Outside CN RoW_SE_NA_Anthracene_120-12-7	0.004	0	SE	NA	WA-SED-102B	WA-SED-102B_20191016_SE	N	10/16/2019	0	0	Anthracene	120-12-7	U	0.004	mg/kg
Outside CN RoW_SE_NA_Anthracene_120-12-7	0.004	0	SE	NA	WA-SED-112B	WA-SED-112B_20191016_SE	N	10/16/2019	0	0	Anthracene	120-12-7	U	0.004	mg/kg
Outside CN RoW_SE_NA_Anthracene_120-12-7	0.004	0	SE	NA	WA-SED-111B	WA-SED-111B_20191016_SE	N	10/16/2019	0	0	Anthracene	120-12-7	U	0.004	mg/kg
Outside CN RoW_SE_NA_Benzo(a)anthracene_56-55-3	0.005	0	SE	NA	WA-SED-113	WA-SED-113_20190813_SE	N	8/13/2019	0	0	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(a)anthracene_56-55-3	0.014	1	SE	NA	WA-SED-111B	WA-SED-111B_20191016_SE	N	10/16/2019	0	0	Benzo(a)anthracene	56-55-3			mg/kg
Outside CN RoW_SE_NA_Benzo(a)anthracene_56-55-3	0.0098	1	SE	NA	WA-SED-115B	WA-SED-115B_20191016_SE	N	10/16/2019	0	0	Benzo(a)anthracene	56-55-3			mg/kg
Outside CN RoW_SE_NA_Benzo(a)anthracene_56-55-3	0.005	0	SE	NA	S-079B	S-079B_20191016_SE	N	10/16/2019	0	0	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(a)anthracene_56-55-3	0.005	0	SE	NA	C-2140B	C-2140B_20191016_SE	N	10/16/2019	0	0	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(a)anthracene_56-55-3	0.005	0	SE	NA	WA-SED-109	WA-SED-109_20190813_SE	N	8/13/2019	0	0	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(a)anthracene_56-55-3	0.005	0	SE	NA	WA-SED-114	WA-SED-114_20190813_SE	N	8/13/2019	0	0	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(a)anthracene_56-55-3	0.005	0	SE	NA	WA-SED-118	WA-SED-118_20190813_SE	N	8/13/2019	0	0	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(a)anthracene_56-55-3	0.005	0	SE	NA	WA-SED-116	WA-SED-116_20190813_SE	N	8/13/2019	0	0	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(a)anthracene_56-55-3	0.005	0	SE	NA	WA-SED-120	WA-SED-120_20190815_SE	N	8/15/2019	0	0	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(a)anthracene_56-55-3	0.005	0	SE	NA	WA-SED-117	WA-SED-117_20190813_SE	N	8/13/2019	0	0	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(a)anthracene_56-55-3	0.005	0	SE	NA	WA-SED-106B	WA-SED-106B_20191016_SE	N	10/16/2019	0	0	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(a)anthracene_56-55-3	0.005	0	SE	NA	WA-SED-119	WA-SED-119_20190813_SE	N	8/13/2019	0	0	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(a)anthracene_56-55-3	0.005	0	SE	NA	WA-SED-112B	WA-SED-112B_20191016_SE	N	10/16/2019	0	0	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(a)anthracene_56-55-3	0.058	1	SE	NA	WA-SED-105B	WA-SED-105B_20191016_SE	N	10/16/2019	0	0	Benzo(a)anthracene	56-55-3			mg/kg
Outside CN RoW_SE_NA_Benzo(a)anthracene_56-55-3	0.005	0	SE	NA	WA-SED-104	WA-SED-104_20190813_SE	N	8/13/2019	0	0	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(a)anthracene_56-55-3	0.041	1	SE	NA	WA-SED-110B	WA-SED-110B_20191016_SE	N	10/16/2019	0	0	Benzo(a)anthracene	56-55-3			mg/kg
Outside CN RoW_SE_NA_Benzo(a)anthracene_56-55-3	0.005	0	SE	NA	WA-SED-102B	WA-SED-102B_20191016_SE	N	10/16/2019	0	0	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(a)anthracene_56-55-3	0.005	0	SE	NA	WA-SED-108B	WA-SED-108B_20191016_SE	N	10/16/2019	0	0	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(a)anthracene_56-55-3	0.005	0	SE	NA	WA-SED-107B	WA-SED-107B_20191016_SE	N	10/16/2019	0	0	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(a)anthracene_56-55-3	0.005	0	SE	NA	WA-SED-101	WA-SED-101_20190813_SE	N	8/13/2019	0	0	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(a)anthracene_56-55-3	0.005	0	SE	NA	C-2150C	C-2150C_20191016_SE	N	10/16/2019	0	0	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(a)anthracene_56-55-3	0.005	0	SE	NA	WA-SED-103	WA-SED-103_20190813_SE	N	8/13/2019	0	0	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(a)pyrene_50-32-8	0.005	0	SE	NA	C-2140B	C-2140B_20191016_SE	N	10/16/2019	0	0	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(a)pyrene_50-32-8	0.058	1	SE	NA	WA-SED-110B	WA-SED-110B_20191016_SE	N	10/16/2019	0	0	Benzo(a)pyrene	50-32-8			mg/kg
Outside CN RoW_SE_NA_Benzo(a)pyrene_50-32-8	0.005	0	SE	NA	WA-SED-118	WA-SED-118_20190813_SE	N	8/13/2019	0	0	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(a)pyrene_50-32-8	0.016	1	SE	NA	WA-SED-111B	WA-SED-111B_20191016_SE	N	10/16/2019	0	0	Benzo(a)pyrene	50-32-8			mg/kg
Outside CN RoW_SE_NA_Benzo(a)pyrene_50-32-8	0.005	0	SE	NA	WA-SED-103	WA-SED-103_20190813_SE	N	8/13/2019	0	0	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(a)pyrene_50-32-8	0.005	0	SE	NA	WA-SED-101	WA-SED-101_20190813_SE	N	8/13/2019	0	0	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(a)pyrene_50-32-8	0.005	0	SE	NA	WA-SED-114	WA-SED-114_20190813_SE	N	8/13/2019	0	0	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(a)pyrene_50-32-8	0.005	0	SE	NA	WA-SED-104	WA-SED-104_20190813_SE	N	8/13/2019	0	0	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(a)pyrene_50-32-8	0.005	0	SE	NA	C-2150C	C-2150C_20191016_SE	N	10/16/2019	0	0	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(a)pyrene_50-32-8	0.005	0	SE	NA	WA-SED-107B	WA-SED-107B_20191016_SE	N	10/16/2019	0	0	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(a)pyrene_50-32-8	0.005	0	SE	NA	WA-SED-116	WA-SED-116_20190813_SE	N	8/13/2019	0	0	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(a)pyrene_50-32-8	0.005	0	SE	NA	WA-SED-117	WA-SED-117_20190813_SE	N	8/13/2019	0	0	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(a)pyrene_50-32-8	0.005	0	SE	NA	WA-SED-108B	WA-SED-108B_20191016_SE	N	10/16/2019	0	0	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(a)pyrene_50-32-8	0.005	0	SE	NA	S-079B	S-079B_20191016_SE	N	10/16/2019	0	0	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(a)pyrene_50-32-8	0.005	0	SE	NA	WA-SED-112B	WA-SED-112B_20191016_SE	N	10/16/2019	0	0	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(a)pyrene_50-32-8	0.005	0	SE	NA	WA-SED-115B	WA-SED-115B_20191016_SE	N	10/16/2019	0	0	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(a)pyrene_50-32-8	0.005	0	SE	NA	WA-SED-120	WA-SED-120_20190815_SE	N	8/15/2019	0	0	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(a)pyrene_50-32-8	0.005	0	SE	NA	WA-SED-113	WA-SED-113_20190813_SE	N	8/13/2019	0	0	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(a)pyrene_50-32-8	0.005	0	SE	NA	WA-SED-109	WA-SED-109_20190813_SE	N	8/13/2019	0	0	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(a)pyrene_50-32-8	0.005	0	SE	NA	WA-SED-102B	WA-SED-102B_20191016_SE	N	10/16/2019	0	0	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(a)pyrene_50-32-8	0.047	1	SE	NA	WA-SED-105B	WA-SED-105B_20191016_SE	N	10/16/2019	0	0	Benzo(a)pyrene	50-32-8			mg/kg
Outside CN RoW_SE_NA_Benzo(a)pyrene_50-32-8	0.005	0	SE	NA	WA-SED-119	WA-SED-119_20190813_SE	N	8/13/2019	0	0	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(a)pyrene_50-32-8	0.005	0	SE	NA	WA-SED-106B	WA-SED-106B_20191016_SE	N	10/16/2019	0	0	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SE	NA	WA-SED-113	WA-SED-113_20190813_SE	N	8/13/2019	0	0	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SE	NA	WA-SED-109	WA-SED-109_20190813_SE	N	8/13/2019	0	0	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.016	1	SE	NA	WA-SED-101	WA-SED-101_20190813_SE	N	8/13/2019	0	0	Benzo(b&j)fluoranthene	205-99-2_205-82-3			mg/kg
Outside CN RoW_SE_NA_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SE	NA	WA-SED-119	WA-SED-119_20190813_SE	N	8/13/2019	0	0	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SE	NA	WA-SED-114	WA-SED-114_20190813_SE	N	8/13/2019	0	0	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SE	NA	WA-SED-104	WA-SED-104_20190813_SE	N	8/13/2019	0	0	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SE	NA	WA-SED-116	WA-SED-116_20190813_SE	N	8/13/2019	0	0	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.0073	1	SE	NA	WA-SED-107B	WA-SED-107B_20191016_SE	N	10/16/2019	0	0	Benzo(b&j)fluoranthene	205-99-2_205-82-3			mg/kg
Outside CN RoW_SE_NA_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SE	NA	C-2150C	C-2150C_20191016_SE	N	10/16/2019	0	0	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SE	NA	WA-SED-108B	WA-SED-108B_20191016_SE	N	10/16/2019	0	0	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SE	NA	WA-SED-106B	WA-SED-106B_20191016_SE	N	10/16/2019	0	0	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.0075	1	SE	NA	WA-SED-102B	WA-SED-102B_20191016_SE	N	10/16/2019	0	0	Benzo(b&j)fluoranthene	205-99-2_205-82-3			mg/kg
Outside CN RoW_SE_NA_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.088	1	SE	NA	WA-SED-105B	WA-SED-105B_20191016_SE	N	10/16/2019	0	0	Benzo(b&j)fluoranthene	205-99-2_205-82-3			mg/kg
Outside CN RoW_SE_NA_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.13	1	SE	NA	WA-SED-110B	WA-SED-110B_20191016_SE	N	10/16/2019	0	0	Benzo(b&j)fluoranthene	205-99-2_205-82-3			mg/kg
Outside CN RoW_SE_NA_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.0099	1	SE	NA	S-079B	S-079B_20191016_SE	N	10/16/2019	0	0	Benzo(b&j)fluoranthene	205-99-2_205-82-3			mg/kg
Outside CN RoW_SE_NA_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SE	NA	C-2140B	C-2140B_20191016_SE	N	10/16/2019	0	0	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SE	NA	WA-SED-120	WA-SED-120_20190815_SE	N	8/15/2019	0	0	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.033	1	SE	NA	WA-SED-111B	WA-SED-111B_20191016_SE	N	10/16/2019	0	0	Benzo(b&j)fluoranthene	205-99-2_205-82-3			mg/kg
Outside CN RoW_SE_NA_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.014	1	SE	NA	WA-SED-117	WA-SED-117_20190813_SE	N	8/13/2019	0	0	Benzo(b&j)fluoranthene	205-99-2_205-82-3			mg/kg
Outside CN RoW_SE_NA_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.011	1	SE	NA	WA-SED-112B	WA-SED-112B_20191016_SE	N	10/16/2019	0	0	Benzo(b&j)fluoranthene	205-99-2_205-82-3			mg/kg
Outside CN RoW_SE_NA_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.02	1	SE	NA	WA-SED-115B	WA-SED-115B_20191016_SE	N	10/16/2019	0	0	Benzo(b&j)fluoranthene	205-99-2_205-82-3			mg/kg
Outside CN RoW_SE_NA_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SE	NA	WA-SED-103	WA-SED-103_20190813_SE	N	8/13/2019	0	0	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SE	NA	WA-SED-118	WA-SED-118_20190813_SE	N	8/13/2019	0	0	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(c)phenanthrene_195-19-7	0.012	1	SE	NA	WA-SED-110B	WA-SED-110B_20191016_SE	N	10/16/2019	0	0	Benzo(c)phenanthrene	195-19-7			mg/kg
Outside CN RoW_SE_NA_Benzo(c)phenanthrene_195-19-7	0.005	0	SE	NA	WA-SED-111B	WA-SED-111B_20191016_SE	N	10/16/2019	0	0	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(c)phenanthrene_195-19-7	0.005	0	SE	NA	WA-SED-118	WA-SED-118_20190813_SE	N	8/13/2019	0	0	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(c)phenanthrene_195-19-7	0.005	0	SE	NA	WA-SED-101	WA-SED-101_20190813_SE	N	8/13/2019	0	0	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(c)phenanthrene_195-19-7	0.005	0	SE	NA	WA-SED-103	WA-SED-103_20190813_SE	N	8/13/2019	0	0	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(c)phenanthrene_195-19-7	0.005	0	SE	NA	WA-SED-102B	WA-SED-102B_20191016_SE	N	10/16/2019	0	0	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(c)phenanthrene_195-19-7	0.005	0	SE	NA	S-079B	S-079B_20191016_SE	N	10/16/2019	0	0	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(c)phenanthrene_195-19-7	0.005	0	SE	NA	WA-SED-115B	WA-SED-115B_20191016_SE	N	10/16/2019	0	0	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(c)phenanthrene_195-19-7	0.011	1	SE	NA	WA-SED-105B	WA-SED-105B_20191016_SE	N	10/16/2019	0	0	Benzo(c)phenanthrene	195-19-7			mg/kg
Outside CN RoW_SE_NA_Benzo(c)phenanthrene_195-19-7	0.005	0	SE	NA	WA-SED-114	WA-SED-114_20190813_SE	N	8/13/2019	0	0	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(c)phenanthrene_195-19-7	0.005	0	SE	NA	WA-SED-104	WA-SED-104_20190813_SE	N	8/13/2019	0	0	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(c)phenanthrene_195-19-7	0.005	0	SE	NA	C-2150C	C-2150C_20191016_SE	N	10/16/2019	0	0	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(c)phenanthrene_195-19-7	0.005	0	SE	NA	WA-SED-112B	WA-SED-112B_20191016_SE	N	10/16/2019	0	0	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(c)phenanthrene_195-19-7	0.005	0	SE	NA	WA-SED-116	WA-SED-116_20190813_SE	N	8/13/2019	0	0	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(c)phenanthrene_195-19-7	0.005	0	SE	NA	WA-SED-109	WA-SED-109_20190813_SE	N	8/13/2019	0	0	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(c)phenanthrene_195-19-7	0.005	0	SE	NA	WA-SED-117	WA-SED-117_20190813_SE	N	8/13/2019	0	0	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(c)phenanthrene_195-19-7	0.005	0	SE	NA	WA-SED-120	WA-SED-120_20190815_SE	N	8/15/2019	0	0	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(c)phenanthrene_195-19-7	0.005	0	SE	NA	WA-SED-119	WA-SED-119_20190813_SE	N	8/13/2019	0	0	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(c)phenanthrene_195-19-7	0.005	0	SE	NA	WA-SED-106B	WA-SED-106B_20191016_SE	N	10/16/2019	0	0	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(c)phenanthrene_195-19-7	0.005	0	SE	NA	WA-SED-113	WA-SED-113_20190813_SE	N	8/13/2019	0	0	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(c)phenanthrene_195-19-7	0.005	0	SE	NA	C-2140B	C-2140B_20191016_SE	N	10/16/2019	0	0	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(c)phenanthrene_195-19-7	0.005	0	SE	NA	WA-SED-108B	WA-SED-108B_20191016_SE	N	10/16/2019	0	0	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(c)phenanthrene_195-19-7	0.005	0	SE	NA	WA-SED-107B	WA-SED-107B_20191016_SE	N	10/16/2019	0	0	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(e)pyrene_192-97-2	0.005	0	SE	NA	C-2150C	C-2150C_20191016_SE	N	10/16/2019	0	0	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(e)pyrene_192-97-2	0.005	0	SE	NA	WA-SED-114	WA-SED-114_20190813_SE	N	8/13/2019	0	0	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(e)pyrene_192-97-2	0.005	0	SE	NA	WA-SED-116	WA-SED-116_20190813_SE	N	8/13/2019	0	0	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(e)pyrene_192-97-2	0.005	0	SE	NA	WA-SED-120	WA-SED-120_20190815_SE	N	8/15/2019	0	0	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(e)pyrene_192-97-2	0.005	0	SE	NA	WA-SED-103	WA-SED-103_20190813_SE	N	8/13/2019	0	0	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(e)pyrene_192-97-2	0.005	0	SE	NA	WA-SED-109	WA-SED-109_20190813_SE	N	8/13/2019	0	0	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(e)pyrene_192-97-2	0.005	0	SE	NA	WA-SED-112B	WA-SED-112B_20191016_SE	N	10/16/2019	0	0	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(e)pyrene_192-97-2	0.005	0	SE	NA	WA-SED-104	WA-SED-104_20190813_SE	N	8/13/2019	0	0	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(e)pyrene_192-97-2	0.005	0	SE	NA	WA-SED-117	WA-SED-117_20190813_SE	N	8/13/2019	0	0	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(e)pyrene_192-97-2	0.005	0	SE	NA	WA-SED-118	WA-SED-118_20190813_SE	N	8/13/2019	0	0	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(e)pyrene_192-97-2	0.005	0	SE	NA	C-2140B	C-2140B_20191016_SE	N	10/16/2019	0	0	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(e)pyrene_192-97-2	0.005	0	SE	NA	WA-SED-113	WA-SED-113_20190813_SE	N	8/13/2019	0	0	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(e)pyrene_192-97-2	0.0095	1	SE	NA	WA-SED-101	WA-SED-101_20190813_SE	N	8/13/2019	0	0	Benzo(e)pyrene	192-97-2			mg/kg
Outside CN RoW_SE_NA_Benzo(e)pyrene_192-97-2	0.073	1	SE	NA	WA-SED-110B	WA-SED-110B_20191016_SE	N	10/16/2019	0	0	Benzo(e)pyrene	192-97-2			mg/kg
Outside CN RoW_SE_NA_Benzo(e)pyrene_192-97-2	0.0074	1	SE	NA	S-079B	S-079B_20191016_SE	N	10/16/2019	0	0	Benzo(e)pyrene	192-97-2			mg/kg
Outside CN RoW_SE_NA_Benzo(e)pyrene_192-97-2	0.012	1	SE	NA	WA-SED-115B	WA-SED-115B_20191016_SE	N	10/16/2019	0	0	Benzo(e)pyrene	192-97-2			mg/kg
Outside CN RoW_SE_NA_Benzo(e)pyrene_192-97-2	0.005	0	SE	NA	WA-SED-119	WA-SED-119_20190813_SE	N	8/13/2019	0	0	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(e)pyrene_192-97-2	0.017	1	SE	NA	WA-SED-111B	WA-SED-111B_20191016_SE	N	10/16/2019	0	0	Benzo(e)pyrene	192-97-2			mg/kg
Outside CN RoW_SE_NA_Benzo(e)pyrene_192-97-2	0.005	0	SE	NA	WA-SED-102B	WA-SED-102B_20191016_SE	N	10/16/2019	0	0	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(e)pyrene_192-97-2	0.005	0	SE	NA	WA-SED-106B	WA-SED-106B_20191016_SE	N	10/16/2019	0	0	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(e)pyrene_192-97-2	0.005	0	SE	NA	WA-SED-107B	WA-SED-107B_20191016_SE	N	10/16/2019	0	0	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(e)pyrene_192-97-2	0.005	0	SE	NA	WA-SED-108B	WA-SED-108B_20191016_SE	N	10/16/2019	0	0	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(e)pyrene_192-97-2	0.046	1	SE	NA	WA-SED-105B	WA-SED-105B_20191016_SE	N	10/16/2019	0	0	Benzo(e)pyrene	192-97-2			mg/kg
Outside CN RoW_SE_NA_Benzo(g,h,i)perylene_191-24-2	0.005	0	SE	NA	WA-SED-103	WA-SED-103_20190813_SE	N	8/13/2019	0	0	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(g,h,i)perylene_191-24-2	0.005	0	SE	NA	WA-SED-116	WA-SED-116_20190813_SE	N	8/13/2019	0	0	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(g,h,i)perylene_191-24-2	0.005	0	SE	NA	WA-SED-102B	WA-SED-102B_20191016_SE	N	10/16/2019	0	0	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(g,h,i)perylene_191-24-2	0.022	1	SE	NA	WA-SED-105B	WA-SED-105B_20191016_SE	N	10/16/2019	0	0	Benzo(g,h,i)perylene	191-24-2			mg/kg
Outside CN RoW_SE_NA_Benzo(g,h,i)perylene_191-24-2	0.005	0	SE	NA	WA-SED-120	WA-SED-120_20190815_SE	N	8/15/2019	0	0	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(g,h,i)perylene_191-24-2	0.005	0	SE	NA	WA-SED-119	WA-SED-119_20190813_SE	N	8/13/2019	0	0	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(g,h,i)perylene_191-24-2	0.005	0	SE	NA	WA-SED-118	WA-SED-118_20190813_SE	N	8/13/2019	0	0	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(g,h,i)perylene_191-24-2	0.005	0	SE	NA	C-2150C	C-2150C_20191016_SE	N	10/16/2019	0	0	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(g,h,i)perylene_191-24-2	0.005	0	SE	NA	WA-SED-113	WA-SED-113_20190813_SE	N	8/13/2019	0	0	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(g,h,i)perylene_191-24-2	0.051	1	SE	NA	WA-SED-110B	WA-SED-110B_20191016_SE	N	10/16/2019	0	0	Benzo(g,h,i)perylene	191-24-2			mg/kg
Outside CN RoW_SE_NA_Benzo(g,h,i)perylene_191-24-2	0.005	0	SE	NA	WA-SED-101	WA-SED-101_20190813_SE	N	8/13/2019	0	0	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(g,h,i)perylene_191-24-2	0.005	0	SE	NA	WA-SED-115B	WA-SED-115B_20191016_SE	N	10/16/2019	0	0	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(g,h,i)perylene_191-24-2	0.005	0	SE	NA	WA-SED-106B	WA-SED-106B_20191016_SE	N	10/16/2019	0	0	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(g,h,i)perylene_191-24-2	0.005	0	SE	NA	WA-SED-104	WA-SED-104_20190813_SE	N	8/13/2019	0	0	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(g,h,i)perylene_191-24-2	0.005	0	SE	NA	C-2140B	C-2140B_20191016_SE	N	10/16/2019	0	0	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(g,h,i)perylene_191-24-2	0.005	0	SE	NA	WA-SED-109	WA-SED-109_20190813_SE	N	8/13/2019	0	0	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(g,h,i)perylene_191-24-2	0.005	0	SE	NA	WA-SED-117	WA-SED-117_20190813_SE	N	8/13/2019	0	0	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(g,h,i)perylene_191-24-2	0.014	1	SE	NA	WA-SED-111B	WA-SED-111B_20191016_SE	N	10/16/2019	0	0	Benzo(g,h,i)perylene	191-24-2			mg/kg
Outside CN RoW_SE_NA_Benzo(g,h,i)perylene_191-24-2	0.005	0	SE	NA	WA-SED-112B	WA-SED-112B_20191016_SE	N	10/16/2019	0	0	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(g,h,i)perylene_191-24-2	0.005	0	SE	NA	WA-SED-108B	WA-SED-108B_20191016_SE	N	10/16/2019	0	0	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(g,h,i)perylene_191-24-2	0.005	0	SE	NA	WA-SED-107B	WA-SED-107B_20191016_SE	N	10/16/2019	0	0	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(g,h,i)perylene_191-24-2	0.005	0	SE	NA	S-079B	S-079B_20191016_SE	N	10/16/2019	0	0	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(g,h,i)perylene_191-24-2	0.005	0	SE	NA	WA-SED-114	WA-SED-114_20190813_SE	N	8/13/2019	0	0	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(k)fluoranthene_207-08-9	0.043	1	SE	NA	WA-SED-110B	WA-SED-110B_20191016_SE	N	10/16/2019	0	0	Benzo(k)fluoranthene	207-08-9			mg/kg

TABLE B.5
DATA INPUT FOR PROUCL SOFTWARE
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Notes:
The maximum of the field duplicate and parent sample pairs were applied and a detect was chosen over a non-detect value.

ProUCL Group	ProUCL Result	ProUCL Flag	Medium	Soil Zone	Location	Sample ID	Sample Type	Sample Date	Start Depth (m)	End Depth (m)	COPC	CASRN	Qualifier	Detection Limit for Non-Detects	Unit
Outside CN RoW_SE_NA_Benzo(k)fluoranthene_207-08-9	0.005	0	SE	NA	S-079B	S-079B_20191016_SE	N	10/16/2019	0	0	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(k)fluoranthene_207-08-9	0.005	0	SE	NA	C-2150C	C-2150C_20191016_SE	N	10/16/2019	0	0	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(k)fluoranthene_207-08-9	0.005	0	SE	NA	WA-SED-115B	WA-SED-115B_20191016_SE	N	10/16/2019	0	0	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(k)fluoranthene_207-08-9	0.005	0	SE	NA	WA-SED-104	WA-SED-104_20190813_SE	N	8/13/2019	0	0	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(k)fluoranthene_207-08-9	0.005	0	SE	NA	WA-SED-101	WA-SED-101_20190813_SE	N	8/13/2019	0	0	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(k)fluoranthene_207-08-9	0.005	0	SE	NA	WA-SED-102B	WA-SED-102B_20191016_SE	N	10/16/2019	0	0	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(k)fluoranthene_207-08-9	0.005	0	SE	NA	WA-SED-112B	WA-SED-112B_20191016_SE	N	10/16/2019	0	0	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(k)fluoranthene_207-08-9	0.005	0	SE	NA	WA-SED-117	WA-SED-117_20190813_SE	N	8/13/2019	0	0	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(k)fluoranthene_207-08-9	0.005	0	SE	NA	WA-SED-116	WA-SED-116_20190813_SE	N	8/13/2019	0	0	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(k)fluoranthene_207-08-9	0.028	1	SE	NA	WA-SED-105B	WA-SED-105B_20191016_SE	N	10/16/2019	0	0	Benzo(k)fluoranthene	207-08-9			mg/kg
Outside CN RoW_SE_NA_Benzo(k)fluoranthene_207-08-9	0.005	0	SE	NA	C-2140B	C-2140B_20191016_SE	N	10/16/2019	0	0	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(k)fluoranthene_207-08-9	0.005	0	SE	NA	WA-SED-114	WA-SED-114_20190813_SE	N	8/13/2019	0	0	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(k)fluoranthene_207-08-9	0.011	1	SE	NA	WA-SED-111B	WA-SED-111B_20191016_SE	N	10/16/2019	0	0	Benzo(k)fluoranthene	207-08-9			mg/kg
Outside CN RoW_SE_NA_Benzo(k)fluoranthene_207-08-9	0.005	0	SE	NA	WA-SED-109	WA-SED-109_20190813_SE	N	8/13/2019	0	0	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(k)fluoranthene_207-08-9	0.005	0	SE	NA	WA-SED-113	WA-SED-113_20190813_SE	N	8/13/2019	0	0	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(k)fluoranthene_207-08-9	0.005	0	SE	NA	WA-SED-120	WA-SED-120_20190815_SE	N	8/15/2019	0	0	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(k)fluoranthene_207-08-9	0.005	0	SE	NA	WA-SED-106B	WA-SED-106B_20191016_SE	N	10/16/2019	0	0	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(k)fluoranthene_207-08-9	0.005	0	SE	NA	WA-SED-119	WA-SED-119_20190813_SE	N	8/13/2019	0	0	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(k)fluoranthene_207-08-9	0.005	0	SE	NA	WA-SED-118	WA-SED-118_20190813_SE	N	8/13/2019	0	0	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(k)fluoranthene_207-08-9	0.005	0	SE	NA	WA-SED-108B	WA-SED-108B_20191016_SE	N	10/16/2019	0	0	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(k)fluoranthene_207-08-9	0.005	0	SE	NA	WA-SED-107B	WA-SED-107B_20191016_SE	N	10/16/2019	0	0	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(k)fluoranthene_207-08-9	0.005	0	SE	NA	WA-SED-103	WA-SED-103_20190813_SE	N	8/13/2019	0	0	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Chrysene_218-01-9	0.005	0	SE	NA	WA-SED-118	WA-SED-118_20190813_SE	N	8/13/2019	0	0	Chrysene	218-01-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Chrysene_218-01-9	0.005	0	SE	NA	WA-SED-119	WA-SED-119_20190813_SE	N	8/13/2019	0	0	Chrysene	218-01-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Chrysene_218-01-9	0.005	0	SE	NA	WA-SED-120	WA-SED-120_20190815_SE	N	8/15/2019	0	0	Chrysene	218-01-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Chrysene_218-01-9	0.005	0	SE	NA	WA-SED-107B	WA-SED-107B_20191016_SE	N	10/16/2019	0	0	Chrysene	218-01-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Chrysene_218-01-9	0.005	0	SE	NA	C-2140B	C-2140B_20191016_SE	N	10/16/2019	0	0	Chrysene	218-01-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Chrysene_218-01-9	0.005	0	SE	NA	WA-SED-108B	WA-SED-108B_20191016_SE	N	10/16/2019	0	0	Chrysene	218-01-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Chrysene_218-01-9	0.005	0	SE	NA	WA-SED-116	WA-SED-116_20190813_SE	N	8/13/2019	0	0	Chrysene	218-01-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Chrysene_218-01-9	0.005	0	SE	NA	C-2150C	C-2150C_20191016_SE	N	10/16/2019	0	0	Chrysene	218-01-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Chrysene_218-01-9	0.1	1	SE	NA	WA-SED-105B	WA-SED-105B_20191016_SE	N	10/16/2019	0	0	Chrysene	218-01-9			mg/kg
Outside CN RoW_SE_NA_Chrysene_218-01-9	0.017	1	SE	NA	WA-SED-115B	WA-SED-115B_20191016_SE	N	10/16/2019	0	0	Chrysene	218-01-9			mg/kg
Outside CN RoW_SE_NA_Chrysene_218-01-9	0.005	0	SE	NA	WA-SED-112B	WA-SED-112B_20191016_SE	N	10/16/2019	0	0	Chrysene	218-01-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Chrysene_218-01-9	0.021	1	SE	NA	WA-SED-111B	WA-SED-111B_20191016_SE	N	10/16/2019	0	0	Chrysene	218-01-9			mg/kg
Outside CN RoW_SE_NA_Chrysene_218-01-9	0.081	1	SE	NA	WA-SED-110B	WA-SED-110B_20191016_SE	N	10/16/2019	0	0	Chrysene	218-01-9			mg/kg
Outside CN RoW_SE_NA_Chrysene_218-01-9	0.005	0	SE	NA	S-079B	S-079B_20191016_SE	N	10/16/2019	0	0	Chrysene	218-01-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Chrysene_218-01-9	0.005	0	SE	NA	WA-SED-109	WA-SED-109_20190813_SE	N	8/13/2019	0	0	Chrysene	218-01-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Chrysene_218-01-9	0.005	0	SE	NA	WA-SED-104	WA-SED-104_20190813_SE	N	8/13/2019	0	0	Chrysene	218-01-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Chrysene_218-01-9	0.005	0	SE	NA	WA-SED-113	WA-SED-113_20190813_SE	N	8/13/2019	0	0	Chrysene	218-01-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Chrysene_218-01-9	0.005	0	SE	NA	WA-SED-117	WA-SED-117_20190813_SE	N	8/13/2019	0	0	Chrysene	218-01-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Chrysene_218-01-9	0.005	0	SE	NA	WA-SED-103	WA-SED-103_20190813_SE	N	8/13/2019	0	0	Chrysene	218-01-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Chrysene_218-01-9	0.005	0	SE	NA	WA-SED-114	WA-SED-114_20190813_SE	N	8/13/2019	0	0	Chrysene	218-01-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Chrysene_218-01-9	0.0083	1	SE	NA	WA-SED-101	WA-SED-101_20190813_SE	N	8/13/2019	0	0	Chrysene	218-01-9			mg/kg
Outside CN RoW_SE_NA_Chrysene_218-01-9	0.005	0	SE	NA	WA-SED-102B	WA-SED-102B_20191016_SE	N	10/16/2019	0	0	Chrysene	218-01-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Chrysene_218-01-9	0.005	0	SE	NA	WA-SED-106B	WA-SED-106B_20191016_SE	N	10/16/2019	0	0	Chrysene	218-01-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Fluoranthene_206-44-0	0.005	0	SE	NA	WA-SED-103	WA-SED-103_20190813_SE	N	8/13/2019	0	0	Fluoranthene	206-44-0	U	0.005	mg/kg
Outside CN RoW_SE_NA_Fluoranthene_206-44-0	0.005	0	SE	NA	WA-SED-104	WA-SED-104_20190813_SE	N	8/13/2019	0	0	Fluoranthene	206-44-0	U	0.005	mg/kg
Outside CN RoW_SE_NA_Fluoranthene_206-44-0	0.005	0	SE	NA	WA-SED-118	WA-SED-118_20190813_SE	N	8/13/2019	0	0	Fluoranthene	206-44-0	U	0.005	mg/kg
Outside CN RoW_SE_NA_Fluoranthene_206-44-0	0.0091	1	SE	NA	WA-SED-114	WA-SED-114_20190813_SE	N	8/13/2019	0	0	Fluoranthene	206-44-0			mg/kg
Outside CN RoW_SE_NA_Fluoranthene_206-44-0	0.005	0	SE	NA	C-2140B	C-2140B_20191016_SE	N	10/16/2019	0	0	Fluoranthene	206-44-0	U	0.005	mg/kg
Outside CN RoW_SE_NA_Fluoranthene_206-44-0	0.043	1	SE	NA	WA-SED-115B	WA-SED-115B_20191016_SE	N	10/16/2019	0	0	Fluoranthene	206-44-0			mg/kg
Outside CN RoW_SE_NA_Fluoranthene_206-44-0	0.005	0	SE	NA	C-2150C	C-2150C_20191016_SE	N	10/16/2019	0	0	Fluoranthene	206-44-0	U	0.005	mg/kg
Outside CN RoW_SE_NA_Fluoranthene_206-44-0	0.0077	1	SE	NA	S-079B	S-079B_20191016_SE	N	10/16/2019	0	0	Fluoranthene	206-44-0			mg/kg
Outside CN RoW_SE_NA_Fluoranthene_206-44-0	0.01	1	SE	NA	WA-SED-112B	WA-SED-112B_20191016_SE	N	10/16/2019	0	0	Fluoranthene	206-44-0			mg/kg
Outside CN RoW_SE_NA_Fluoranthene_206-44-0	0.0082	1	SE	NA	WA-SED-106B	WA-SED-106B_20191016_SE	N	10/16/2019	0	0	Fluoranthene	206-44-0			mg/kg
Outside CN RoW_SE_NA_Fluoranthene_206-44-0	0.005	0	SE	NA	WA-SED-119	WA-SED-119_20190813_SE	N	8/13/2019	0	0	Fluoranthene	206-44-0	U	0.005	mg/kg
Outside CN RoW_SE_NA_Fluoranthene_206-44-0	0.005	0	SE	NA	WA-SED-116	WA-SED-116_20190813_SE	N	8/13/2019	0	0	Fluoranthene	206-44-0	U	0.005	mg/kg
Outside CN RoW_SE_NA_Fluoranthene_206-44-0	0.013	1	SE	NA	WA-SED-107B	WA-SED-107B_20191016_SE	N	10/16/2019	0	0	Fluoranthene	206-44-0			mg/kg
Outside CN RoW_SE_NA_Fluoranthene_206-44-0	0.017	1	SE	NA	WA-SED-101	WA-SED-101_20190813_SE	N	8/13/2019	0	0	Fluoranthene	206-44-0			mg/kg
Outside CN RoW_SE_NA_Fluoranthene_206-44-0	0.005	0	SE	NA	WA-SED-113	WA-SED-113_20190813_SE	N	8/13/2019	0	0	Fluoranthene	206-44-0	U	0.005	mg/kg
Outside CN RoW_SE_NA_Fluoranthene_206-44-0	0.005	0	SE	NA	WA-SED-109	WA-SED-109_20190813_SE	N	8/13/2019	0	0	Fluoranthene	206-44-0	U	0.005	mg/kg
Outside CN RoW_SE_NA_Fluoranthene_206-44-0	0.005	0	SE	NA	WA-SED-108B	WA-SED-108B_20191016_SE	N	10/16/2019	0	0	Fluoranthene	206-44-0	U	0.005	mg/kg
Outside CN RoW_SE_NA_Fluoranthene_206-44-0	0.005	0	SE	NA	WA-SED-120	WA-SED-120_20190815_SE	N	8/15/2019	0	0	Fluoranthene	206-44-0	U	0.005	mg/kg
Outside CN RoW_SE_NA_Fluoranthene_206-44-0	0.14	1	SE	NA	WA-SED-110B	WA-SED-110B_20191016_SE	N	10/16/2019	0	0	Fluoranthene	206-44-0			mg/kg
Outside CN RoW_SE_NA_Fluoranthene_206-44-0	0.16	1	SE	NA	WA-SED-105B	WA-SED-105B_20191016_SE	N	10/16/2019	0	0	Fluoranthene	206-44-0			mg/kg
Outside CN RoW_SE_NA_Fluoranthene_206-44-0	0.046	1	SE	NA	WA-SED-111B	WA-SED-111B_20191016_SE	N	10/16/2019	0	0	Fluoranthene	206-44-0			mg/kg
Outside CN RoW_SE_NA_Fluoranthene_206-44-0	0.0081	1	SE	NA	WA-SED-102B	WA-SED-102B_20191016_SE	N	10/16/2019	0	0	Fluoranthene	206-44-0			mg/kg
Outside CN RoW_SE_NA_Fluoranthene_206-44-0	0.012	1	SE	NA	WA-SED-117	WA-SED-117_20190813_SE	N	8/13/2019	0	0	Fluoranthene	206-44-0			mg/kg
Outside CN RoW_SE_NA_Fluorene_86-73-7	0.0086	1	SE	NA	WA-SED-115B	WA-SED-115B_20191016_SE	N	10/16/2019	0	0	Fluorene	86-73-7			mg/kg
Outside CN RoW_SE_NA_Fluorene_86-73-7	0.005	0	SE	NA	WA-SED-120	WA-SED-120_20190815_SE	N	8/15/2019	0	0	Fluorene	86-73-7	U	0.005	mg/kg
Outside CN RoW_SE_NA_Fluorene_86-73-7	0.0096	1	SE	NA	WA-SED-105B	WA-SED-105B_20191016_SE	N	10/16/2019	0	0	Fluorene	86-73-7			mg/kg
Outside CN RoW_SE_NA_Fluorene_86-73-7	0.005	0	SE	NA	WA-SED-117	WA-SED-117_20190813_SE	N	8/13/2019	0	0	Fluorene	86-73-7	U	0.005	mg/kg
Outside CN RoW_SE_NA_Fluorene_86-73-7	0.005	0	SE	NA	WA-SED-119	WA-SED-119_20190813_SE	N	8/13/2019	0	0	Fluorene	86-73-7	U	0.005	mg/kg
Outside CN RoW_SE_NA_Fluorene_86-73-7	0.005	0	SE	NA	WA-SED-114	WA-SED-114_20190813_SE	N	8/13/2019	0	0	Fluorene	86-73-7	U	0.005	mg/kg
Outside CN RoW_SE_NA_Fluorene_86-73-7	0.005	0	SE	NA	WA-SED-109	WA-SED-109_20190813_SE	N	8/13/2019	0	0	Fluorene	86-73-7	U	0.005	mg/kg
Outside CN RoW_SE_NA_Fluorene_86-73-7	0.005	0	SE	NA	WA-SED-118	WA-SED-118_20190813_SE	N	8/13/2019	0	0	Fluorene	86-73-7	U	0.005	mg/kg
Outside CN RoW_SE_NA_Fluorene_86-73-7	0.005	0	SE	NA	S-079B	S-079B_20191016_SE	N	10/16/2019	0	0	Fluorene	86-73-7	U	0.005	mg/kg
Outside CN RoW_SE_NA_Fluorene_86-73-7	0.005	0	SE	NA	WA-SED-116	WA-SED-116_20190813_SE	N	8/13/2019	0	0	Fluorene	86-73-7	U	0.005	mg/kg
Outside CN RoW_SE_NA_Fluorene_86-73-7	0.005	0	SE	NA	WA-SED-113	WA-SED-113_20190813_SE	N	8/13/2019	0	0	Fluorene	86-73-7	U	0.005	mg/kg
Outside CN RoW_SE_NA_Fluorene_86-73-7	0.005	0	SE	NA	WA-SED-110B	WA-SED-110B_20191016_SE	N	10/16/2019	0	0	Fluorene	86-73-7	U	0.005	mg/kg
Outside CN RoW_SE_NA_Fluorene_86-73-7	0.005	0	SE	NA	WA-SED-102B	WA-SED-102B_20191016_SE	N	10/16/2019	0	0	Fluorene	86-73-7	U	0.005	mg/kg
Outside CN RoW_SE_NA_Fluorene_86-73-7	0.005	0	SE	NA	WA-SED-111B	WA-SED-111B_20191016_SE	N	10/16/2019	0	0	Fluorene	86-73-7	U	0.005	mg/kg
Outside CN RoW_SE_NA_Fluorene_86-73-7	0.005	0	SE	NA	WA-SED-107B	WA-SED-107B_20191016_SE	N	10/16/2019	0	0	Fluorene	86-73-7	U	0.005	mg/kg
Outside CN RoW_SE_NA_Fluorene_86-73-7	0.005	0	SE	NA	WA-SED-108B	WA-SED-108B_20191016_SE	N	10/16/2019	0	0	Fluorene	86-73-7	U	0.005	mg/kg
Outside CN RoW_SE_NA_Fluorene_86-73-7	0.005	0	SE	NA	WA-SED-106B	WA-SED-106B_20191016_SE	N	10/16/2019	0	0	Fluorene	86-73-7	U	0.005	mg/kg
Outside CN RoW_SE_NA_Fluorene_86-73-7	0.005	0	SE	NA	WA-SED-112B	WA-SED-112B_20191016_SE	N	10/16/2019	0	0	Fluorene	86-73-7	U	0.005	mg/kg
Outside CN RoW_SE_NA_Fluorene_86-73-7	0.005	0	SE	NA	C-2140B	C-2140B_20191016_SE	N	10/16/2019	0	0	Fluorene	86-73-7	U	0.005	mg/kg
Outside CN RoW_SE_NA_Fluorene_86-73-7	0.005	0	SE	NA	WA-SED-101	WA-SED-101_20190813_SE	N	8/13/2019	0	0	Fluorene	86-73-7	U	0.005	mg/kg
Outside CN RoW_SE_NA_Fluorene_86-73-7	0.005	0	SE	NA	WA-SED-103	WA-SED-103_20190813_SE	N	8/13/2019	0	0	Fluorene	86-73-7	U	0.005	mg/kg
Outside CN RoW_SE_NA_Fluorene_86-73-7	0.005	0	SE	NA	C-2150C	C-2150C_20191016_SE	N	10/16/2019	0	0	Fluorene	86-73-7	U	0.005	mg/kg
Outside CN RoW_SE_NA_Fluorene_86-73-7	0.005	0	SE	NA	WA-SED-104	WA-SED-104_20190813_SE	N	8/13/2019	0	0	Fluorene	86-73-7	U	0.005	mg/kg
Outside CN RoW_SE_NA_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SE	NA	C-2150C	C-2150C_20191016_SE	N	10/16/2019	0	0	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
Outside CN RoW_SE_NA_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SE	NA	WA-SED-101	WA-SED-101_20190813_SE	N	8/13/2019	0	0	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
Outside CN RoW_SE_NA_Indeno(1,2,3-cd)pyrene_193-39-5	0.054	1	SE	NA	WA-SED-110B	WA-SED-110B_20191016_SE	N	10/16/2019	0	0	Indeno (1,2,3-cd)pyrene	193-39-5			mg/kg
Outside CN RoW_SE_NA_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SE	NA	S-079B	S-079B_20191016_SE	N	10/16/2019	0	0	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
Outside CN RoW_SE_NA_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SE	NA	WA-SED-103	WA-SED-103_20190813_SE	N	8/13/2019	0	0	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
Outside CN RoW_SE_NA_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SE	NA	WA-SED-115B	WA-SED-115B_20191016_SE	N	10/16/2019	0	0	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
Outside CN RoW_SE_NA_Indeno(1,2,3-cd)pyrene_193-39-5	0.014	1	SE	NA	WA-SED-111B	WA-SED-111B_20191016_SE	N	10/16/2019	0	0	Indeno (1,2,3-cd)pyrene	193-39-5			mg/kg
Outside CN RoW_SE_NA_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SE	NA	WA-SED-112B	WA-SED-112B_20191016_SE	N	10/16/2019	0	0	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
Outside CN RoW_SE_NA_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SE	NA	WA-SED-119	WA-SED-119_20190813_SE	N	8/13/2019	0	0	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
Outside CN RoW_SE_NA_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SE	NA	WA-SED-107B	WA-SED-107B_20191016_SE	N	10/16/2019	0	0	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
Outside CN RoW_SE_NA_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SE	NA	WA-SED-102B	WA-SED-102B_20191016_SE	N	10/16/2019	0	0	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
Outside CN RoW_SE_NA_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SE	NA	WA-SED-117	WA-SED-117_20190813_SE	N	8/13/2019	0	0	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
Outside CN RoW_SE_NA_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SE	NA	WA-SED-109	WA-SED-109_20190813_SE	N	8/13/2019	0	0	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
Outside CN RoW_SE_NA_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SE	NA	WA-SED-114	WA-SED-114_20190813_SE	N	8/13/2019	0	0	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
Outside CN RoW_SE_NA_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SE	NA	WA-SED-104	WA-SED-104_20190813_SE	N	8/13/2019	0	0	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
Outside CN RoW_SE_NA_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SE	NA	C-2140B	C-2140B_20191016_SE	N	10/16/2019	0	0	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
Outside CN RoW_SE_NA_Indeno(1,2,3-cd)pyrene_193-39-5	0.022	1	SE	NA	WA-SED-105B	WA-SED-105B_20191016_SE	N	10/16/2019	0	0	Indeno (1,2,3-cd)pyrene	193-39-5			mg/kg
Outside CN RoW_SE_NA_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SE	NA	WA-SED-113	WA-SED-113_20190813_SE	N	8/13/2019	0	0	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
Outside CN RoW_SE_NA_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SE	NA	WA-SED-108B	WA-SED-108B_20191016_SE	N	10/16/2019	0	0	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
Outside CN RoW_SE_NA_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SE	NA	WA-SED-106B	WA-SED-106B_20191016_SE	N	10/16/2019	0	0	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
Outside CN RoW_SE_NA_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SE	NA	WA-SED-116	WA-SED-116_20190813_SE	N	8/13/2019	0	0	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
Outside CN RoW_SE_NA_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SE	NA	WA-SED-118	WA-SED-118_20190813_SE	N	8/13/2019	0	0	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
Outside CN RoW_SE_NA_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SE	NA	WA-SED-120	WA-SED-120_20190815_SE	N	8/15/2019	0	0	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
Outside CN RoW_SE_NA_Methylnaphthalene, 2-_91-57-6	0.005	0	SE	NA	WA-SED-101	WA-SED-101_20190813_SE	N	8/13/2019	0	0	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SE_NA_Methylnaphthalene, 2-_91-57-6	0.005	0	SE	NA	WA-SED-109	WA-SED-109_20190813_SE	N	8/13/2019	0	0	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SE_NA_Methylnaphthalene, 2-_91-57-6	0.005	0	SE	NA	WA-SED-114	WA-SED-114_20190813_SE	N	8/13/2019	0	0	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SE_NA_Methylnaphthalene, 2-_91-57-6	0.005	0	SE	NA	WA-SED-104	WA-SED-104_20190813_SE	N	8/13/2019	0	0	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SE_NA_Methylnaphthalene, 2-_91-57-6	0.005	0	SE	NA	WA-SED-116	WA-SED-116_20190813_SE	N	8/13/2019	0	0	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SE_NA_Methylnaphthalene, 2-_91-57-6	0.005	0	SE	NA	WA-SED-117	WA-SED-117_20190813_SE	N	8/13/2019	0	0	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SE_NA_Methylnaphthalene, 2-_91-57-6	0.005	0	SE	NA	WA-SED-118	WA-SED-118_20190813_SE	N	8/13/2019	0	0	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SE_NA_Methylnaphthalene, 2-_91-57-6	0.005	0	SE	NA	WA-SED-120	WA-SED-120_20190815_SE	N	8/15/2019	0	0	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SE_NA_Methylnaphthalene, 2-_91-57-6	0.005	0	SE	NA	WA-SED-107B	WA-SED-107B_20191016_SE	N	10/16/2019	0	0	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SE_NA_Methylnaphthalene, 2-_91-57-6	0.005	0	SE	NA	WA-SED-119	WA-SED-119_20190813_SE	N	8/13/2019	0	0	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SE_NA_Methylnaphthalene, 2-_91-57-6	0.005	0	SE	NA	C-2140B	C-2140B_20191016_SE	N	10/16/2019	0	0	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SE_NA_Methylnaphthalene, 2-_91-57-6	0.005	0	SE	NA	WA-SED-103	WA-SED-103_20190813_SE	N	8/13/2019	0	0	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SE_NA_Methylnaphthalene, 2-_91-57-6	0.005	0	SE	NA	C-2150C	C-2150C_20191016_SE	N	10/16/2019	0	0	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SE_NA_Methylnaphthalene, 2-_91-57-6	0.005	0	SE	NA	WA-SED-113	WA-SED-113_20190813_SE	N	8/13/2019	0	0	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SE_NA_Methylnaphthalene, 2-_91-57-6	0.005	0	SE	NA	WA-SED-102B	WA-SED-102B_20191016_SE	N	10/16/2019	0	0	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SE_NA_Methylnaphthalene, 2-_91-57-6	0.0086	1	SE	NA	WA-SED-105B	WA-SED-105B_20191016_SE	N	10/16/2019	0	0	Methylnaphthalene, 2-	91-57-6			mg/kg
Outside CN RoW_SE_NA_Methylnaphthalene, 2-_91-57-6	0.005	0	SE	NA	WA-SED-108B	WA-SED-108B_20191016_SE	N	10/16/2019	0	0	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SE_NA_Methylnaphthalene, 2-_91-57-6	0.005	0	SE	NA	WA-SED-112B	WA-SED-112B_20191016_SE	N	10/16/2019	0	0	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SE_NA_Methylnaphthalene, 2-_91-57-6	0.005	0	SE	NA	WA-SED-106B	WA-SED-106B_20191016_SE	N	10/16/2019	0	0	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SE_NA_Methylnaphthalene, 2-_91-57-6	0.005	0	SE	NA	S-079B	S-079B_20191016_SE	N	10/16/2019	0	0	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SE_NA_Methylnaphthalene, 2-_91-57-6	0.005	0	SE	NA	WA-SED-111B	WA-SED-111B_20191016_SE	N	10/16/2019	0	0	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SE_NA_Methylnaphthalene, 2-_91-57-6	0.005	0	SE	NA	WA-SED-110B	WA-SED-110B_20191016_SE	N	10/16/2019	0	0	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SE_NA_Methylnaphthalene, 2-_91-57-6	0.0078	1	SE	NA	WA-SED-115B	WA-SED-115B_20191016_SE	N	10/16/2019	0	0	Methylnaphthalene, 2-	91-57-6			mg/kg
Outside CN RoW_SE_NA_Naphthalene_91-20-3	0.005	0	SE	NA	S-079B	S-079B_20191016_SE	N	10/16/2019	0	0	Naphthalene	91-20-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Naphthalene_91-20-3	0.005	0	SE	NA	C-2140B	C-2140B_20191016_SE	N	10/16/2019	0	0	Naphthalene	91-20-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Naphthalene_91-20-3	0.005	0	SE	NA	WA-SED-101	WA-SED-101_20190813_SE	N	8/13/2019	0	0	Naphthalene	91-20-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Naphthalene_91-20-3	0.005	0	SE	NA	WA-SED-112B	WA-SED-112B_20191016_SE	N	10/16/2019	0	0	Naphthalene	91-20-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Naphthalene_91-20-3	0.005	0	SE	NA	WA-SED-102B	WA-SED-102B_20191016_SE	N	10/16/2019	0	0	Naphthalene	91-20-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Naphthalene_91-20-3	0.005	0	SE	NA	WA-SED-105B	WA-SED-105B_20191016_SE	N	10/16/2019	0	0	Naphthalene	91-20-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Naphthalene_91-20-3	0.005	0	SE	NA	C-2150C	C-2150C_20191016_SE	N	10/16/2019	0	0	Naphthalene	91-20-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Naphthalene_91-20-3	0.005	0	SE	NA	WA-SED-111B	WA-SED-111B_20191016_SE	N	10/16/2019	0	0	Naphthalene	91-20-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Naphthalene_91-20-3	0.005	0	SE	NA	WA-SED-114	WA-SED-114_20190813_SE	N	8/13/2019	0	0	Naphthalene	91-20-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Naphthalene_91-20-3	0.005	0	SE	NA	WA-SED-115B	WA-SED-115B_20191016_SE	N	10/16/2019	0	0	Naphthalene	91-20-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Naphthalene_91-20-3	0.005	0	SE	NA	WA-SED-107B	WA-SED-107B_20191016_SE	N	10/16/2019	0	0	Naphthalene	91-20-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Naphthalene_91-20-3	0.005	0	SE	NA	WA-SED-117	WA-SED-117_20190813_SE	N	8/13/2019	0	0	Naphthalene	91-20-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Naphthalene_91-20-3	0.0069	1	SE	NA	WA-SED-110B	WA-SED-110B_20191016_SE	N	10/16/2019	0	0	Naphthalene	91-20-3			mg/kg
Outside CN RoW_SE_NA_Naphthalene_91-20-3	0.005	0	SE	NA	WA-SED-119	WA-SED-119_20190813_SE	N	8/13/2019	0	0	Naphthalene	91-20-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Naphthalene_91-20-3	0.005	0	SE	NA	WA-SED-106B	WA-SED-106B_20191016_SE	N	10/16/2019	0	0	Naphthalene	91-20-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Naphthalene_91-20-3	0.005	0	SE	NA	WA-SED-116	WA-SED-116_20190813_SE	N	8/13/2019	0	0	Naphthalene	91-20-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Naphthalene_91-20-3	0.005	0	SE	NA	WA-SED-120	WA-SED-120_20190815_SE	N	8/15/2019	0	0	Naphthalene	91-20-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Naphthalene_91-20-3	0.005	0	SE	NA	WA-SED-103	WA-SED-103_20190813_SE	N	8/13/2019	0	0	Naphthalene	91-20-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Naphthalene_91-20-3	0.005	0	SE	NA	WA-SED-108B	WA-SED-108B_20191016_SE	N	10/16/2019	0	0	Naphthalene	91-20-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Naphthalene_91-20-3	0.005	0	SE	NA	WA-SED-113	WA-SED-113_20190813_SE	N	8/13/2019	0	0	Naphthalene	91-20-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Naphthalene_91-20-3	0.005	0	SE	NA	WA-SED-104	WA-SED-104_20190813_SE	N	8/13/2019	0	0	Naphthalene	91-20-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Naphthalene_91-20-3	0.005	0	SE	NA	WA-SED-109	WA-SED-109_20190813_SE	N	8/13/2019	0	0	Naphthalene	91-20-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Naphthalene_91-20-3	0.005	0	SE	NA	WA-SED-118	WA-SED-118_20190813_SE	N	8/13/2019	0	0	Naphthalene	91-20-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Perylene_198-55-0	0.005	0	SE	NA	WA-SED-108B	WA-SED-108B_20191016_SE	N	10/16/2019	0	0	Perylene	198-55-0	U	0.005	mg/kg
Outside CN RoW_SE_NA_Perylene_198-55-0	0.025	1	SE	NA	WA-SED-117	WA-SED-117_20190813_SE	N	8/13/2019	0	0	Perylene	198-55-0			mg/kg
Outside CN RoW_SE_NA_Perylene_198-55-0	0.024	1	SE	NA	WA-SED-101	WA-SED-101_20190813_SE	N	8/13/2019	0	0	Perylene	198-55-0			mg/kg
Outside CN RoW_SE_NA_Perylene_198-55-0	0.0094	1	SE	NA	WA-SED-103	WA-SED-103_20190813_SE	N	8/13/2019	0	0	Perylene	198-55-0			mg/kg
Outside CN RoW_SE_NA_Perylene_198-55-0	0.014	1	SE	NA	WA-SED-104	WA-SED-104_20190813_SE	N	8/13/2019	0	0	Perylene	198-55-0			mg/kg
Outside CN RoW_SE_NA_Perylene_198-55-0	0.019	1	SE	NA	WA-SED-109	WA-SED-109_20190813_SE	N	8/13/2019	0	0	Perylene	198-55-0			mg/kg
Outside CN RoW_SE_NA_Perylene_198-55-0	0.014	1	SE	NA	WA-SED-114	WA-SED-114_20190813_SE	N	8/13/2019	0	0	Perylene	198-55-0			mg/kg
Outside CN RoW_SE_NA_Perylene_198-55-0	0.005	0	SE	NA	WA-SED-116	WA-SED-116_20190813_SE	N	8/13/2019	0	0	Perylene	198-55-0	U	0.005	mg/kg
Outside CN RoW_SE_NA_Perylene_198-55-0	0.0084	1	SE	NA	WA-SED-113	WA-SED-113_20190813_SE	N	8/13/2019	0	0	Perylene	198-55-0			mg/kg
Outside CN RoW_SE_NA_Perylene_198-55-0	0.005	0	SE	NA	WA-SED-118	WA-SED-118_20190813_SE	N	8/13/2019	0	0	Perylene	198-55-0	U	0.005	mg/kg
Outside CN RoW_SE_NA_Perylene_198-55-0	0.028	1	SE	NA	WA-SED-110B	WA-SED-110B_20191016_SE	N	10/16/2019	0	0	Perylene	198-55-0			mg/kg
Outside CN RoW_SE_NA_Perylene_198-55-0	0.018	1	SE	NA	WA-SED-105B	WA-SED-105B_20191016_SE	N	10/16/2019	0	0	Perylene	198-55-0			mg/kg
Outside CN RoW_SE_NA_Perylene_198-55-0	0.0075	1	SE	NA	WA-SED-111B	WA-SED-111B_20191016_SE	N	10/16/2019	0	0	Perylene	198-55-0			mg/kg
Outside CN RoW_SE_NA_Perylene_198-55-0	0.021	1	SE	NA	WA-SED-120	WA-SED-120_20190815_SE	N	8/15/2019	0	0	Perylene	198-55-0			mg/kg
Outside CN RoW_SE_NA_Perylene_198-55-0	0.005	0	SE	NA	C-2140B	C-2140B_20191016_SE	N	10/16/2019	0	0	Perylene	198-55-0	U	0.005	mg/kg
Outside CN RoW_SE_NA_Perylene_198-55-0	0.0066	1	SE	NA	C-2150C	C-2150C_20191016_SE	N	10/16/2019	0	0	Perylene	198-55-0			mg/kg
Outside CN RoW_SE_NA_Perylene_198-55-0	0.005	0	SE	NA	WA-SED-107B	WA-SED-107B_20191016_SE	N	10/16/2019	0	0	Perylene	198-55-0	U	0.005	mg/kg
Outside CN RoW_SE_NA_Perylene_198-55-0	0.021	1	SE	NA	WA-SED-115B	WA-SED-115B_20191016_SE	N	10/16/2019	0	0	Perylene	198-55-0			mg/kg
Outside CN RoW_SE_NA_Perylene_198-55-0	0.021	1	SE	NA	S-079B	S-079B_20191016_SE	N	10/16/2019	0	0	Perylene	198-55-0			mg/kg
Outside CN RoW_SE_NA_Perylene_198-55-0	0.0097	1	SE	NA	WA-SED-119	WA-SED-119_20190813_SE	N	8/13/2019	0	0	Perylene	198-55-0			mg/kg
Outside CN RoW_SE_NA_Perylene_198-55-0	0.0093	1	SE	NA	WA-SED-106B	WA-SED-106B_20191016_SE	N	10/16/2019	0	0	Perylene	198-55-0			mg/kg
Outside CN RoW_SE_NA_Perylene_198-55-0	0.017	1	SE	NA	WA-SED-112B	WA-SED-112B_20191016_SE	N	10/16/2019	0	0	Perylene	198-55-0			mg/kg
Outside CN RoW_SE_NA_Perylene_198-55-0	0.031	1	SE	NA	WA-SED-102B	WA-SED-102B_20191016_SE	N	10/16/2019	0	0	Perylene	198-55-0			mg/kg
Outside CN RoW_SE_NA_Phenanthrene_85-01-8	0.01	1	SE	NA	WA-SED-101	WA-SED-101_20190813_SE	N	8/13/2019	0	0	Phenanthrene	85-01-8			mg/kg
Outside CN RoW_SE_NA_Phenanthrene_85-01-8	0.005	0	SE	NA	S-079B	S-079B_20191016_SE	N	10/16/2019	0	0	Phenanthrene	85-01-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Phenanthrene_85-01-8	0.025	1	SE	NA	WA-SED-106B	WA-SED-106B_20191016_SE	N	10/16/2019	0	0	Phenanthrene	85-01-8			mg/kg
Outside CN RoW_SE_NA_Phenanthrene_85-01-8	0.031	1	SE	NA	WA-SED-115B	WA-SED-115B_20191016_SE	N	10/16/2019	0	0	Phenanthrene	85-01-8			mg/kg
Outside CN RoW_SE_NA_Phenanthrene_85-01-8	0.005	0	SE	NA	WA-SED-112B	WA-SED-112B_20191016_SE	N	10/16/2019	0	0	Phenanthrene	85-01-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Phenanthrene_85-01-8	0.005	0	SE	NA	C-2150C	C-2150C_20191016_SE	N	10/16/2019	0	0	Phenanthrene	85-01-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Phenanthrene_85-01-8	0.005	0	SE	NA	WA-SED-118	WA-SED-118_20190813_SE	N	8/13/2019	0	0	Phenanthrene	85-01-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Phenanthrene_85-01-8	0.005	0	SE	NA	WA-SED-107B	WA-SED-107B_20191016_SE	N	10/16/2019	0	0	Phenanthrene	85-01-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Phenanthrene_85-01-8	0.005	0	SE	NA	WA-SED-116	WA-SED-116_20190813_SE	N	8/13/2019	0	0	Phenanthrene	85-01-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Phenanthrene_85-01-8	0.0096	1	SE	NA	WA-SED-114	WA-SED-114_20190813_SE	N	8/13/2019	0	0	Phenanthrene	85-01-8			mg/kg

TABLE B.5
DATA INPUT FOR PROUCL SOFTWARE
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Notes:
The maximum of the field duplicate and parent sample pairs were applied and a detect was chosen over a non-detect value.

ProUCL Group	ProUCL Result	ProUCL Flag	Medium	Soil Zone	Location	Sample ID	Sample Type	Sample Date	Start Depth (m)	End Depth (m)	COPC	CASRN	Qualifier	Detection Limit for Non-Detects	Unit
Outside CN RoW_SE_NA_Phenanthrene_85-01-8	0.005	0	SE	NA	WA-SED-119	WA-SED-119_20190813_SE	N	8/13/2019	0	0	Phenanthrene	85-01-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Phenanthrene_85-01-8	0.017	1	SE	NA	WA-SED-111B	WA-SED-111B_20191016_SE	N	10/16/2019	0	0	Phenanthrene	85-01-8			mg/kg
Outside CN RoW_SE_NA_Phenanthrene_85-01-8	0.048	1	SE	NA	WA-SED-105B	WA-SED-105B_20191016_SE	N	10/16/2019	0	0	Phenanthrene	85-01-8			mg/kg
Outside CN RoW_SE_NA_Phenanthrene_85-01-8	0.005	0	SE	NA	WA-SED-103	WA-SED-103_20190813_SE	N	8/13/2019	0	0	Phenanthrene	85-01-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Phenanthrene_85-01-8	0.005	0	SE	NA	WA-SED-117	WA-SED-117_20190813_SE	N	8/13/2019	0	0	Phenanthrene	85-01-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Phenanthrene_85-01-8	0.005	0	SE	NA	WA-SED-104	WA-SED-104_20190813_SE	N	8/13/2019	0	0	Phenanthrene	85-01-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Phenanthrene_85-01-8	0.005	0	SE	NA	C-2140B	C-2140B_20191016_SE	N	10/16/2019	0	0	Phenanthrene	85-01-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Phenanthrene_85-01-8	0.005	0	SE	NA	WA-SED-109	WA-SED-109_20190813_SE	N	8/13/2019	0	0	Phenanthrene	85-01-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Phenanthrene_85-01-8	0.0079	1	SE	NA	WA-SED-102B	WA-SED-102B_20191016_SE	N	10/16/2019	0	0	Phenanthrene	85-01-8			mg/kg
Outside CN RoW_SE_NA_Phenanthrene_85-01-8	0.005	0	SE	NA	WA-SED-113	WA-SED-113_20190813_SE	N	8/13/2019	0	0	Phenanthrene	85-01-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Phenanthrene_85-01-8	0.005	0	SE	NA	WA-SED-120	WA-SED-120_20190815_SE	N	8/15/2019	0	0	Phenanthrene	85-01-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Phenanthrene_85-01-8	0.034	1	SE	NA	WA-SED-110B	WA-SED-110B_20191016_SE	N	10/16/2019	0	0	Phenanthrene	85-01-8			mg/kg
Outside CN RoW_SE_NA_Phenanthrene_85-01-8	0.005	0	SE	NA	WA-SED-108B	WA-SED-108B_20191016_SE	N	10/16/2019	0	0	Phenanthrene	85-01-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Pyrene_129-00-0	0.005	0	SE	NA	WA-SED-108B	WA-SED-108B_20191016_SE	N	10/16/2019	0	0	Pyrene	129-00-0	U	0.005	mg/kg
Outside CN RoW_SE_NA_Pyrene_129-00-0	0.005	0	SE	NA	WA-SED-104	WA-SED-104_20190813_SE	N	8/13/2019	0	0	Pyrene	129-00-0	U	0.005	mg/kg
Outside CN RoW_SE_NA_Pyrene_129-00-0	0.005	0	SE	NA	WA-SED-103	WA-SED-103_20190813_SE	N	8/13/2019	0	0	Pyrene	129-00-0	U	0.005	mg/kg
Outside CN RoW_SE_NA_Pyrene_129-00-0	0.005	0	SE	NA	WA-SED-113	WA-SED-113_20190813_SE	N	8/13/2019	0	0	Pyrene	129-00-0	U	0.005	mg/kg
Outside CN RoW_SE_NA_Pyrene_129-00-0	0.036	1	SE	NA	WA-SED-115B	WA-SED-115B_20191016_SE	N	10/16/2019	0	0	Pyrene	129-00-0			mg/kg
Outside CN RoW_SE_NA_Pyrene_129-00-0	0.005	0	SE	NA	WA-SED-109	WA-SED-109_20190813_SE	N	8/13/2019	0	0	Pyrene	129-00-0	U	0.005	mg/kg
Outside CN RoW_SE_NA_Pyrene_129-00-0	0.023	1	SE	NA	WA-SED-114	WA-SED-114_20190813_SE	N	8/13/2019	0	0	Pyrene	129-00-0			mg/kg
Outside CN RoW_SE_NA_Pyrene_129-00-0	0.034	1	SE	NA	WA-SED-111B	WA-SED-111B_20191016_SE	N	10/16/2019	0	0	Pyrene	129-00-0			mg/kg
Outside CN RoW_SE_NA_Pyrene_129-00-0	0.005	0	SE	NA	WA-SED-120	WA-SED-120_20190815_SE	N	8/15/2019	0	0	Pyrene	129-00-0	U	0.005	mg/kg
Outside CN RoW_SE_NA_Pyrene_129-00-0	0.005	0	SE	NA	WA-SED-116	WA-SED-116_20190813_SE	N	8/13/2019	0	0	Pyrene	129-00-0	U	0.005	mg/kg
Outside CN RoW_SE_NA_Pyrene_129-00-0	0.0087	1	SE	NA	S-079B	S-079B_20191016_SE	N	10/16/2019	0	0	Pyrene	129-00-0			mg/kg
Outside CN RoW_SE_NA_Pyrene_129-00-0	0.12	1	SE	NA	WA-SED-105B	WA-SED-105B_20191016_SE	N	10/16/2019	0	0	Pyrene	129-00-0			mg/kg
Outside CN RoW_SE_NA_Pyrene_129-00-0	0.0096	1	SE	NA	WA-SED-112B	WA-SED-112B_20191016_SE	N	10/16/2019	0	0	Pyrene	129-00-0			mg/kg
Outside CN RoW_SE_NA_Pyrene_129-00-0	0.11	1	SE	NA	WA-SED-110B	WA-SED-110B_20191016_SE	N	10/16/2019	0	0	Pyrene	129-00-0			mg/kg
Outside CN RoW_SE_NA_Pyrene_129-00-0	0.005	0	SE	NA	WA-SED-118	WA-SED-118_20190813_SE	N	8/13/2019	0	0	Pyrene	129-00-0	U	0.005	mg/kg
Outside CN RoW_SE_NA_Pyrene_129-00-0	0.014	1	SE	NA	WA-SED-107B	WA-SED-107B_20191016_SE	N	10/16/2019	0	0	Pyrene	129-00-0			mg/kg
Outside CN RoW_SE_NA_Pyrene_129-00-0	0.014	1	SE	NA	WA-SED-101	WA-SED-101_20190813_SE	N	8/13/2019	0	0	Pyrene	129-00-0			mg/kg
Outside CN RoW_SE_NA_Pyrene_129-00-0	0.005	0	SE	NA	WA-SED-106B	WA-SED-106B_20191016_SE	N	10/16/2019	0	0	Pyrene	129-00-0	U	0.005	mg/kg
Outside CN RoW_SE_NA_Pyrene_129-00-0	0.0098	1	SE	NA	WA-SED-117	WA-SED-117_20190813_SE	N	8/13/2019	0	0	Pyrene	129-00-0			mg/kg
Outside CN RoW_SE_NA_Pyrene_129-00-0	0.005	0	SE	NA	WA-SED-119	WA-SED-119_20190813_SE	N	8/13/2019	0	0	Pyrene	129-00-0	U	0.005	mg/kg
Outside CN RoW_SE_NA_Pyrene_129-00-0	0.005	0	SE	NA	C-2140B	C-2140B_20191016_SE	N	10/16/2019	0	0	Pyrene	129-00-0	U	0.005	mg/kg
Outside CN RoW_SE_NA_Pyrene_129-00-0	0.005	0	SE	NA	WA-SED-102B	WA-SED-102B_20191016_SE	N	10/16/2019	0	0	Pyrene	129-00-0	U	0.005	mg/kg
Outside CN RoW_SE_NA_Pyrene_129-00-0	0.005	0	SE	NA	C-2150C	C-2150C_20191016_SE	N	10/16/2019	0	0	Pyrene	129-00-0	U	0.005	mg/kg
Outside CN RoW_SE_NA_Quinoline_91-22-5	0.01	0	SE	NA	WA-SED-111B	WA-SED-111B_20191016_SE	N	10/16/2019	0	0	Quinoline	91-22-5	U	0.01	mg/kg
Outside CN RoW_SE_NA_Quinoline_91-22-5	0.01	0	SE	NA	WA-SED-104	WA-SED-104_20190813_SE	N	8/13/2019	0	0	Quinoline	91-22-5	U	0.01	mg/kg
Outside CN RoW_SE_NA_Quinoline_91-22-5	0.01	0	SE	NA	WA-SED-118	WA-SED-118_20190813_SE	N	8/13/2019	0	0	Quinoline	91-22-5	U	0.01	mg/kg
Outside CN RoW_SE_NA_Quinoline_91-22-5	0.01	0	SE	NA	WA-SED-115B	WA-SED-115B_20191016_SE	N	10/16/2019	0	0	Quinoline	91-22-5	U	0.01	mg/kg
Outside CN RoW_SE_NA_Quinoline_91-22-5	0.01	0	SE	NA	WA-SED-110B	WA-SED-110B_20191016_SE	N	10/16/2019	0	0	Quinoline	91-22-5	U	0.01	mg/kg
Outside CN RoW_SE_NA_Quinoline_91-22-5	0.01	0	SE	NA	WA-SED-106B	WA-SED-106B_20191016_SE	N	10/16/2019	0	0	Quinoline	91-22-5	U	0.01	mg/kg
Outside CN RoW_SE_NA_Quinoline_91-22-5	0.01	0	SE	NA	S-079B	S-079B_20191016_SE	N	10/16/2019	0	0	Quinoline	91-22-5	U	0.01	mg/kg
Outside CN RoW_SE_NA_Quinoline_91-22-5	0.01	0	SE	NA	WA-SED-105B	WA-SED-105B_20191016_SE	N	10/16/2019	0	0	Quinoline	91-22-5	U	0.01	mg/kg
Outside CN RoW_SE_NA_Quinoline_91-22-5	0.01	0	SE	NA	WA-SED-108B	WA-SED-108B_20191016_SE	N	10/16/2019	0	0	Quinoline	91-22-5	U	0.01	mg/kg
Outside CN RoW_SE_NA_Quinoline_91-22-5	0.01	0	SE	NA	WA-SED-101	WA-SED-101_20190813_SE	N	8/13/2019	0	0	Quinoline	91-22-5	U	0.01	mg/kg
Outside CN RoW_SE_NA_Quinoline_91-22-5	0.01	0	SE	NA	WA-SED-113	WA-SED-113_20190813_SE	N	8/13/2019	0	0	Quinoline	91-22-5	U	0.01	mg/kg
Outside CN RoW_SE_NA_Quinoline_91-22-5	0.01	0	SE	NA	WA-SED-103	WA-SED-103_20190813_SE	N	8/13/2019	0	0	Quinoline	91-22-5	U	0.01	mg/kg
Outside CN RoW_SE_NA_Quinoline_91-22-5	0.01	0	SE	NA	WA-SED-109	WA-SED-109_20190813_SE	N	8/13/2019	0	0	Quinoline	91-22-5	U	0.01	mg/kg
Outside CN RoW_SE_NA_Quinoline_91-22-5	0.01	0	SE	NA	C-2140B	C-2140B_20191016_SE	N	10/16/2019	0	0	Quinoline	91-22-5	U	0.01	mg/kg
Outside CN RoW_SE_NA_Quinoline_91-22-5	0.01	0	SE	NA	WA-SED-117	WA-SED-117_20190813_SE	N	8/13/2019	0	0	Quinoline	91-22-5	U	0.01	mg/kg
Outside CN RoW_SE_NA_Quinoline_91-22-5	0.01	0	SE	NA	WA-SED-114	WA-SED-114_20190813_SE	N	8/13/2019	0	0	Quinoline	91-22-5	U	0.01	mg/kg
Outside CN RoW_SE_NA_Quinoline_91-22-5	0.01	0	SE	NA	WA-SED-119	WA-SED-119_20190813_SE	N	8/13/2019	0	0	Quinoline	91-22-5	U	0.01	mg/kg
Outside CN RoW_SE_NA_Quinoline_91-22-5	0.01	0	SE	NA	WA-SED-102B	WA-SED-102B_20191016_SE	N	10/16/2019	0	0	Quinoline	91-22-5	U	0.01	mg/kg
Outside CN RoW_SE_NA_Quinoline_91-22-5	0.01	0	SE	NA	WA-SED-120	WA-SED-120_20190815_SE	N	8/15/2019	0	0	Quinoline	91-22-5	U	0.01	mg/kg
Outside CN RoW_SE_NA_Quinoline_91-22-5	0.01	0	SE	NA	WA-SED-116	WA-SED-116_20190813_SE	N	8/13/2019	0	0	Quinoline	91-22-5	U	0.01	mg/kg
Outside CN RoW_SE_NA_Quinoline_91-22-5	0.01	0	SE	NA	WA-SED-107B	WA-SED-107B_20191016_SE	N	10/16/2019	0	0	Quinoline	91-22-5	U	0.01	mg/kg
Outside CN RoW_SE_NA_Quinoline_91-22-5	0.01	0	SE	NA	C-2150C	C-2150C_20191016_SE	N	10/16/2019	0	0	Quinoline	91-22-5	U	0.01	mg/kg
Outside CN RoW_SE_NA_Quinoline_91-22-5	0.01	0	SE	NA	WA-SED-112B	WA-SED-112B_20191016_SE	N	10/16/2019	0	0	Quinoline	91-22-5	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	S-047G	S-047G_20190227_SO	N	2/27/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	S-032B	S-032B_20190227_SO	N	2/27/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-202	WA-SOIL-202_20190814_SO	N	8/14/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	S-047C	S-047C_20190227_SO	N	2/27/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-209	WA-SOIL-209_20190814_SO	N	8/14/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-207	WA-SOIL-207_20190814_SO	N	8/14/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	S-079	S-079_20190227_SO	N	2/27/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-205	WA-SOIL-205_20190814_SO	N	8/14/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-201	WA-SOIL-201_20190814_SO	N	8/14/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-206	WA-SOIL-206_20190814_SO	N	8/14/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	S-036	S-036_20190227_SO	N	2/27/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.011	0	SO	Surface Soil 0-1.5m	S-031	S-031_20190227_SO	N	2/27/2019	0	0.1	Acenaphthene	83-32-9	U	0.011	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	S-044 FLOOR	S-044 FLOOR_20190227_SO	N	2/27/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-208	WA-SOIL-208_20190814_SO	N	8/14/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-204	WA-SOIL-204_20190814_SO	N	8/14/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-203	WA-SOIL-203_20190814_SO	N	8/14/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	S-048	S-048_20190227_SO	N	2/27/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	S-029A-B	S-029A-B_20190304_SO	N	3/4/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	S-039B	S-039B_20190227_SO	N	2/27/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	C-2600B	C-2600B_20200225_SO	N	2/25/2020	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	19-H16-001	19-H16-001_20190609_SO	N	6/9/2019	0	0.15	Acenaphthene	83-32-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	S-314WB	S-314WB_20191016_SO	N	10/16/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	19-H15-001	19-H15-001_20190609_SO	N	6/9/2019	0	0.15	Acenaphthene	83-32-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	DB-011	DB-011_20190302_SO	N	3/2/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.011	1	SO	Surface Soil 0-1.5m	19-H11-001	19-H11-001_20190609_SO	N	6/9/2019	0	0.15	Acenaphthene	83-32-9			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	19-H13-001	19-H13-001_20190609_SO	N	6/9/2019	0	0.15	Acenaphthene	83-32-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	19-H11-002	19-H11-002_20190609_SO	N	6/9/2019	0	0.15	Acenaphthene	83-32-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	19-H14-001	19-H14-001_20190609_SO	N	6/9/2019	0	0.15	Acenaphthene	83-32-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	19-H12-001	19-H12-001_20190609_SO	N	6/9/2019	0	0.15	Acenaphthene	83-32-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	C-2156	C-2156_20190306_SO	N	3/6/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	C-6020	C-6020_20190306_SO	N	3/6/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	C-6042B	C-6042B_20190814_SO	N	8/14/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	S-011	S-011_20190227_SO	N	2/27/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	C-2406-B	C-2406-B_20190310_SO	N	3/10/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	C-2140	C-2140_20190306_SO	N	3/6/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	S-007B	S-007B_20190227_SO	N	2/27/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	C-6042	C-6042_20190306_SO	N	3/6/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.0095	0	SO	Surface Soil 0-1.5m	C-6035B	C-6035B_20190814_SO	N	8/14/2019	0	0.1	Acenaphthene	83-32-9	U	0.0095	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	C-1011W	C-1011W_20190303_SO	N	3/3/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.011	0	SO	Surface Soil 0-1.5m	C-6013B	C-6013B_20190814_SO	N	8/14/2019	0	0.1	Acenaphthene	83-32-9	U	0.011	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	C-2153	C-2153_20190306_SO	N	3/6/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	C-2424	C-2424_20190308_SO	N	3/8/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	S-008	S-008_20190227_SO	N	2/27/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	C-2400	C-2400_20190308_SO	N	3/8/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.0077	1	SO	Surface Soil 0-1.5m	C-2150-B	C-2150-B_20190306_SO	N	3/6/2019	0	0.1	Acenaphthene	83-32-9			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	C-6013	C-6013_20190306_SO	N	3/6/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	C-6219	C-6219_20190309_SO	N	3/9/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	C-2419	C-2419_20190308_SO	N	3/8/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	C-2131	C-2131_20190306_SO	N	3/6/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	C-2146	C-2146_20190306_SO	N	3/6/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	C-1018F	C-1018F_20190303_SO	N	3/3/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	C-2410	C-2410_20190308_SO	N	3/8/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	C-1016F	C-1016F_20190303_SO	N	3/3/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	C-6015B	C-6015B_20190814_SO	N	8/14/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	C-2404	C-2404_20190308_SO	N	3/8/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	C-6204	C-6204_20190309_SO	N	3/9/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	C-2422	C-2422_20190308_SO	N	3/8/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-209	WA-SOIL-209_20190814_SO	N	8/14/2019	0	0.1	Acenaphthylene	208-96-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	S-048	S-048_20190227_SO	N	2/27/2019	0	0.1	Acenaphthylene	208-96-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	S-047G	S-047G_20190227_SO	N	2/27/2019	0	0.1	Acenaphthylene	208-96-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-201	WA-SOIL-201_20190814_SO	N	8/14/2019	0	0.1	Acenaphthylene	208-96-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-203	WA-SOIL-203_20190814_SO	N	8/14/2019	0	0.1	Acenaphthylene	208-96-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	S-047C	S-047C_20190227_SO	N	2/27/2019	0	0.1	Acenaphthylene	208-96-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-207	WA-SOIL-207_20190814_SO	N	8/14/2019	0	0.1	Acenaphthylene	208-96-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-206	WA-SOIL-206_20190814_SO	N	8/14/2019	0	0.1	Acenaphthylene	208-96-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-202	WA-SOIL-202_20190814_SO	N	8/14/2019	0	0.1	Acenaphthylene	208-96-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.011	0	SO	Surface Soil 0-1.5m	S-031	S-031_20190227_SO	N	2/27/2019	0	0.1	Acenaphthylene	208-96-8	U	0.011	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	S-029A-B	S-029A-B_20190304_SO	N	3/4/2019	0	0.1	Acenaphthylene	208-96-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	S-039B	S-039B_20190227_SO	N	2/27/2019	0	0.1	Acenaphthylene	208-96-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	S-044 FLOOR	S-044 FLOOR_20190227_SO	N	2/27/2019	0	0.1	Acenaphthylene	208-96-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-205	WA-SOIL-205_20190814_SO	N	8/14/2019	0	0.1	Acenaphthylene	208-96-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.036	1	SO	Surface Soil 0-1.5m	S-079	S-079_20190227_SO	N	2/27/2019	0	0.1	Acenaphthylene	208-96-8			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	S-036	S-036_20190227_SO	N	2/27/2019	0	0.1	Acenaphthylene	208-96-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	S-032B	S-032B_20190227_SO	N	2/27/2019	0	0.1	Acenaphthylene	208-96-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-204	WA-SOIL-204_20190814_SO	N	8/14/2019	0	0.1	Acenaphthylene	208-96-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-208	WA-SOIL-208_20190814_SO	N	8/14/2019	0	0.1	Acenaphthylene	208-96-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	C-2600B	C-2600B_20200225_SO	N	2/25/2020	0	0.1	Acenaphthylene	208-96-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	19-H11-001	19-H11-001_20190609_SO	N	6/9/2019	0	0.15	Acenaphthylene	208-96-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	19-H13-001	19-H13-001_20190609_SO	N	6/9/2019	0	0.15	Acenaphthylene	208-96-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	DB-011	DB-011_20190302_SO	N	3/2/2019	0	0.1	Acenaphthylene	208-96-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	S-314WB	S-314WB_20191016_SO	N	10/16/2019	0	0.1	Acenaphthylene	208-96-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	19-H12-001	19-H12-001_20190609_SO	N	6/9/2019	0	0.15	Acenaphthylene	208-96-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	19-H11-002	19-H11-002_20190609_SO	N	6/9/2019	0	0.15	Acenaphthylene	208-96-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	19-H16-001	19-H16-001_20190609_SO	N	6/9/2019	0	0.15	Acenaphthylene	208-96-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	19-H14-001	19-H14-001_20190609_SO	N	6/9/2019	0	0.15	Acenaphthylene	208-96-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	19-H15-001	19-H15-001_20190609_SO	N	6/9/2019	0	0.15	Acenaphthylene	208-96-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	C-2404	C-2404_20190308_SO	N	3/8/2019	0	0.1	Acenaphthylene	208-96-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	C-2400	C-2400_20190308_SO	N	3/8/2019	0	0.1	Acenaphthylene	208-96-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	C-2153	C-2153_20190306_SO	N	3/6/2019	0	0.1	Acenaphthylene	208-96-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	C-6042	C-6042_20190306_SO	N	3/6/2019	0	0.1	Acenaphthylene	208-96-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	C-6042B	C-6042B_20190814_SO	N	8/14/2019	0	0.1	Acenaphthylene	208-96-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	C-1011W	C-1011W_20190303_SO	N	3/3/2019	0	0.1	Acenaphthylene	208-96-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.011	0	SO	Surface Soil 0-1.5m	C-6013B	C-6013B_20190814_SO	N	8/14/2019	0	0.1	Acenaphthylene	208-96-8	U	0.011	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	C-2419	C-2419_20190308_SO	N	3/8/2019	0	0.1	Acenaphthylene	208-96-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	C-6013	C-6013_20190306_SO	N	3/6/2019	0	0.1	Acenaphthylene	208-96-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.0091	1	SO	Surface Soil 0-1.5m	C-2140	C-2140_20190306_SO	N	3/6/2019	0	0.1	Acenaphthylene	208-96-8			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	C-6219	C-6219_20190309_SO	N	3/9/2019	0	0.1	Acenaphthylene	208-96-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	C-2156	C-2156_20190306_SO	N	3/6/2019	0	0.1	Acenaphthylene	208-96-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	C-6204	C-6204_20190309_SO	N	3/9/2019	0	0.1	Acenaphthylene	208-96-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	C-2146	C-2146_20190306_SO	N	3/6/2019	0	0.1	Acenaphthylene	208-96-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	C-2131	C-2131_20190306_SO	N	3/6/2019	0	0.1	Acenaphthylene	208-96-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	S-008	S-008_20190227_SO	N	2/27/2019	0	0.1	Acenaphthylene	208-96-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	C-2422	C-2422_20190308_SO	N	3/8/2019	0	0.1	Acenaphthylene	208-96-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	C-1018F	C-1018F_20190303_SO	N	3/3/2019	0	0.1	Acenaphthylene	208-96-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	C-2410	C-2410_20190308_SO	N	3/8/2019	0	0.1	Acenaphthylene	208-96-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.0095	0	SO	Surface Soil 0-1.5m	C-6035B	C-6035B_20190814_SO	N	8/14/2019	0	0.1	Acenaphthylene	208-96-8	U	0.0095	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.0072	1	SO	Surface Soil 0-1.5m	C-2150-B	C-2150-B_20190306_SO	N	3/6/2019	0	0.1	Acenaphthylene	208-96-8			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	C-6015B	C-6015B_20190814_SO	N	8/14/2019	0	0.1	Acenaphthylene	208-96-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	S-007B	S-007B_20190227_SO	N	2/27/2019	0	0.1	Acenaphthylene	208-96-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	C-1016F	C-1016F_20190303_SO	N	3/3/2019	0	0.1	Acenaphthylene	208-96-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	S-011	S-011_20190227_SO	N	2/27/2019	0	0.1	Acenaphthylene	208-96-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	C-2424	C-2424_20190308_SO	N	3/8/2019	0	0.1	Acenaphthylene	208-96-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	C-6020	C-6020_20190306_SO	N	3/6/2019	0	0.1	Acenaphthylene	208-96-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acenaphthylene_208-96-8	0.005	0	SO	Surface Soil 0-1.5m	C-2406-B	C-2406-B_20190310_SO	N	3/10/2019	0	0.1	Acenaphthylene	208-96-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	WA-SOIL-203	WA-SOIL-203_20190814_SO	N	8/14/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	S-032B	S-032B_20190227_SO	N	2/27/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	S-047C	S-047C_20190227_SO	N	2/27/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	WA-SOIL-201	WA-SOIL-201_20190814_SO	N	8/14/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	S-039B	S-039B_20190227_SO	N	2/27/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.021	0	SO	Surface Soil 0-1.5m	S-031	S-031_20190227_SO	N	2/27/2019	0	0.1	Acridine	260-94-6	U	0.021	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	S-048	S-048_20190227_SO	N	2/27/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	S-047G	S-047G_20190227_SO	N	2/27/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	WA-SOIL-204	WA-SOIL-204_20190814_SO	N	8/14/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	WA-SOIL-206	WA-SOIL-206_20190814_SO	N	8/14/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	S-079	S-079_20190227_SO	N	2/27/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	WA-SOIL-209	WA-SOIL-209_20190814_SO	N	8/14/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	S-044 FLOOR	S-044 FLOOR_20190227_SO	N	2/27/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	WA-SOIL-208	WA-SOIL-208_20190814_SO	N	8/14/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	S-036	S-036_20190227_SO	N	2/27/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.068	1	SO	Surface Soil 0-1.5m	WA-SOIL-202	WA-SOIL-202_20190814_SO	N	8/14/2019	0	0.1	Acridine	260-94-6			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	S-029A-B	S-029A-B_20190304_SO	N	3/4/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	WA-SOIL-205	WA-SOIL-205_20190814_SO	N	8/14/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	WA-SOIL-207	WA-SOIL-207_20190814_SO	N	8/14/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	C-2600B	C-2600B_20200225_SO	N	2/25/2020	0	0.1	Acridine	260-94-6	U	0.01	mg/kg

TABLE B.5
DATA INPUT FOR PROUCL SOFTWARE
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Notes:
The maximum of the field duplicate and parent sample pairs were applied and a detect was chosen over a non-detect value.

ProUCL Group	ProUCL Result	ProUCL Flag	Medium	Soil Zone	Location	Sample ID	Sample Type	Sample Date	Start Depth (m)	End Depth (m)	COPC	CASRN	Qualifier	Detection Limit for Non-Detects	Unit
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	19-H13-001	19-H13-001_20190609_SO	N	6/9/2019	0	0.15	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	19-H15-001	19-H15-001_20190609_SO	N	6/9/2019	0	0.15	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	S-314WB	S-314WB_20191016_SO	N	10/16/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	19-H12-001	19-H12-001_20190609_SO	N	6/9/2019	0	0.15	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	19-H14-001	19-H14-001_20190609_SO	N	6/9/2019	0	0.15	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	19-H11-001	19-H11-001_20190609_SO	N	6/9/2019	0	0.15	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	DB-011	DB-011_20190302_SO	N	3/2/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	19-H16-001	19-H16-001_20190609_SO	N	6/9/2019	0	0.15	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	19-H11-002	19-H11-002_20190609_SO	N	6/9/2019	0	0.15	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	C-6013	C-6013_20190306_SO	N	3/6/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	C-2424	C-2424_20190308_SO	N	3/8/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	C-2156	C-2156_20190306_SO	N	3/6/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	C-6204	C-6204_20190309_SO	N	3/9/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	C-6042B	C-6042B_20190814_SO	N	8/14/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.021	0	SO	Surface Soil 0-1.5m	C-6013B	C-6013B_20190814_SO	N	8/14/2019	0	0.1	Acridine	260-94-6	U	0.021	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	C-1018F	C-1018F_20190303_SO	N	3/3/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	C-6042	C-6042_20190306_SO	N	3/6/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	C-2131	C-2131_20190306_SO	N	3/6/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.019	0	SO	Surface Soil 0-1.5m	C-6035B	C-6035B_20190814_SO	N	8/14/2019	0	0.1	Acridine	260-94-6	U	0.019	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	C-1016F	C-1016F_20190303_SO	N	3/3/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	C-6015B	C-6015B_20190814_SO	N	8/14/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	C-6219	C-6219_20190309_SO	N	3/9/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	C-6020	C-6020_20190306_SO	N	3/6/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	C-2146	C-2146_20190306_SO	N	3/6/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	C-1011W	C-1011W_20190303_SO	N	3/3/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	S-008	S-008_20190227_SO	N	2/27/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	S-011	S-011_20190227_SO	N	2/27/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	C-2153	C-2153_20190306_SO	N	3/6/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.015	1	SO	Surface Soil 0-1.5m	C-2150-B	C-2150-B_20190306_SO	N	3/6/2019	0	0.1	Acridine	260-94-6			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	C-2400	C-2400_20190308_SO	N	3/8/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	C-2410	C-2410_20190308_SO	N	3/8/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	C-2422	C-2422_20190308_SO	N	3/8/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	S-007B	S-007B_20190227_SO	N	2/27/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	C-2140	C-2140_20190306_SO	N	3/6/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	C-2419	C-2419_20190308_SO	N	3/8/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	C-2406-B	C-2406-B_20190310_SO	N	3/10/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	C-2404	C-2404_20190308_SO	N	3/8/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	WA-SOIL-207	WA-SOIL-207_20190814_SO	N	8/14/2019	0	0.1	Anthracene	120-12-7	U	0.004	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	WA-SOIL-204	WA-SOIL-204_20190814_SO	N	8/14/2019	0	0.1	Anthracene	120-12-7	U	0.004	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	WA-SOIL-206	WA-SOIL-206_20190814_SO	N	8/14/2019	0	0.1	Anthracene	120-12-7	U	0.004	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	WA-SOIL-209	WA-SOIL-209_20190814_SO	N	8/14/2019	0	0.1	Anthracene	120-12-7	U	0.004	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	S-039B	S-039B_20190227_SO	N	2/27/2019	0	0.1	Anthracene	120-12-7	U	0.004	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	WA-SOIL-208	WA-SOIL-208_20190814_SO	N	8/14/2019	0	0.1	Anthracene	120-12-7	U	0.004	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	S-047C	S-047C_20190227_SO	N	2/27/2019	0	0.1	Anthracene	120-12-7	U	0.004	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	WA-SOIL-202	WA-SOIL-202_20190814_SO	N	8/14/2019	0	0.1	Anthracene	120-12-7	U	0.004	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	S-036	S-036_20190227_SO	N	2/27/2019	0	0.1	Anthracene	120-12-7	U	0.004	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	S-047G	S-047G_20190227_SO	N	2/27/2019	0	0.1	Anthracene	120-12-7	U	0.004	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	S-032B	S-032B_20190227_SO	N	2/27/2019	0	0.1	Anthracene	120-12-7	U	0.004	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	WA-SOIL-203	WA-SOIL-203_20190814_SO	N	8/14/2019	0	0.1	Anthracene	120-12-7	U	0.004	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	S-029A-B	S-029A-B_20190304_SO	N	3/4/2019	0	0.1	Anthracene	120-12-7	U	0.004	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	S-044 FLOOR	S-044 FLOOR_20190227_SO	N	2/27/2019	0	0.1	Anthracene	120-12-7	U	0.004	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.0084	0	SO	Surface Soil 0-1.5m	S-031	S-031_20190227_SO	N	2/27/2019	0	0.1	Anthracene	120-12-7	U	0.0084	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.055	1	SO	Surface Soil 0-1.5m	S-079	S-079_20190227_SO	N	2/27/2019	0	0.1	Anthracene	120-12-7			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	WA-SOIL-201	WA-SOIL-201_20190814_SO	N	8/14/2019	0	0.1	Anthracene	120-12-7	U	0.004	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	WA-SOIL-205	WA-SOIL-205_20190814_SO	N	8/14/2019	0	0.1	Anthracene	120-12-7	U	0.004	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	S-048	S-048_20190227_SO	N	2/27/2019	0	0.1	Anthracene	120-12-7	U	0.004	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	C-2600B	C-2600B_20200225_SO	N	2/25/2020	0	0.1	Anthracene	120-12-7	U	0.004	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.0043	1	SO	Surface Soil 0-1.5m	19-H11-001	19-H11-001_20190609_SO	N	6/9/2019	0	0.15	Anthracene	120-12-7			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	19-H16-001	19-H16-001_20190609_SO	N	6/9/2019	0	0.15	Anthracene	120-12-7	U	0.004	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.0097	1	SO	Surface Soil 0-1.5m	19-H14-001	19-H14-001_20190609_SO	N	6/9/2019	0	0.15	Anthracene	120-12-7			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	19-H11-002	19-H11-002_20190609_SO	N	6/9/2019	0	0.15	Anthracene	120-12-7	U	0.004	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	S-314WB	S-314WB_20191016_SO	N	10/16/2019	0	0.1	Anthracene	120-12-7	U	0.004	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	19-H13-001	19-H13-001_20190609_SO	N	6/9/2019	0	0.15	Anthracene	120-12-7	U	0.004	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	19-H12-001	19-H12-001_20190609_SO	N	6/9/2019	0	0.15	Anthracene	120-12-7	U	0.004	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	19-H15-001	19-H15-001_20190609_SO	N	6/9/2019	0	0.15	Anthracene	120-12-7	U	0.004	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	C-2424	C-2424_20190308_SO	N	3/8/2019	0	0.1	Anthracene	120-12-7	U	0.004	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.0086	1	SO	Surface Soil 0-1.5m	C-2419	C-2419_20190308_SO	N	3/8/2019	0	0.1	Anthracene	120-12-7			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	1	SO	Surface Soil 0-1.5m	C-2153	C-2153_20190306_SO	N	3/6/2019	0	0.1	Anthracene	120-12-7			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.019	1	SO	Surface Soil 0-1.5m	C-2140	C-2140_20190306_SO	N	3/6/2019	0	0.1	Anthracene	120-12-7			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	C-1018F	C-1018F_20190303_SO	N	3/3/2019	0	0.1	Anthracene	120-12-7	U	0.004	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	C-6042	C-6042_20190306_SO	N	3/6/2019	0	0.1	Anthracene	120-12-7	U	0.004	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.0076	0	SO	Surface Soil 0-1.5m	C-6035B	C-6035B_20190814_SO	N	8/14/2019	0	0.1	Anthracene	120-12-7	U	0.0076	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	S-011	S-011_20190227_SO	N	2/27/2019	0	0.1	Anthracene	120-12-7	U	0.004	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	C-2410	C-2410_20190308_SO	N	3/8/2019	0	0.1	Anthracene	120-12-7	U	0.004	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	C-2406-B	C-2406-B_20190310_SO	N	3/10/2019	0	0.1	Anthracene	120-12-7	U	0.004	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	C-6015B	C-6015B_20190814_SO	N	8/14/2019	0	0.1	Anthracene	120-12-7	U	0.004	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	C-1011W	C-1011W_20190303_SO	N	3/3/2019	0	0.1	Anthracene	120-12-7	U	0.004	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	C-6219	C-6219_20190309_SO	N	3/9/2019	0	0.1	Anthracene	120-12-7	U	0.004	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	C-6020	C-6020_20190306_SO	N	3/6/2019	0	0.1	Anthracene	120-12-7	U	0.004	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	C-1016F	C-1016F_20190303_SO	N	3/3/2019	0	0.1	Anthracene	120-12-7	U	0.004	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	DB-011	DB-011_20190302_SO	N	3/2/2019	0	0.1	Anthracene	120-12-7	U	0.004	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	S-007B	S-007B_20190227_SO	N	2/27/2019	0	0.1	Anthracene	120-12-7	U	0.004	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	C-6013	C-6013_20190306_SO	N	3/6/2019	0	0.1	Anthracene	120-12-7	U	0.004	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	C-6204	C-6204_20190309_SO	N	3/9/2019	0	0.1	Anthracene	120-12-7	U	0.004	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	C-2400	C-2400_20190308_SO	N	3/8/2019	0	0.1	Anthracene	120-12-7	U	0.004	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	S-008	S-008_20190227_SO	N	2/27/2019	0	0.1	Anthracene	120-12-7	U	0.004	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.013	1	SO	Surface Soil 0-1.5m	C-2150-B	C-2150-B_20190306_SO	N	3/6/2019	0	0.1	Anthracene	120-12-7			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.0055	1	SO	Surface Soil 0-1.5m	C-2156	C-2156_20190306_SO	N	3/6/2019	0	0.1	Anthracene	120-12-7			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	C-2422	C-2422_20190308_SO	N	3/8/2019	0	0.1	Anthracene	120-12-7	U	0.004	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	C-2404	C-2404_20190308_SO	N	3/8/2019	0	0.1	Anthracene	120-12-7	U	0.004	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	C-2131	C-2131_20190306_SO	N	3/6/2019	0	0.1	Anthracene	120-12-7	U	0.004	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.0084	0	SO	Surface Soil 0-1.5m	C-6013B	C-6013B_20190814_SO	N	8/14/2019	0	0.1	Anthracene	120-12-7	U	0.0084	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.005	1	SO	Surface Soil 0-1.5m	C-2146	C-2146_20190306_SO	N	3/6/2019	0	0.1	Anthracene	120-12-7			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Anthracene_120-12-7	0.004	0	SO	Surface Soil 0-1.5m	C-6042B	C-6042B_20190814_SO	N	8/14/2019	0	0.1	Anthracene	120-12-7	U	0.004	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	S-032B	S-032B_20190227_SO	N	2/27/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	S-029A-B	S-029A-B_20190304_SO	N	3/4/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	S-036	S-036_20190227_SO	N	2/27/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-207	WA-SOIL-207_20190814_SO	N	8/14/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	S-048	S-048_20190227_SO	N	2/27/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-204	WA-SOIL-204_20190814_SO	N	8/14/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-203	WA-SOIL-203_20190814_SO	N	8/14/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	S-047C	S-047C_20190227_SO	N	2/27/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-209	WA-SOIL-209_20190814_SO	N	8/14/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	S-047G	S-047G_20190227_SO	N	2/27/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-201	WA-SOIL-201_20190814_SO	N	8/14/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-205	WA-SOIL-205_20190814_SO	N	8/14/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.011	0	SO	Surface Soil 0-1.5m	S-031	S-031_20190227_SO	N	2/27/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.011	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.12	1	SO	Surface Soil 0-1.5m	S-079	S-079_20190227_SO	N	2/27/2019	0	0.1	Benzo(a)anthracene	56-55-3			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-206	WA-SOIL-206_20190814_SO	N	8/14/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.0082	1	SO	Surface Soil 0-1.5m	WA-SOIL-202	WA-SOIL-202_20190814_SO	N	8/14/2019	0	0.1	Benzo(a)anthracene	56-55-3			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	S-039B	S-039B_20190227_SO	N	2/27/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-208	WA-SOIL-208_20190814_SO	N	8/14/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	S-044 FLOOR	S-044 FLOOR_20190227_SO	N	2/27/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.014	1	SO	Surface Soil 0-1.5m	19-H14-001	19-H14-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(a)anthracene	56-55-3			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	C-2600B	C-2600B_20200225_SO	N	2/25/2020	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	19-H12-001	19-H12-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	19-H11-001	19-H11-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	19-H11-002	19-H11-002_20190609_SO	N	6/9/2019	0	0.15	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	S-314WB	S-314WB_20191016_SO	N	10/16/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	19-H16-001	19-H16-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	19-H15-001	19-H15-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.011	1	SO	Surface Soil 0-1.5m	DB-011	DB-011_20190302_SO	N	3/2/2019	0	0.1	Benzo(a)anthracene	56-55-3			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	19-H13-001	19-H13-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.02	1	SO	Surface Soil 0-1.5m	S-011	S-011_20190227_SO	N	2/27/2019	0	0.1	Benzo(a)anthracene	56-55-3			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.061	1	SO	Surface Soil 0-1.5m	C-2140	C-2140_20190306_SO	N	3/6/2019	0	0.1	Benzo(a)anthracene	56-55-3			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	C-6020	C-6020_20190306_SO	N	3/6/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.0095	0	SO	Surface Soil 0-1.5m	C-6035B	C-6035B_20190814_SO	N	8/14/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.0095	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	S-008	S-008_20190227_SO	N	2/27/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	C-1011W	C-1011W_20190303_SO	N	3/3/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.0084	1	SO	Surface Soil 0-1.5m	C-2156	C-2156_20190306_SO	N	3/6/2019	0	0.1	Benzo(a)anthracene	56-55-3			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	C-6042B	C-6042B_20190814_SO	N	8/14/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	S-007B	S-007B_20190227_SO	N	2/27/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	C-6204	C-6204_20190309_SO	N	3/9/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	C-6219	C-6219_20190309_SO	N	3/9/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	C-6042	C-6042_20190306_SO	N	3/6/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	C-2406-B	C-2406-B_20190310_SO	N	3/10/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.0084	1	SO	Surface Soil 0-1.5m	C-2410	C-2410_20190308_SO	N	3/8/2019	0	0.1	Benzo(a)anthracene	56-55-3			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	C-2422	C-2422_20190308_SO	N	3/8/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	C-2400	C-2400_20190308_SO	N	3/8/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	C-6013	C-6013_20190306_SO	N	3/6/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.011	1	SO	Surface Soil 0-1.5m	C-2146	C-2146_20190306_SO	N	3/6/2019	0	0.1	Benzo(a)anthracene	56-55-3			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	C-2424	C-2424_20190308_SO	N	3/8/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.024	1	SO	Surface Soil 0-1.5m	C-2419	C-2419_20190308_SO	N	3/8/2019	0	0.1	Benzo(a)anthracene	56-55-3			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	C-1016F	C-1016F_20190303_SO	N	3/3/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.0053	1	SO	Surface Soil 0-1.5m	C-2153	C-2153_20190306_SO	N	3/6/2019	0	0.1	Benzo(a)anthracene	56-55-3			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.018	1	SO	Surface Soil 0-1.5m	C-2150-B	C-2150-B_20190306_SO	N	3/6/2019	0	0.1	Benzo(a)anthracene	56-55-3			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	C-6015B	C-6015B_20190814_SO	N	8/14/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.011	0	SO	Surface Soil 0-1.5m	C-6013B	C-6013B_20190814_SO	N	8/14/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.011	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	C-1018F	C-1018F_20190303_SO	N	3/3/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	C-2131	C-2131_20190306_SO	N	3/6/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	C-2404	C-2404_20190308_SO	N	3/8/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.0086	1	SO	Surface Soil 0-1.5m	WA-SOIL-202	WA-SOIL-202_20190814_SO	N	8/14/2019	0	0.1	Benzo(a)pyrene	50-32-8			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.0072	1	SO	Surface Soil 0-1.5m	WA-SOIL-209	WA-SOIL-209_20190814_SO	N	8/14/2019	0	0.1	Benzo(a)pyrene	50-32-8			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-207	WA-SOIL-207_20190814_SO	N	8/14/2019	0	0.1	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.005	0	SO	Surface Soil 0-1.5m	S-044 FLOOR	S-044 FLOOR_20190227_SO	N	2/27/2019	0	0.1	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-205	WA-SOIL-205_20190814_SO	N	8/14/2019	0	0.1	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-206	WA-SOIL-206_20190814_SO	N	8/14/2019	0	0.1	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.01	1	SO	Surface Soil 0-1.5m	S-029A-B	S-029A-B_20190304_SO	N	3/4/2019	0	0.1	Benzo(a)pyrene	50-32-8			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.005	0	SO	Surface Soil 0-1.5m	S-047C	S-047C_20190227_SO	N	2/27/2019	0	0.1	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.11	1	SO	Surface Soil 0-1.5m	S-079	S-079_20190227_SO	N	2/27/2019	0	0.1	Benzo(a)pyrene	50-32-8			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.005	0	SO	Surface Soil 0-1.5m	S-047G	S-047G_20190227_SO	N	2/27/2019	0	0.1	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.005	0	SO	Surface Soil 0-1.5m	S-032B	S-032B_20190227_SO	N	2/27/2019	0	0.1	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-203	WA-SOIL-203_20190814_SO	N	8/14/2019	0	0.1	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-201	WA-SOIL-201_20190814_SO	N	8/14/2019	0	0.1	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.005	0	SO	Surface Soil 0-1.5m	S-048	S-048_20190227_SO	N	2/27/2019	0	0.1	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.011	0	SO	Surface Soil 0-1.5m	S-031	S-031_20190227_SO	N	2/27/2019	0	0.1	Benzo(a)pyrene	50-32-8	U	0.011	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.01	1	SO	Surface Soil 0-1.5m	S-036	S-036_20190227_SO	N	2/27/2019	0	0.1	Benzo(a)pyrene	50-32-8			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.005	0	SO	Surface Soil 0-1.5m	S-039B	S-039B_20190227_SO	N	2/27/2019	0	0.1	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-208	WA-SOIL-208_20190814_SO	N	8/14/2019	0	0.1	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-204	WA-SOIL-204_20190814_SO	N	8/14/2019	0	0.1	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.005	0	SO	Surface Soil 0-1.5m	19-H15-001	19-H15-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.005	0	SO	Surface Soil 0-1.5m	19-H11-001	19-H11-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.005	0	SO	Surface Soil 0-1.5m	C-2600B	C-2600B_20200225_SO	N	2/25/2020	0	0.1	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.005	0	SO	Surface Soil 0-1.5m	19-H12-001	19-H12-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.005	0	SO	Surface Soil 0-1.5m	19-H16-001	19-H16-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.005	0	SO	Surface Soil 0-1.5m	19-H11-002	19-H11-002_20190609_SO	N	6/9/2019	0	0.15	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.013	1	SO	Surface Soil 0-1.5m	DB-011	DB-011_20190302_SO	N	3/2/2019	0	0.1	Benzo(a)pyrene	50-32-8			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.023	1	SO	Surface Soil 0-1.5m	19-H14-001	19-H14-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(a)pyrene	50-32-8			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.005	0	SO	Surface Soil 0-1.5m	19-H13-001	19-H13-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.005	0	SO	Surface Soil 0-1.5m	S-314WB	S-314WB_20191016_SO	N	10/16/2019	0	0.1	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.014	1	SO	Surface Soil 0-1.5m	C-2422	C-2422_20190308_SO	N	3/8/2019	0	0.1	Benzo(a)pyrene	50-32-8			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.005	0	SO	Surface Soil 0-1.5m	C-6219	C-6219_20190309_SO	N	3/9/2019	0	0.1	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.005	0	SO	Surface Soil 0-1.5m	C-2424	C-2424_20190308_SO	N	3/8/2019	0	0.1	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.013	1	SO	Surface Soil 0-1.5m	C-2156	C-2156_20190306_SO	N	3/6/2019	0	0.1	Benzo(a)pyrene	50-32-8			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.005	0	SO	Surface Soil 0-1.5m	C-6013	C-6013_20190306_SO	N	3/6/2019	0	0.1	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.005	0	SO	Surface Soil 0-1.5m	C-2400	C-2400_20190308_SO	N	3/8/2019	0	0.1	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.005	0	SO	Surface Soil 0-1.5m	S-007B	S-007B_20190227_SO	N	2/27/2019	0	0.1	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.036	1	SO	Surface Soil 0-1.5m	C-2419	C-2419_20190308_SO	N	3/8/2019	0	0.1	Benzo(a)pyrene	50-32-8			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.005	0	SO	Surface Soil 0-1.5m	C-2404	C-2404_20190308_SO	N	3/8/2019	0	0.1	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.011	1	SO	Surface Soil 0-1.5m	C-2410	C-2410_20190308_SO	N	3/8/2019	0	0.1	Benzo(a)pyrene	50-32-8			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.005	0	SO	Surface Soil 0-1.5m	S-008	S-008_20190227_SO	N	2/27/2019	0	0.1	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.089	1	SO	Surface Soil 0-1.5m	C-2140	C-2140_20190306_SO	N	3/6/2019	0	0.1	Benzo(a)pyrene	50-32-8			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.005	0	SO	Surface Soil 0-1.5m	C-2406-B	C-2406-B_20190310_SO	N	3/10/2019	0	0.1	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg

TABLE B.5
DATA INPUT FOR PROUCL SOFTWARE
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Notes:
The maximum of the field duplicate and parent sample pairs were applied and a detect was chosen over a non-detect value.

ProUCL Group	ProUCL Result	ProUCL Flag	Medium	Soil Zone	Location	Sample ID	Sample Type	Sample Date	Start Depth (m)	End Depth (m)	COPC	CASRN	Qualifier	Detection Limit for Non-Detects	Unit
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.034	1	SO	Surface Soil 0-1.5m	S-011	S-011_20190227_SO	N	2/27/2019	0	0.1	Benzo(a)pyrene	50-32-8			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.029	1	SO	Surface Soil 0-1.5m	C-2150-B	C-2150-B_20190306_SO	N	3/6/2019	0	0.1	Benzo(a)pyrene	50-32-8			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.011	1	SO	Surface Soil 0-1.5m	C-2153	C-2153_20190306_SO	N	3/6/2019	0	0.1	Benzo(a)pyrene	50-32-8			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.005	0	SO	Surface Soil 0-1.5m	C-1018F	C-1018F_20190303_SO	N	3/3/2019	0	0.1	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.018	1	SO	Surface Soil 0-1.5m	C-2146	C-2146_20190306_SO	N	3/6/2019	0	0.1	Benzo(a)pyrene	50-32-8			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.005	0	SO	Surface Soil 0-1.5m	C-6020	C-6020_20190306_SO	N	3/6/2019	0	0.1	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.005	0	SO	Surface Soil 0-1.5m	C-6015B	C-6015B_20190814_SO	N	8/14/2019	0	0.1	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.005	0	SO	Surface Soil 0-1.5m	C-1016F	C-1016F_20190303_SO	N	3/3/2019	0	0.1	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.0095	0	SO	Surface Soil 0-1.5m	C-6035B	C-6035B_20190814_SO	N	8/14/2019	0	0.1	Benzo(a)pyrene	50-32-8	U	0.0095	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.005	0	SO	Surface Soil 0-1.5m	C-2131	C-2131_20190306_SO	N	3/6/2019	0	0.1	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.005	0	SO	Surface Soil 0-1.5m	C-6204	C-6204_20190309_SO	N	3/9/2019	0	0.1	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.005	0	SO	Surface Soil 0-1.5m	C-6042	C-6042_20190306_SO	N	3/6/2019	0	0.1	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.005	0	SO	Surface Soil 0-1.5m	C-6042B	C-6042B_20190814_SO	N	8/14/2019	0	0.1	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.005	0	SO	Surface Soil 0-1.5m	C-1011W	C-1011W_20190303_SO	N	3/3/2019	0	0.1	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)pyrene_50-32-8	0.011	0	SO	Surface Soil 0-1.5m	C-6013B	C-6013B_20190814_SO	N	8/14/2019	0	0.1	Benzo(a)pyrene	50-32-8	U	0.011	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-204	WA-SOIL-204_20190814_SO	N	8/14/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.24	1	SO	Surface Soil 0-1.5m	S-079	S-079_20190227_SO	N	2/27/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SO	Surface Soil 0-1.5m	S-032B	S-032B_20190227_SO	N	2/27/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.018	1	SO	Surface Soil 0-1.5m	S-047C	S-047C_20190227_SO	N	2/27/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3		0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-206	WA-SOIL-206_20190814_SO	N	8/14/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.016	1	SO	Surface Soil 0-1.5m	WA-SOIL-202	WA-SOIL-202_20190814_SO	N	8/14/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-203	WA-SOIL-203_20190814_SO	N	8/14/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.023	1	SO	Surface Soil 0-1.5m	S-029A-B	S-029A-B_20190304_SO	N	3/4/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-207	WA-SOIL-207_20190814_SO	N	8/14/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.018	1	SO	Surface Soil 0-1.5m	S-031	S-031_20190227_SO	N	2/27/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-208	WA-SOIL-208_20190814_SO	N	8/14/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SO	Surface Soil 0-1.5m	S-039B	S-039B_20190227_SO	N	2/27/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.024	1	SO	Surface Soil 0-1.5m	S-036	S-036_20190227_SO	N	2/27/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-201	WA-SOIL-201_20190814_SO	N	8/14/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-205	WA-SOIL-205_20190814_SO	N	8/14/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SO	Surface Soil 0-1.5m	S-048	S-048_20190227_SO	N	2/27/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.017	1	SO	Surface Soil 0-1.5m	WA-SOIL-209	WA-SOIL-209_20190814_SO	N	8/14/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SO	Surface Soil 0-1.5m	S-044 FLOOR	S-044 FLOOR_20190227_SO	N	2/27/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SO	Surface Soil 0-1.5m	S-047G	S-047G_20190227_SO	N	2/27/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.0066	1	SO	Surface Soil 0-1.5m	19-H11-001	19-H11-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(b&j)fluoranthene	205-99-2_205-82-3			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SO	Surface Soil 0-1.5m	19-H15-001	19-H15-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.026	1	SO	Surface Soil 0-1.5m	DB-011	DB-011_20190302_SO	N	3/2/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.039	1	SO	Surface Soil 0-1.5m	19-H14-001	19-H14-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(b&j)fluoranthene	205-99-2_205-82-3			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SO	Surface Soil 0-1.5m	S-314WB	S-314WB_20191016_SO	N	10/16/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SO	Surface Soil 0-1.5m	19-H13-001	19-H13-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SO	Surface Soil 0-1.5m	19-H11-002	19-H11-002_20190609_SO	N	6/9/2019	0	0.15	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SO	Surface Soil 0-1.5m	19-H16-001	19-H16-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SO	Surface Soil 0-1.5m	19-H12-001	19-H12-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.024	1	SO	Surface Soil 0-1.5m	C-2410	C-2410_20190308_SO	N	3/8/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SO	Surface Soil 0-1.5m	C-1018F	C-1018F_20190303_SO	N	3/3/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.019	1	SO	Surface Soil 0-1.5m	S-008	S-008_20190227_SO	N	2/27/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.0078	1	SO	Surface Soil 0-1.5m	C-6020	C-6020_20190306_SO	N	3/6/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.014	1	SO	Surface Soil 0-1.5m	C-6015B	C-6015B_20190814_SO	N	8/14/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SO	Surface Soil 0-1.5m	C-6204	C-6204_20190309_SO	N	3/9/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.0054	1	SO	Surface Soil 0-1.5m	C-6042	C-6042_20190306_SO	N	3/6/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.017	1	SO	Surface Soil 0-1.5m	C-2600B	C-2600B_20200225_SO	N	2/25/2020	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.031	1	SO	Surface Soil 0-1.5m	C-2156	C-2156_20190306_SO	N	3/6/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.014	1	SO	Surface Soil 0-1.5m	C-6035B	C-6035B_20190814_SO	N	8/14/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.048	1	SO	Surface Soil 0-1.5m	C-2146	C-2146_20190306_SO	N	3/6/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.089	1	SO	Surface Soil 0-1.5m	S-011	S-011_20190227_SO	N	2/27/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SO	Surface Soil 0-1.5m	C-2131	C-2131_20190306_SO	N	3/6/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SO	Surface Soil 0-1.5m	C-2406-B	C-2406-B_20190310_SO	N	3/10/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.013	1	SO	Surface Soil 0-1.5m	C-6013	C-6013_20190306_SO	N	3/6/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.17	1	SO	Surface Soil 0-1.5m	C-2140	C-2140_20190306_SO	N	3/6/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SO	Surface Soil 0-1.5m	C-2424	C-2424_20190308_SO	N	3/8/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.019	1	SO	Surface Soil 0-1.5m	C-6042B	C-6042B_20190814_SO	N	8/14/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.015	1	SO	Surface Soil 0-1.5m	C-6013B	C-6013B_20190814_SO	N	8/14/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SO	Surface Soil 0-1.5m	C-6219	C-6219_20190309_SO	N	3/9/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SO	Surface Soil 0-1.5m	S-007B	S-007B_20190227_SO	N	2/27/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.031	1	SO	Surface Soil 0-1.5m	C-2422	C-2422_20190308_SO	N	3/8/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.063	1	SO	Surface Soil 0-1.5m	C-2150-B	C-2150-B_20190306_SO	N	3/6/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SO	Surface Soil 0-1.5m	C-2400	C-2400_20190308_SO	N	3/8/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SO	Surface Soil 0-1.5m	C-1016F	C-1016F_20190303_SO	N	3/3/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SO	Surface Soil 0-1.5m	C-1011W	C-1011W_20190303_SO	N	3/3/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.068	1	SO	Surface Soil 0-1.5m	C-2419	C-2419_20190308_SO	N	3/8/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.027	1	SO	Surface Soil 0-1.5m	C-2153	C-2153_20190306_SO	N	3/6/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.0065	1	SO	Surface Soil 0-1.5m	C-2404	C-2404_20190308_SO	N	3/8/2019	0	0.1	Benzo(b&j)fluoranthene	205-99-2_205-82-3			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	S-044 FLOOR	S-044 FLOOR_20190227_SO	N	2/27/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.011	0	SO	Surface Soil 0-1.5m	S-031	S-031_20190227_SO	N	2/27/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.011	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-204	WA-SOIL-204_20190814_SO	N	8/14/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	S-032B	S-032B_20190227_SO	N	2/27/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	S-036	S-036_20190227_SO	N	2/27/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	S-039B	S-039B_20190227_SO	N	2/27/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-206	WA-SOIL-206_20190814_SO	N	8/14/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-202	WA-SOIL-202_20190814_SO	N	8/14/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-201	WA-SOIL-201_20190814_SO	N	8/14/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	S-048	S-048_20190227_SO	N	2/27/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-209	WA-SOIL-209_20190814_SO	N	8/14/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-208	WA-SOIL-208_20190814_SO	N	8/14/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-203	WA-SOIL-203_20190814_SO	N	8/14/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	S-047G	S-047G_20190227_SO	N	2/27/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	S-047C	S-047C_20190227_SO	N	2/27/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	S-029A-B	S-029A-B_20190304_SO	N	3/4/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-205	WA-SOIL-205_20190814_SO	N	8/14/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-207	WA-SOIL-207_20190814_SO	N	8/14/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.021	1	SO	Surface Soil 0-1.5m	S-079	S-079_20190227_SO	N	2/27/2019	0	0.1	Benzo(c)phenanthrene	195-19-7			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	C-2600B	C-2600B_20200225_SO	N	2/25/2020	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	19-H16-001	19-H16-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	19-H11-002	19-H11-002_20190609_SO	N	6/9/2019	0	0.15	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	DB-011	DB-011_20190302_SO	N	3/2/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	19-H14-001	19-H14-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	19-H15-001	19-H15-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	S-314WB	S-314WB_20191016_SO	N	10/16/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	19-H11-001	19-H11-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	19-H12-001	19-H12-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	19-H13-001	19-H13-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	C-2150-B	C-2150-B_20190306_SO	N	3/6/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	C-2156	C-2156_20190306_SO	N	3/6/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.013	1	SO	Surface Soil 0-1.5m	C-2140	C-2140_20190306_SO	N	3/6/2019	0	0.1	Benzo(c)phenanthrene	195-19-7			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	C-2131	C-2131_20190306_SO	N	3/6/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	C-2146	C-2146_20190306_SO	N	3/6/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	C-2422	C-2422_20190308_SO	N	3/8/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	C-6020	C-6020_20190306_SO	N	3/6/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	C-1016F	C-1016F_20190303_SO	N	3/3/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.0095	0	SO	Surface Soil 0-1.5m	C-6035B	C-6035B_20190814_SO	N	8/14/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.0095	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	C-2153	C-2153_20190306_SO	N	3/6/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	C-1018F	C-1018F_20190303_SO	N	3/3/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.011	0	SO	Surface Soil 0-1.5m	C-6013B	C-6013B_20190814_SO	N	8/14/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.011	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	C-6042	C-6042_20190306_SO	N	3/6/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	C-6013	C-6013_20190306_SO	N	3/6/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	C-6042B	C-6042B_20190814_SO	N	8/14/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	C-1011W	C-1011W_20190303_SO	N	3/3/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	C-6015B	C-6015B_20190814_SO	N	8/14/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	C-2419	C-2419_20190308_SO	N	3/8/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	S-007B	S-007B_20190227_SO	N	2/27/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	C-2410	C-2410_20190308_SO	N	3/8/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.008	1	SO	Surface Soil 0-1.5m	S-011	S-011_20190227_SO	N	2/27/2019	0	0.1	Benzo(c)phenanthrene	195-19-7			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	C-6219	C-6219_20190309_SO	N	3/9/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	C-2406-B	C-2406-B_20190310_SO	N	3/10/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	S-008	S-008_20190227_SO	N	2/27/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	C-2400	C-2400_20190308_SO	N	3/8/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	C-6204	C-6204_20190309_SO	N	3/9/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	C-2424	C-2424_20190308_SO	N	3/8/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	C-2404	C-2404_20190308_SO	N	3/8/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.015	1	SO	Surface Soil 0-1.5m	S-029A-B	S-029A-B_20190304_SO	N	3/4/2019	0	0.1	Benzo(e)pyrene	192-97-2			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	S-032B	S-032B_20190227_SO	N	2/27/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.011	0	SO	Surface Soil 0-1.5m	S-031	S-031_20190227_SO	N	2/27/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.011	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-207	WA-SOIL-207_20190814_SO	N	8/14/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-206	WA-SOIL-206_20190814_SO	N	8/14/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.013	1	SO	Surface Soil 0-1.5m	WA-SOIL-209	WA-SOIL-209_20190814_SO	N	8/14/2019	0	0.1	Benzo(e)pyrene	192-97-2			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.013	1	SO	Surface Soil 0-1.5m	S-036	S-036_20190227_SO	N	2/27/2019	0	0.1	Benzo(e)pyrene	192-97-2			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	S-047G	S-047G_20190227_SO	N	2/27/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-208	WA-SOIL-208_20190814_SO	N	8/14/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	S-044 FLOOR	S-044 FLOOR_20190227_SO	N	2/27/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-201	WA-SOIL-201_20190814_SO	N	8/14/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	S-048	S-048_20190227_SO	N	2/27/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.014	1	SO	Surface Soil 0-1.5m	WA-SOIL-202	WA-SOIL-202_20190814_SO	N	8/14/2019	0	0.1	Benzo(e)pyrene	192-97-2			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.0087	1	SO	Surface Soil 0-1.5m	S-047C	S-047C_20190227_SO	N	2/27/2019	0	0.1	Benzo(e)pyrene	192-97-2		0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-203	WA-SOIL-203_20190814_SO	N	8/14/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.11	1	SO	Surface Soil 0-1.5m	S-079	S-079_20190227_SO	N	2/27/2019	0	0.1	Benzo(e)pyrene	192-97-2			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-204	WA-SOIL-204_20190814_SO	N	8/14/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	S-039B	S-039B_20190227_SO	N	2/27/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-205	WA-SOIL-205_20190814_SO	N	8/14/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.0097	1	SO	Surface Soil 0-1.5m	C-2600B	C-2600B_20200225_SO	N	2/25/2020	0	0.1	Benzo(e)pyrene	192-97-2			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.024	1	SO	Surface Soil 0-1.5m	19-H14-001	19-H14-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(e)pyrene	192-97-2			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	S-314WB	S-314WB_20191016_SO	N	10/16/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	19-H11-002	19-H11-002_20190609_SO	N	6/9/2019	0	0.15	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	19-H13-001	19-H13-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	19-H15-001	19-H15-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	19-H16-001	19-H16-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	19-H11-001	19-H11-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	19-H12-001	19-H12-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.013	1	SO	Surface Soil 0-1.5m	DB-011	DB-011_20190302_SO	N	3/2/2019	0	0.1	Benzo(e)pyrene	192-97-2			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.042	1	SO	Surface Soil 0-1.5m	S-011	S-011_20190227_SO	N	2/27/2019	0	0.1	Benzo(e)pyrene	192-97-2			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.0095	0	SO	Surface Soil 0-1.5m	C-6035B	C-6035B_20190814_SO	N	8/14/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.0095	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	C-6042	C-6042_20190306_SO	N	3/6/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.01	1	SO	Surface Soil 0-1.5m	S-008	S-008_20190227_SO	N	2/27/2019	0	0.1	Benzo(e)pyrene	192-97-2			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	S-007B	S-007B_20190227_SO	N	2/27/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.096	1	SO	Surface Soil 0-1.5m	C-2140	C-2140_20190306_SO	N	3/6/2019	0	0.1	Benzo(e)pyrene	192-97-2			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.028	1	SO	Surface Soil 0-1.5m	C-2146	C-2146_20190306_SO	N	3/6/2019	0	0.1	Benzo(e)pyrene	192-97-2			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.0071	1	SO	Surface Soil 0-1.5m	C-6020	C-6020_20190306_SO	N	3/6/2019	0	0.1	Benzo(e)pyrene	192-97-2			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	C-6219	C-6219_20190309_SO	N	3/9/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	C-1011W	C-1011W_20190303_SO	N	3/3/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.011	1	SO	Surface Soil 0-1.5m	C-6042B	C-6042B_20190814_SO	N	8/14/2019	0	0.1	Benzo(e)pyrene	192-97-2			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	C-2424	C-2424_20190308_SO	N	3/8/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.017	1	SO	Surface Soil 0-1.5m	C-2153	C-2153_20190306_SO	N	3/6/2019	0	0.1	Benzo(e)pyrene	192-97-2			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	C-2400	C-2400_20190308_SO	N	3/8/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	C-2404	C-2404_20190308_SO	N	3/8/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	C-2406-B	C-2406-B_20190310_SO	N	3/10/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.014	1	SO	Surface Soil 0-1.5m	C-2410	C-2410_20190308_SO	N	3/8/2019	0	0.1	Benzo(e)pyrene	192-97-2			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.019	1	SO	Surface Soil 0-1.5m	C-2156	C-2156_20190306_SO	N	3/6/2019	0	0.1	Benzo(e)pyrene	192-97-2			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.045	1	SO	Surface Soil 0-1.5m	C-2419	C-2419_20190308_SO	N	3/8/2019	0	0.1	Benzo(e)pyrene	192-97-2			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.018	1	SO	Surface Soil 0-1.5m	C-2422	C-2422_20190308_SO	N	3/8/2019	0	0.1	Benzo(e)pyrene	192-97-2			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.036	1	SO	Surface Soil 0-1.5m	C-2150-B	C-2150-B_20190306_SO	N	3/6/2019	0	0.1	Benzo(e)pyrene	192-97-2			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.0076	1	SO	Surface Soil 0-1.5m	C-6013	C-6013_20190306_SO	N	3/6/2019	0	0.1	Benzo(e)pyrene	192-97-2			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	C-2131	C-2131_20190306_SO	N	3/6/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.011	0	SO	Surface Soil 0-1.5m	C-6013B	C-6013B_20190814_SO	N	8/14/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.011	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	C-1018F	C-1018F_20190303_SO	N	3/3/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	C-6015B	C-6015B_20190814_SO	N	8/14/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	C-6204	C-6204_20190309_SO	N	3/9/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	C-1016F	C-1016F_20190303_SO	N	3/3/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	S-047C	S-047C_20190227_SO	N	2/27/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	S-047G	S-047G_20190227_SO	N	2/27/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-201	WA-SOIL-201_20190814_SO	N	8/14/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	S-048	S-048_20190227_SO	N	2/27/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.0078	1	SO	Surface Soil 0-1.5m	WA-SOIL-209	WA-SOIL-209_20190814_SO	N	8/14/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.0075	1	SO	Surface Soil 0-1.5m	WA-SOIL-202	WA-SOIL-202_20190814_SO	N	8/14/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.011	1	SO	Surface Soil 0-1.5m	S-029A-B	S-029A-B_20190304_SO	N	3/4/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2			mg/kg

TABLE B.5
DATA INPUT FOR PROUCL SOFTWARE
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Notes:
The maximum of the field duplicate and parent sample pairs were applied and a detect was chosen over a non-detect value.

ProUCL Group	ProUCL Result	ProUCL Flag	Medium	Soil Zone	Location	Sample ID	Sample Type	Sample Date	Start Depth (m)	End Depth (m)	COPC	CASRN	Qualifier	Detection Limit for Non-Detects	Unit
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-208	WA-SOIL-208_20190814_SO	N	8/14/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.0093	1	SO	Surface Soil 0-1.5m	S-036	S-036_20190227_SO	N	2/27/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	S-039B	S-039B_20190227_SO	N	2/27/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-203	WA-SOIL-203_20190814_SO	N	8/14/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-204	WA-SOIL-204_20190814_SO	N	8/14/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.077	1	SO	Surface Soil 0-1.5m	S-079	S-079_20190227_SO	N	2/27/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-205	WA-SOIL-205_20190814_SO	N	8/14/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-207	WA-SOIL-207_20190814_SO	N	8/14/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	S-044 FLOOR	S-044 FLOOR_20190227_SO	N	2/27/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.011	0	SO	Surface Soil 0-1.5m	S-031	S-031_20190227_SO	N	2/27/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.011	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-206	WA-SOIL-206_20190814_SO	N	8/14/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	S-032B	S-032B_20190227_SO	N	2/27/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	C-2600B	C-2600B_20200225_SO	N	2/25/2020	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.0094	1	SO	Surface Soil 0-1.5m	DB-011	DB-011_20190302_SO	N	3/2/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	19-H11-001	19-H11-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	19-H13-001	19-H13-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	19-H12-001	19-H12-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	19-H11-002	19-H11-002_20190609_SO	N	6/9/2019	0	0.15	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	19-H15-001	19-H15-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	S-314WB	S-314WB_20191016_SO	N	10/16/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.02	1	SO	Surface Soil 0-1.5m	19-H14-001	19-H14-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(g,h,i)perylene	191-24-2			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	19-H16-001	19-H16-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	C-1016F	C-1016F_20190303_SO	N	3/3/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	C-2131	C-2131_20190306_SO	N	3/6/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	C-1018F	C-1018F_20190303_SO	N	3/3/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.013	1	SO	Surface Soil 0-1.5m	C-2156	C-2156_20190306_SO	N	3/6/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.064	1	SO	Surface Soil 0-1.5m	C-2140	C-2140_20190306_SO	N	3/6/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.01	1	SO	Surface Soil 0-1.5m	C-2153	C-2153_20190306_SO	N	3/6/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	C-1011W	C-1011W_20190303_SO	N	3/3/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	C-2406-B	C-2406-B_20190310_SO	N	3/10/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	C-2424	C-2424_20190308_SO	N	3/8/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.0095	0	SO	Surface Soil 0-1.5m	C-6035B	C-6035B_20190814_SO	N	8/14/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.0095	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.015	1	SO	Surface Soil 0-1.5m	C-2422	C-2422_20190308_SO	N	3/8/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.039	1	SO	Surface Soil 0-1.5m	C-2419	C-2419_20190308_SO	N	3/8/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	C-6219	C-6219_20190309_SO	N	3/9/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	C-6042	C-6042_20190306_SO	N	3/6/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	C-6020	C-6020_20190306_SO	N	3/6/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.011	1	SO	Surface Soil 0-1.5m	C-2410	C-2410_20190308_SO	N	3/8/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	S-008	S-008_20190227_SO	N	2/27/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.009	1	SO	Surface Soil 0-1.5m	C-6042B	C-6042B_20190814_SO	N	8/14/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.011	0	SO	Surface Soil 0-1.5m	C-6013B	C-6013B_20190814_SO	N	8/14/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.011	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	S-007B	S-007B_20190227_SO	N	2/27/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	C-2404	C-2404_20190308_SO	N	3/8/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	C-2400	C-2400_20190308_SO	N	3/8/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	C-6204	C-6204_20190309_SO	N	3/9/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.025	1	SO	Surface Soil 0-1.5m	C-2150-B	C-2150-B_20190306_SO	N	3/6/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.0055	1	SO	Surface Soil 0-1.5m	C-6013	C-6013_20190306_SO	N	3/6/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	C-6015B	C-6015B_20190814_SO	N	8/14/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.019	1	SO	Surface Soil 0-1.5m	C-2146	C-2146_20190306_SO	N	3/6/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.026	1	SO	Surface Soil 0-1.5m	S-011	S-011_20190227_SO	N	2/27/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	S-036	S-036_20190227_SO	N	2/27/2019	0	0.1	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	S-039B	S-039B_20190227_SO	N	2/27/2019	0	0.1	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	S-048	S-048_20190227_SO	N	2/27/2019	0	0.1	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.093	1	SO	Surface Soil 0-1.5m	S-079	S-079_20190227_SO	N	2/27/2019	0	0.1	Benzo(k)fluoranthene	207-08-9			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	S-029A-B	S-029A-B_20190304_SO	N	3/4/2019	0	0.1	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.011	0	SO	Surface Soil 0-1.5m	S-031	S-031_20190227_SO	N	2/27/2019	0	0.1	Benzo(k)fluoranthene	207-08-9	U	0.011	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	S-047C	S-047C_20190227_SO	N	2/27/2019	0	0.1	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	S-044 FLOOR	S-044 FLOOR_20190227_SO	N	2/27/2019	0	0.1	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	S-032B	S-032B_20190227_SO	N	2/27/2019	0	0.1	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	S-047G	S-047G_20190227_SO	N	2/27/2019	0	0.1	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-204	WA-SOIL-204_20190814_SO	N	8/14/2019	0	0.1	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-205	WA-SOIL-205_20190814_SO	N	8/14/2019	0	0.1	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-201	WA-SOIL-201_20190814_SO	N	8/14/2019	0	0.1	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-206	WA-SOIL-206_20190814_SO	N	8/14/2019	0	0.1	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-209	WA-SOIL-209_20190814_SO	N	8/14/2019	0	0.1	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-202	WA-SOIL-202_20190814_SO	N	8/14/2019	0	0.1	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-207	WA-SOIL-207_20190814_SO	N	8/14/2019	0	0.1	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-203	WA-SOIL-203_20190814_SO	N	8/14/2019	0	0.1	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-208	WA-SOIL-208_20190814_SO	N	8/14/2019	0	0.1	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	C-2600B	C-2600B_20200225_SO	N	2/25/2020	0	0.1	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	19-H16-001	19-H16-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	19-H15-001	19-H15-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.012	1	SO	Surface Soil 0-1.5m	19-H14-001	19-H14-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(k)fluoranthene	207-08-9			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	19-H13-001	19-H13-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	19-H11-002	19-H11-002_20190609_SO	N	6/9/2019	0	0.15	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	19-H12-001	19-H12-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	19-H11-001	19-H11-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.009	1	SO	Surface Soil 0-1.5m	DB-011	DB-011_20190302_SO	N	3/2/2019	0	0.1	Benzo(k)fluoranthene	207-08-9			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	S-314WB	S-314WB_20191016_SO	N	10/16/2019	0	0.1	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	C-2404	C-2404_20190308_SO	N	3/8/2019	0	0.1	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.0092	1	SO	Surface Soil 0-1.5m	C-2156	C-2156_20190306_SO	N	3/6/2019	0	0.1	Benzo(k)fluoranthene	207-08-9			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.0095	0	SO	Surface Soil 0-1.5m	C-6035B	C-6035B_20190814_SO	N	8/14/2019	0	0.1	Benzo(k)fluoranthene	207-08-9	U	0.0095	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	C-2406-B	C-2406-B_20190310_SO	N	3/10/2019	0	0.1	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.019	1	SO	Surface Soil 0-1.5m	C-2150-B	C-2150-B_20190306_SO	N	3/6/2019	0	0.1	Benzo(k)fluoranthene	207-08-9			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.054	1	SO	Surface Soil 0-1.5m	C-2140	C-2140_20190306_SO	N	3/6/2019	0	0.1	Benzo(k)fluoranthene	207-08-9			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.011	0	SO	Surface Soil 0-1.5m	C-6013B	C-6013B_20190814_SO	N	8/14/2019	0	0.1	Benzo(k)fluoranthene	207-08-9	U	0.011	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	C-2410	C-2410_20190308_SO	N	3/8/2019	0	0.1	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	C-6015B	C-6015B_20190814_SO	N	8/14/2019	0	0.1	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	C-6042	C-6042_20190306_SO	N	3/6/2019	0	0.1	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	C-1011W	C-1011W_20190303_SO	N	3/3/2019	0	0.1	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	C-6042B	C-6042B_20190814_SO	N	8/14/2019	0	0.1	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	C-2400	C-2400_20190308_SO	N	3/8/2019	0	0.1	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	C-1018F	C-1018F_20190303_SO	N	3/3/2019	0	0.1	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	C-6219	C-6219_20190309_SO	N	3/9/2019	0	0.1	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	C-6204	C-6204_20190309_SO	N	3/9/2019	0	0.1	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.0076	1	SO	Surface Soil 0-1.5m	C-2153	C-2153_20190306_SO	N	3/6/2019	0	0.1	Benzo(k)fluoranthene	207-08-9			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	S-007B	S-007B_20190227_SO	N	2/27/2019	0	0.1	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.0093	1	SO	Surface Soil 0-1.5m	C-2422	C-2422_20190308_SO	N	3/8/2019	0	0.1	Benzo(k)fluoranthene	207-08-9			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	C-6020	C-6020_20190306_SO	N	3/6/2019	0	0.1	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	C-2424	C-2424_20190308_SO	N	3/8/2019	0	0.1	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.014	1	SO	Surface Soil 0-1.5m	C-2146	C-2146_20190306_SO	N	3/6/2019	0	0.1	Benzo(k)fluoranthene	207-08-9			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	C-6013	C-6013_20190306_SO	N	3/6/2019	0	0.1	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	S-008	S-008_20190227_SO	N	2/27/2019	0	0.1	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.031	1	SO	Surface Soil 0-1.5m	S-011	S-011_20190227_SO	N	2/27/2019	0	0.1	Benzo(k)fluoranthene	207-08-9			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	C-2131	C-2131_20190306_SO	N	3/6/2019	0	0.1	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.005	0	SO	Surface Soil 0-1.5m	C-1016F	C-1016F_20190303_SO	N	3/3/2019	0	0.1	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(k)fluoranthene_207-08-9	0.024	1	SO	Surface Soil 0-1.5m	C-2419	C-2419_20190308_SO	N	3/8/2019	0	0.1	Benzo(k)fluoranthene	207-08-9			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-207	WA-SOIL-207_20190814_SO	N	8/14/2019	0	0.1	Chrysene	218-01-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	S-032B	S-032B_20190227_SO	N	2/27/2019	0	0.1	Chrysene	218-01-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-203	WA-SOIL-203_20190814_SO	N	8/14/2019	0	0.1	Chrysene	218-01-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.0083	1	SO	Surface Soil 0-1.5m	S-036	S-036_20190227_SO	N	2/27/2019	0	0.1	Chrysene	218-01-9			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.011	0	SO	Surface Soil 0-1.5m	S-031	S-031_20190227_SO	N	2/27/2019	0	0.1	Chrysene	218-01-9	U	0.011	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	S-044 FLOOR	S-044 FLOOR_20190227_SO	N	2/27/2019	0	0.1	Chrysene	218-01-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-204	WA-SOIL-204_20190814_SO	N	8/14/2019	0	0.1	Chrysene	218-01-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-206	WA-SOIL-206_20190814_SO	N	8/14/2019	0	0.1	Chrysene	218-01-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-205	WA-SOIL-205_20190814_SO	N	8/14/2019	0	0.1	Chrysene	218-01-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	S-039B	S-039B_20190227_SO	N	2/27/2019	0	0.1	Chrysene	218-01-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	S-047G	S-047G_20190227_SO	N	2/27/2019	0	0.1	Chrysene	218-01-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.016	1	SO	Surface Soil 0-1.5m	WA-SOIL-202	WA-SOIL-202_20190814_SO	N	8/14/2019	0	0.1	Chrysene	218-01-9			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.009	1	SO	Surface Soil 0-1.5m	S-047C	S-047C_20190227_SO	N	2/27/2019	0	0.1	Chrysene	218-01-9		0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.23	1	SO	Surface Soil 0-1.5m	S-079	S-079_20190227_SO	N	2/27/2019	0	0.1	Chrysene	218-01-9			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-208	WA-SOIL-208_20190814_SO	N	8/14/2019	0	0.1	Chrysene	218-01-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	S-048	S-048_20190227_SO	N	2/27/2019	0	0.1	Chrysene	218-01-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.01	1	SO	Surface Soil 0-1.5m	S-029A-B	S-029A-B_20190304_SO	N	3/4/2019	0	0.1	Chrysene	218-01-9			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-201	WA-SOIL-201_20190814_SO	N	8/14/2019	0	0.1	Chrysene	218-01-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.019	1	SO	Surface Soil 0-1.5m	WA-SOIL-209	WA-SOIL-209_20190814_SO	N	8/14/2019	0	0.1	Chrysene	218-01-9			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.011	1	SO	Surface Soil 0-1.5m	C-2600B	C-2600B_20200225_SO	N	2/25/2020	0	0.1	Chrysene	218-01-9			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	19-H11-001	19-H11-001_20190609_SO	N	6/9/2019	0	0.15	Chrysene	218-01-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	S-314WB	S-314WB_20191016_SO	N	10/16/2019	0	0.1	Chrysene	218-01-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.0082	1	SO	Surface Soil 0-1.5m	19-H15-001	19-H15-001_20190609_SO	N	6/9/2019	0	0.15	Chrysene	218-01-9			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	19-H12-001	19-H12-001_20190609_SO	N	6/9/2019	0	0.15	Chrysene	218-01-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.017	1	SO	Surface Soil 0-1.5m	DB-011	DB-011_20190302_SO	N	3/2/2019	0	0.1	Chrysene	218-01-9			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	19-H13-001	19-H13-001_20190609_SO	N	6/9/2019	0	0.15	Chrysene	218-01-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.025	1	SO	Surface Soil 0-1.5m	19-H14-001	19-H14-001_20190609_SO	N	6/9/2019	0	0.15	Chrysene	218-01-9			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	19-H11-002	19-H11-002_20190609_SO	N	6/9/2019	0	0.15	Chrysene	218-01-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	19-H16-001	19-H16-001_20190609_SO	N	6/9/2019	0	0.15	Chrysene	218-01-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.015	1	SO	Surface Soil 0-1.5m	C-2422	C-2422_20190308_SO	N	3/8/2019	0	0.1	Chrysene	218-01-9			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	C-6204	C-6204_20190309_SO	N	3/9/2019	0	0.1	Chrysene	218-01-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	C-6015B	C-6015B_20190814_SO	N	8/14/2019	0	0.1	Chrysene	218-01-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	C-2424	C-2424_20190308_SO	N	3/8/2019	0	0.1	Chrysene	218-01-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.023	1	SO	Surface Soil 0-1.5m	C-2410	C-2410_20190308_SO	N	3/8/2019	0	0.1	Chrysene	218-01-9			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	C-6020	C-6020_20190306_SO	N	3/6/2019	0	0.1	Chrysene	218-01-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	C-1016F	C-1016F_20190303_SO	N	3/3/2019	0	0.1	Chrysene	218-01-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.0095	0	SO	Surface Soil 0-1.5m	C-6035B	C-6035B_20190814_SO	N	8/14/2019	0	0.1	Chrysene	218-01-9	U	0.0095	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.011	0	SO	Surface Soil 0-1.5m	C-6013B	C-6013B_20190814_SO	N	8/14/2019	0	0.1	Chrysene	218-01-9	U	0.011	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.011	1	SO	Surface Soil 0-1.5m	C-6042B	C-6042B_20190814_SO	N	8/14/2019	0	0.1	Chrysene	218-01-9			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	C-1018F	C-1018F_20190303_SO	N	3/3/2019	0	0.1	Chrysene	218-01-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	C-6042	C-6042_20190306_SO	N	3/6/2019	0	0.1	Chrysene	218-01-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	C-2406-B	C-2406-B_20190310_SO	N	3/10/2019	0	0.1	Chrysene	218-01-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.0067	1	SO	Surface Soil 0-1.5m	C-6013	C-6013_20190306_SO	N	3/6/2019	0	0.1	Chrysene	218-01-9			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	C-2404	C-2404_20190308_SO	N	3/8/2019	0	0.1	Chrysene	218-01-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	C-1011W	C-1011W_20190303_SO	N	3/3/2019	0	0.1	Chrysene	218-01-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.052	1	SO	Surface Soil 0-1.5m	C-2419	C-2419_20190308_SO	N	3/8/2019	0	0.1	Chrysene	218-01-9			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	C-2400	C-2400_20190308_SO	N	3/8/2019	0	0.1	Chrysene	218-01-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.099	1	SO	Surface Soil 0-1.5m	C-2140	C-2140_20190306_SO	N	3/6/2019	0	0.1	Chrysene	218-01-9			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.054	1	SO	Surface Soil 0-1.5m	S-011	S-011_20190227_SO	N	2/27/2019	0	0.1	Chrysene	218-01-9			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.015	1	SO	Surface Soil 0-1.5m	C-2156	C-2156_20190306_SO	N	3/6/2019	0	0.1	Chrysene	218-01-9			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.012	1	SO	Surface Soil 0-1.5m	C-2153	C-2153_20190306_SO	N	3/6/2019	0	0.1	Chrysene	218-01-9			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	C-2131	C-2131_20190306_SO	N	3/6/2019	0	0.1	Chrysene	218-01-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	S-007B	S-007B_20190227_SO	N	2/27/2019	0	0.1	Chrysene	218-01-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	C-6219	C-6219_20190309_SO	N	3/9/2019	0	0.1	Chrysene	218-01-9	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.024	1	SO	Surface Soil 0-1.5m	C-2146	C-2146_20190306_SO	N	3/6/2019	0	0.1	Chrysene	218-01-9			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.009	1	SO	Surface Soil 0-1.5m	S-008	S-008_20190227_SO	N	2/27/2019	0	0.1	Chrysene	218-01-9			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.041	1	SO	Surface Soil 0-1.5m	C-2150-B	C-2150-B_20190306_SO	N	3/6/2019	0	0.1	Chrysene	218-01-9			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	S-032B	S-032B_20190227_SO	N	2/27/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-205	WA-SOIL-205_20190814_SO	N	8/14/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	S-048	S-048_20190227_SO	N	2/27/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	S-036	S-036_20190227_SO	N	2/27/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-204	WA-SOIL-204_20190814_SO	N	8/14/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	S-044 FLOOR	S-044 FLOOR_20190227_SO	N	2/27/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	S-047G	S-047G_20190227_SO	N	2/27/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.019	1	SO	Surface Soil 0-1.5m	S-079	S-079_20190227_SO	N	2/27/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	S-039B	S-039B_20190227_SO	N	2/27/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-203	WA-SOIL-203_20190814_SO	N	8/14/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-202	WA-SOIL-202_20190814_SO	N	8/14/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-201	WA-SOIL-201_20190814_SO	N	8/14/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	S-047C	S-047C_20190227_SO	N	2/27/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-209	WA-SOIL-209_20190814_SO	N	8/14/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.011	0	SO	Surface Soil 0-1.5m	S-031	S-031_20190227_SO	N	2/27/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3	U	0.011	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-206	WA-SOIL-206_20190814_SO	N	8/14/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-208	WA-SOIL-208_20190814_SO	N	8/14/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	S-029A-B	S-029A-B_20190304_SO	N	3/4/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-207	WA-SOIL-207_20190814_SO	N	8/14/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	C-2600B	C-2600B_20200225_SO	N	2/25/2020	0	0.1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	19-H16-001	19-H16-001_20190609_SO	N	6/9/2019	0	0.15	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	S-314WB	S-314WB_20191016_SO	N	10/16/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	19-H13-001	19-H13-001_20190609_SO	N	6/9/2019	0	0.15	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	19-H12-001	19-H12-001_20190609_SO	N	6/9/2019	0	0.15	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	19-H15-001	19-H15-001_20190609_SO	N	6/9/2019	0	0.15	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	DB-011	DB-011_20190302_SO	N	3/2/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	19-H11-002	19-H11-002_20190609_SO	N	6/9/2019	0	0.15	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	19-H11-001	19-H11-001_20190609_SO	N	6/9/2019	0	0.15	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	19-H14-001	19-H14-001_20190609_SO	N	6/9/2019	0	0.15	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg

TABLE B.5
DATA INPUT FOR PROUCL SOFTWARE
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Notes:
The maximum of the field duplicate and parent sample pairs were applied and a detect was chosen over a non-detect value.

ProUCL Group	ProUCL Result	ProUCL Flag	Medium	Soil Zone	Location	Sample ID	Sample Type	Sample Date	Start Depth (m)	End Depth (m)	COPC	CASRN	Qualifier	Detection Limit for Non-Detects	Unit
Outside CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	C-1016F	C-1016F_20190303_SO	N	3/3/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	C-2410	C-2410_20190308_SO	N	3/8/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	C-1011W	C-1011W_20190303_SO	N	3/3/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	S-007B	S-007B_20190227_SO	N	2/27/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	C-2150-B	C-2150-B_20190306_SO	N	3/6/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	C-2156	C-2156_20190306_SO	N	3/6/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	C-2406-B	C-2406-B_20190310_SO	N	3/10/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	S-011	S-011_20190227_SO	N	2/27/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	C-6015B	C-6015B_20190814_SO	N	8/14/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	C-6042	C-6042_20190306_SO	N	3/6/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	C-2404	C-2404_20190308_SO	N	3/8/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.0098	1	SO	Surface Soil 0-1.5m	C-2419	C-2419_20190308_SO	N	3/8/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	C-2146	C-2146_20190306_SO	N	3/6/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	C-2422	C-2422_20190308_SO	N	3/8/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	C-2131	C-2131_20190306_SO	N	3/6/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	C-6020	C-6020_20190306_SO	N	3/6/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	S-008	S-008_20190227_SO	N	2/27/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	C-2424	C-2424_20190308_SO	N	3/8/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	C-6013	C-6013_20190306_SO	N	3/6/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.0095	0	SO	Surface Soil 0-1.5m	C-6035B	C-6035B_20190814_SO	N	8/14/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3	U	0.0095	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.011	0	SO	Surface Soil 0-1.5m	C-6013B	C-6013B_20190814_SO	N	8/14/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3	U	0.011	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	C-6219	C-6219_20190309_SO	N	3/9/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	C-1018F	C-1018F_20190303_SO	N	3/3/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	C-2400	C-2400_20190308_SO	N	3/8/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	C-2153	C-2153_20190306_SO	N	3/6/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	C-6204	C-6204_20190309_SO	N	3/9/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.016	1	SO	Surface Soil 0-1.5m	C-2140	C-2140_20190306_SO	N	3/6/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Dibenz(a,h)anthracene_53-70-3	0.005	0	SO	Surface Soil 0-1.5m	C-6042B	C-6042B_20190814_SO	N	8/14/2019	0	0.1	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-208	WA-SOIL-208_20190814_SO	N	8/14/2019	0	0.1	Fluoranthene	206-44-0	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-207	WA-SOIL-207_20190814_SO	N	8/14/2019	0	0.1	Fluoranthene	206-44-0	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-203	WA-SOIL-203_20190814_SO	N	8/14/2019	0	0.1	Fluoranthene	206-44-0	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.005	0	SO	Surface Soil 0-1.5m	S-044 FLOOR	S-044 FLOOR_20190227_SO	N	2/27/2019	0	0.1	Fluoranthene	206-44-0	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.026	1	SO	Surface Soil 0-1.5m	S-029A-B	S-029A-B_20190304_SO	N	3/4/2019	0	0.1	Fluoranthene	206-44-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.014	1	SO	Surface Soil 0-1.5m	S-031	S-031_20190227_SO	N	2/27/2019	0	0.1	Fluoranthene	206-44-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.018	1	SO	Surface Soil 0-1.5m	WA-SOIL-202	WA-SOIL-202_20190814_SO	N	8/14/2019	0	0.1	Fluoranthene	206-44-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.005	0	SO	Surface Soil 0-1.5m	S-047G	S-047G_20190227_SO	N	2/27/2019	0	0.1	Fluoranthene	206-44-0	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.027	1	SO	Surface Soil 0-1.5m	WA-SOIL-209	WA-SOIL-209_20190814_SO	N	8/14/2019	0	0.1	Fluoranthene	206-44-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.27	1	SO	Surface Soil 0-1.5m	S-079	S-079_20190227_SO	N	2/27/2019	0	0.1	Fluoranthene	206-44-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.0073	1	SO	Surface Soil 0-1.5m	WA-SOIL-201	WA-SOIL-201_20190814_SO	N	8/14/2019	0	0.1	Fluoranthene	206-44-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.005	0	SO	Surface Soil 0-1.5m	S-048	S-048_20190227_SO	N	2/27/2019	0	0.1	Fluoranthene	206-44-0	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.018	1	SO	Surface Soil 0-1.5m	S-047C	S-047C_20190227_SO	N	2/27/2019	0	0.1	Fluoranthene	206-44-0		0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-206	WA-SOIL-206_20190814_SO	N	8/14/2019	0	0.1	Fluoranthene	206-44-0	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.017	1	SO	Surface Soil 0-1.5m	S-036	S-036_20190227_SO	N	2/27/2019	0	0.1	Fluoranthene	206-44-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-205	WA-SOIL-205_20190814_SO	N	8/14/2019	0	0.1	Fluoranthene	206-44-0	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-204	WA-SOIL-204_20190814_SO	N	8/14/2019	0	0.1	Fluoranthene	206-44-0	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.005	0	SO	Surface Soil 0-1.5m	S-032B	S-032B_20190227_SO	N	2/27/2019	0	0.1	Fluoranthene	206-44-0	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.005	0	SO	Surface Soil 0-1.5m	S-039B	S-039B_20190227_SO	N	2/27/2019	0	0.1	Fluoranthene	206-44-0	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.025	1	SO	Surface Soil 0-1.5m	C-2600B	C-2600B_20200225_SO	N	2/25/2020	0	0.1	Fluoranthene	206-44-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.005	0	SO	Surface Soil 0-1.5m	19-H11-002	19-H11-002_20190609_SO	N	6/9/2019	0	0.15	Fluoranthene	206-44-0	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.039	1	SO	Surface Soil 0-1.5m	DB-011	DB-011_20190302_SO	N	3/2/2019	0	0.1	Fluoranthene	206-44-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.011	1	SO	Surface Soil 0-1.5m	19-H11-001	19-H11-001_20190609_SO	N	6/9/2019	0	0.15	Fluoranthene	206-44-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.005	0	SO	Surface Soil 0-1.5m	19-H15-001	19-H15-001_20190609_SO	N	6/9/2019	0	0.15	Fluoranthene	206-44-0	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.024	1	SO	Surface Soil 0-1.5m	19-H14-001	19-H14-001_20190609_SO	N	6/9/2019	0	0.15	Fluoranthene	206-44-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.005	0	SO	Surface Soil 0-1.5m	S-314WB	S-314WB_20191016_SO	N	10/16/2019	0	0.1	Fluoranthene	206-44-0	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.005	0	SO	Surface Soil 0-1.5m	19-H16-001	19-H16-001_20190609_SO	N	6/9/2019	0	0.15	Fluoranthene	206-44-0	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.005	0	SO	Surface Soil 0-1.5m	19-H13-001	19-H13-001_20190609_SO	N	6/9/2019	0	0.15	Fluoranthene	206-44-0	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.005	0	SO	Surface Soil 0-1.5m	19-H12-001	19-H12-001_20190609_SO	N	6/9/2019	0	0.15	Fluoranthene	206-44-0	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.026	1	SO	Surface Soil 0-1.5m	C-2422	C-2422_20190308_SO	N	3/8/2019	0	0.1	Fluoranthene	206-44-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.005	0	SO	Surface Soil 0-1.5m	C-2400	C-2400_20190308_SO	N	3/8/2019	0	0.1	Fluoranthene	206-44-0	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.0067	1	SO	Surface Soil 0-1.5m	C-2404	C-2404_20190308_SO	N	3/8/2019	0	0.1	Fluoranthene	206-44-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.07	1	SO	Surface Soil 0-1.5m	S-011	S-011_20190227_SO	N	2/27/2019	0	0.1	Fluoranthene	206-44-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.025	1	SO	Surface Soil 0-1.5m	C-2156	C-2156_20190306_SO	N	3/6/2019	0	0.1	Fluoranthene	206-44-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.053	1	SO	Surface Soil 0-1.5m	C-2419	C-2419_20190308_SO	N	3/8/2019	0	0.1	Fluoranthene	206-44-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.018	1	SO	Surface Soil 0-1.5m	S-008	S-008_20190227_SO	N	2/27/2019	0	0.1	Fluoranthene	206-44-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.005	0	SO	Surface Soil 0-1.5m	C-2131	C-2131_20190306_SO	N	3/6/2019	0	0.1	Fluoranthene	206-44-0	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.11	1	SO	Surface Soil 0-1.5m	C-2140	C-2140_20190306_SO	N	3/6/2019	0	0.1	Fluoranthene	206-44-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.014	1	SO	Surface Soil 0-1.5m	C-6035B	C-6035B_20190814_SO	N	8/14/2019	0	0.1	Fluoranthene	206-44-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.005	0	SO	Surface Soil 0-1.5m	C-6204	C-6204_20190309_SO	N	3/9/2019	0	0.1	Fluoranthene	206-44-0	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.005	0	SO	Surface Soil 0-1.5m	C-6219	C-6219_20190309_SO	N	3/9/2019	0	0.1	Fluoranthene	206-44-0	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.021	1	SO	Surface Soil 0-1.5m	C-2153	C-2153_20190306_SO	N	3/6/2019	0	0.1	Fluoranthene	206-44-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.005	0	SO	Surface Soil 0-1.5m	C-2424	C-2424_20190308_SO	N	3/8/2019	0	0.1	Fluoranthene	206-44-0	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.005	0	SO	Surface Soil 0-1.5m	C-1018F	C-1018F_20190303_SO	N	3/3/2019	0	0.1	Fluoranthene	206-44-0	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.0093	1	SO	Surface Soil 0-1.5m	C-6020	C-6020_20190306_SO	N	3/6/2019	0	0.1	Fluoranthene	206-44-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.041	1	SO	Surface Soil 0-1.5m	C-2146	C-2146_20190306_SO	N	3/6/2019	0	0.1	Fluoranthene	206-44-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.005	0	SO	Surface Soil 0-1.5m	C-1016F	C-1016F_20190303_SO	N	3/3/2019	0	0.1	Fluoranthene	206-44-0	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.017	1	SO	Surface Soil 0-1.5m	C-6013B	C-6013B_20190814_SO	N	8/14/2019	0	0.1	Fluoranthene	206-44-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.0058	1	SO	Surface Soil 0-1.5m	C-6042	C-6042_20190306_SO	N	3/6/2019	0	0.1	Fluoranthene	206-44-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.02	1	SO	Surface Soil 0-1.5m	C-6013	C-6013_20190306_SO	N	3/6/2019	0	0.1	Fluoranthene	206-44-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.005	0	SO	Surface Soil 0-1.5m	S-007B	S-007B_20190227_SO	N	2/27/2019	0	0.1	Fluoranthene	206-44-0	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.018	1	SO	Surface Soil 0-1.5m	C-2410	C-2410_20190308_SO	N	3/8/2019	0	0.1	Fluoranthene	206-44-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.018	1	SO	Surface Soil 0-1.5m	C-6015B	C-6015B_20190814_SO	N	8/14/2019	0	0.1	Fluoranthene	206-44-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.005	0	SO	Surface Soil 0-1.5m	C-2406-B	C-2406-B_20190310_SO	N	3/10/2019	0	0.1	Fluoranthene	206-44-0	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.02	1	SO	Surface Soil 0-1.5m	C-6042B	C-6042B_20190814_SO	N	8/14/2019	0	0.1	Fluoranthene	206-44-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.005	0	SO	Surface Soil 0-1.5m	C-1011W	C-1011W_20190303_SO	N	3/3/2019	0	0.1	Fluoranthene	206-44-0	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluoranthene_206-44-0	0.074	1	SO	Surface Soil 0-1.5m	C-2150-B	C-2150-B_20190306_SO	N	3/6/2019	0	0.1	Fluoranthene	206-44-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	S-032B	S-032B_20190227_SO	N	2/27/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-209	WA-SOIL-209_20190814_SO	N	8/14/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	S-047C	S-047C_20190227_SO	N	2/27/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.011	0	SO	Surface Soil 0-1.5m	S-031	S-031_20190227_SO	N	2/27/2019	0	0.1	Fluorene	86-73-7	U	0.011	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-207	WA-SOIL-207_20190814_SO	N	8/14/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-201	WA-SOIL-201_20190814_SO	N	8/14/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-208	WA-SOIL-208_20190814_SO	N	8/14/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.031	1	SO	Surface Soil 0-1.5m	S-079	S-079_20190227_SO	N	2/27/2019	0	0.1	Fluorene	86-73-7			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	S-048	S-048_20190227_SO	N	2/27/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	S-047G	S-047G_20190227_SO	N	2/27/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-206	WA-SOIL-206_20190814_SO	N	8/14/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-203	WA-SOIL-203_20190814_SO	N	8/14/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	S-039B	S-039B_20190227_SO	N	2/27/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	S-029A-B	S-029A-B_20190304_SO	N	3/4/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-205	WA-SOIL-205_20190814_SO	N	8/14/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.011	1	SO	Surface Soil 0-1.5m	WA-SOIL-202	WA-SOIL-202_20190814_SO	N	8/14/2019	0	0.1	Fluorene	86-73-7			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-204	WA-SOIL-204_20190814_SO	N	8/14/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	S-036	S-036_20190227_SO	N	2/27/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	S-044 FLOOR	S-044 FLOOR_20190227_SO	N	2/27/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.0084	1	SO	Surface Soil 0-1.5m	C-2600B	C-2600B_20200225_SO	N	2/25/2020	0	0.1	Fluorene	86-73-7			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	19-H12-001	19-H12-001_20190609_SO	N	6/9/2019	0	0.15	Fluorene	86-73-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.0074	1	SO	Surface Soil 0-1.5m	19-H11-001	19-H11-001_20190609_SO	N	6/9/2019	0	0.15	Fluorene	86-73-7			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	19-H11-002	19-H11-002_20190609_SO	N	6/9/2019	0	0.15	Fluorene	86-73-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	19-H14-001	19-H14-001_20190609_SO	N	6/9/2019	0	0.15	Fluorene	86-73-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	S-314WB	S-314WB_20191016_SO	N	10/16/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	19-H15-001	19-H15-001_20190609_SO	N	6/9/2019	0	0.15	Fluorene	86-73-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	19-H16-001	19-H16-001_20190609_SO	N	6/9/2019	0	0.15	Fluorene	86-73-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	19-H13-001	19-H13-001_20190609_SO	N	6/9/2019	0	0.15	Fluorene	86-73-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	DB-011	DB-011_20190302_SO	N	3/2/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	C-2131	C-2131_20190306_SO	N	3/6/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	C-2422	C-2422_20190308_SO	N	3/8/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.0067	1	SO	Surface Soil 0-1.5m	C-6013	C-6013_20190306_SO	N	3/6/2019	0	0.1	Fluorene	86-73-7			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	C-6020	C-6020_20190306_SO	N	3/6/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	C-2153	C-2153_20190306_SO	N	3/6/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	C-6015B	C-6015B_20190814_SO	N	8/14/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	C-1018F	C-1018F_20190303_SO	N	3/3/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	C-2404	C-2404_20190308_SO	N	3/8/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	C-2140	C-2140_20190306_SO	N	3/6/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	S-008	S-008_20190227_SO	N	2/27/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	C-2424	C-2424_20190308_SO	N	3/8/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	C-1016F	C-1016F_20190303_SO	N	3/3/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	C-2156	C-2156_20190306_SO	N	3/6/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	C-6204	C-6204_20190309_SO	N	3/9/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	C-6042B	C-6042B_20190814_SO	N	8/14/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	S-007B	S-007B_20190227_SO	N	2/27/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	C-2410	C-2410_20190308_SO	N	3/8/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.0095	0	SO	Surface Soil 0-1.5m	C-6035B	C-6035B_20190814_SO	N	8/14/2019	0	0.1	Fluorene	86-73-7	U	0.0095	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.011	1	SO	Surface Soil 0-1.5m	C-2150-B	C-2150-B_20190306_SO	N	3/6/2019	0	0.1	Fluorene	86-73-7			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	C-2419	C-2419_20190308_SO	N	3/8/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	C-2406-B	C-2406-B_20190310_SO	N	3/10/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	S-011	S-011_20190227_SO	N	2/27/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	C-6042	C-6042_20190306_SO	N	3/6/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	C-2400	C-2400_20190308_SO	N	3/8/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	C-2146	C-2146_20190306_SO	N	3/6/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.011	0	SO	Surface Soil 0-1.5m	C-6013B	C-6013B_20190814_SO	N	8/14/2019	0	0.1	Fluorene	86-73-7	U	0.011	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	C-1011W	C-1011W_20190303_SO	N	3/3/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	C-6219	C-6219_20190309_SO	N	3/9/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.011	1	SO	Surface Soil 0-1.5m	S-029A-B	S-029A-B_20190304_SO	N	3/4/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.011	0	SO	Surface Soil 0-1.5m	S-031	S-031_20190227_SO	N	2/27/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.011	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SO	Surface Soil 0-1.5m	S-047C	S-047C_20190227_SO	N	2/27/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-206	WA-SOIL-206_20190814_SO	N	8/14/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-201	WA-SOIL-201_20190814_SO	N	8/14/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SO	Surface Soil 0-1.5m	S-048	S-048_20190227_SO	N	2/27/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-207	WA-SOIL-207_20190814_SO	N	8/14/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-209	WA-SOIL-209_20190814_SO	N	8/14/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SO	Surface Soil 0-1.5m	S-044 FLOOR	S-044 FLOOR_20190227_SO	N	2/27/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-208	WA-SOIL-208_20190814_SO	N	8/14/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SO	Surface Soil 0-1.5m	S-039B	S-039B_20190227_SO	N	2/27/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.0063	1	SO	Surface Soil 0-1.5m	WA-SOIL-202	WA-SOIL-202_20190814_SO	N	8/14/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-204	WA-SOIL-204_20190814_SO	N	8/14/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.011	1	SO	Surface Soil 0-1.5m	S-036	S-036_20190227_SO	N	2/27/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-205	WA-SOIL-205_20190814_SO	N	8/14/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SO	Surface Soil 0-1.5m	S-047G	S-047G_20190227_SO	N	2/27/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-203	WA-SOIL-203_20190814_SO	N	8/14/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SO	Surface Soil 0-1.5m	S-032B	S-032B_20190227_SO	N	2/27/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.098	1	SO	Surface Soil 0-1.5m	S-079	S-079_20190227_SO	N	2/27/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SO	Surface Soil 0-1.5m	C-2600B	C-2600B_20200225_SO	N	2/25/2020	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.01	1	SO	Surface Soil 0-1.5m	DB-011	DB-011_20190302_SO	N	3/2/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SO	Surface Soil 0-1.5m	19-H16-001	19-H16-001_20190609_SO	N	6/9/2019	0	0.15	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SO	Surface Soil 0-1.5m	19-H15-001	19-H15-001_20190609_SO	N	6/9/2019	0	0.15	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SO	Surface Soil 0-1.5m	S-314WB	S-314WB_20191016_SO	N	10/16/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SO	Surface Soil 0-1.5m	19-H11-002	19-H11-002_20190609_SO	N	6/9/2019	0	0.15	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SO	Surface Soil 0-1.5m	19-H13-001	19-H13-001_20190609_SO	N	6/9/2019	0	0.15	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SO	Surface Soil 0-1.5m	19-H11-001	19-H11-001_20190609_SO	N	6/9/2019	0	0.15	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.02	1	SO	Surface Soil 0-1.5m	19-H14-001	19-H14-001_20190609_SO	N	6/9/2019	0	0.15	Indeno (1,2,3-cd)pyrene	193-39-5			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SO	Surface Soil 0-1.5m	19-H12-001	19-H12-001_20190609_SO	N	6/9/2019	0	0.15	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SO	Surface Soil 0-1.5m	C-1016F	C-1016F_20190303_SO	N	3/3/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SO	Surface Soil 0-1.5m	C-6015B	C-6015B_20190814_SO	N	8/14/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SO	Surface Soil 0-1.5m	C-2131	C-2131_20190306_SO	N	3/6/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.011	0	SO	Surface Soil 0-1.5m	C-6013B	C-6013B_20190814_SO	N	8/14/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.011	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.022	1	SO	Surface Soil 0-1.5m	C-2146	C-2146_20190306_SO	N	3/6/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.032	1	SO	Surface Soil 0-1.5m	S-011	S-011_20190227_SO	N	2/27/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.069	1	SO	Surface Soil 0-1.5m	C-2140	C-2140_20190306_SO	N	3/6/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.01	1	SO	Surface Soil 0-1.5m	C-2410	C-2410_20190308_SO	N	3/8/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.012	1	SO	Surface Soil 0-1.5m	C-2153	C-2153_20190306_SO	N	3/6/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SO	Surface Soil 0-1.5m	C-6204	C-6204_20190309_SO	N	3/9/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SO	Surface Soil 0-1.5m	C-2400	C-2400_20190308_SO	N	3/8/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SO	Surface Soil 0-1.5m	C-1011W	C-1011W_20190303_SO	N	3/3/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SO	Surface Soil 0-1.5m	C-2404	C-2404_20190308_SO	N	3/8/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SO	Surface Soil 0-1.5m	S-007B	S-007B_20190227_SO	N	2/27/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SO	Surface Soil 0-1.5m	C-1018F	C-1018F_20190303_SO	N	3/3/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SO	Surface Soil 0-1.5m	C-6042B	C-6042B_20190814_SO	N	8/14/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SO	Surface Soil 0-1.5m	C-2406-B	C-2406-B_20190310_SO	N	3/10/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SO	Surface Soil 0-1.5m	C-6042	C-6042_20190306_SO	N	3/6/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.026	1	SO	Surface Soil 0-1.5m	C-2150-B	C-2150-B_20190306_SO	N	3/6/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SO	Surface Soil 0-1.5m	C-2424	C-2424_20190308_SO	N	3/8/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SO	Surface Soil 0-1.5m	C-6219	C-6219_20190309_SO	N	3/9/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.041	1	SO	Surface Soil 0-1.5m	C-2419	C-2419_20190308_SO	N	3/8/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5			mg/kg

TABLE B.5
DATA INPUT FOR PROUCL SOFTWARE
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Notes:
The maximum of the field duplicate and parent sample pairs were applied and a detect was chosen over a non-detect value.

ProUCL Group	ProUCL Result	ProUCL Flag	Medium	Soil Zone	Location	Sample ID	Sample Type	Sample Date	Start Depth (m)	End Depth (m)	COPC	CASRN	Qualifier	Detection Limit for Non-Detects	Unit
Outside CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.0059	1	SO	Surface Soil 0-1.5m	C-6013	C-6013_20190306_SO	N	3/6/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SO	Surface Soil 0-1.5m	S-008	S-008_20190227_SO	N	2/27/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.015	1	SO	Surface Soil 0-1.5m	C-2422	C-2422_20190308_SO	N	3/8/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.0095	0	SO	Surface Soil 0-1.5m	C-6035B	C-6035B_20190814_SO	N	8/14/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.0095	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.014	1	SO	Surface Soil 0-1.5m	C-2156	C-2156_20190306_SO	N	3/6/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SO	Surface Soil 0-1.5m	C-6020	C-6020_20190306_SO	N	3/6/2019	0	0.1	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.013	1	SO	Surface Soil 0-1.5m	S-029A-B	S-029A-B_20190304_SO	N	3/4/2019	0	0.1	Methylnaphthalene, 2-	91-57-6			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.01	1	SO	Surface Soil 0-1.5m	S-036	S-036_20190227_SO	N	2/27/2019	0	0.1	Methylnaphthalene, 2-	91-57-6			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-203	WA-SOIL-203_20190814_SO	N	8/14/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	S-032B	S-032B_20190227_SO	N	2/27/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-205	WA-SOIL-205_20190814_SO	N	8/14/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	S-039B	S-039B_20190227_SO	N	2/27/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.0089	1	SO	Surface Soil 0-1.5m	WA-SOIL-202	WA-SOIL-202_20190814_SO	N	8/14/2019	0	0.1	Methylnaphthalene, 2-	91-57-6			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.011	0	SO	Surface Soil 0-1.5m	S-031	S-031_20190227_SO	N	2/27/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.011	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-206	WA-SOIL-206_20190814_SO	N	8/14/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	S-011	S-011_20190227_SO	N	2/27/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	S-079	S-079_20190227_SO	N	2/27/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-204	WA-SOIL-204_20190814_SO	N	8/14/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	S-047G	S-047G_20190227_SO	N	2/27/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	S-048	S-048_20190227_SO	N	2/27/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	S-047C	S-047C_20190227_SO	N	2/27/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.014	1	SO	Surface Soil 0-1.5m	WA-SOIL-209	WA-SOIL-209_20190814_SO	N	8/14/2019	0	0.1	Methylnaphthalene, 2-	91-57-6			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	S-044 FLOOR	S-044 FLOOR_20190227_SO	N	2/27/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-208	WA-SOIL-208_20190814_SO	N	8/14/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-207	WA-SOIL-207_20190814_SO	N	8/14/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-201	WA-SOIL-201_20190814_SO	N	8/14/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.021	1	SO	Surface Soil 0-1.5m	C-2600B	C-2600B_20200225_SO	N	2/25/2020	0	0.1	Methylnaphthalene, 2-	91-57-6			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	19-H11-002	19-H11-002_20190609_SO	N	6/9/2019	0	0.15	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	19-H11-001	19-H11-001_20190609_SO	N	6/9/2019	0	0.15	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	19-H16-001	19-H16-001_20190609_SO	N	6/9/2019	0	0.15	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.0087	1	SO	Surface Soil 0-1.5m	19-H12-001	19-H12-001_20190609_SO	N	6/9/2019	0	0.15	Methylnaphthalene, 2-	91-57-6			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	19-H15-001	19-H15-001_20190609_SO	N	6/9/2019	0	0.15	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	S-314WB	S-314WB_20191016_SO	N	10/16/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	19-H13-001	19-H13-001_20190609_SO	N	6/9/2019	0	0.15	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	DB-011	DB-011_20190302_SO	N	3/2/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	19-H14-001	19-H14-001_20190609_SO	N	6/9/2019	0	0.15	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	C-6204	C-6204_20190309_SO	N	3/9/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	C-1011W	C-1011W_20190303_SO	N	3/3/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	C-6042B	C-6042B_20190814_SO	N	8/14/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	S-008	S-008_20190227_SO	N	2/27/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.0079	1	SO	Surface Soil 0-1.5m	C-1016F	C-1016F_20190303_SO	N	3/3/2019	0	0.1	Methylnaphthalene, 2-	91-57-6			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	C-6020	C-6020_20190306_SO	N	3/6/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.0095	0	SO	Surface Soil 0-1.5m	C-6035B	C-6035B_20190814_SO	N	8/14/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.0095	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	C-6042	C-6042_20190306_SO	N	3/6/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	S-007B	S-007B_20190227_SO	N	2/27/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	C-6015B	C-6015B_20190814_SO	N	8/14/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	C-6219	C-6219_20190309_SO	N	3/9/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.013	1	SO	Surface Soil 0-1.5m	C-1018F	C-1018F_20190303_SO	N	3/3/2019	0	0.1	Methylnaphthalene, 2-	91-57-6			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	C-2406-B	C-2406-B_20190310_SO	N	3/10/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	C-2424	C-2424_20190308_SO	N	3/8/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	C-2153	C-2153_20190306_SO	N	3/6/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	C-2156	C-2156_20190306_SO	N	3/6/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	C-2422	C-2422_20190308_SO	N	3/8/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	C-2146	C-2146_20190306_SO	N	3/6/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.009	1	SO	Surface Soil 0-1.5m	C-6013	C-6013_20190306_SO	N	3/6/2019	0	0.1	Methylnaphthalene, 2-	91-57-6			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	C-2419	C-2419_20190308_SO	N	3/8/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.031	1	SO	Surface Soil 0-1.5m	C-2150-B	C-2150-B_20190306_SO	N	3/6/2019	0	0.1	Methylnaphthalene, 2-	91-57-6			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	C-2400	C-2400_20190308_SO	N	3/8/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	C-2131	C-2131_20190306_SO	N	3/6/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	C-2410	C-2410_20190308_SO	N	3/8/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	C-2140	C-2140_20190306_SO	N	3/6/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	C-2404	C-2404_20190308_SO	N	3/8/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.011	0	SO	Surface Soil 0-1.5m	C-6013B	C-6013B_20190814_SO	N	8/14/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.011	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	S-047G	S-047G_20190227_SO	N	2/27/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.0083	1	SO	Surface Soil 0-1.5m	S-079	S-079_20190227_SO	N	2/27/2019	0	0.1	Naphthalene	91-20-3			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-202	WA-SOIL-202_20190814_SO	N	8/14/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	S-044 FLOOR	S-044 FLOOR_20190227_SO	N	2/27/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	S-039B	S-039B_20190227_SO	N	2/27/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-203	WA-SOIL-203_20190814_SO	N	8/14/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-201	WA-SOIL-201_20190814_SO	N	8/14/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	S-048	S-048_20190227_SO	N	2/27/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-208	WA-SOIL-208_20190814_SO	N	8/14/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	S-047C	S-047C_20190227_SO	N	2/27/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.0072	1	SO	Surface Soil 0-1.5m	WA-SOIL-209	WA-SOIL-209_20190814_SO	N	8/14/2019	0	0.1	Naphthalene	91-20-3			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	S-036	S-036_20190227_SO	N	2/27/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-207	WA-SOIL-207_20190814_SO	N	8/14/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-204	WA-SOIL-204_20190814_SO	N	8/14/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	S-032B	S-032B_20190227_SO	N	2/27/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-205	WA-SOIL-205_20190814_SO	N	8/14/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-206	WA-SOIL-206_20190814_SO	N	8/14/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.011	0	SO	Surface Soil 0-1.5m	S-031	S-031_20190227_SO	N	2/27/2019	0	0.1	Naphthalene	91-20-3	U	0.011	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	S-029A-B	S-029A-B_20190304_SO	N	3/4/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.0097	1	SO	Surface Soil 0-1.5m	C-2600B	C-2600B_20200225_SO	N	2/25/2020	0	0.1	Naphthalene	91-20-3			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	19-H11-001	19-H11-001_20190609_SO	N	6/9/2019	0	0.15	Naphthalene	91-20-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	DB-011	DB-011_20190302_SO	N	3/2/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	19-H16-001	19-H16-001_20190609_SO	N	6/9/2019	0	0.15	Naphthalene	91-20-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	S-314WB	S-314WB_20191016_SO	N	10/16/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	19-H12-001	19-H12-001_20190609_SO	N	6/9/2019	0	0.15	Naphthalene	91-20-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	19-H15-001	19-H15-001_20190609_SO	N	6/9/2019	0	0.15	Naphthalene	91-20-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	19-H14-001	19-H14-001_20190609_SO	N	6/9/2019	0	0.15	Naphthalene	91-20-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	19-H13-001	19-H13-001_20190609_SO	N	6/9/2019	0	0.15	Naphthalene	91-20-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	19-H11-002	19-H11-002_20190609_SO	N	6/9/2019	0	0.15	Naphthalene	91-20-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	C-6020	C-6020_20190306_SO	N	3/6/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	C-2406-B	C-2406-B_20190310_SO	N	3/10/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	C-6042	C-6042_20190306_SO	N	3/6/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	C-2156	C-2156_20190306_SO	N	3/6/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	C-2424	C-2424_20190308_SO	N	3/8/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	C-6204	C-6204_20190309_SO	N	3/9/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	C-2410	C-2410_20190308_SO	N	3/8/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	C-6042B	C-6042B_20190814_SO	N	8/14/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.0095	0	SO	Surface Soil 0-1.5m	C-6035B	C-6035B_20190814_SO	N	8/14/2019	0	0.1	Naphthalene	91-20-3	U	0.0095	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	C-2404	C-2404_20190308_SO	N	3/8/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	C-1011W	C-1011W_20190303_SO	N	3/3/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	C-2422	C-2422_20190308_SO	N	3/8/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	C-2400	C-2400_20190308_SO	N	3/8/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	C-2419	C-2419_20190308_SO	N	3/8/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	C-2146	C-2146_20190306_SO	N	3/6/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	S-011	S-011_20190227_SO	N	2/27/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	C-2140	C-2140_20190306_SO	N	3/6/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.011	0	SO	Surface Soil 0-1.5m	C-6013B	C-6013B_20190814_SO	N	8/14/2019	0	0.1	Naphthalene	91-20-3	U	0.011	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	C-1016F	C-1016F_20190303_SO	N	3/3/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	S-008	S-008_20190227_SO	N	2/27/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	C-2131	C-2131_20190306_SO	N	3/6/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.0091	1	SO	Surface Soil 0-1.5m	C-1018F	C-1018F_20190303_SO	N	3/3/2019	0	0.1	Naphthalene	91-20-3			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	S-007B	S-007B_20190227_SO	N	2/27/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	C-6015B	C-6015B_20190814_SO	N	8/14/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.008	1	SO	Surface Soil 0-1.5m	C-2150-B	C-2150-B_20190306_SO	N	3/6/2019	0	0.1	Naphthalene	91-20-3			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	C-6219	C-6219_20190309_SO	N	3/9/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	C-6013	C-6013_20190306_SO	N	3/6/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	C-2153	C-2153_20190306_SO	N	3/6/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.027	1	SO	Surface Soil 0-1.5m	S-029A-B	S-029A-B_20190304_SO	N	3/4/2019	0	0.1	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.03	1	SO	Surface Soil 0-1.5m	S-079	S-079_20190227_SO	N	2/27/2019	0	0.1	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.036	1	SO	Surface Soil 0-1.5m	S-031	S-031_20190227_SO	N	2/27/2019	0	0.1	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.018	1	SO	Surface Soil 0-1.5m	WA-SOIL-209	WA-SOIL-209_20190814_SO	N	8/14/2019	0	0.1	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.0071	1	SO	Surface Soil 0-1.5m	WA-SOIL-201	WA-SOIL-201_20190814_SO	N	8/14/2019	0	0.1	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.011	1	SO	Surface Soil 0-1.5m	S-048	S-048_20190227_SO	N	2/27/2019	0	0.1	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-208	WA-SOIL-208_20190814_SO	N	8/14/2019	0	0.1	Perylene	198-55-0	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.021	1	SO	Surface Soil 0-1.5m	WA-SOIL-202	WA-SOIL-202_20190814_SO	N	8/14/2019	0	0.1	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.033	1	SO	Surface Soil 0-1.5m	S-047C	S-047C_20190227_SO	N	2/27/2019	0	0.1	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-206	WA-SOIL-206_20190814_SO	N	8/14/2019	0	0.1	Perylene	198-55-0	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-203	WA-SOIL-203_20190814_SO	N	8/14/2019	0	0.1	Perylene	198-55-0	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.047	1	SO	Surface Soil 0-1.5m	S-044 FLOOR	S-044 FLOOR_20190227_SO	N	2/27/2019	0	0.1	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.014	1	SO	Surface Soil 0-1.5m	S-032B	S-032B_20190227_SO	N	2/27/2019	0	0.1	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.0086	1	SO	Surface Soil 0-1.5m	WA-SOIL-205	WA-SOIL-205_20190814_SO	N	8/14/2019	0	0.1	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.014	1	SO	Surface Soil 0-1.5m	S-039B	S-039B_20190227_SO	N	2/27/2019	0	0.1	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.072	1	SO	Surface Soil 0-1.5m	S-047G	S-047G_20190227_SO	N	2/27/2019	0	0.1	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.032	1	SO	Surface Soil 0-1.5m	S-036	S-036_20190227_SO	N	2/27/2019	0	0.1	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-204	WA-SOIL-204_20190814_SO	N	8/14/2019	0	0.1	Perylene	198-55-0	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-207	WA-SOIL-207_20190814_SO	N	8/14/2019	0	0.1	Perylene	198-55-0	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.015	1	SO	Surface Soil 0-1.5m	C-2600B	C-2600B_20200225_SO	N	2/25/2020	0	0.1	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.011	1	SO	Surface Soil 0-1.5m	19-H16-001	19-H16-001_20190609_SO	N	6/9/2019	0	0.15	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	S-314WB	S-314WB_20191016_SO	N	10/16/2019	0	0.1	Perylene	198-55-0	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.011	1	SO	Surface Soil 0-1.5m	19-H14-001	19-H14-001_20190609_SO	N	6/9/2019	0	0.15	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.0058	1	SO	Surface Soil 0-1.5m	19-H11-002	19-H11-002_20190609_SO	N	6/9/2019	0	0.15	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.0086	1	SO	Surface Soil 0-1.5m	19-H13-001	19-H13-001_20190609_SO	N	6/9/2019	0	0.15	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.0076	1	SO	Surface Soil 0-1.5m	19-H11-001	19-H11-001_20190609_SO	N	6/9/2019	0	0.15	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.015	1	SO	Surface Soil 0-1.5m	DB-011	DB-011_20190302_SO	N	3/2/2019	0	0.1	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.0077	1	SO	Surface Soil 0-1.5m	19-H12-001	19-H12-001_20190609_SO	N	6/9/2019	0	0.15	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.013	1	SO	Surface Soil 0-1.5m	19-H15-001	19-H15-001_20190609_SO	N	6/9/2019	0	0.15	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.023	1	SO	Surface Soil 0-1.5m	C-2140	C-2140_20190306_SO	N	3/6/2019	0	0.1	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.061	1	SO	Surface Soil 0-1.5m	C-2406-B	C-2406-B_20190310_SO	N	3/10/2019	0	0.1	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.013	1	SO	Surface Soil 0-1.5m	C-2153	C-2153_20190306_SO	N	3/6/2019	0	0.1	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.0097	1	SO	Surface Soil 0-1.5m	S-011	S-011_20190227_SO	N	2/27/2019	0	0.1	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.018	1	SO	Surface Soil 0-1.5m	C-2146	C-2146_20190306_SO	N	3/6/2019	0	0.1	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.02	1	SO	Surface Soil 0-1.5m	C-2400	C-2400_20190308_SO	N	3/8/2019	0	0.1	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.014	1	SO	Surface Soil 0-1.5m	S-007B	S-007B_20190227_SO	N	2/27/2019	0	0.1	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.0077	1	SO	Surface Soil 0-1.5m	C-6204	C-6204_20190309_SO	N	3/9/2019	0	0.1	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.0099	1	SO	Surface Soil 0-1.5m	C-1011W	C-1011W_20190303_SO	N	3/3/2019	0	0.1	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.0086	1	SO	Surface Soil 0-1.5m	C-6219	C-6219_20190309_SO	N	3/9/2019	0	0.1	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.14	1	SO	Surface Soil 0-1.5m	C-6042B	C-6042B_20190814_SO	N	8/14/2019	0	0.1	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.032	1	SO	Surface Soil 0-1.5m	S-008	S-008_20190227_SO	N	2/27/2019	0	0.1	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.0069	1	SO	Surface Soil 0-1.5m	C-2131	C-2131_20190306_SO	N	3/6/2019	0	0.1	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.014	1	SO	Surface Soil 0-1.5m	C-2156	C-2156_20190306_SO	N	3/6/2019	0	0.1	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.018	1	SO	Surface Soil 0-1.5m	C-2150-B	C-2150-B_20190306_SO	N	3/6/2019	0	0.1	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.017	1	SO	Surface Soil 0-1.5m	C-2404	C-2404_20190308_SO	N	3/8/2019	0	0.1	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	C-2424	C-2424_20190308_SO	N	3/8/2019	0	0.1	Perylene	198-55-0	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.25	1	SO	Surface Soil 0-1.5m	C-6015B	C-6015B_20190814_SO	N	8/14/2019	0	0.1	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.22	1	SO	Surface Soil 0-1.5m	C-6035B	C-6035B_20190814_SO	N	8/14/2019	0	0.1	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.027	1	SO	Surface Soil 0-1.5m	C-2422	C-2422_20190308_SO	N	3/8/2019	0	0.1	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.26	1	SO	Surface Soil 0-1.5m	C-6013B	C-6013B_20190814_SO	N	8/14/2019	0	0.1	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.03	1	SO	Surface Soil 0-1.5m	C-2419	C-2419_20190308_SO	N	3/8/2019	0	0.1	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.013	1	SO	Surface Soil 0-1.5m	C-1016F	C-1016F_20190303_SO	N	3/3/2019	0	0.1	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.0079	1	SO	Surface Soil 0-1.5m	C-1018F	C-1018F_20190303_SO	N	3/3/2019	0	0.1	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.02	1	SO	Surface Soil 0-1.5m	C-2410	C-2410_20190308_SO	N	3/8/2019	0	0.1	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.027	1	SO	Surface Soil 0-1.5m	C-6020	C-6020_20190306_SO	N	3/6/2019	0	0.1	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.22	1	SO	Surface Soil 0-1.5m	C-6013	C-6013_20190306_SO	N	3/6/2019	0	0.1	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.047	1	SO	Surface Soil 0-1.5m	C-6042	C-6042_20190306_SO	N	3/6/2019	0	0.1	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.018	1	SO	Surface Soil 0-1.5m	WA-SOIL-209	WA-SOIL-209_20190814_SO	N	8/14/2019	0	0.1	Phenanthrene	85-01-8			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.2	1	SO	Surface Soil 0-1.5m	S-079	S-079_20190227_SO	N	2/27/2019	0	0.1	Phenanthrene	85-01-8			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-207	WA-SOIL-207_20190814_SO	N	8/14/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.041	1	SO	Surface Soil 0-1.5m	WA-SOIL-202	WA-SOIL-202_20190814_SO	N	8/14/2019	0	0.1	Phenanthrene	85-01-8			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.0079	1	SO	Surface Soil 0-1.5m	WA-SOIL-208	WA-SOIL-208_20190814_SO	N	8/14/2019	0	0.1	Phenanthrene	85-01-8			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	S-047C	S-047C_20190227_SO	N	2/27/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-206	WA-SOIL-206_20190814_SO	N	8/14/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-204	WA-SOIL-204_20190814_SO	N	8/14/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	S-048	S-048_20190227_SO	N	2/27/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.016	1	SO	Surface Soil 0-1.5m	S-036	S-036_20190227_SO	N	2/27/2019	0	0.1	Phenanthrene	85-01-8			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.011	0	SO	Surface Soil 0-1.5m	S-031	S-031_20190227_SO	N	2/27/2019	0	0.1	Phenanthrene	85-01-8	U	0.011	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	S-047G	S-047G_20190227_SO	N	2/27/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	S-039B	S-039B_20190227_SO	N	2/27/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-205	WA-SOIL-205_20190814_SO	N	8/14/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.016	1	SO	Surface Soil 0-1.5m	S-029A-B	S-029A-B_20190304_SO	N	3/4/2019	0	0.1	Phenanthrene	85-01-8			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	S-032B	S-032B_20190227_SO	N	2/27/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg

TABLE B.5
DATA INPUT FOR PROUCL SOFTWARE
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Notes:
The maximum of the field duplicate and parent sample pairs were applied and a detect was chosen over a non-detect value.

ProUCL Group	ProUCL Result	ProUCL Flag	Medium	Soil Zone	Location	Sample ID	Sample Type	Sample Date	Start Depth (m)	End Depth (m)	COPC	CASRN	Qualifier	Detection Limit for Non-Detects	Unit
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-201	WA-SOIL-201_20190814_SO	N	8/14/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-203	WA-SOIL-203_20190814_SO	N	8/14/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	S-044 FLOOR	S-044 FLOOR_20190227_SO	N	2/27/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.027	1	SO	Surface Soil 0-1.5m	C-2600B	C-2600B_20200225_SO	N	2/25/2020	0	0.1	Phenanthrene	85-01-8			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.012	1	SO	Surface Soil 0-1.5m	19-H15-001	19-H15-001_20190609_SO	N	6/9/2019	0	0.15	Phenanthrene	85-01-8			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.011	1	SO	Surface Soil 0-1.5m	DB-011	DB-011_20190302_SO	N	3/2/2019	0	0.1	Phenanthrene	85-01-8			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.0083	1	SO	Surface Soil 0-1.5m	19-H16-001	19-H16-001_20190609_SO	N	6/9/2019	0	0.15	Phenanthrene	85-01-8			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.007	1	SO	Surface Soil 0-1.5m	19-H11-002	19-H11-002_20190609_SO	N	6/9/2019	0	0.15	Phenanthrene	85-01-8			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	19-H13-001	19-H13-001_20190609_SO	N	6/9/2019	0	0.15	Phenanthrene	85-01-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.018	1	SO	Surface Soil 0-1.5m	19-H14-001	19-H14-001_20190609_SO	N	6/9/2019	0	0.15	Phenanthrene	85-01-8			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.015	1	SO	Surface Soil 0-1.5m	19-H12-001	19-H12-001_20190609_SO	N	6/9/2019	0	0.15	Phenanthrene	85-01-8			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.018	1	SO	Surface Soil 0-1.5m	19-H11-001	19-H11-001_20190609_SO	N	6/9/2019	0	0.15	Phenanthrene	85-01-8			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	S-314WB	S-314WB_20191016_SO	N	10/16/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	C-6015B	C-6015B_20190814_SO	N	8/14/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	C-6219	C-6219_20190309_SO	N	3/9/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.0072	1	SO	Surface Soil 0-1.5m	C-2153	C-2153_20190306_SO	N	3/6/2019	0	0.1	Phenanthrene	85-01-8			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.014	1	SO	Surface Soil 0-1.5m	C-2419	C-2419_20190308_SO	N	3/8/2019	0	0.1	Phenanthrene	85-01-8			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	S-007B	S-007B_20190227_SO	N	2/27/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.013	1	SO	Surface Soil 0-1.5m	C-6013	C-6013_20190306_SO	N	3/6/2019	0	0.1	Phenanthrene	85-01-8			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.0056	1	SO	Surface Soil 0-1.5m	C-6020	C-6020_20190306_SO	N	3/6/2019	0	0.1	Phenanthrene	85-01-8			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.0097	1	SO	Surface Soil 0-1.5m	C-2146	C-2146_20190306_SO	N	3/6/2019	0	0.1	Phenanthrene	85-01-8			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	C-2131	C-2131_20190306_SO	N	3/6/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	C-6204	C-6204_20190309_SO	N	3/9/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.05	1	SO	Surface Soil 0-1.5m	C-2150-B	C-2150-B_20190306_SO	N	3/6/2019	0	0.1	Phenanthrene	85-01-8			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	C-2424	C-2424_20190308_SO	N	3/8/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.021	1	SO	Surface Soil 0-1.5m	C-2140	C-2140_20190306_SO	N	3/6/2019	0	0.1	Phenanthrene	85-01-8			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	C-2404	C-2404_20190308_SO	N	3/8/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	C-2406-B	C-2406-B_20190310_SO	N	3/10/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	C-1011W	C-1011W_20190303_SO	N	3/3/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.01	1	SO	Surface Soil 0-1.5m	C-6042B	C-6042B_20190814_SO	N	8/14/2019	0	0.1	Phenanthrene	85-01-8			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	C-2156	C-2156_20190306_SO	N	3/6/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	C-6042	C-6042_20190306_SO	N	3/6/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	S-011	S-011_20190227_SO	N	2/27/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.0095	0	SO	Surface Soil 0-1.5m	C-6035B	C-6035B_20190814_SO	N	8/14/2019	0	0.1	Phenanthrene	85-01-8	U	0.0095	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.013	1	SO	Surface Soil 0-1.5m	C-6013B	C-6013B_20190814_SO	N	8/14/2019	0	0.1	Phenanthrene	85-01-8			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	C-1016F	C-1016F_20190303_SO	N	3/3/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	C-2410	C-2410_20190308_SO	N	3/8/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	S-008	S-008_20190227_SO	N	2/27/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.011	1	SO	Surface Soil 0-1.5m	C-2422	C-2422_20190308_SO	N	3/8/2019	0	0.1	Phenanthrene	85-01-8			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	C-2400	C-2400_20190308_SO	N	3/8/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	C-1018F	C-1018F_20190303_SO	N	3/3/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-207	WA-SOIL-207_20190814_SO	N	8/14/2019	0	0.1	Pyrene	129-00-0	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-208	WA-SOIL-208_20190814_SO	N	8/14/2019	0	0.1	Pyrene	129-00-0	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-204	WA-SOIL-204_20190814_SO	N	8/14/2019	0	0.1	Pyrene	129-00-0	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	S-044 FLOOR	S-044 FLOOR_20190227_SO	N	2/27/2019	0	0.1	Pyrene	129-00-0	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.018	1	SO	Surface Soil 0-1.5m	WA-SOIL-209	WA-SOIL-209_20190814_SO	N	8/14/2019	0	0.1	Pyrene	129-00-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	S-032B	S-032B_20190227_SO	N	2/27/2019	0	0.1	Pyrene	129-00-0	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.033	1	SO	Surface Soil 0-1.5m	WA-SOIL-202	WA-SOIL-202_20190814_SO	N	8/14/2019	0	0.1	Pyrene	129-00-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.011	0	SO	Surface Soil 0-1.5m	S-031	S-031_20190227_SO	N	2/27/2019	0	0.1	Pyrene	129-00-0	U	0.011	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-203	WA-SOIL-203_20190814_SO	N	8/14/2019	0	0.1	Pyrene	129-00-0	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-201	WA-SOIL-201_20190814_SO	N	8/14/2019	0	0.1	Pyrene	129-00-0	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.2	1	SO	Surface Soil 0-1.5m	S-079	S-079_20190227_SO	N	2/27/2019	0	0.1	Pyrene	129-00-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	S-048	S-048_20190227_SO	N	2/27/2019	0	0.1	Pyrene	129-00-0	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	S-039B	S-039B_20190227_SO	N	2/27/2019	0	0.1	Pyrene	129-00-0	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.021	1	SO	Surface Soil 0-1.5m	S-029A-B	S-029A-B_20190304_SO	N	3/4/2019	0	0.1	Pyrene	129-00-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.014	1	SO	Surface Soil 0-1.5m	S-047C	S-047C_20190227_SO	N	2/27/2019	0	0.1	Pyrene	129-00-0		0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.014	1	SO	Surface Soil 0-1.5m	S-036	S-036_20190227_SO	N	2/27/2019	0	0.1	Pyrene	129-00-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	S-047G	S-047G_20190227_SO	N	2/27/2019	0	0.1	Pyrene	129-00-0	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-205	WA-SOIL-205_20190814_SO	N	8/14/2019	0	0.1	Pyrene	129-00-0	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-206	WA-SOIL-206_20190814_SO	N	8/14/2019	0	0.1	Pyrene	129-00-0	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.021	1	SO	Surface Soil 0-1.5m	C-2600B	C-2600B_20200225_SO	N	2/25/2020	0	0.1	Pyrene	129-00-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	S-314WB	S-314WB_20191016_SO	N	10/16/2019	0	0.1	Pyrene	129-00-0	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	19-H11-002	19-H11-002_20190609_SO	N	6/9/2019	0	0.15	Pyrene	129-00-0	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	19-H12-001	19-H12-001_20190609_SO	N	6/9/2019	0	0.15	Pyrene	129-00-0	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	19-H15-001	19-H15-001_20190609_SO	N	6/9/2019	0	0.15	Pyrene	129-00-0	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	19-H16-001	19-H16-001_20190609_SO	N	6/9/2019	0	0.15	Pyrene	129-00-0	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.022	1	SO	Surface Soil 0-1.5m	19-H14-001	19-H14-001_20190609_SO	N	6/9/2019	0	0.15	Pyrene	129-00-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	19-H13-001	19-H13-001_20190609_SO	N	6/9/2019	0	0.15	Pyrene	129-00-0	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.0096	1	SO	Surface Soil 0-1.5m	19-H11-001	19-H11-001_20190609_SO	N	6/9/2019	0	0.15	Pyrene	129-00-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	C-1016F	C-1016F_20190303_SO	N	3/3/2019	0	0.1	Pyrene	129-00-0	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.013	1	SO	Surface Soil 0-1.5m	C-6015B	C-6015B_20190814_SO	N	8/14/2019	0	0.1	Pyrene	129-00-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.029	1	SO	Surface Soil 0-1.5m	DB-011	DB-011_20190302_SO	N	3/2/2019	0	0.1	Pyrene	129-00-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	S-007B	S-007B_20190227_SO	N	2/27/2019	0	0.1	Pyrene	129-00-0	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.031	1	SO	Surface Soil 0-1.5m	C-2146	C-2146_20190306_SO	N	3/6/2019	0	0.1	Pyrene	129-00-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	C-1018F	C-1018F_20190303_SO	N	3/3/2019	0	0.1	Pyrene	129-00-0	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.1	1	SO	Surface Soil 0-1.5m	C-2140	C-2140_20190306_SO	N	3/6/2019	0	0.1	Pyrene	129-00-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.057	1	SO	Surface Soil 0-1.5m	S-011	S-011_20190227_SO	N	2/27/2019	0	0.1	Pyrene	129-00-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.059	1	SO	Surface Soil 0-1.5m	C-2150-B	C-2150-B_20190306_SO	N	3/6/2019	0	0.1	Pyrene	129-00-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.013	1	SO	Surface Soil 0-1.5m	S-008	S-008_20190227_SO	N	2/27/2019	0	0.1	Pyrene	129-00-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	C-2424	C-2424_20190308_SO	N	3/8/2019	0	0.1	Pyrene	129-00-0	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.023	1	SO	Surface Soil 0-1.5m	C-2156	C-2156_20190306_SO	N	3/6/2019	0	0.1	Pyrene	129-00-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	C-2131	C-2131_20190306_SO	N	3/6/2019	0	0.1	Pyrene	129-00-0	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	C-1011W	C-1011W_20190303_SO	N	3/3/2019	0	0.1	Pyrene	129-00-0	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.014	1	SO	Surface Soil 0-1.5m	C-6013B	C-6013B_20190814_SO	N	8/14/2019	0	0.1	Pyrene	129-00-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.017	1	SO	Surface Soil 0-1.5m	C-2153	C-2153_20190306_SO	N	3/6/2019	0	0.1	Pyrene	129-00-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.015	1	SO	Surface Soil 0-1.5m	C-6013	C-6013_20190306_SO	N	3/6/2019	0	0.1	Pyrene	129-00-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.042	1	SO	Surface Soil 0-1.5m	C-2419	C-2419_20190308_SO	N	3/8/2019	0	0.1	Pyrene	129-00-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.02	1	SO	Surface Soil 0-1.5m	C-2422	C-2422_20190308_SO	N	3/8/2019	0	0.1	Pyrene	129-00-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	C-6204	C-6204_20190309_SO	N	3/9/2019	0	0.1	Pyrene	129-00-0	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.011	1	SO	Surface Soil 0-1.5m	C-6035B	C-6035B_20190814_SO	N	8/14/2019	0	0.1	Pyrene	129-00-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.016	1	SO	Surface Soil 0-1.5m	C-6042B	C-6042B_20190814_SO	N	8/14/2019	0	0.1	Pyrene	129-00-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	C-2400	C-2400_20190308_SO	N	3/8/2019	0	0.1	Pyrene	129-00-0	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.0075	1	SO	Surface Soil 0-1.5m	C-6020	C-6020_20190306_SO	N	3/6/2019	0	0.1	Pyrene	129-00-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.013	1	SO	Surface Soil 0-1.5m	C-2410	C-2410_20190308_SO	N	3/8/2019	0	0.1	Pyrene	129-00-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	C-2404	C-2404_20190308_SO	N	3/8/2019	0	0.1	Pyrene	129-00-0	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	C-6219	C-6219_20190309_SO	N	3/9/2019	0	0.1	Pyrene	129-00-0	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	C-6042	C-6042_20190306_SO	N	3/6/2019	0	0.1	Pyrene	129-00-0	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	C-2406-B	C-2406-B_20190310_SO	N	3/10/2019	0	0.1	Pyrene	129-00-0	U	0.005	mg/kg

ATTACHMENT C

Impact to Groundwater Pathway Evaluation

ATTACHMENT C TABLE OF CONTENTS:

Table C.1 Summary of IACR Exceedances for the Impact to Groundwater Pathway in Soil Samples

TABLE C.1
SUMMARY OF IACR EXCEEDANCES FOR THE IMPACT TO GROUNDWATER PATHWAY IN SOIL SAMPLES
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

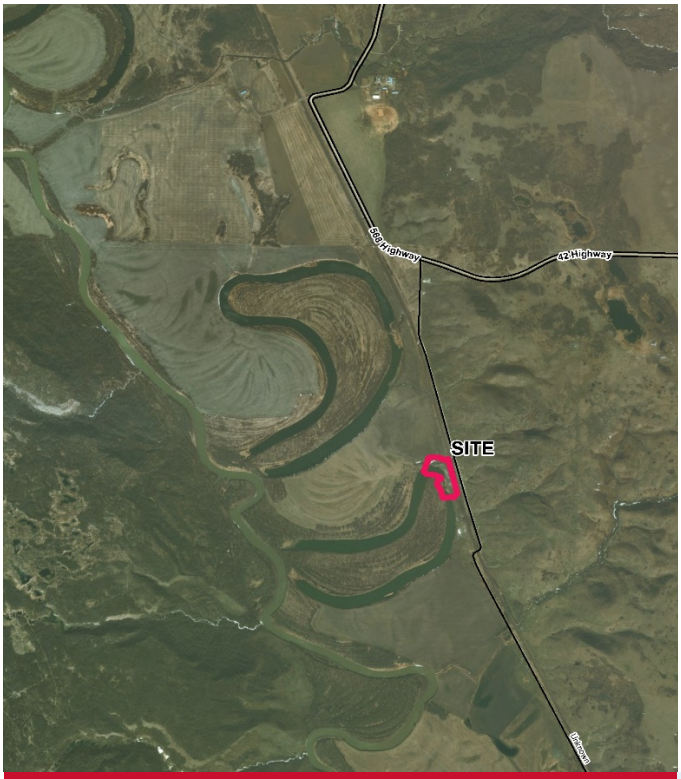
Area	Sample Name	Sample Date	Depth (m bgs)	IACR (unitless)
Surface Soil (0-1.5 m)				
CN Right-of-Way	C (collected adjacent to the north of the rail)	5/3/2019	0 - 0.15	5.4
CN Right-of-Way	D (collected at BH19-15)	5/7/2019	0 - 0.15	1.8
CN Right-of-Way	N-031	2/26/2019	0 - 0.1	2.9
CN Right-of-Way	N-036	2/26/2019	0 - 0.1	1.6
CN Right-of-Way	N-1000 (duplicate of N-009)	2/26/2019	0 - 0.1	8.1
CN Right-of-Way	NSERIESDIL-2	10/16/2019	0 - 0.1	5.3
Subsurface Soil (>1.5 m)				
CN Right-of-Way	BH19-120-3	12/5/2019	1.52 - 1.83	5.9
CN Right-of-Way	EX2-3	6/5/2019	2.3	2.5
CN Right-of-Way	EX2-4	6/5/2019	1.8	2.8
CN Right-of-Way	EX2-8	6/5/2019	2	1.2
CN Right-of-Way	DUP 8 (duplicate of EX2-8)	6/5/2019	2	1.7

Notes:
The sample "C" is not representative of conditions resulting from the release and is not further evaluated.

Abbreviations:
bgs -- below ground surface
CN -- Canadian National Railway Company
IACR -- Index of Additive Cancer Risk
PAH -- polycyclic aromatic hydrocarbon

Appendix H

Draft Ecological Screening Assessment



Appendix H

ECOLOGICAL SCREENING ASSESSMENT

CN MILE 197.4 DERAILMENT

RIVERS SUBDIVISION – ST. LAZARE, MANITOBA

May 29, 2020

PREPARED FOR:

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ABBREVIATIONS AND ACRONYMS

BC	Benchmark concentration
BTEX	Benzene, toluene, ethylbenzene, xylene
°C	Celsius degrees
CCME	Canadian Council of Ministers of the Environment
CLB	Cold Lake Dilbit Blend
cm	Centimeter
CN	Canadian National Railway Company
COPC	Constituent of Potential Concern
COC	Constituent of Concern
CSM	Conceptual site model
EPC	Exposure point concentration
ESA	Environmental Site Assessment
HDR	HDR Corporation
HQ	Hazard Quotient
IUCN	International Union for Conservation of Nature
km	Kilometer
LC50	Lethal concentration that represents a dose where 50% of the participants in an experimental study will die
m	Meter
mbgs	Meters below ground surface
MSD	Manitoba Sustainable Development
OMA	Oxbow Monitoring Area
PAH	Polycyclic aromatic hydrocarbon
PHC	Petroleum hydrocarbon fractions
ROC	Receptors of concern
RoW	Right-of-Way
SAR	Species at Risk
SARA	Species at Risk Act
UCL	Upper Confidence Limit
USEPA	United States Environmental Protection Agency
VEC	Valued Ecosystem Component

1 Introduction

HDR has completed a Screening Assessment of the potential ecological risks at the Site specific to PAHs as part of the Environmental Site Assessment (ESA). The ESA is being submitted in response to the Letter of Designation issued by Manitoba Sustainable Development (MSD) on February 21, 2019 for the Site described as "SW 13-16-28 W1M, Rural Municipality of Ellice-Archie, Manitoba".

On February 16, 2019, a Canadian National Railway Company (CN) freight train derailed immediately east of an oxbow of the Assiniboine River. The 34 cars that derailed were carrying Cold Lake Dilbit Blend (CLB), and 13 cars ruptured and released approximately 820,000 liters of CLB. The purpose of the ESA is to report on Site remediation and restoration to determine if the Site is no longer contaminated at a level that may pose a threat to human health or safety or to the environment related to PAHs that are included in the Letter of Designation.

1.1 Screening Assessment Scope

The Screening Assessment has been completed in accordance with the Canadian Council of Ministers of the Environment (CCME) guidelines, as provided in *A Framework for Ecological Risk Assessment: General Guidance* (CCME 1996; 1997), supplemented primarily by the *Canadian Soil Quality Guidelines for the Protection of Environmental and Human Health – Polycyclic Aromatic Hydrocarbons* (CCME 2010b), the *Contaminated Sites Remediation Regulation* administered by the MSD, and guidance from the Federal Contaminated Sites Action Plan (Health Canada 2012). Other relevant guidance (CCME 2020) was used as appropriate. The CCME guidance presents a three-tiered framework composed of three types of ecological risk assessments that increase in level of scope and detail: Screening Assessment, Preliminary Quantitative Ecological Risk Assessment and a Detailed Quantitative Ecological Risk Assessment. This report represents the first step in the framework, the Screening Assessment.

The Screening Assessment provides a summary of the regulatory context and Site management goals, existing Site information relevant to the history of the release, nature and extent of associated contamination and potential impacts to the ecosystem, what resources are at risk, information regarding Contaminants of Potential Concern (COPCs), the receptors of concern (ROCs) that could be affected by contamination, exposure pathways and a conceptual site model (CSM) representing the interaction of contaminant sources, exposure pathways, and receptors. The Screening Assessment also consists of the calculation of PAH-specific Hazard Quotients (HQs), which represent the ratio of COPC concentrations detected at the Site to available ecological guidelines. Exceedance of the regulatory threshold, i.e., a HQ of greater than 1, indicates a potential concern for impacts to ecological health and these COPCs are then identified as Constituents of Concern (COC) in the **Section 5 Risk Characterization**.

The *Canadian Soil Quality Guidelines for Carcinogenic and Other PAHs* (CCME 2010a) and the *Canadian Soil Quality Guidelines for the Protection of Environmental and Human Health* (CCME 2010b) provides instruction on how to apply the soil guidelines for PAHs at a contaminated site and includes a three step process for calculating risk to human and

environmental health. This process was followed for both the human health and ecological risk assessments for this Site. Step 3 is used for Ecological Direct Contact and includes a comparison of individual PAH detected concentrations to the appropriate guideline based on non-carcinogenic effects to calculate a HQ. For ecological exposures, the areas within the CN Right-of-Way (ROW) and outside of the ROW are evaluated separately based on the Letter of Designation, PAR approval and local land use and control, and to prioritize areas for response (e.g., within the oxbow), if further action is determined to be needed.

1.2 Site Description

Detailed information on the physical setting, surrounding land use, site release and response history, data collection activity, description of geology and hydrogeology and contaminants detected at the Site is presented in the main body of the ESA report (as noted below), to which this Screening Assessment is an appendix.

1.2.1 Physical Setting and Land Use

See Section 3 of the ESA report for a description of the physical setting and land use.

1.2.2 Site Release and Response History

See Sections 6 and 7 of the ESA report for a description of the release resulting from and response actions taken as a result of the February 2019 derailment.

1.2.3 Summary of Sample Collection, Methodology and Analyses

See Section 8 of the ESA report for information regarding the numerous sampling events, sample collection methods and laboratory analyses performed.

1.2.4 Site Geology and Hydrogeology

See Sections 4 and 5 of the ESA report for a description of the geology and hydrogeology of the Site.

1.2.5 Contaminants Present

A detailed report of contamination detected at the Site is provided in Section 6 of the ESA report and incorporated into the discussion of COPCs for purposes of the Screening Assessment, see **Section 4 Hazard Assessment** below.

2 Receptor Characterization

The Receptor Characterization includes information on the life history on the ROC and information regarding the communities and habitats at the Site. Refer to **Section 4.4** for further information.

2.1 Receptors of Concern

The primary concern related to the CLB release was immediate impacts to fish within the oxbow, which was frozen at the time of the derailment. The immediate emergency response to the event focused on containing the spilled product visible on the ice and snow

of the oxbow. Isolation was achieved through constructing two soil berms on either side of the visible limits of product sitting on the oxbow defined as the Oxbow Monitoring Area (OMA). These berms have remained in place to provide a confined monitoring area within the oxbow. Impacted ice, snow and soils were removed from the Site during the emergency response, focusing on areas between the CN track and the oxbow. Impacted sediments were also removed from the base of the oxbow between the two containment berms. These factors limited the number of potentially affected receptors and impacts.

The two temporary berms defining the OMA are no longer required to support site remediation or restoration; however, they have remained in place and as such have required monitoring of the aquatic environment within the OMA. During a July 4, 2019 site visit, CN and HDR representatives observed small-bodied fish in shallow pools in between the two containment berms. The determination was made these fish should be moved into deeper waters to help prevent possible fish mortalities. On July 24, 2019, fish relocation within the OMA was completed. See Section 12.1 of the ESA report for more details of the fish salvage operations.

Four fish species were observed during the salvage operation; they include the emerald shiner, spottail shiner, fathead minnow and white sucker. As the only species noted within the areal extent of the CLB released, these fish species are considered the ROC.

2.2 Life History of Receptors

The emerald shiner (*Notropis atherinoides*) is a small fish with a silvery emerald color on its sides. It is found from Canada to the Gulf of Mexico, typically in large, deep lakes and rivers. It can be found in smaller bodies of water. It feeds on microcrustaceans, midge larvae, algae, zooplankton and insects, in large groups near the water's surface. It is a common fish often used as bait. It can live to about five years of age and is preyed upon by birds and other fishes. It is a small species of little conservation concern and has a stable population based on the International Union for Conservation of Nature (IUCN) database. (Auer 1982, Eakins RJ 2019, Froese 2019, IUCN 2019)

The range of the spottail shiner (*Notropis hudsonius*) is similar to the emerald shiner, being found throughout much of North America. It feeds on plants, aquatic invertebrates and algae. It is a small fish, with a typical length of 9 – 15 cm. Its life history has not been studied in detail. Spawning season is usually in summer, and it is thought to spawn in sandy bottoms and shorelines of rivers, lakes and streams. The maximum age of a spottail shiner is five years; they too are prey for other fish. It is of little conservation concern and its population is stable. (Auer 1982, Eakins RJ 2019, Froese 2019, IUCN 2019)

The wild fathead minnow (*Pimephales promelas*) is olive-grey, with a dusky stripe along the back and side and a lighter belly, with a dusky blotch midway on the dorsal fin. It too is distributed across much of North America and is highly tolerant of varied environmental conditions (e.g., low oxygen, high turbidity). It is typically found in small lakes, ponds and wetlands, but can be found in larger water bodies. They are omnivorous, benthic filter feeders and are preyed upon by other fishes. It ranges in length from approximately 7 – 10 cm. Its spawning season is from spring to late summer. It is of little conservation concern and is widely used as bait. (Auer 1982, Eakins RJ 2019, Froese 2019, IUCN 2019)

The white sucker (*Catostomus commersonii*) is the most common sucker fish species in Manitoba. It is typically light brown, grey or copper coloured with a creamy white belly. The species is found throughout much of North America and Manitoba. It tends to inhabit shallow lakes or bays and slow moving rivers. It spawns in spring, with migration into spawning "home" streams when the water temperature reaches about 10^{o} C. It is most active searching for food at dawn and dusk. It travels in small schools, and is a bottom feeder, eating insects, insect larvae, crustaceans, worms and leeches. Its length is typically from about 40 to 65 cm. It too is prey for other fishes and birds, of little conservation value with a stable population and is used as bait. (Auer 1982, Eakins RJ 2019, Froese 2019, IUCN 2019)

2.3 Habitat Assessment

Habitat assessment for the Site involves evaluating the quality of in-stream, riparian and terrestrial habitat, as these will dictate the aquatic community that can survive in the oxbow and in nearby uplands. Degraded physical habitat that occurs as a result local land use and conditions, separate from the release can heighten the effects of any potential contaminant toxicity. Developing an integrated picture of how these factors interact is necessary to assess habitat and the ability of ROC to successfully inhabit the Site.

An earlier Request for Review including detailed information on existing fish and fish habitat conditions was rescinded by MSD; therefore a detailed habitat assessment has not been completed. Available habitat-related information collected during Site work and from open literature is provided below.

2.3.1 Physical Characteristics and Water Quality

Information regarding both physical characteristics and water quality parameters is necessary to characterize aquatic habitat, which is of primary concern for the Site and to assess the health of the waterbody and its ability to support an aquatic community. This information is also needed in order to assess the impact of the presence of chemical and other stressors on the system.

Site Description

The Site is approximately 11 kilometers (km) south/southeast of St. Lazare in the Rural Municipality of Ellice-Archie. The CN rail line runs north/northwest to south/southeast through agricultural lands, including improved pasture. The Assiniboine River mirrors the alignment of the rail line, approximately 850 meters (m) to the west. The Site is located at the east end of an oxbow, east of the Assiniboine River.

The oxbow was frozen at the time of the release. At other times of the year, flow within the oxbow is limited. For example, there was no flow in the oxbow in August 2019. During the spring freshet, the Assiniboine River typically carries water into the north arm of the oxbow, which then exits at the south outlet; however, there was no inflow into the oxbow in the spring of 2019.

The Site is comprised of a flat open field with some trees, shrubs and herbaceous plants. The lands surrounding the Site, beyond the CN ROW are primarily improved pasture. Uplands in the vicinity of the Site consist of willow shrub, riparian woodland including aspen, ash, maple and oak trees, native pasture grassland and cropland.

Studies of the biodiversity in the St. Lazare area (Nature Manitoba 2013) and an evaluation of Site conditions indicate there is no significant habitat or sensitive species within the area impacted by the release. The Site and oxbow are located adjacent to the railroad ROW and agricultural lands. Long-term agricultural land use in the vicinity of the Site, including cattle grazing contributes the lack of quality habitat. Given the presence of high quality prairie grasslands and the Assiniboine River it is likely that plant and animal species of concern would more likely be found in the higher quality habitat.

A review of the Manitoba *Conservation Data Centre* list of species' conservation status rank (Manitoba 2018a) indicates none of the fish species relocated during fish salvage operations (as noted above) are listed as being of conservation concern.

Site Visits

Field observations during Site response found no federal Species at Risk Act (SARA; Canada 2019) listed fish species, even during fish salvage efforts within the oxbow. The fish that were present are bait species, as discussed in **Section 2.2 Life History of Receptors** above.

Additional species or signs of wildlife observed in the oxbow and riparian areas and documented in project field notes included bear tracks, adult leopard frog, waterfowl (not identified to species); kingbird, killdeer adults and active nest and warblers (in flight; not identified to species).

The northern leopard frog (*Lithobates pipiens*) is a species of interest for conservation throughout its range, including Manitoba. It is ranked as apparently secure (S4) within Manitoba. Conservation of this species typically occurs only as part of broader grassland and wetland protection efforts (Environment Canada 2013).

In Manitoba, the western kingbird (*Tyrannus verticalis*) has greatly decreased in numbers over time (Manitoba 2018b).

A number of nest sweeps were conducted at the Site to record evidence of migratory birds, raptors, and other provincially regulated birds nesting within the project area with the following nests identified:

- A spotted sandpiper (*Actitis macularius*) nest (four eggs - female/male present) was identified directly beside the trees/woody debris stockpile on the inside of the oxbow. Spotted sandpipers are not a species at risk (SAR), but are protected under the Migratory Bird Act (Canada 1994). A setback buffer was implemented at the Site until the nest became inactive. Concern for the conservation status of this species is low due its large numbers and its extensive breeding range (Manitoba 2018b).
- A barn swallow (*Hirundo rustica*) nest (one egg) was identified within the cattle culvert. Barn swallows are a SAR (COSEWIC Status *Threatened*); however, no mitigation was required due to the location at the time (Canada 2019, COSEWIC 2011).
- A buffer area was established around an American robin's nest noted early in the response and left in place until the nest cleared and was no longer active (young having fledged). The nest was then removed to prevent re-nesting. Long-term

monitoring shows a slow increase in the robin's population in Manitoba. There is no special conservation concern for this species (Manitoba 2018b).

- Killdeer nest (four eggs - female present) was active early in the response timeframe on the west side of the embankment along the dirt path between coconut matting. Killdeer are not a SAR, but are protected under the Migratory Bird Act (Canada 1994). The area was avoided until the nest became inactive (July), using a setback buffer. The Killdeer population is decreasing in the province. Its preferred nesting habitat includes gravel roads, drying temporary wetlands, heavily grazed pastures and railway tracks (Manitoba 2018b).

Cattail colonizing in areas between the containment berms is documented in field notes completed during the response action.

Emergent and submergent aquatic vegetation were also noted as being present within the oxbow.

Water Quality

As noted previously, the Site is located adjacent to an oxbow, east of the Assiniboine River.

As described in detail in the ESA, extensive surface water quality data has been collected from the Site, upstream and downstream of the Site, and within the oxbow monitoring area as part of the response to the release. Field water quality parameters have included temperature, pH, electrical conductivity and dissolved oxygen. In the summer months (July, August and September), the measured temperature of the water ranged from 18.3 to 31.1 degrees Celsius, the pH ranged from 7.93 to 9.91, and the dissolved oxygen content ranged from 4.85 to 14.27 mg/L.

A total of 109 surface water samples, including six duplicates were collected between May 2, 2019 and October 22, 2019 and were submitted for PAH analysis. These samples have been analyzed for chemicals of concern (including PAHs) and routine water quality parameters. In the ESA report, surface water monitoring locations are presented on Figure 6 and surface water results are included Figures 12 and 13 and Tables 4 through 8 as well as discussed in Section 11.

3 Exposure Assessment

The exposure assessment provides information on COPCs, fate and transport information for releases associated with the site, assessment of both aquatic and terrestrial exposure, COPC concentrations as compared to toxicity data, identification of assessment and measurement endpoints and exposure pathways. An uncertainty analysis related to the exposure assessment is also provided.

3.1 Summary of Contaminant Concentrations

Analytical data from samples collected by HDR in 2019 and analyzed for PAHs were used to quantitatively evaluate potential human exposure to contaminants. Tables presenting the environmental media data are provided in the ESA report, Tables 1 to 27 and detailed information on the contaminant concentrations in each environmental medium are presented in Section 11 of the ESA report. As documented in the ESA report and Tables

1 to 27, response actions, including excavation have been performed in which soil and sediment associated with various sample locations have been removed. These sample results (e.g., samples “A” and ‘B” collected on May 2, 2019) were identified and are not included in this Screening Assessment as the contamination is no longer present. It was also determined that sample “C” (collected on May 3, 2019, see ESA report Figure 7b) should not be included in the Screening Assessment as it is not representative of conditions resulting from the release.

Data from the 2019 sampling events were determined appropriate for use in the risk assessments and are further refined for use in the Screening Assessment, as described below. The data are refined as follows (USEPA 1992):

- The detection limit is used to represent non-detect results.
- The maximum result of the parent and field duplicate sample pairs is used if constituents are detected in both samples. The detected value is used when one was detected and the other reported as non-detect.

3.2 COPC Screening

CLB is a diluted crude with the hydrocarbons, benzene, toluene, ethylbenzene, xylenes, (BTEX) and Petroleum Hydrocarbon (PHC) Fractions F1 through F4, being the primary contaminants of concern. Non-carcinogenic PAHs (acenaphthene, anthracene, fluoranthene, fluorene, naphthalene, phenanthrene, and pyrene) have been included as components of petroleum hydrocarbon Fractions F1 to F4.

Analysis of these PAHs is necessary when dealing with non-petroleum hydrocarbons such as coal tar, creosote, hydrocarbons altered by incomplete combustion (e.g., flare pits, petroleum or petrochemical fires) or products such as solvents where individual compounds may be present at a much greater concentration than in crude products or fuels. The Safety Data Sheet provided for the CLB directly from the Shipper, Cenovus, indicates that the composition/information on ingredients for CLB is 100% crude oil, petroleum.

When the sources of hydrocarbon contamination are crude petroleum or refined fuels, separate analysis of non-carcinogenic PAHs is not necessary, unless the contaminants are in a Domestic Use Aquifer or a surface water aquatic life receptor.[1]

As the oxbow can be considered a surface water aquatic life receptor, PAH concentrations in surface water within the OMA will be assessed to differentiate between naturally-occurring hydrocarbons, as it is recognized that PAHs are ubiquitous in terrestrial, atmospheric, and aquatic environments throughout the world and have been detected in rivers, lakes, groundwater, sediments, soils, and biota throughout Canada.

The PAH analytical results within and outside of the CN ROW were compared to environmental guidelines by environmental medium. Surface water and sediment results from samples collected within the nearby culvert were also evaluated against the following Benchmark Concentrations (BCs), further described in **Section 4.2**:

[1] Alberta Environment and Parks (AEP). 2019. Alberta Tier 1 Soil and Groundwater Remediation Guidelines. Land Policy Branch, Policy and Planning Division. 198 pp.

- Surface soil (0-1.5 mbgs): Canadian Soil Quality Guidelines for the Protection of Environmental and Human Health (CCME 2010b, 2014);
- Surface water: Canadian Water Quality Guidelines for the Protection of Aquatic Life for generic freshwater (CCME 2014);
- Sediment: Canadian Sediment Quality Guidelines for the Protection of Aquatic Life (CCME 1999, 2014)

If the maximum detected concentration of a PAH was less than the guideline or it was not detected, it was eliminated as a COPC, as it is assumed it will not contribute significantly to potential unacceptable risk (CCME 1996, 1997; USEPA 1989). If the maximum detected concentration of a PAH was greater than the guideline, it was carried through for further evaluation in the Screening Assessment. Exceedances of environmental guidelines do not in themselves indicate than an unacceptable exposure and hazard exists. Rather, the exceedances indicates the need for further evaluation.

A summary of the occurrence and distribution of the PAHs is provided in **Attachment A, Tables 1.1 to 1.3**, in which **Table 1.1** presents the surface soil (0-1.5 mbgs) data, **Table 1.2** the surface water data and **Table 1.3** the sediment data.

As shown in **Attachment A, Table 1.1**, all of the PAHs were detected at least once in surface soil. The only exception is for quinoline (Outside CN RoW); however, no guideline is available for comparison to its detection limit. **Attachment A, Tables 1.2 and 1.3** indicate that the detection limits for non-detected PAHs in surface water and sediment are all below their respective guidelines.

The COPCs are presented in **Attachment A, Table 1.4** by environmental medium and are summarized in **Table 3-1**, below. There were 12 COPCs identified in surface soil (CN ROW), 11 in surface soil (outside CN ROW), none in surface water (outside CN ROW), 1 in culvert surface water (outside CN ROW), 8 in culvert surface water (CN ROW), 18 in sediment (outside CN ROW), 1 in culvert sediment (outside CN ROW) and 10 in culvert sediment (CN ROW).

Table 3-1. Summary of COPCs

COPC	Surface Soil (CN RoW)	Surface Soil (Outside CN RoW)	Culvert Surface Water (Outside CN RoW)	Culvert Surface Water (CN RoW)	Sediment (Outside CN RoW)	Culvert Sediment (Outside CN RoW)	Culvert Sediment (CN RoW)
Acenaphthene	Yes				Yes		
Acenaphthylene					Yes		Yes
Acridine	Yes	Yes			Yes		
Anthracene				Yes			Yes
Benzo(a)anthracene		Yes			Yes		
Benzo(a)pyrene					Yes		Yes
Benzo(b&j)fluoranthene		Yes		Yes	Yes		Yes
Benzo(c)phenanthrene	Yes	Yes			Yes		
Benzo(e)pyrene	Yes	Yes			Yes		Yes
Benzo(g,h,i)perylene	Yes	Yes			Yes		Yes
Benzo(k)fluoranthene			Yes	Yes	Yes		Yes
Chrysene	Yes			Yes			
Dibenz(a,h)anthracene							Yes
Fluoranthene				Yes	Yes		
Fluorene	Yes						
Indeno(1,2,3-cd)pyrene		Yes			Yes		Yes

COPC	Surface Soil (CN RoW)	Surface Soil (Outside CN RoW)	Culvert Surface Water (Outside CN RoW)	Culvert Surface Water (CN RoW)	Sediment (Outside CN RoW)	Culvert Sediment (Outside CN RoW)	Culvert Sediment (CN RoW)
2-Methylnaphthalene	**Yes**	**Yes**		**Yes**	**Yes**		
Naphthalene	**Yes**			**Yes**	**Yes**		
Perylene	**Yes**	**Yes**			**Yes**	**Yes**	**Yes**
Phenanthrene	**Yes**	**Yes**			**Yes**		
Pyrene		**Yes**		**Yes**	**Yes**		
Quinoline	**Yes**				**Yes**		
Note: No COPCs were identified in the data set for "Surface Water (Outside CN RoW)".							

3.3 COPC Release, Fate and Transport

The immediate emergency response to this event focused on containing the spilled product visible on the ice and snow of the oxbow. Isolation was achieved through constructing two temporary berms on either side of the visible limits of product sitting on the oxbow. These berms have remained in place to provide a confined monitoring area within the oxbow.

Response to the derailment has included removal of impacted soils, water, ice and free product during the emergency response, focusing on areas between the CN track and the oxbow. Impacted sediments were also removed from the base of the oxbow between the two containment berms.

An investigation to characterize and delineate remaining impacted soils was completed in May 2019, with additional source removal of remaining CLB product within the rail bed completed in June 2019. Surface and ground water monitoring, additional PAH soil and sediment sampling have been performed.

In the environment, PAHs released to soil will adsorb to the organic fraction of soils and sediments. Higher molecular weight PAHs are more likely to adsorb to soil and sediment as compared to lower molecular weight PAHs. In aquatic environments, PAHs will adsorb to the sediment and persist, but typically have limited bioavailability to terrestrial and aquatic organisms (CCME 2010a, 2010b).

PAHs may be biologically degraded by microorganisms in the aerobic soil zone. Factors such as the PAH molecular weight, temperature, soil type, oxygen levels in the soil zone, and type of microorganisms affect the biodegradation process (CCME 2010a, 2010b).

3.4 Exposure Pathways

The Screening Assessment evaluates exposure of terrestrial and aquatic ecological receptors with COPCs in the surface soil, surface water and sediment via direct contact.

Potentially complete pathways of exposure for ecological receptors include:

- Dermal contact with surface soil (0-1.5 mbgs), surface water and sediment
- Incidental ingestion of surface soil (0-1.5 mbgs) and sediment, and
- Ingestion of surface water

The direct contact exposure pathways are included in the determination of the value of the environmental guidelines, which are based on animal studies taken from literature.

3.5 Conceptual Site Model

This section presents a CSM that identifies the exposure pathways and potentially exposed ecological ROCs, including information on how COPCs were released, the Site's receiving environment, fate and transport, modes of exposure, receptors and effects of concern. The CSM is a tool for understanding site conditions and potential exposure scenarios. An exposure pathway consists of:

- A source (e.g., derailment) and mode of contaminant release;
- A receiving medium (e.g., soil) for the contaminant;
- Mechanism(s) of transport or transformation;
- A mode of exposure (e.g., contact with surface soil) between the ecological receptor and the medium;
- A route of exposure (e.g., incidental ingestion) for the potential ecological receptor at the contact point;
- Receptors that may be impacted; and
- Effects of interest

A CSM illustrating potential ecological exposure pathways is included as **Figure 3-1**.

3.6 Assessment and Measurement Endpoints

The assessment and measurement endpoints are chosen to protect the local populations of the identified resources. Adequate protection is generally defined as protection of growth, reproduction and survival of local ecological receptor populations.

3.6.1 Assessment Endpoints

Assessment endpoints describe the environmental value that is to be protected; they are selected by evaluating the ecosystems, biotic communities and/or species and the contaminants at the Site. Assessment endpoints identify the adverse effects of COPCs and various toxicity factors, e.g., which species may be most impacted, chemistry, bioavailability and the exposure pathway, among other issues.

The assessment endpoints include:

- Viability (survival, growth and reproduction) of terrestrial ecological receptors/communities in surface soil; and
- Viability (survival, growth and reproduction) of aquatic ecological receptors/communities in surface water and sediment.

Selection of assessment endpoints leads to the development of measurement endpoints, used to identify if any potential threats to the assessment endpoints exist.

3.6.2 Measurement Endpoints

Measurement endpoints are measurable ecological characteristics that can be related to the valued ecosystem components (VECs) chosen as assessment endpoints; e.g., measures of biological effects like mortality and growth, such as the concentration at which

exposure is fatal to 50% of the ecological population, i.e., the LC50. Further information is provided in **Section 4.4**.

For this Screening Assessment, measurement endpoints are the HQs, calculated for each environmental medium, further discussed in **Section 5 Risk Characterization**.

3.7 Exposure Point Concentrations

Estimates of COPC concentrations at points of potential ecological exposure are necessary for evaluating chemical intakes by potentially exposed receptors. The concentrations of COPCs in the exposure medium at the exposure point are termed "exposure point concentrations" (EPCs). EPCs are determined for each medium, as detailed below.

Calculation of the 95% Upper Confidence Limit (UCL) of the mean for each COPC in each medium was conducted in accordance with guidance (USEPA 2015b and c). The ProUCL software package, version 5.1 was used to determine the underlying statistical distributions of the data sets and 95% UCLs of the mean. The 95% UCL of the mean was then compared to the maximum detected concentration and the minimum was applied as the EPC value, by COPC and medium. For a data set, if no 95% UCL of the mean was calculated due to low detection frequency, the maximum detected concentration was used as the EPC. Supporting documentation using ProUCL software is provided in **Attachment B, Tables B.1 to B.7** in the following order of environmental medium:

- Surface soil (0-1.5 mbgs) within the CN RoW
- Surface soil (0-1.5 mbgs) outside of the CN RoW
- Surface water in the culvert outside of the CN RoW
- Surface water in the culvert within the CN RoW
- Sediment outside of the CN RoW
- Sediment in the culvert outside of the CN RoW
- Sediment in the culvert within the CN RoW

Attachment B, Table B.8 presents the data that was used in the calculation of the 95% UCLs.

3.8 Uncertainty Analysis

It is important that factors used consider actual site conditions, such as properties of the media to which ecological receptors are exposed. Other factors, such as exposure frequency and duration of exposure factors in an area may be impacted by the remote nature and weather patterns of the Site.

4 Hazard Assessment

The hazard assessment provides information on potential ecological exposure to identified COPCs, the environmental guidelines that may be harmful based on available toxicity data. It also provides the calculated screening level hazards using a hazard quotient method.

4.1 COPC Refinement

The COPC list remains the same as that identified in **Section 3.2 COPC Screening** above and has not been refined further for this Screening Assessment. All COPCs identified in **Section 3.2** were carried forward to be conservative.

4.2 Ecological Benchmark Concentrations

The BCs may be either the environmental guidelines or toxicity value for the COPC that represents the concentration at which potential adverse effects to terrestrial and aquatic ecological receptors at the Site may occur. The derivation of benchmark values indicates a variety of data, depending on the chemical, its inherent toxicity, bioaccumulation potential and data availability, among other factors. For this Site, the BCs are the environmental guidelines identified in **Section 3.2 COPC Screening** for surface soil (0-1.5 mbgs), surface water and sediment, taken from the Canadian Soil Quality Guidelines for the Protection of Environmental and Human Health for PAHs (CCME, 2010).

4.3 Ecological Toxicity Data

The reduced potential for PAH-contaminated soil causing toxic effects on terrestrial organisms is related to the low availability of PAHs in soil (CCME 2010b). The bioavailability of PAHs is low due to PAHs high tendency to bind to organic material in soils (CCME 2010b). Higher molecular weight PAHs, e.g., B(a)P, are likely to strongly adsorb to soil and persist in the soil while lower molecular weight PAHs, e.g., naphthalene, are likely to be taken up and metabolized by microorganisms (CCME 2010a, b). The ecological toxicity screening values used are taken from the Canadian Soil Quality Guidelines for the Protection of Environmental and Human Health for PAHs (CCME, 2010), that are derived considering chemical-specific toxicity, exposure routes, bioaccumulation potential and data availability.

- The main route of exposure of terrestrial vertebrates to PAHs is thought to be via the diet, either from invertebrates, such as earthworms, or plants (Rodriguez-Seijo et al. 2016, Brown et al. 2004).
- There is a lack of toxicity data for PAHs or PAH-containing mixtures based directly on studies on cattle or similar livestock (CCME 2010a).
- Accumulation of PAHs by plants represents an entry point of hazardous compounds into the food web, initiating a biomagnification process (Douben 2003). Some terrestrial plants can take up PAHs from soil via the roots or from air via the foliage; uptake rates are dependent on the concentration, solubility, and molecular weight of the PAH and on the plant species (ATSDR 1995). However, terrestrial plants exhibit a wide range of variability in tolerance to PAH-contaminated soil (CCME 2010a).

There are numerous scientific studies on the exposure of aquatic organisms to PAHs, many of which are documented in the USEPA ECOTOX database (CCME 2010a). A CSM illustrating potential ecological exposure pathways is included as **Figure 3-1**, including source (the release) to ecological receptor points of contact in various media and potential distribution through the environment, as described below.

Aquatic organisms can bioaccumulate PAHs from water, sediment and food (ATSDR 1995):

- PAHs in sediment can be accumulated via exposure of bottom-dwelling invertebrates and fish. Approximate tissue to sediment ratios were 0.6-1.2 for amphipods, 0.1 for clams and 0.05 for fish and shrimp.
- PAHs in surface water can be accumulated by aquatic organisms. The BCFs have generally been reported in the range of 10-10,000 in fish and crustaceans. Typically, bioconcentration is greater for the higher molecular weight PAHs than for the lower molecular weight PAHs.
- Biomagnification of PAHs up the food chain is limited because of the tendency of many aquatic organisms to eliminate these compounds rapidly. Fish can metabolize PAHs and eliminate the breakdown products in the feces and urine. One study ranked the extent of B(a)P metabolism by aquatic organisms as follows: fish > shrimp > amphipod crustaceans > clams. Half-lives for elimination of PAHs in fish ranged from >2 days to 9 days.
- Biotransformation of the PAHs in the organisms can also occur, resulting in the formation of carcinogenic and mutagenic intermediates; exposure to PAHs has been linked to the development of tumors in fish.

4.4 Valued Ecological Components

VECs are those environmental values (e.g., soil quality, species habitat) that have scientific, economic, social or cultural significance and may be impacted by site activity or incidents.

VECs considered in the Screening Assessment include impacts to soil, surface water and sediment quality, and aquatic and terrestrial habitat as they pertain to representative ecological receptors at the site. These include benthic invertebrates, fish, birds and mammals that may be exposed to COCs via incidental ingestion and/or direct contact with soil, surface water and sediment and shown in the Ecological Conceptual Site Model, **Figure 2-1**. However, dermal contact tends to be a negligible exposure route for most avian and mammalian VECs, because contact is inhibited by the feathers, scales, and fur that cover most of the skin.

4.5 Uncertainty Analysis

Uncertainty in the hazard assessment can result from variation in the potential for exposure to COPCs, which is dependent on species-specific factors, e.g., home range; derivation of the environmental guidelines that is based on available and potentially incomplete toxicity data from animal studies that vary in their animal species, chemical dosage, study duration and other factors that influence the final results. Determination of which BCs are most appropriate and applicable for evaluation of ecological exposures is also variable. The hazards are calculated using a hazard quotient method, which is a simplified representation of a more complex process used to reflect conservative assumptions required in a screening level evaluation.

5 Risk Characterization

The risk characterization integrates components of the Screening Assessment, identifying key uncertainties and data gaps, characterizing risk to ecological receptors and providing HQs estimating risk using a quotient method.

5.1 Hazard Quotient Methodology

The HQ is the ratio of the estimated exposure of a receptor at the Site to a BC, as shown in the equation:

$$HQ = \frac{Exposure}{Benchmark\ Concentration}$$

In the above equation, "exposure" may be expressed as the concentration in an environmental medium (e.g., water, sediment, soil), concentration in the tissues of an exposed receptor, or the amount of COPC ingested (i.e., exposure dose) by a receptor. For this Site, exposure is represented as the EPCs, which are the lower of the maximum detected concentration and 95% UCL of the mean, that were identified in **Section 3.6 Exposure Point Concentrations**. For this Site, the BCs are the environmental guidelines identified in **Section 3.2 COPC Screening**. HQs greater than or equal to 1 indicate potential unacceptable adverse effect; **Table 5-1** provides a summary of HQs.

5.2 Semi-Quantitative Risk Estimates

Two sets of HQs in surface soil (0-1.5 mbgs), surface water and sediment data were calculated:

1. HQ Screening using the maximum detected concentrations as compared to the BCs
2. HQ Refinement using the EPCs as compared to the BCs

5.2.1 HQ Screening Evaluation

The HQ screening using maximum detected concentrations, which are conservative estimates of exposure, in that they represent a greater level of exposure, as the maximum concentration is typically greater than the 95% UCL. Exceptions to this are for sites with small size data sets (<10 samples), which is not the case here.

The following COPCs with HQs greater than or equal to 1 were identified:

- Surface soil (0-1.5 mbgs) within the CN ROW – acenaphthene, fluorene, naphthalene and phenanthrene
- Surface soil (0-1.5 mbgs) outside of the CN ROW – benzo(a)anthracene, benzo(b&j)fluoranthene, indeno(1,2,3-cd)pyrene, phenanthrene and pyrene
- Surface water in the culvert within the CN ROW – anthracene, fluoranthene, naphthalene and pyrene

- Sediment outside of the CN ROW – acenaphthene, acenaphthylene, benzo(a)anthracene, benzo(a)pyrene, fluoranthene, 2-methylnaphthalene, naphthalene, phenanthrene and pyrene
- Sediment in the culvert within the CN ROW – acenaphthylene, anthracene, benzo(a)pyrene, dibenz(a,h)anthracene

These conservative HQ values, derived using maximum detected concentrations are presented in **Attachment A, Table 1.5**.

5.2.2 HQ Refinement Evaluation

Refined HQs using more realistic exposure point concentrations (EPCs) were derived. The EPCs are based on the 95% UCL of the mean, i.e., value of the upper estimate of the population mean with a 95% confidence level. Using this EPC value, the COPCs with HQs greater than or equal to 1 include:

- Surface soil (0-1.5 mbgs) within the CN RoW – naphthalene and phenanthrene
- Surface water in the culvert within the CN RoW – anthracene, fluoranthene, naphthalene and pyrene
- Sediment outside of the CN RoW – acenaphthene and acenaphthylene
- Sediment in the culvert within the CN RoW – acenaphthylene, anthracene, benzo(a)pyrene, dibenz(a,h)anthracene

The use of EPCs vs. maximum concentrations in this HQ evaluation results in elimination of COPCs from further evaluation. Acenaphthene and fluorine were eliminated from surface soil (0-1.5 mbgs) located within the CN ROW. Benzo(a)anthracene, benzo(b&j)fluoranthene, indeno(1,2,3-cd)pyrene, phenanthrene and pyrene were eliminated in surface soil (0-1.5 mbgs) located outside of the CN RoW. In sediment outside of the CN RoW, all COPCs except for acenaphthene were acenaphthylene were eliminated from further evaluation. A summary of HQ results is presented in **Table 5-1** below.

To summarize, the HQs are greater than 1 in four of the eight data sets: surface soil within the ROW, sediment outside of the ROW, and surface water and sediment in the culvert within the ROW (related to the sample “Mid Culvert 2”). This indicates the potential for hazards to ecological receptors.

Regarding sediment and surface water in the culvert within the RoW, three out of the four samples evaluated have non-detect concentrations of PAH. Sample Mid Culvert 2 had elevated concentrations and is the primary contributor to the HQs. The culvert was unblocked and cleaned after this sample was collected. Following cleaning, there has been no sediment or a sufficient volume of water to sample. These data were evaluated in this Screening Assessment to be conservative and consider overall potential risk; it is unlikely elevated concentrations remain.

The HQs are presented by environmental medium in **Attachment A, Tables 2.1 to 2.3**, with **Table 2.1** presenting the HQs for surface soil (0-1.5 mbgs), **Table 2.2** the HQs for surface water and **Table 2.3** the HQs for sediment. The HQs are also summarized in **Attachment A, Table 2.4**.

Table 5-1. Summary of HQs using EPCs

COPC	Soil (CN RoW)	Soil (Outside CN RoW)	Culvert Surface Water (Outside CN RoW)	Culvert Surface Water (CN RoW)	Sediment (Outside CN RoW)	Culvert Sediment (Outside CN RoW)	Culvert Sediment (CN RoW)
Acenaphthene	**0.1**	--	--	--	**1**	--	--
Acenaphthylene	--	--	--	--	**2**	--	**5**
Acridine	NG	NG	--	--	NG	--	--
Anthracene	--	--	--	**2**	--	--	**1**
Benzo(a)anthracene	--	0.1	--	--	0.3	--	--
Benzo(a)pyrene	--	--	--	--	0.3	--	**2**
Benzo(b&j)fluoranthene	--	0.3	--	NG	NG	--	NG
Benzo(c)phenanthrene	NG	NG	--	--	NG	--	--
Benzo(e)pyrene	NG	NG	--	--	NG	--	NG
Benzo(g,h,i)perylene	NG	NG	--	--	NG	--	NG
Benzo(k)fluoranthene	--	--	NG	NG	NG	--	NG
Chrysene	NG	--	--	NG	--	--	--
Dibenz(a,h)anthracene	--	--	--	--	**--**	--	**3**
Fluoranthene	--	--	--	**3**	0.3	--	--
Fluorene	**0.1**	--	--	--	--	--	--
Indeno(1,2,3-cd)pyrene	--	0.2	--	--	NG	--	NG
2-Methylnaphthalene	NG	NG	--	NG	0.4	--	--
Naphthalene	**1**	--	--	**6**	0.4	--	--
Perylene	NG	NG	--	--	NG	NG	NG
Phenanthrene	**2**	0.6	--	--	0.4	--	--
Pyrene	--	0.3	--	**5**	0.5	--	--
Quinoline	NG	--	--	--	NG	--	--

Note: HQs greater than or equal to 1, which indicate potential adverse effects, are shaded and bolded. NG = No guideline available. HQs were not calculated for the data set "Surface Water (Outside CN RoW)" as no COPCs were identified.

5.3 Uncertainty Analysis

There is uncertainty inherent in the conclusions of any Screening Assessment. This level of uncertainty results from the fact that most every step in the risk assessment process involves assumptions and unknowns, contributing to the total uncertainty in the final conclusions. These include, but are not limited to:

- Knowledge of the site, including its geology, hydrology, habitat and past and current land use;
- Variation in factors (e.g., exposure area) that influence risk, incorporating conservative, default or site-specific values for those factors and expressing risk as a discrete probability and magnitude of adverse effects rather than a risk range. This tends to overestimate HQs;
- There is less uncertainty here than in a risk assessment for a large area involving multiple chemicals and varied VECs, as it is reduced for a smaller, localized area with a rapid and ongoing response action;
- Environmental parameters, chemistry, sampling and analysis, which can over or underestimate HQs;
- Fate and transport of COCs than can vary based on the timing and mechanism of release, the presence of co-contaminants and environmental conditions, which can over or underestimate HQs;

- Assumptions in the derivation of screening criteria, especially as it relates to toxicity of COCs. Toxic effects can vary by species, route of exposure and environmental conditions. Use of a discrete screening criterion and surrogate species may under or overestimate HQs;
- Limited toxicological information exists for the majority of PAHs and benchmark concentrations have not been derived. The level of uncertainty introduced may vary depending on the PAHs, mixtures and a variety of factors (CCME, 2008); and
- Bioavailability of 100% of the chemical substance is assumed to be available for uptake by organisms. This assumption is known to be invalid for most chemical substances under varying environmental conditions and likely overestimates HQs.

6 Conclusions

This Screening Assessment was prepared to evaluate potential risks to aquatic and terrestrial ecological receptors from exposure to PAHs related to the February 2019 derailment in soil, sediment and surface water. The Screening Assessment identified 22 COPCs, varying by media. There were 12 COPCs identified in surface soil (CN RoW), 11 in surface soil (outside CN RoW), none in surface water (outside CN RoW), one in culvert surface water (outside CN RoW), eight in culvert surface water (CN RoW), 18 in sediment (outside CN RoW), one in culvert sediment (outside CN RoW) and 10 in culvert sediment (CN RoW). The potential exposure scenarios considered in the Screening Assessment include dermal contact with surface soil (0-1.5 mbgs), surface water and sediment, incidental ingestion of surface soil (0-1.5 mbgs) and sediment and ingestion of surface water, as shown in the CSM, **Figure 3-1**.

The Screening Assessment evaluated risk to ecological receptors exposed to the COPC EPCs, which are the lower value of the maximum detected concentration and the 95% UCL of the mean. The HQ evaluation, using the EPCs, resulted in a finding of potential unacceptable hazard for ecological receptors exposed to PAHs in surface soil within the ROW, sediment outside of the ROW, and surface water and sediment in the culvert within the ROW. In addition, the culvert has been remediated and is no longer of concern. The HQ results are presented in **Table 5-1**.

The Screening Assessment results indicate that remedial action to date has reduced the overall ecological risk at the site; monitoring indicates the concentration of PAHs is decreasing, with few locations exceeding criteria. Continued monitoring and further remedial action may be necessary to address the residual PAH levels in surface soil within the ROW and sediment outside of the ROW, as noted below.

7 Recommendations

Continued monitoring of PAH concentrations is to be performed as part of the response action. The PAHs have largely been remediated and any residual contamination is subject to attenuation via weathering and microbial biodegradation. Should monitoring activities indicate that PAH concentrations are not attenuating adequately over time, or they are shown to vary seasonally or by location, those results should be evaluated in terms of the

need for further response action. This should include consideration of those exposure scenarios in surface soil within the ROW and sediment outside of the ROW, as discussed herein.

The Screening Assessment meets the objectives set forth for the Site in the Letter of Designation issued by MSD on February 21, 2019. The CCME *Framework for Ecological Risk Assessment: General Guidance* (CCME 1996) includes applicable *Decision Points for Proceeding to a Preliminary Quantitative ERA* (Table 5) that are to be considered once a Screening Assessment is completed. These have been reviewed against the findings of this Screening Assessment to provide context to the risk manager in determining if a PQRA is necessary.

This review indicates one point that may require consideration:

In the Hazard Assessment, several of the PAHs detected at the Site do not have BCs and therefore could not be quantitatively evaluated in the Screening Assessment. See **Table 7-1**, below for a list of these PAHs by medium.

Table 7-1. COPCs without BCs

Surface Soil	Sediment	Culvert Surface Water	Culvert Sediment
Acridine	Acridine	Benzo(b&j)fluoranthene	Benzo(b&j)fluoranthene
Benzo(c)phenanthrene	Benzo(b&j)fluoranthene	Benzo(k)fluoranthene	Benzo(e)pyrene
Benzo(e)pyrene	Benzo(c)phenanthrene	Chrysene	Benzo(g,h,i)perylene
Benzo(g,h,i)perylene	Benzo(e)pyrene	2-Methylnaphthalene	Benzo(k)fluoranthene
Chrysene	Benzo(g,h,i)perylene		Indeno(1,2,3-cd)pyrene
2-Methylnaphthalene	Benzo(k)fluoranthene		Perylene
Perylene	Indeno(1,2,3-cd)pyrene		
Quinoline	Perylene		
	Quinoline		

Determining whether these are indicative of moderate risk requiring a Preliminary Quantitative ERA, as noted in the Ecological Framework (CCME 1996), may require consideration of other Site-related factors.

These include the fact that there is an ongoing monitoring for this release. As described in the ESA Report, much of the released CLD immediately after the release. Response actions since that time have continued to remediate any residual contamination, limiting impacts to the environment. Ongoing monitoring of soil, surface water and sediment indicates natural degradation of any residuals is occurring, with decreasing concentrations of PAHS detected over time. Aggressive actions have been taken to ensure the health of aquatic life at the Site, including fish salvage operations that removed and relocated over 25,000 fish and blocking the east culvert during freshet culverts. Surface water, groundwater and sediment monitoring will occur at the Site through 2020.

These factors should be considered in determining if the current actions are sufficient as risk management efforts or if further risk analysis is necessary.

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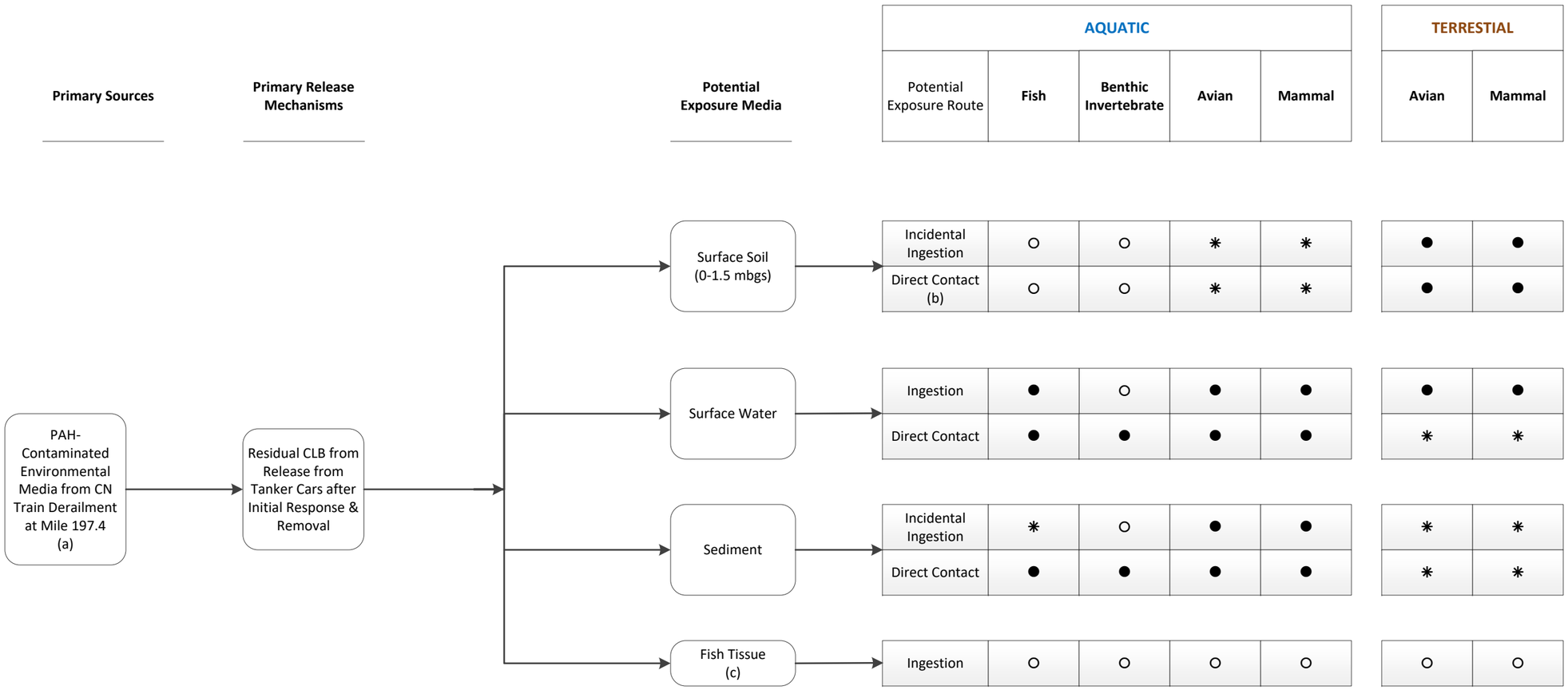
FIGURES

Figure 3-1 Ecological Conceptual Site Model



NOTES:

- ● Pathway assumed to be complete.
- ○ Pathway assumed to be incomplete.
- ∗ Pathway assumed to be insignificant.

(a) The CSM reflects current understanding of exposure pathways and is subject to change. An initial removal of contamination in soil, surface water and sediment was performed immediately after the release and it is likely the exposure pathways included here are insignificant. They are conservatively noted as complete in this CSM and evaluated in the Screening Assessment; see discussion in Section 3 Exposure Assessment.

(b) Direct contact is an insignifcant pathway for species that have feathers, fur or scales.

(c) A fish salvage operation was performed to remove fish within the bermed area of the oxbow and the pathway is considered incomplete.

ABBREVIATIONS:

CLB = Cold Lake Dilbit Blend, mbgs = meters below ground surface, PAH = Polycyclic aromatic hydrocarbon

Figure 3-1
Ecological Conceptual Site Model
CN Mile 197.4, Rivers Subdivision
Southeast of St. Lazare, Manitoba

ATTACHMENT A

Screening Assessment

Supporting Tables

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TABLE 1.1
OCCURRENCE AND DISTRIBUTION OF COPCS FOR SURFACE SOIL
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Scenario Timeframe: Current/Future
Medium: Soil
Exposure Medium: Surface Soil (0-1.5 m)

Exposure Point	Constituent Group	Constituent	CASRN	Minimum Detected Concentration (mg/kg)	Maximum Detected Concentration (mg/kg)	Location of Maximum Detected Concentration	Sample Count	Detect Count	Detection Frequency (%)	Range of Detection Limits of Non-Detects (mg/kg)	CCME Soil Quality Guidelines (mg/kg)		COPC Flag (Y/N)	HQ Ratio - Max/Guideline
											Value	Basis		
CN RoW	SVOC	Acenaphthene	83-32-9	0.0085	0.39	D_BH19-15	85	16	19	0.005 - 0.005	0.28	SQGfl	Y	**1**
CN RoW	SVOC	Acenaphthylene	208-96-8	0.0057	0.12	N-009	85	13	15	0.005 - 0.005	320	SQGfl	N	0.0004
CN RoW	SVOC	Acridine	260-94-6	0.012	0.023	N-006	85	5	6	0.01 - 0.01	NG	--	Y	**NG**
CN RoW	SVOC	Anthracene	120-12-7	0.0044	0.29	D_BH19-15	85	28	33	0.004 - 0.004	32	SQGsc	N	0.01
CN RoW	SVOC	Benzo(a)anthracene	56-55-3	0.0067	0.4	N-009	85	23	27	0.005 - 0.005	10	ISQC	N	0.04
CN RoW	SVOC	Benzo(a)pyrene	50-32-8	0.0071	0.37	N-009	85	25	29	0.005 - 0.005	72	SQGsc	N	0.005
CN RoW	SVOC	Benzo(b&j)fluoranthene	205-99-2_205-82-3	0.0073	0.65	N-009	85	33	39	0.005 - 0.005	10	ISQC	N	0.07
CN RoW	SVOC	Benzo(c)phenanthrene	195-19-7	0.0052	0.064	NSERIESDIL-2	85	12	14	0.005 - 0.005	NG	--	Y	**NG**
CN RoW	SVOC	Benzo(e)pyrene	192-97-2	0.0064	0.42	N-009	85	28	33	0.005 - 0.005	NG	--	Y	**NG**
CN RoW	SVOC	Benzo(g,h,i)perylene	191-24-2	0.0055	0.24	N-009	85	27	32	0.005 - 0.005	NG	--	Y	**NG**
CN RoW	SVOC	Benzo(k)fluoranthene	207-08-9	0.0061	0.2	N-009	85	22	26	0.005 - 0.005	10	ISQC	N	0.02
CN RoW	SVOC	Chrysene	218-01-9	0.0053	0.36	NSERIESDIL-2	85	27	32	0.005 - 0.005	NG	--	Y	**NG**
CN RoW	SVOC	Dibenz(a,h)anthracene	53-70-3	0.0055	0.064	N-009	85	9	11	0.005 - 0.005	10	ISQC	N	0.006
CN RoW	SVOC	Fluoranthene	206-44-0	0.0062	0.69	D_BH19-15	85	42	49	0.005 - 0.005	180	SQGsc	N	0.004
CN RoW	SVOC	Fluorene	86-73-7	0.0057	0.38	D_BH19-15	85	20	24	0.005 - 0.005	0.25	SQGfl	Y	**2**
CN RoW	SVOC	Indeno (1,2,3-cd)pyrene	193-39-5	0.0062	0.2	N-009	85	24	28	0.005 - 0.005	10	ISQC	N	0.02
CN RoW	SVOC	2-Methylnaphthalene	91-57-6	0.0066	0.071	D_BH19-15	85	21	25	0.005 - 0.005	NG	--	Y	**NG**
CN RoW	SVOC	Naphthalene	91-20-3	0.0065	0.088	N-031	85	17	20	0.005 - 0.005	0.013	SQGfl	Y	**7**
CN RoW	SVOC	Perylene	198-55-0	0.0052	0.1	N-009	85	39	46	0.005 - 0.005	NG	--	Y	**NG**
CN RoW	SVOC	Phenanthrene	85-01-8	0.0056	0.79	D_BH19-15	85	41	48	0.005 - 0.005	0.046	SQGfl	Y	**17**
CN RoW	SVOC	Pyrene	129-00-0	0.0053	0.54	D_BH19-15	85	43	51	0.005 - 0.005	100	ISQC	N	0.005
CN RoW	SVOC	Quinoline	91-22-5	0.013	0.08	D_BH19-15	85	5	6	0.01 - 0.01	NG	--	Y	**NG**
Outside CN RoW	SVOC	Acenaphthene	83-32-9	0.0077	0.011	19-H11-001	57	2	4	0.005 - 0.011	0.28	SQGfl	N	0.04
Outside CN RoW	SVOC	Acenaphthylene	208-96-8	0.0072	0.036	S-079	57	3	5	0.005 - 0.011	320	SQGfl	N	0.0001
Outside CN RoW	SVOC	Acridine	260-94-6	0.015	0.068	WA-SOIL-202	57	2	4	0.01 - 0.021	NG	--	Y	**NG**
Outside CN RoW	SVOC	Anthracene	120-12-7	0.004	0.055	S-079	57	9	16	0.004 - 0.0084	2.5	SQGsc	N	0.02
Outside CN RoW	SVOC	Benzo(a)anthracene	56-55-3	0.0053	0.12	S-079	57	12	21	0.005 - 0.011	0.1	ISQC	Y	**1**
Outside CN RoW	SVOC	Benzo(a)pyrene	50-32-8	0.0072	0.11	S-079	57	16	28	0.005 - 0.011	20	SQGsc	N	0.006
Outside CN RoW	SVOC	Benzo(b&j)fluoranthene	205-99-2_205-82-3	0.0054	0.24	S-079	57	29	51	0.005 - 0.005	0.1	ISQC	Y	2.4
Outside CN RoW	SVOC	Benzo(c)phenanthrene	195-19-7	0.008	0.021	S-079	57	3	5	0.005 - 0.011	NG	--	Y	**NG**
Outside CN RoW	SVOC	Benzo(e)pyrene	192-97-2	0.0071	0.11	S-079	57	22	39	0.005 - 0.011	NG	--	Y	**NG**
Outside CN RoW	SVOC	Benzo(g,h,i)perylene	191-24-2	0.0055	0.077	S-079	57	18	32	0.005 - 0.011	NG	--	Y	**NG**
Outside CN RoW	SVOC	Benzo(k)fluoranthene	207-08-9	0.0076	0.093	S-079	57	11	19	0.005 - 0.011	0.1	ISQC	N	0.9
Outside CN RoW	SVOC	Chrysene	218-01-9	0.0067	0.23	S-079	57	22	39	0.005 - 0.011	6.2	SQGi	N	0.04
Outside CN RoW	SVOC	Dibenz(a,h)anthracene	53-70-3	0.0098	0.019	S-079	57	3	5	0.005 - 0.011	0.1	ISQC	N	0.2
Outside CN RoW	SVOC	Fluoranthene	206-44-0	0.0058	0.27	S-079	57	30	53	0.005 - 0.005	50	SQGsc	N	0.005
Outside CN RoW	SVOC	Fluorene	86-73-7	0.0067	0.031	S-079	57	6	11	0.005 - 0.011	0.25	SQGfl	N	0.1
Outside CN RoW	SVOC	Indeno (1,2,3-cd)pyrene	193-39-5	0.0059	0.098	S-079	57	16	28	0.005 - 0.011	0.1	ISQC	Y	**1**
Outside CN RoW	SVOC	2-Methylnaphthalene	91-57-6	0.0079	0.031	C-2150-B	57	10	18	0.005 - 0.011	NG	--	Y	**NG**
Outside CN RoW	SVOC	Naphthalene	91-20-3	0.0072	0.0097	C-2600B	57	5	9	0.005 - 0.011	0.013	SQGfl	N	0.7
Outside CN RoW	SVOC	Perylene	198-55-0	0.0058	0.26	C-6013B	57	50	88	0.005 - 0.005	NG	--	Y	**NG**
Outside CN RoW	SVOC	Phenanthrene	85-01-8	0.0056	0.2	S-079	57	24	42	0.005 - 0.011	0.046	SQGfl	Y	**4**
Outside CN RoW	SVOC	Pyrene	129-00-0	0.0075	0.2	S-079	57	26	46	0.005 - 0.011	0.1	ISQC	Y	**2**
Outside CN RoW	SVOC	Quinoline	91-22-5	ND	ND	--	57	0	0	0.01 - 0.021	NG	--	N	--

Notes:
Maximum chemical concentrations within the CN ROW were compared to Industrial SQGs. Maximum chemical concentrations outside of the CN ROW was compared to Agricultural SQGs.
The SQG is based on the lowest of the available environmental health guidelines.
The interim soil quality criterion is retained as the enviornmental soil quality guideline when there was insufficient/inadequate data to calculate an SQG. (CCME 1991)
The soil quality guideline for benzo(b)fluoranthene was applied for benzo(b&j)fluoranthene

References:

CCME. 2014. Canadian Environmental Quality Guidelines. Available online: https://www.ccme.ca/en/resources/canadian_environmental_quality_guidelines/index.html
CCME. 2010. Canadian Soil Quality Guidelines for the Protection of Enviornmental and Human Health. Available online: http://ceqg-rcqe.ccme.ca/download/en/320
CCME. 1991. Interim Canadian Environmental Quality Criteria for Contaminated Sites. Available online: https://www.ccme.ca/files/Resources/csm/pn_1007_e.pdf

Abbreviations:
CCME -- Canadian Council of Ministers of the Environment
CN RoW -- Canadian National Railway Company Right of Way
COPC -- Constituent of potential concern
HQ -- Hazard quotient
ISQC-- Interim Soil Quality Criteria
mg/kg -- Milligrams per kilogram
ND -- No detections
SVOC -- Semi-volatile organic compound
SQG -- Soil quality guidelines
SQGfl -- Protection of freshwater life quality guidelinees
SQGi -- Soil and food ingestion quailty guidelines
SQGsc -- Soil contact quality guidelines

TABLE 1.2
OCCURRENCE AND DISTRIBUTION OF COPCS FOR SURFACE WATER
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Scenario Timeframe: Current/Future
Medium: Surface Water
Exposure Medium: Surface Water

Exposure Point	Constituent Group	Constituent	CASRN	Minimum Detected Concentration (ug/L)	Maximum Detected Concentration (ug/L)	Location of Maximum Detected Concentration	Sample Count	Detect Count	Detection Frequency (%)	Range of Detection Limits for Non-Detects (ug/L)	CCME Interim Surface Water Quality Guidelines (ug/L)	COPC Flag (Y/N)	HQ Ratio - Max/Guideline
Outside CN RoW	SVOC	Acenaphthene	83-32-9	ND	ND	--	72	0	0	0.1 - 0.1	5.8	N	--
Outside CN RoW	SVOC	Acenaphthylene	208-96-8	ND	ND	--	72	0	0	0.1 - 0.1	NG	N	--
Outside CN RoW	SVOC	Acridine	260-94-6	ND	ND	--	72	0	0	0.04 - 0.04	4.4	N	--
Outside CN RoW	SVOC	Anthracene	120-12-7	ND	ND	--	72	0	0	0.01 - 0.01	0.01	N	--
Outside CN RoW	SVOC	Benzo(a)anthracene	56-55-3	ND	ND	--	72	0	0	0.0085 - 0.0085	0.018	N	--
Outside CN RoW	SVOC	Benzo(a)pyrene	50-32-8	ND	ND	--	72	0	0	0.0075 - 0.0075	0.015	N	--
Outside CN RoW	SVOC	Benzo(b&j)fluoranthene	205-99-2_205-82-3	ND	ND	--	72	0	0	0.0085 - 0.0085	NG	N	--
Outside CN RoW	SVOC	Benzo(c)phenanthrene	195-19-7	ND	ND	--	72	0	0	0.05 - 0.05	NG	N	--
Outside CN RoW	SVOC	Benzo(e)pyrene	192-97-2	ND	ND	--	72	0	0	0.05 - 0.05	NG	N	--
Outside CN RoW	SVOC	Benzo(g,h,i)perylene	191-24-2	ND	ND	--	72	0	0	0.0085 - 0.0085	NG	N	--
Outside CN RoW	SVOC	Benzo(k)fluoranthene	207-08-9	ND	ND	--	72	0	0	0.0085 - 0.0085	NG	N	--
Outside CN RoW	SVOC	Chrysene	218-01-9	ND	ND	--	72	0	0	0.0085 - 0.0085	NG	N	--
Outside CN RoW	SVOC	Dibenz(a,h)anthracene	53-70-3	ND	ND	--	72	0	0	0.0075 - 0.0075	NG	N	--
Outside CN RoW	SVOC	Fluoranthene	206-44-0	0.01	0.012	TH-21	72	7	10	0.01 - 0.01	0.04	N	0.3
Outside CN RoW	SVOC	Fluorene	86-73-7	ND	ND	--	72	0	0	0.05 - 0.05	3	N	--
Outside CN RoW	SVOC	Indeno (1,2,3-cd)pyrene	193-39-5	ND	ND	--	72	0	0	0.0085 - 0.0085	NG	N	--
Outside CN RoW	SVOC	2-Methylnaphthalene	91-57-6	ND	ND	--	72	0	0	0.1 - 0.1	NG	N	--
Outside CN RoW	SVOC	Naphthalene	91-20-3	ND	ND	--	72	0	0	0.1 - 0.1	1.1	N	--
Outside CN RoW	SVOC	Perylene	198-55-0	ND	ND	--	72	0	0	0.05 - 0.05	NG	N	--
Outside CN RoW	SVOC	Phenanthrene	85-01-8	0.051	0.066	TH-22	72	13	18	0.05 - 0.05	0.4	N	0.2
Outside CN RoW	SVOC	Pyrene	129-00-0	ND	ND	--	72	0	0	0.02 - 0.02	0.03	N	--
Outside CN RoW	SVOC	Quinoline	91-22-5	ND	ND	--	72	0	0	0.2 - 0.2	3.4	N	--
Culvert - Outside CN RoW	SVOC	Acenaphthene	83-32-9	ND	ND	--	1	0	0	0.1 - 0.1	5.8	N	--
Culvert - Outside CN RoW	SVOC	Acenaphthylene	208-96-8	ND	ND	--	1	0	0	0.1 - 0.1	NG	N	--
Culvert - Outside CN RoW	SVOC	Acridine	260-94-6	ND	ND	--	1	0	0	0.04 - 0.04	4.4	N	--
Culvert - Outside CN RoW	SVOC	Anthracene	120-12-7	ND	ND	--	1	0	0	0.01 - 0.01	0.01	N	--
Culvert - Outside CN RoW	SVOC	Benzo(a)anthracene	56-55-3	ND	ND	--	1	0	0	0.0085 - 0.0085	0.018	N	--
Culvert - Outside CN RoW	SVOC	Benzo(a)pyrene	50-32-8	ND	ND	--	1	0	0	0.0075 - 0.0075	0.015	N	--
Culvert - Outside CN RoW	SVOC	Benzo(b&j)fluoranthene	205-99-2_205-82-3	ND	ND	--	1	0	0	0.0085 - 0.0085	NG	N	--
Culvert - Outside CN RoW	SVOC	Benzo(c)phenanthrene	195-19-7	ND	ND	--	1	0	0	0.05 - 0.05	NG	N	--
Culvert - Outside CN RoW	SVOC	Benzo(e)pyrene	192-97-2	ND	ND	--	1	0	0	0.05 - 0.05	NG	N	--
Culvert - Outside CN RoW	SVOC	Benzo(g,h,i)perylene	191-24-2	ND	ND	--	1	0	0	0.0085 - 0.0085	NG	N	--
Culvert - Outside CN RoW	SVOC	Benzo(k)fluoranthene	207-08-9	0.0099	0.0099	BEFORE CULVERT	1	1	100	-	NG	Y	**NG**
Culvert - Outside CN RoW	SVOC	Chrysene	218-01-9	ND	ND	--	1	0	0	0.0085 - 0.0085	NG	N	--
Culvert - Outside CN RoW	SVOC	Dibenz(a,h)anthracene	53-70-3	ND	ND	--	1	0	0	0.0075 - 0.0075	NG	N	--
Culvert - Outside CN RoW	SVOC	Fluoranthene	206-44-0	ND	ND	--	1	0	0	0.01 - 0.01	0.04	N	--
Culvert - Outside CN RoW	SVOC	Fluorene	86-73-7	ND	ND	--	1	0	0	0.05 - 0.05	3	N	--
Culvert - Outside CN RoW	SVOC	Indeno (1,2,3-cd)pyrene	193-39-5	ND	ND	--	1	0	0	0.0085 - 0.0085	NG	N	--
Culvert - Outside CN RoW	SVOC	2-Methylnaphthalene	91-57-6	ND	ND	--	1	0	0	0.1 - 0.1	NG	N	--
Culvert - Outside CN RoW	SVOC	Naphthalene	91-20-3	ND	ND	--	1	0	0	0.1 - 0.1	1.1	N	--
Culvert - Outside CN RoW	SVOC	Perylene	198-55-0	ND	ND	--	1	0	0	0.05 - 0.05	NG	N	--
Culvert - Outside CN RoW	SVOC	Phenanthrene	85-01-8	ND	ND	--	1	0	0	0.05 - 0.05	0.4	N	--
Culvert - Outside CN RoW	SVOC	Pyrene	129-00-0	ND	ND	--	1	0	0	0.02 - 0.02	0.03	N	--
Culvert - Outside CN RoW	SVOC	Quinoline	91-22-5	ND	ND	--	1	0	0	0.2 - 0.2	3.4	N	--
Culvert CN RoW	SVOC	Acenaphthene	83-32-9	ND	ND	--	3	0	0	0.1 - 0.1	5.8	N	--
Culvert CN RoW	SVOC	Acenaphthylene	208-96-8	ND	ND	--	3	0	0	0.1 - 0.1	NG	N	--
Culvert CN RoW	SVOC	Acridine	260-94-6	0.067	0.067	MID CULVERT 2	3	1	33	0.04 - 0.04	4.4	N	0.02
Culvert CN RoW	SVOC	Anthracene	120-12-7	0.021	0.021	MID CULVERT 2	3	1	33	0.01 - 0.01	0.01	Y	**2**
Culvert CN RoW	SVOC	Benzo(a)anthracene	56-55-3	0.0093	0.0093	MID CULVERT 2	3	1	33	0.0085 - 0.0085	0.018	N	0.5
Culvert CN RoW	SVOC	Benzo(a)pyrene	50-32-8	0.0087	0.0087	MID CULVERT 2	3	1	33	0.0075 - 0.0075	0.015	N	0.6
Culvert CN RoW	SVOC	Benzo(b&j)fluoranthene	205-99-2_205-82-3	0.012	0.012	MID CULVERT 2	3	1	33	0.0085 - 0.0085	NG	Y	**NG**
Culvert CN RoW	SVOC	Benzo(c)phenanthrene	195-19-7	ND	ND	--	3	0	0	0.05 - 0.05	NG	N	--
Culvert CN RoW	SVOC	Benzo(e)pyrene	192-97-2	ND	ND	--	3	0	0	0.05 - 0.05	NG	N	--
Culvert CN RoW	SVOC	Benzo(g,h,i)perylene	191-24-2	ND	ND	--	3	0	0	0.0085 - 0.0085	NG	N	--
Culvert CN RoW	SVOC	Benzo(k)fluoranthene	207-08-9	0.031	0.031	MID CULVERT 2	3	1	33	0.0085 - 0.0085	NG	Y	**NG**

TABLE 1.2
OCCURRENCE AND DISTRIBUTION OF COPCS FOR SURFACE WATER
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Scenario Timeframe: Current/Future
Medium: Surface Water
Exposure Medium: Surface Water

Exposure Point	Constituent Group	Constituent	CASRN	Minimum Detected Concentration (ug/L)	Maximum Detected Concentration (ug/L)	Location of Maximum Detected Concentration	Sample Count	Detect Count	Detection Frequency (%)	Range of Detection Limits for Non-Detects (ug/L)	CCME Interim Surface Water Quality Guidelines (ug/L)	COPC Flag (Y/N)	HQ Ratio - Max/Guideline
Culvert CN RoW	SVOC	Chrysene	218-01-9	0.017	0.017	MID CULVERT 2	3	1	33	0.0085 - 0.0085	NG	Y	**NG**
Culvert CN RoW	SVOC	Dibenz(a,h)anthracene	53-70-3	ND	ND	--	3	0	0	0.0075 - 0.0075	NG	N	--
Culvert CN RoW	SVOC	Fluoranthene	206-44-0	0.025	0.13	MID CULVERT 2	3	2	67	0.01 - 0.01	0.04	Y	**3**
Culvert CN RoW	SVOC	Fluorene	86-73-7	0.054	0.064	MID CULVERT 2	3	2	67	0.05 - 0.05	3	N	0.02
Culvert CN RoW	SVOC	Indeno (1,2,3-cd)pyrene	193-39-5	ND	ND	--	3	0	0	0.0085 - 0.0085	NG	N	--
Culvert CN RoW	SVOC	2-Methylnaphthalene	91-57-6	0.5	0.5	AFTER CULVERT	3	1	33	0.1 - 0.1	NG	Y	**NG**
Culvert CN RoW	SVOC	Naphthalene	91-20-3	6.3	6.3	AFTER CULVERT	3	1	33	0.1 - 0.1	1.1	Y	**6**
Culvert CN RoW	SVOC	Perylene	198-55-0	ND	ND	--	3	0	0	0.05 - 0.05	NG	N	--
Culvert CN RoW	SVOC	Phenanthrene	85-01-8	0.06	0.18	MID CULVERT 2	3	2	67	0.05 - 0.05	0.4	N	0.5
Culvert CN RoW	SVOC	Pyrene	129-00-0	0.03	0.13	MID CULVERT 2	3	2	67	0.02 - 0.02	0.025	Y	**5**
Culvert CN RoW	SVOC	Quinoline	91-22-5	ND	ND	--	3	0	0	0.2 - 0.2	3.4	N	--

Notes:
The freshwater water quality guidelines for the protection of aquatic life were used to compare against to the max concentrations and were applied in the calculation of the HQs.
The water quality guidelines for the protection of agriculture were reviewed; no CCME guidelines currently exist.

References:
CCME. 2014. Canadian Water Quality Guidelines for the Protection of Aquatic Life: Polycyclic Aromatic Hydrocarbons. Available online: https://www.ccme.ca/en/resources/canadian_environmental_quality_guidelines/index.html

Abbreviations:
CCME -- Canadian Council of Ministers of the Environment
CN RoW -- Canadian National Railway Company Right of Way
COPC -- Constituent of potential concern
HQ -- Hazard quotient
ND -- No detections
NG -- No guidelines
SVOC -- Semi-volatile organic compound
ug/L -- micrograms per liter

TABLE 1.3
OCCURRENCE AND DISTRIBUTION OF COPCS FOR SEDIMENT
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Scenario Timeframe: Current/Future
Medium: Sediment
Exposure Medium: Sediment

Exposure Point	Constituent Group	Constituent	CASRN	Minimum Detected Concentration (mg/kg)	Maximum Detected Concentration (mg/kg)	Location of Maximum Detected Concentration	Sample Count	Detect Count	Detection Frequency (%)	Range of Detection Limits for Non-Detects (mg/kg)	CCME Interim Sediment Quality Guidelines (mg/kg)	PELs (mg/kg)	COPC Flag (Y/N)	HQ Ratio - Max/Guideline
Outside CN RoW	SVOC	Acenaphthene	83-32-9	0.009	0.02	WA-SED-105C	41	3	7	0.005 - 0.005	0.00671[1]	0.0889[2]	Y	**3**
Outside CN RoW	SVOC	Acenaphthylene	208-96-8	0.012	0.012	WA-SED-220	41	1	2	0.005 - 0.005	0.00587[1]	0.128[2]	Y	**2**
Outside CN RoW	SVOC	Acridine	260-94-6	0.012	0.015	WA-SED-223	41	3	7	0.01 - 0.01	NG	NG	Y	**NG**
Outside CN RoW	SVOC	Anthracene	120-12-7	0.0079	0.033	WA-SED-220	41	4	10	0.004 - 0.004	0.0469[1]	0.245[2]	N	0.7
Outside CN RoW	SVOC	Benzo(a)anthracene	56-55-3	0.0081	0.044	WA-SED-220	41	5	12	0.005 - 0.005	0.0317	0.385	Y	**1**
Outside CN RoW	SVOC	Benzo(a)pyrene	50-32-8	0.011	0.047	WA-SED-220	41	4	10	0.005 - 0.005	0.0319	0.782	Y	**1**
Outside CN RoW	SVOC	Benzo(b&j)fluoranthene	205-99-2_205-82-3	0.0072	0.074	WA-SED-220	41	15	37	0.005 - 0.005	NG	NG	Y	**NG**
Outside CN RoW	SVOC	Benzo(c)phenanthrene	195-19-7	0.0082	0.0088	WA-SED-220	41	2	5	0.005 - 0.005	NG	NG	Y	**NG**
Outside CN RoW	SVOC	Benzo(e)pyrene	192-97-2	0.0074	0.041	WA-SED-220	41	10	24	0.005 - 0.005	NG	NG	Y	**NG**
Outside CN RoW	SVOC	Benzo(g,h,i)perylene	191-24-2	0.0075	0.034	WA-SED-220	41	5	12	0.005 - 0.005	NG	NG	Y	**NG**
Outside CN RoW	SVOC	Benzo(k)fluoranthene	207-08-9	0.0098	0.026	WA-SED-220	41	4	10	0.005 - 0.005	NG	NG	Y	**NG**
Outside CN RoW	SVOC	Chrysene	218-01-9	0.0083	0.049	WA-SED-220	41	8	20	0.005 - 0.005	0.571	0.862	N	0.1
Outside CN RoW	SVOC	Dibenz(a,h)anthracene	53-70-3	ND	ND	--	41	0	0	0.005 - 0.005	0.00622[1]	0.135[2]	N	--
Outside CN RoW	SVOC	Fluoranthene	206-44-0	0.0074	0.15	WA-SED-220	41	17	41	0.005 - 0.005	0.111	2.355	Y	**1**
Outside CN RoW	SVOC	Fluorene	86-73-7	0.0079	0.02	WA-SED-220	41	7	17	0.005 - 0.005	0.0212[1]	0.144[2]	N	0.9
Outside CN RoW	SVOC	Indeno (1,2,3-cd)pyrene	193-39-5	0.015	0.033	WA-SED-220	41	4	10	0.005 - 0.005	NG	NG	Y	**NG**
Outside CN RoW	SVOC	Methylnaphthalene, 2-	91-57-6	0.008	0.024	WA-SED-105C	41	11	27	0.005 - 0.005	0.0202[1]	0.201[2]	Y	**1**
Outside CN RoW	SVOC	Naphthalene	91-20-3	0.0085	0.068	WA-SED-105C	41	6	15	0.005 - 0.005	0.0346[1]	0.391[2]	Y	**2**
Outside CN RoW	SVOC	Perylene	198-55-0	0.0066	0.33	WA-SED-218	41	35	85	0.005 - 0.005	NG	NG	Y	**NG**
Outside CN RoW	SVOC	Phenanthrene	85-01-8	0.01	0.13	WA-SED-220	41	15	37	0.005 - 0.005	0.0419	0.515	Y	**3**
Outside CN RoW	SVOC	Pyrene	129-00-0	0.0082	0.12	WA-SED-220	41	18	44	0.005 - 0.005	0.053	0.875	Y	**2**
Outside CN RoW	SVOC	Quinoline	91-22-5	0.021	0.033	WA-SED-224	41	2	5	0.01 - 0.01	NG	NG	Y	**NG**
Culvert - Outside CN RoW	SVOC	Acenaphthene	83-32-9	ND	ND	--	1	0	0	0.012 - 0.012	0.00671[1]	0.0889[2]	N	--
Culvert - Outside CN RoW	SVOC	Acenaphthylene	208-96-8	ND	ND	--	1	0	0	0.012 - 0.012	0.00587[1]	0.128[2]	N	--
Culvert - Outside CN RoW	SVOC	Acridine	260-94-6	ND	ND	--	1	0	0	0.023 - 0.023	NG	NG	N	--
Culvert - Outside CN RoW	SVOC	Anthracene	120-12-7	ND	ND	--	1	0	0	0.0092 - 0.0092	0.0469[1]	0.245[2]	N	--
Culvert - Outside CN RoW	SVOC	Benzo(a)anthracene	56-55-3	ND	ND	--	1	0	0	0.012 - 0.012	0.0317	0.385	N	--
Culvert - Outside CN RoW	SVOC	Benzo(a)pyrene	50-32-8	ND	ND	--	1	0	0	0.012 - 0.012	0.0319	0.782	N	--
Culvert - Outside CN RoW	SVOC	Benzo(b&j)fluoranthene	205-99-2_205-82-3	ND	ND	--	1	0	0	0.012 - 0.012	NG	NG	N	--
Culvert - Outside CN RoW	SVOC	Benzo(c)phenanthrene	195-19-7	ND	ND	--	1	0	0	0.012 - 0.012	NG	NG	N	--
Culvert - Outside CN RoW	SVOC	Benzo(e)pyrene	192-97-2	ND	ND	--	1	0	0	0.012 - 0.012	NG	NG	N	--
Culvert - Outside CN RoW	SVOC	Benzo(g,h,i)perylene	191-24-2	ND	ND	--	1	0	0	0.012 - 0.012	NG	NG	N	--
Culvert - Outside CN RoW	SVOC	Benzo(k)fluoranthene	207-08-9	ND	ND	--	1	0	0	0.012 - 0.012	NG	NG	N	--
Culvert - Outside CN RoW	SVOC	Chrysene	218-01-9	ND	ND	--	1	0	0	0.012 - 0.012	0.571	0.862	N	--
Culvert - Outside CN RoW	SVOC	Dibenz(a,h)anthracene	53-70-3	ND	ND	--	1	0	0	0.012 - 0.012	0.00622[1]	0.135[2]	N	--
Culvert - Outside CN RoW	SVOC	Fluoranthene	206-44-0	0.017	0.017	BEFORE CULVERT	1	1	100	-	0.111	2.355	N	0.2
Culvert - Outside CN RoW	SVOC	Fluorene	86-73-7	ND	ND	--	1	0	0	0.012 - 0.012	0.0212[1]	0.144[2]	N	--
Culvert - Outside CN RoW	SVOC	Indeno (1,2,3-cd)pyrene	193-39-5	ND	ND	--	1	0	0	0.012 - 0.012	NG	NG	N	--
Culvert - Outside CN RoW	SVOC	Methylnaphthalene, 2-	91-57-6	ND	ND	--	1	0	0	0.012 - 0.012	0.0202[1]	0.201[2]	N	--
Culvert - Outside CN RoW	SVOC	Naphthalene	91-20-3	ND	ND	--	1	0	0	0.012 - 0.012	0.0346[1]	0.391[2]	N	--
Culvert - Outside CN RoW	SVOC	Perylene	198-55-0	0.029	0.029	BEFORE CULVERT	1	1	100	-	NG	NG	Y	**NG**
Culvert - Outside CN RoW	SVOC	Phenanthrene	85-01-8	0.017	0.017	BEFORE CULVERT	1	1	100	-	0.0419	0.515	N	0.4
Culvert - Outside CN RoW	SVOC	Pyrene	129-00-0	ND	ND	--	1	0	0	0.012 - 0.012	0.053	0.875	N	--
Culvert - Outside CN RoW	SVOC	Quinoline	91-22-5	ND	ND	--	1	0	0	0.023 - 0.023	NG	NG	N	--
Culvert CN RoW	SVOC	Acenaphthene	83-32-9	ND	ND	--	4	0	0	0.005 - 0.005	0.00671[1]	0.0889[2]	N	--
Culvert CN RoW	SVOC	Acenaphthylene	208-96-8	0.029	0.029	MID CULVERT 2	4	1	25	0.005 - 0.005	0.00587[1]	0.128[2]	Y	**5**
Culvert CN RoW	SVOC	Acridine	260-94-6	ND	ND	--	4	0	0	0.01 - 0.01	NG	NG	N	--
Culvert CN RoW	SVOC	Anthracene	120-12-7	0.054	0.054	MID CULVERT 2	4	1	25	0.004 - 0.004	0.0469[1]	0.245[2]	Y	**1**
Culvert CN RoW	SVOC	Benzo(a)anthracene	56-55-3	0.028	0.028	MID CULVERT 2	4	1	25	0.005 - 0.005	0.0317	0.385	N	0.9
Culvert CN RoW	SVOC	Benzo(a)pyrene	50-32-8	0.059	0.059	MID CULVERT 2	4	1	25	0.005 - 0.005	0.0319	0.782	Y	**2**
Culvert CN RoW	SVOC	Benzo(b&j)fluoranthene	205-99-2_205-82-3	0.17	0.17	MID CULVERT 2	4	1	25	0.005 - 0.005	NG	NG	Y	**NG**
Culvert CN RoW	SVOC	Benzo(c)phenanthrene	195-19-7	ND	ND	--	4	0	0	0.005 - 0.005	NG	NG	N	--
Culvert CN RoW	SVOC	Benzo(e)pyrene	192-97-2	0.11	0.11	MID CULVERT 2	4	1	25	0.005 - 0.005	NG	NG	Y	**NG**
Culvert CN RoW	SVOC	Benzo(g,h,i)perylene	191-24-2	0.049	0.049	MID CULVERT 2	4	1	25	0.005 - 0.005	NG	NG	Y	**NG**
Culvert CN RoW	SVOC	Benzo(k)fluoranthene	207-08-9	0.048	0.048	MID CULVERT 2	4	1	25	0.005 - 0.005	NG	NG	Y	**NG**
Culvert CN RoW	SVOC	Chrysene	218-01-9	0.041	0.041	MID CULVERT 2	4	1	25	0.005 - 0.005	0.571	0.862	N	0.1
Culvert CN RoW	SVOC	Dibenz(a,h)anthracene	53-70-3	0.017	0.017	MID CULVERT 2	4	1	25	0.005 - 0.005	0.00622[1]	0.135[2]	Y	**3**
Culvert CN RoW	SVOC	Fluoranthene	206-44-0	0.021	0.021	MID CULVERT 2	4	1	25	0.005 - 0.005	0.111	2.355	N	0.2
Culvert CN RoW	SVOC	Fluorene	86-73-7	ND	ND	--	4	0	0	0.005 - 0.005	0.0212[1]	0.144[2]	N	--
Culvert CN RoW	SVOC	Indeno (1,2,3-cd)pyrene	193-39-5	0.05	0.05	MID CULVERT 2	4	1	25	0.005 - 0.005	NG	NG	Y	**NG**
Culvert CN RoW	SVOC	Methylnaphthalene, 2-	91-57-6	ND	ND	--	4	0	0	0.005 - 0.005	0.0202[1]	0.201[2]	N	--
Culvert CN RoW	SVOC	Naphthalene	91-20-3	ND	ND	--	4	0	0	0.005 - 0.005	0.0346[1]	0.391[2]	N	--

TABLE 1.3
OCCURRENCE AND DISTRIBUTION OF COPCS FOR SEDIMENT
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Scenario Timeframe: Current/Future
Medium: Sediment
Exposure Medium: Sediment

Exposure Point	Constituent Group	Constituent	CASRN	Minimum Detected Concentration (mg/kg)	Maximum Detected Concentration (mg/kg)	Location of Maximum Detected Concentration	Sample Count	Detect Count	Detection Frequency (%)	Range of Detection Limits for Non-Detects (mg/kg)	CCME Interim Sediment Quality Guidelines (mg/kg)	PELs (mg/kg)	COPC Flag (Y/N)	HQ Ratio - Max/Guideline
Culvert CN RoW	SVOC	Perylene	198-55-0	0.021	0.021	MID CULVERT 2	4	1	25	0.005 - 0.005	NG	NG	Y	**NG**
Culvert CN RoW	SVOC	Phenanthrene	85-01-8	ND	ND	--	4	0	0	0.005 - 0.005	0.0419	0.515	N	--
Culvert CN RoW	SVOC	Pyrene	129-00-0	0.027	0.027	MID CULVERT 2	4	1	25	0.005 - 0.005	0.053	0.875	N	0.5
Culvert CN RoW	SVOC	Quinoline	91-22-5	ND	ND	--	4	0	0	0.01 - 0.01	NG	NG	N	--

Notes:
The freshwater ISQG values were used to compare against the max concentrations and applied in the calculation of the HQs.
(1) -- Provisional guideline; adoption of marine ISQG developed using the modified National Status and Trends Program approach
(2) -- Provisional guideline; adoption of marine PEL developed using the modified National Status and Trends Program approach

References:
CCME. 2014. Canadian Sediment Quality Guidelines for the Protection of Aquatic Life: Polycyclic Aromatic Hydrocarbons. Available online: https://www.ccme.ca/en/resources/canadian_environmental_quality_guidelines/index.html

Abbreviations:
CCME -- Canadian Council of Ministers of the Environment
CN RoW -- Canadian National Railway Company Right of Way
COPC -- Constituent of potential concern
HQ -- Hazard quotient
ISQG-- Interim sediment quality guidelines
mg/kg -- Milligrams per kilogram
ND -- No detections
NG -- No guidelines
PEL -- Probable effect levels
SVOC -- Semi-volatile organic compound

TABLE 1.4
SUMMARY OF COPCS
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

COPC Group	COPC	CASRN	Soil (CN RoW)	Soil (Outside CN RoW)	Surface Water (Outside CN RoW)	Culvert Surface Water (Outside CN RoW)	Culvert Surface Water (CN RoW)	Sediment (Outside CN RoW)	Culvert Sediment (Outside CN RoW)	Culvert Sediment (CN RoW)
SVOC	Acenaphthene	83-32-9	**Yes**	No	No	No	No	**Yes**	No	No
SVOC	Acenaphthylene	208-96-8	No	No	No	No	No	**Yes**	No	**Yes**
SVOC	Acridine	260-94-6	**Yes**	**Yes**	No	No	No	**Yes**	No	No
SVOC	Anthracene	120-12-7	No	No	No	No	**Yes**	No	No	**Yes**
SVOC	Benzo(a)anthracene	56-55-3	No	**Yes**	No	No	No	**Yes**	No	No
SVOC	Benzo(a)pyrene	50-32-8	No	No	No	No	No	**Yes**	No	**Yes**
SVOC	Benzo(b&j)fluoranthene	205-99-2 205-82-3	No	**Yes**	No	No	**Yes**	**Yes**	No	**Yes**
SVOC	Benzo(c)phenanthrene	195-19-7	**Yes**	**Yes**	No	No	No	**Yes**	No	No
SVOC	Benzo(e)pyrene	192-97-2	**Yes**	**Yes**	No	No	No	**Yes**	No	**Yes**
SVOC	Benzo(g,h,i)perylene	191-24-2	**Yes**	**Yes**	No	No	No	**Yes**	No	**Yes**
SVOC	Benzo(k)fluoranthene	207-08-9	No	No	No	**Yes**	**Yes**	**Yes**	No	**Yes**
SVOC	Chrysene	218-01-9	**Yes**	No	No	No	**Yes**	No	No	No
SVOC	Dibenz(a,h)anthracene	53-70-3	No	No	No	No	No	No	No	**Yes**
SVOC	Fluoranthene	206-44-0	No	No	No	No	**Yes**	**Yes**	No	No
SVOC	Fluorene	86-73-7	**Yes**	No	No	No	No	No	No	No
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	No	**Yes**	No	No	No	**Yes**	No	**Yes**
SVOC	2-Methylnaphthalene	91-57-6	**Yes**	**Yes**	No	No	**Yes**	**Yes**	No	No
SVOC	Naphthalene	91-20-3	**Yes**	No	No	No	**Yes**	**Yes**	No	No
SVOC	Perylene	198-55-0	**Yes**	**Yes**	No	No	No	**Yes**	**Yes**	**Yes**
SVOC	Phenanthrene	85-01-8	**Yes**	**Yes**	No	No	No	**Yes**	No	No
SVOC	Pyrene	129-00-0	No	**Yes**	No	No	**Yes**	**Yes**	No	No
SVOC	Quinoline	91-22-5	**Yes**	No	No	No	No	**Yes**	No	No
		Total COPCs:	**12**	**11**	**0**	**1**	**8**	**18**	**1**	**10**

Abbreviations:
CN RoW -- Canadian National Railway Company Right of Way
COPC -- Constituent of potential concern
SVOC -- Semi-volatile organic compound

Notes:
COPCs based on exceedances of environmental quality guidelines are shaded and bolded. COPCs based on lack of environmental quality guidelines are bolded.

TABLE 1.5
SUMMARY OF ECOLOGICAL SCREENING HAZARD QUOTIENTS BASED ON MAXIMUM DETECTED CONCENTRATIONS FOR DIRECT CONTACT EXPOSURE PATHWAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

COPC Group	COPC	CASRN	Soil (CN RoW)	Soil (Outside CN RoW)	Surface Water (Outside CN RoW)	Culvert Surface Water (Outside CN RoW)	Culvert Surface Water (CN RoW)	Sediment (Outside CN RoW)	Culvert Sediment (Outside CN RoW)	Culvert Sediment (CN RoW)
SVOC	Acenaphthene	83-32-9	**1**	--	--	--	--	**3**	--	--
SVOC	Acenaphthylene	208-96-8	--	--	--	--	--	**2**	--	**5**
SVOC	Acridine	260-94-6	NG	NG	--	--	--	NG	--	--
SVOC	Anthracene	120-12-7	--	--	--	--	**2**	--	--	**1**
SVOC	Benzo(a)anthracene	56-55-3	--	**1**	--	--	--	**1**	--	--
SVOC	Benzo(a)pyrene	50-32-8	--	--	--	--	--	**1**	--	**2**
SVOC	Benzo(b&j)fluoranthene	205-99-2_205-82-3	--	**2**	--	--	NG	NG	--	NG
SVOC	Benzo(c)phenanthrene	195-19-7	NG	NG	--	--	--	NG	--	--
SVOC	Benzo(e)pyrene	192-97-2	NG	NG	--	--	--	NG	--	NG
SVOC	Benzo(g,h,i)perylene	191-24-2	NG	NG	--	--	--	NG	--	NG
SVOC	Benzo(k)fluoranthene	207-08-9	--	--	--	NG	NG	NG	--	NG
SVOC	Chrysene	218-01-9	NG	--	--	--	NG	--	--	--
SVOC	Dibenz(a,h)anthracene	53-70-3	--	--	--	--	--	--	--	**3**
SVOC	Fluoranthene	206-44-0	--	--	--	--	**3**	**1**	--	--
SVOC	Fluorene	86-73-7	**2**	--	--	--	--	--	--	--
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	--	**1**	--	--	--	NG	--	NG
SVOC	2-Methylnaphthalene	91-57-6	NG	NG	--	--	NG	**1**	--	--
SVOC	Naphthalene	91-20-3	**7**	--	--	--	**6**	**2**	--	--
SVOC	Perylene	198-55-0	NG	NG	--	--	--	NG	NG	NG
SVOC	Phenanthrene	85-01-8	**17**	**4**	--	--	--	**3**	--	--
SVOC	Pyrene	129-00-0	--	**2**	--	--	**5**	**2**	--	--
SVOC	Quinoline	91-22-5	NG	--	--	--	--	NG	--	--

Note:
Only values for COPCs identified in each medium are presented. Non-COPCs are marked with a dash.
The screening hazard quotients (HQs) are the maximum concentrations of a COPC divided by the environmental quality guidance value per medium.
HQs ≥ 1, which indicate potential adverse health effects, are shaded and bolded.

Abbreviations:
CN RoW -- Canadian National Railway Company Right of Way
COPC -- Constituent of potential concern
HQ - Hazard quotient
NG -- No guidelines available for COPC
SVOC -- Semi-volatile organic compound

TABLE 2.1
CALCULATION OF HAZARD QUOTIENTS USING SOIL GUIDELINES
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Scenario Timeframe: Current/Future
Medium: Soil
Exposure Medium: Surface Soil (0-1.5 m)

Exposure Point	COPC Group	COPC	CASRN	Maximum Detected Concentration (mg/kg)	95% UCL (mg/kg) (1)	95% UCL Method	ProUCL Notes	Exposure Point Concentration (mg/kg) (2)		CCME Soil Quality Guidelines (mg/kg)	Hazard Quotient (unitless) (3)
								Value	Basis		
CN RoW	SVOC	Acenaphthene	83-32-9	0.39	0.0276	95% KM Approximate Gamma UCL	--	0.0276	UCL	0.28	0.1
CN RoW	SVOC	Acridine	260-94-6	0.023	0.0108	95% KM (t) UCL	--	0.0108	UCL	NG	NG
CN RoW	SVOC	Benzo(c)phenanthrene	195-19-7	0.064	0.0117	95% KM (Chebyshev) UCL	--	0.0117	UCL	NG	NG
CN RoW	SVOC	Benzo(e)pyrene	192-97-2	0.42	0.0198	KM H-UCL	--	0.0198	UCL	NG	NG
CN RoW	SVOC	Benzo(g,h,i)perylene	191-24-2	0.24	0.0152	KM H-UCL	--	0.0152	UCL	NG	NG
CN RoW	SVOC	Chrysene	218-01-9	0.36	0.0226	KM H-UCL	--	0.0226	UCL	NG	NG
CN RoW	SVOC	Fluorene	86-73-7	0.38	0.0267	95% KM Approximate Gamma UCL	--	0.0267	UCL	0.25	0.1
CN RoW	SVOC	2-Methylnaphthalene	91-57-6	0.071	0.0116	95% KM (t) UCL	--	0.0116	UCL	NG	NG
CN RoW	SVOC	Naphthalene	91-20-3	0.088	0.0123	95% KM (Chebyshev) UCL	--	0.0123	UCL	0.013	**1**
CN RoW	SVOC	Perylene	198-55-0	0.1	0.0201	95% KM (Chebyshev) UCL	--	0.0201	UCL	NG	NG
CN RoW	SVOC	Phenanthrene	85-01-8	0.79	0.0855	95% KM (Chebyshev) UCL	--	0.0855	UCL	0.046	**2**
CN RoW	SVOC	Quinoline	91-22-5	0.08	0.0128	95% KM (t) UCL	--	0.0128	UCL	NG	NG
Outside CN RoW	SVOC	Acridine	260-94-6	0.068	0.0173	95% KM (Chebyshev) UCL	e	0.0173	UCL	NG	NG
Outside CN RoW	SVOC	Benzo(a)anthracene	56-55-3	0.12	0.0146	95% KM Approximate Gamma UCL	--	0.0146	UCL	0.1	0.1
Outside CN RoW	SVOC	Benzo(b&j)fluoranthene	205-99-2_205-82-3	0.24	0.0251	KM H-UCL	--	0.0251	UCL	0.1	0.3
Outside CN RoW	SVOC	Benzo(c)phenanthrene	195-19-7	0.021	0.00612	95% KM (t) UCL	f	0.00612	UCL	NG	NG
Outside CN RoW	SVOC	Benzo(e)pyrene	192-97-2	0.11	0.0142	KM H-UCL	--	0.0142	UCL	NG	NG
Outside CN RoW	SVOC	Benzo(g,h,i)perylene	191-24-2	0.077	0.0153	95% GROS Approximate Gamma UCL	j	0.0153	UCL	NG	NG
Outside CN RoW	SVOC	Indeno (1,2,3-cd)pyrene	193-39-5	0.098	0.0164	95% GROS Approximate Gamma UCL	j	0.0164	UCL	0.1	0.2
Outside CN RoW	SVOC	2-Methylnaphthalene	91-57-6	0.031	0.0112	95% GROS Approximate Gamma UCL	j	0.0112	UCL	NG	NG
Outside CN RoW	SVOC	Perylene	198-55-0	0.26	0.0704	95% KM (Chebyshev) UCL	--	0.0704	UCL	NG	NG
Outside CN RoW	SVOC	Phenanthrene	85-01-8	0.2	0.0285	95% KM (Chebyshev) UCL	--	0.0285	UCL	0.046	0.6
Outside CN RoW	SVOC	Pyrene	129-00-0	0.2	0.0347	95% KM (Chebyshev) UCL	--	0.0347	UCL	0.1	0.3

Notes:

(1) The supporting calculations for the 95% Upper Confidence Limits of the mean (UCL) are provided in Attachment B.
(2) The exposure point concentrations (EPCs) are the lower of the maximum detected concentration and 95% UCL.
(3) The screening hazard quotients (HQs) are the EPCs divided by the SQGs. HQs ≥ 1, which indicate potential adverse health effects, are shaded and bolded.

Abbreviations:

CCME -- Canadian Council of Ministers of the Environment
CN ROW -- Canadian National Railway Company Right of Way
COPC -- Constituent of potential concern
HQ -- Hazard quotient
mg/kg -- Milligrams per kilogram
NG -- No guideline value
SVOC -- Semi-volatile organic compound
SQG -- Soil quality guidelines

References:

CCME. 2014. Canadian Environmental Quality Guidelines. Available online: https://www.ccme.ca/en/resources/canadian_environmental_quality_guidelines/index.html
CCME. 2010. Canadian Soil Quality Guidelines for the Protection of Enviornmental and Human Health. Available online: http://ceqg-rcqe.ccme.ca/download/en/320
CCME. 1991. Interim Canadian Environmental Quality Criteria for Contaminated Sites. Available online: https://www.ccme.ca/files/Resources/csm/pn_1007_e.pdf

ProUCL Notes

e	Data set has only 2 Detected Values.
f	Data set has only 3 Detected Values.
j	More than one Suggested UCL available

TABLE 2.2
CALCULATION OF HAZARD QUOTIENTS USING SURFACE WATER GUIDELINES
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Scenario Timeframe: Current/Future
Medium: Surface Water
Exposure Medium: Surface Water

Exposure Point	COPC Group	COPC	CASRN	Maximum Detected Concentration (ug/L)	95% UCL (ug/L) (1)	95% UCL Method	ProUCL Notes	Exposure Point Concentration (ug/L) (2)		CCME Surface Water Quality Guidelines (ug/L)	Hazard Quotient (unitless) (3)
								Value	Basis		
Culvert - Outside CN RoW	SVOC	Benzo(k)fluoranthene	207-08-9	0.0099	--	Insufficient detects, no UCL calculated	d	0.0099	Max	NG	NG
Culvert CN RoW	SVOC	Anthracene	120-12-7	0.021	--	Insufficient detects, no UCL calculated	d	0.021	Max	0.01	**2**
Culvert CN RoW	SVOC	Benzo(b&j)fluoranthene	205-99-2_205-82-3	0.012	--	Insufficient detects, no UCL calculated	d	0.012	Max	NG	NG
Culvert CN RoW	SVOC	Benzo(k)fluoranthene	207-08-9	0.031	--	Insufficient detects, no UCL calculated	d	0.031	Max	NG	NG
Culvert CN RoW	SVOC	Chrysene	218-01-9	0.017	--	Insufficient detects, no UCL calculated	d	0.017	Max	NG	NG
Culvert CN RoW	SVOC	Fluoranthene	206-44-0	0.13	0.245	95% KM (Chebyshev) UCL	e, i	0.13	Max	0.04	**3**
Culvert CN RoW	SVOC	2-Methylnaphthalene	91-57-6	0.5	--	Insufficient detects, no UCL calculated	d	0.5	Max	NG	NG
Culvert CN RoW	SVOC	Naphthalene	91-20-3	6.3	--	Insufficient detects, no UCL calculated	d	6.3	Max	1.1	**6**
Culvert CN RoW	SVOC	Pyrene	129-00-0	0.13	0.237	95% KM (Chebyshev) UCL	e, i	0.13	Max	0.025	**5**

Notes:

(1) The supporting calculations for the 95% Upper Confidence Limits of the mean (UCL) are provided in Attachment B.

(2) The exposure point concentrations (EPCs) are the lower of the maximum detected concentration and 95% UCL.

(3) The screening hazard quotients (HQs) are the EPCs divided by the interim surface water quality guidelines.
HQs ≥ 1, which indicate potential adverse health effects, are shaded and bolded.

References:

CCME. 2014. Canadian Water Quality Guidelines for the Protection of Aquatic Life: Polycyclic Aromatic Hydrocarbons. Available online: https://www.ccme.ca/en/resources/canadian_environmental_quality_guidelines/index.html

ProUCL Notes

d	Data set has only 1 Distinct Detected Values.
e	Data set has only 2 Detected Values.
i	Suggested UCL exceeds the maximum observation.

Abbreviations:

CCME -- Canadian Council of Ministers of the Environment
CN RoW -- Canadian National Railway Company Right of Way
COPC -- Constituent of potential concern
HQ -- Hazard quotient
NA -- Not available
ND -- Not detected
NG -- No guidance value
SVOC -- Semi-volatile organic compound
T or D -- Total or dissolved
UCL -- Upper Confidence Limit

TABLE 2.3
CALCULATION OF HAZARD QUOTIENTS USING SEDIMENT GUIDELINES
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Scenario Timeframe: Current/Future
Medium: Sediment
Exposure Medium: Sediment

Exposure Point	COPC Group	COPC	CASRN	Maximum Detected Concentration (mg/kg)	95% UCL (mg/kg) (1)	95% UCL Method	ProUCL Notes	Exposure Point Concentration (mg/kg) (2)		CCME Interim Sediment Quality Guidelines (mg/kg)	Hazard Quotient (unitless) (3)
								Value	Basis		
Outside CN RoW	SVOC	Acenaphthene	83-32-9	0.02	0.00642	95% KM (t) UCL	f	0.00642	UCL	0.00671	1
Outside CN RoW	SVOC	Acenaphthylene	208-96-8	0.012	--	Insufficient detects, no UCL calculated	d	0.012	Max	0.00587	2
Outside CN RoW	SVOC	Acridine	260-94-6	0.015	0.0105	95% KM (t) UCL	f	0.0105	UCL	NG	NG
Outside CN RoW	SVOC	Benzo(a)anthracene	56-55-3	0.044	0.00909	95% KM (t) UCL		0.00909	UCL	0.0317	0.3
Outside CN RoW	SVOC	Benzo(a)pyrene	50-32-8	0.047	0.0096	95% KM (t) UCL	f	0.0096	UCL	0.0319	0.3
Outside CN RoW	SVOC	Benzo(b&j)fluoranthene	205-99-2_205-82-3	0.074	0.0243	95% KM (Chebyshev) UCL		0.0243	UCL	NG	NG
Outside CN RoW	SVOC	Benzo(c)phenanthrene	195-19-7	0.0088	0.00545	95% KM (t) UCL	b, e	0.00545	UCL	NG	NG
Outside CN RoW	SVOC	Benzo(e)pyrene	192-97-2	0.041	0.0146	95% KM (t) UCL		0.0146	UCL	NG	NG
Outside CN RoW	SVOC	Benzo(g,h,i)perylene	191-24-2	0.034	0.00872	95% KM (t) UCL		0.00872	UCL	NG	NG
Outside CN RoW	SVOC	Benzo(k)fluoranthene	207-08-9	0.026	0.00788	95% KM (t) UCL		0.00788	UCL	NG	NG
Outside CN RoW	SVOC	Fluoranthene	206-44-0	0.15	0.0342	95% KM (Chebyshev) UCL		0.0342	UCL	0.111	0.3
Outside CN RoW	SVOC	Indeno (1,2,3-cd)pyrene	193-39-5	0.033	0.00898	95% KM (t) UCL		0.00898	UCL	NG	NG
Outside CN RoW	SVOC	2-Methylnaphthalene	91-57-6	0.024	0.00864	95% KM (t) UCL		0.00864	UCL	0.0202	0.4
Outside CN RoW	SVOC	Naphthalene	91-20-3	0.068	0.0144	95% KM (Chebyshev) UCL		0.0144	UCL	0.0346	0.4
Outside CN RoW	SVOC	Perylene	198-55-0	0.33	0.0692	95% KM (Chebyshev) UCL		0.0692	UCL	NG	NG
Outside CN RoW	SVOC	Phenanthrene	85-01-8	0.13	0.0166	KM H-UCL		0.0166	UCL	0.0419	0.4
Outside CN RoW	SVOC	Pyrene	129-00-0	0.12	0.0278	95% KM (Chebyshev) UCL		0.0278	UCL	0.053	0.5
Outside CN RoW	SVOC	Quinoline	91-22-5	0.033	0.0123	95% KM (t) UCL	b, e	0.0123	UCL	NG	NG
Culvert - Outside CN RoW	SVOC	Perylene	198-55-0	0.029	--	Insufficient detects, no UCL calculated	d	0.029	Max	NG	NG
Culvert CN RoW	SVOC	Acenaphthylene	208-96-8	0.029	--	Insufficient detects, no UCL calculated	d	0.029	Max	0.00587	5
Culvert CN RoW	SVOC	Anthracene	120-12-7	0.054	--	Insufficient detects, no UCL calculated	d	0.054	Max	0.0469	1
Culvert CN RoW	SVOC	Benzo(a)pyrene	50-32-8	0.059	--	Insufficient detects, no UCL calculated	d	0.059	Max	0.0319	2
Culvert CN RoW	SVOC	Benzo(b&j)fluoranthene	205-99-2_205-82-3	0.17	--	Insufficient detects, no UCL calculated	d	0.17	Max	NG	NG
Culvert CN RoW	SVOC	Benzo(e)pyrene	192-97-2	0.11	--	Insufficient detects, no UCL calculated	d	0.11	Max	NG	NG
Culvert CN RoW	SVOC	Benzo(g,h,i)perylene	191-24-2	0.049	--	Insufficient detects, no UCL calculated	d	0.049	Max	NG	NG
Culvert CN RoW	SVOC	Benzo(k)fluoranthene	207-08-9	0.048	--	Insufficient detects, no UCL calculated	d	0.048	Max	NG	NG
Culvert CN RoW	SVOC	Dibenz(a,h)anthracene	53-70-3	0.017	--	Insufficient detects, no UCL calculated	d	0.017	Max	0.00622	3
Culvert CN RoW	SVOC	Indeno (1,2,3-cd)pyrene	193-39-5	0.05	--	Insufficient detects, no UCL calculated	d	0.05	Max	NG	NG
Culvert CN RoW	SVOC	Perylene	198-55-0	0.021	--	Insufficient detects, no UCL calculated	d	0.021	Max	NG	NG

Notes:

(1) The supporting calculations for the 95% Upper Confidence Limits of the mean (UCL) are provided in Attachment C.

(2) The exposure point concentrations (EPCs) are the minimum of the maximum detected concentration and 95% UCL.

(3) The screening hazard quotients (HQs) are the exposure point concentration divided by the ISQG. HQs ≥ 1, which indicate potential adverse health effects, are shaded and bolded.

References:

CCME. 2014. Canadian Sediment Quality Guidelines for the Protection of Aquatic Life: Polycyclic Aromatic Hydrocarbons. Available online: https://www.ccme.ca/en/resources/canadian_environmental_quality_guidelines/index.html

ProUCL Notes

b	One or more recommended UCL not available.
d	Data set has only 1 Distinct Detected Values.
e	Data set has only 2 Detected Values.
f	Data set has only 3 Detected Values.

Abbreviations:

CCME -- Canadian Council of Ministers of the Environment
CN RoW -- Canadian National Railway Company Right of Way
COPC -- Constituent of potential concern
HQ -- Hazard quotient
ISQG-- Interim sediment quality guidelines
mg/kg -- Milligrams per kilogram

NA -- Not available
NG -- No guidelines
SVOC -- Semi-volatile organic compound

TABLE 2.4
SUMMARY OF ECOLOGICAL SCREENING HAZARD QUOTIENTS BASED ON EPCS FOR DIRECT CONTACT EXPOSURE PATHWAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

COPC Group	COPC	CASRN	Soil (CN RoW)	Soil (Outside CN RoW)	Surface Water (Outside CN RoW)	Culvert Surface Water (Outside CN RoW)	Culvert Surface Water (CN RoW)	Sediment (Outside CN RoW)	Culvert Sediment (Outside CN RoW)	Culvert Sediment (CN RoW)
SVOC	Acenaphthene	83-32-9	0.1	--	--	--	--	**1**	--	--
SVOC	Acenaphthylene	208-96-8	--	--	--	--	--	**2**	--	**5**
SVOC	Acridine	260-94-6	NG	NG	--	--	--	NG	--	--
SVOC	Anthracene	120-12-7	--	--	--	--	**2**	--	--	**1**
SVOC	Benzo(a)anthracene	56-55-3	--	0.1	--	--	--	0.3	--	--
SVOC	Benzo(a)pyrene	50-32-8	--	--	--	--	--	0.3	--	**2**
SVOC	Benzo(b&j)fluoranthene	205-99-2_205-82-3	--	0.3	--	--	NG	NG	--	NG
SVOC	Benzo(c)phenanthrene	195-19-7	NG	NG	--	--	--	NG	--	--
SVOC	Benzo(e)pyrene	192-97-2	NG	NG	--	--	--	NG	--	NG
SVOC	Benzo(g,h,i)perylene	191-24-2	NG	NG	--	--	--	NG	--	NG
SVOC	Benzo(k)fluoranthene	207-08-9	--	--	--	NG	NG	NG	--	NG
SVOC	Chrysene	218-01-9	NG	--	--	--	NG	--	--	--
SVOC	Dibenz(a,h)anthracene	53-70-3	--	--	--	--	--	--	--	**3**
SVOC	Fluoranthene	206-44-0	--	--	--	--	**3**	0.3	--	--
SVOC	Fluorene	86-73-7	0.1	--	--	--	--	--	--	--
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	--	0.2	--	--	--	NG	--	NG
SVOC	2-Methylnaphthalene	91-57-6	NG	NG	--	--	NG	0.4	--	--
SVOC	Naphthalene	91-20-3	**1**	--	--	--	**6**	0.4	--	--
SVOC	Perylene	198-55-0	NG	NG	--	--	--	NG	NG	NG
SVOC	Phenanthrene	85-01-8	**2**	0.6	--	--	--	0.4	--	--
SVOC	Pyrene	129-00-0	--	0.3	--	--	**5**	0.5	--	--
SVOC	Quinoline	91-22-5	NG	--	--	--	--	NG	--	--

Note:
The screening hazard quotients (HQs) are the exposure point concentrations (EPC) divided by the environmental quality guidance value per medium.
HQs ≥ 1, which indicate potential adverse health effects, are shaded and bolded.
HQs are presented for only constituents identified as COPCs in the environmental medium, as identified in Tables 2.1 to 2.3.

Abbreviations:
CN RoW -- Canadian National Railway Company Right of Way
COPC -- Constituent of potential concern
EPC -- Exposure point concentration
HQ - Hazard quotient
NG -- No guidelines available for COPC
SVOC -- Semi-volatile organic compound

ATTACHMENT B

ProUCL Supporting Documentation

ATTACHMENT B TABLE OF CONTENTS:

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Table B.3 **ProUCL Output for Culvert Surface Water Outside of RoW**

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Table B.5 **ProUCL Output for Sediment Outside of RoW**

Table B.6 **ProUCL Output for Culvert Sediment Outside of RoW**

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Table B.8 **Data Input for ProUCL Software**

TABLE B.1
PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) WITHIN RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	ProUCL 5.14/6/2020 3:02:18 PM
From File	WorkSheet.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

result (cn row_so_surface soil 0-1.5m_acenaphthene_83-32-9)

General Statistics

Total Number of Observations	85	Number of Distinct Observations	16
Number of Detects	16	Number of Non-Detects	69
Number of Distinct Detects	15	Number of Distinct Non-Detects	1
Minimum Detect	0.0085	Minimum Non-Detect	0.005
Maximum Detect	0.39	Maximum Non-Detect	0.005
Variance Detects	0.00863	Percent Non-Detects	81.18%
Mean Detects	0.0584	SD Detects	0.0929
Median Detects	0.028	CV Detects	1.591
Skewness Detects	3.401	Kurtosis Detects	12.51
Mean of Logged Detects	-3.466	SD of Logged Detects	1.052

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.534	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.887	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.296	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.213	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.0151	KM Standard Error of Mean	0.00496
KM SD	0.0443	95% KM (BCA) UCL	0.0244
95% KM (t) UCL	0.0233	95% KM (Percentile Bootstrap) UCL	0.0243
95% KM (z) UCL	0.0232	95% KM Bootstrap t UCL	0.0378
90% KM Chebyshev UCL	0.0299	95% KM Chebyshev UCL	0.0367
97.5% KM Chebyshev UCL	0.046	99% KM Chebyshev UCL	0.0644

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.862	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.766	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.169	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.222	Detected data appear Gamma Distributed at 5% Significance Level

Detected data follow Appr. Gamma Distribution at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.93	k star (bias corrected MLE)	0.798
Theta hat (MLE)	0.0628	Theta star (bias corrected MLE)	0.0732
nu hat (MLE)	29.77	nu star (bias corrected)	25.52
Mean (detects)	0.0584		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)
For such situations, GROS method may yield incorrect values of UCLs and BTVs
This is especially true when the sample size is small.
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0085	Mean	0.0191
Maximum	0.39	Median	0.01
SD	0.0436	CV	2.283
k hat (MLE)	1.295	k star (bias corrected MLE)	1.258
Theta hat (MLE)	0.0148	Theta star (bias corrected MLE)	0.0152

TABLE B.1
PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) WITHIN RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

nu hat (MLE)	220.2	nu star (bias corrected)	213.8
Adjusted Level of Significance (β)	0.0472		
Approximate Chi Square Value (213.79, α)	181	Adjusted Chi Square Value (213.79, β)	180.4
95% Gamma Approximate UCL (use when n>=50)	0.0226	95% Gamma Adjusted UCL (use when n<50)	0.0226

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.0151	SD (KM)	0.0443
Variance (KM)	0.00196	SE of Mean (KM)	0.00496
k hat (KM)	0.116	k star (KM)	0.119
nu hat (KM)	19.66	nu star (KM)	20.3
theta hat (KM)	0.13	theta star (KM)	0.126
80% gamma percentile (KM)	0.0131	90% gamma percentile (KM)	0.0426
95% gamma percentile (KM)	0.0859	99% gamma percentile (KM)	0.218

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (20.30, α)	11.07	Adjusted Chi Square Value (20.30, β)	10.95
95% Gamma Approximate KM-UCL (use when n>=50)	0.0276	95% Gamma Adjusted KM-UCL (use when n<50)	0.0279

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.932	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.887	Detected Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.156	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.213	Detected Data appear Lognormal at 5% Significance Level	

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.012	Mean in Log Scale	-7.141
SD in Original Scale	0.0453	SD in Log Scale	2.539
95% t UCL (assumes normality of ROS data)	0.0201	95% Percentile Bootstrap UCL	0.0211
95% BCA Bootstrap UCL	0.0278	95% Bootstrap t UCL	0.0333
95% H-UCL (Log ROS)	0.0614		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-4.953	KM Geo Mean	0.00706
KM SD (logged)	0.842	95% Critical H Value (KM-Log)	2.092
KM Standard Error of Mean (logged)	0.0943	95% H-UCL (KM -Log)	0.0122
KM SD (logged)	0.842	95% Critical H Value (KM-Log)	2.092
KM Standard Error of Mean (logged)	0.0943		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.013	Mean in Log Scale	-5.516
SD in Original Scale	0.045	SD in Log Scale	1.088
95% t UCL (Assumes normality)	0.0211	95% H-Stat UCL	0.00957

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Approximate Gamma Distributed at 5% Significance Level

Suggested UCL to Use

95% KM Approximate Gamma UCL	0.0276

When a data set follows an approximate (e.g., normal) distribution passing one of the GOF test
When applicable, it is suggested to use a UCL based upon a distribution (e.g., gamma) passing both GOF tests in ProUCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

result (cn row_so_surface soil 0-1.5m_acridine_260-94-6)

TABLE B.1
PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) WITHIN RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

General Statistics

Total Number of Observations	85	Number of Distinct Observations	4
Number of Detects	5	Number of Non-Detects	80
Number of Distinct Detects	3	Number of Distinct Non-Detects	1
Minimum Detect	0.012	Minimum Non-Detect	0.01
Maximum Detect	0.023	Maximum Non-Detect	0.01
Variance Detects	1.5200E-5	Percent Non-Detects	94.12%
Mean Detects	0.0172	SD Detects	0.0039
Median Detects	0.017	CV Detects	0.227
Skewness Detects	0.383	Kurtosis Detects	2.078
Mean of Logged Detects	-4.084	SD of Logged Detects	0.23

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.879	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.762	Detected Data appear Normal at 5% Significance Level	
Lilliefors Test Statistic	0.32	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.343	Detected Data appear Normal at 5% Significance Level	

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.0104	KM Standard Error of Mean	2.2962E-4
KM SD	0.00189	95% KM (BCA) UCL	N/A
95% KM (t) UCL	0.0108	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	0.0108	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	0.0111	95% KM Chebyshev UCL	0.0114
97.5% KM Chebyshev UCL	0.0119	99% KM Chebyshev UCL	0.0127

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.517	**Anderson-Darling GOF Test**	
5% A-D Critical Value	0.679	Detected data appear Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.304	**Kolmogorov-Smirnov GOF**	
5% K-S Critical Value	0.357	Detected data appear Gamma Distributed at 5% Significance Level	

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	24.09	k star (bias corrected MLE)	9.768
Theta hat (MLE)	7.1406E-4	Theta star (bias corrected MLE)	0.00176
nu hat (MLE)	240.9	nu star (bias corrected)	97.68
Mean (detects)	0.0172		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)
For such situations, GROS method may yield incorrect values of UCLs and BTVs
This is especially true when the sample size is small.
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	0.0104
Maximum	0.023	Median	0.01
SD	0.00191	CV	0.183
k hat (MLE)	46.37	k star (bias corrected MLE)	44.75
Theta hat (MLE)	2.2511E-4	Theta star (bias corrected MLE)	2.3330E-4
nu hat (MLE)	7884	nu star (bias corrected)	7607
Adjusted Level of Significance (β)	0.0472		
Approximate Chi Square Value (N/A, α)	7405	Adjusted Chi Square Value (N/A, β)	7402
95% Gamma Approximate UCL (use when n>=50)	0.0107	95% Gamma Adjusted UCL (use when n<50)	0.0107

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.0104	SD (KM)	0.00189
Variance (KM)	3.5853E-6	SE of Mean (KM)	2.2962E-4
k hat (KM)	30.3	k star (KM)	29.24
nu hat (KM)	5152	nu star (KM)	4971
theta hat (KM)	3.4396E-4	theta star (KM)	3.5645E-4

TABLE B.1
PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) WITHIN RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

80% gamma percentile (KM)	0.012	90% gamma percentile (KM)	0.013
95% gamma percentile (KM)	0.0138	99% gamma percentile (KM)	0.0154

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (N/A, α)	4808	Adjusted Chi Square Value (N/A, β)	4806
95% Gamma Approximate KM-UCL (use when n>=50)	0.0108	95% Gamma Adjusted KM-UCL (use when n<50)	0.0108

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.881	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.762	Detected Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.316	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.343	Detected Data appear Lognormal at 5% Significance Level	

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.00503	Mean in Log Scale	-5.561
SD in Original Scale	0.00408	SD in Log Scale	0.74
95% t UCL (assumes normality of ROS data)	0.00577	95% Percentile Bootstrap UCL	0.00577
95% BCA Bootstrap UCL	0.00591	95% Bootstrap t UCL	0.00594
95% H-UCL (Log ROS)	0.00596		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-4.574	KM Geo Mean	0.0103
KM SD (logged)	0.132	95% Critical H Value (KM-Log)	1.683
KM Standard Error of Mean (logged)	0.0161	95% H-UCL (KM -Log)	0.0107
KM SD (logged)	0.132	95% Critical H Value (KM-Log)	1.683
KM Standard Error of Mean (logged)	0.0161		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.00572	Mean in Log Scale	-5.227
SD in Original Scale	0.00301	SD in Log Scale	0.292
95% t UCL (Assumes normality)	0.00626	95% H-Stat UCL	0.00592

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL 0.0108

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

result (cn row_so_surface soil 0-1.5m_benzo(c)phenanthrene_195-19-7)

General Statistics

Total Number of Observations	85	Number of Distinct Observations	11
Number of Detects	12	Number of Non-Detects	73
Number of Distinct Detects	10	Number of Distinct Non-Detects	1
Minimum Detect	0.0052	Minimum Non-Detect	0.005
Maximum Detect	0.064	Maximum Non-Detect	0.005
Variance Detects	4.7762E-4	Percent Non-Detects	85.88%
Mean Detects	0.0199	SD Detects	0.0219
Median Detects	0.00895	CV Detects	1.1
Skewness Detects	1.626	Kurtosis Detects	1.358
Mean of Logged Detects	-4.362	SD of Logged Detects	0.921

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.677	**Shapiro Wilk GOF Test**	

TABLE B.1
PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) WITHIN RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

5% Shapiro Wilk Critical Value	0.859	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.343	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.243	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.0071	KM Standard Error of Mean	0.00107
KM SD	0.00941	95% KM (BCA) UCL	0.00882
95% KM (t) UCL	0.00887	95% KM (Percentile Bootstrap) UCL	0.009
95% KM (z) UCL	0.00885	95% KM Bootstrap t UCL	0.0113
90% KM Chebyshev UCL	0.0103	95% KM Chebyshev UCL	0.0117
97.5% KM Chebyshev UCL	0.0138	99% KM Chebyshev UCL	0.0177

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	1.196	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.751	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.319	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.251	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	1.267	k star (bias corrected MLE)	1.006
Theta hat (MLE)	0.0157	Theta star (bias corrected MLE)	0.0198
nu hat (MLE)	30.4	nu star (bias corrected)	24.14
Mean (detects)	0.0199		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)
For such situations, GROS method may yield incorrect values of UCLs and BTVs
This is especially true when the sample size is small.
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0052	Mean	0.0114
Maximum	0.064	Median	0.01
SD	0.00863	CV	0.758
k hat (MLE)	5.357	k star (bias corrected MLE)	5.176
Theta hat (MLE)	0.00213	Theta star (bias corrected MLE)	0.0022
nu hat (MLE)	910.7	nu star (bias corrected)	879.9
Adjusted Level of Significance (β)	0.0472		
Approximate Chi Square Value (879.91, α)	812.1	Adjusted Chi Square Value (879.91, β)	810.9
95% Gamma Approximate UCL (use when n>=50)	0.0123	95% Gamma Adjusted UCL (use when n<50)	0.0124

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.0071	SD (KM)	0.00941
Variance (KM)	8.8637E-5	SE of Mean (KM)	0.00107
k hat (KM)	0.569	k star (KM)	0.556
nu hat (KM)	96.68	nu star (KM)	94.6
theta hat (KM)	0.0125	theta star (KM)	0.0128
80% gamma percentile (KM)	0.0117	90% gamma percentile (KM)	0.0188
95% gamma percentile (KM)	0.0262	99% gamma percentile (KM)	0.0444

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (94.60, α)	73.17	Adjusted Chi Square Value (94.60, β)	72.85
95% Gamma Approximate KM-UCL (use when n>=50)	0.00918	95% Gamma Adjusted KM-UCL (use when n<50)	0.00922

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.824	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.859	Detected Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.275	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.243	Detected Data Not Lognormal at 5% Significance Level

Detected Data Not Lognormal at 5% Significance Level

TABLE B.1
PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) WITHIN RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.00326	Mean in Log Scale	-8.19
SD in Original Scale	0.0104	SD in Log Scale	2.396
95% t UCL (assumes normality of ROS data)	0.00515	95% Percentile Bootstrap UCL	0.00536
95% BCA Bootstrap UCL	0.00618	95% Bootstrap t UCL	0.00759
95% H-UCL (Log ROS)	0.0135		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-5.166	KM Geo Mean	0.00571
KM SD (logged)	0.465	95% Critical H Value (KM-Log)	1.824
KM Standard Error of Mean (logged)	0.0527	95% H-UCL (KM -Log)	0.00697
KM SD (logged)	0.465	95% Critical H Value (KM-Log)	1.824
KM Standard Error of Mean (logged)	0.0527		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.00495	Mean in Log Scale	-5.761
SD in Original Scale	0.00998	SD in Log Scale	0.661
95% t UCL (Assumes normality)	0.00675	95% H-Stat UCL	0.00451

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

95% KM (Chebyshev) UCL 0.0117

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

result (cn row_so_surface soil 0-1.5m_benzo(e)pyrene_192-97-2)

General Statistics

Total Number of Observations	85	Number of Distinct Observations	23
Number of Detects	28	Number of Non-Detects	57
Number of Distinct Detects	22	Number of Distinct Non-Detects	1
Minimum Detect	0.0064	Minimum Non-Detect	0.005
Maximum Detect	0.42	Maximum Non-Detect	0.005
Variance Detects	0.00916	Percent Non-Detects	67.06%
Mean Detects	0.0596	SD Detects	0.0957
Median Detects	0.0265	CV Detects	1.607
Skewness Detects	2.823	Kurtosis Detects	7.874
Mean of Logged Detects	-3.524	SD of Logged Detects	1.089

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.56	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.924	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.353	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.164	Detected Data Not Normal at 5% Significance Level	

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.023	KM Standard Error of Mean	0.0066
KM SD	0.0597	95% KM (BCA) UCL	0.0344
95% KM (t) UCL	0.0339	95% KM (Percentile Bootstrap) UCL	0.0337
95% KM (z) UCL	0.0338	95% KM Bootstrap t UCL	0.0442
90% KM Chebyshev UCL	0.0428	95% KM Chebyshev UCL	0.0517
97.5% KM Chebyshev UCL	0.0642	99% KM Chebyshev UCL	0.0886

Gamma GOF Tests on Detected Observations Only

TABLE B.1
PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) WITHIN RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

A-D Test Statistic	1.952	**Anderson-Darling GOF Test**	
5% A-D Critical Value	0.781	Detected Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.223	**Kolmogorov-Smirnov GOF**	
5% K-S Critical Value	0.171	Detected Data Not Gamma Distributed at 5% Significance Level	

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.838	k star (bias corrected MLE)	0.772
Theta hat (MLE)	0.071	Theta star (bias corrected MLE)	0.0771
nu hat (MLE)	46.95	nu star (bias corrected)	43.25
Mean (detects)	0.0596		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)
For such situations, GROS method may yield incorrect values of UCLs and BTVs
This is especially true when the sample size is small.
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0064	Mean	0.0263
Maximum	0.42	Median	0.01
SD	0.0591	CV	2.245
k hat (MLE)	0.949	k star (bias corrected MLE)	0.924
Theta hat (MLE)	0.0277	Theta star (bias corrected MLE)	0.0285
nu hat (MLE)	161.4	nu star (bias corrected)	157
Adjusted Level of Significance (β)	0.0472		
Approximate Chi Square Value (157.00, α)	129	Adjusted Chi Square Value (157.00, β)	128.6
95% Gamma Approximate UCL (use when n>=50)	0.032	95% Gamma Adjusted UCL (use when n<50)	0.0321

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.023	SD (KM)	0.0597
Variance (KM)	0.00357	SE of Mean (KM)	0.0066
k hat (KM)	0.148	k star (KM)	0.151
nu hat (KM)	25.15	nu star (KM)	25.6
theta hat (KM)	0.155	theta star (KM)	0.153
80% gamma percentile (KM)	0.0251	90% gamma percentile (KM)	0.0682
95% gamma percentile (KM)	0.126	99% gamma percentile (KM)	0.295

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (25.60, α)	15.07	Adjusted Chi Square Value (25.60, β)	14.93
95% Gamma Approximate KM-UCL (use when n>=50)	0.039	95% Gamma Adjusted KM-UCL (use when n<50)	0.0394

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.925	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.924	Detected Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.136	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.164	Detected Data appear Lognormal at 5% Significance Level	

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.0208	Mean in Log Scale	-5.936
SD in Original Scale	0.0608	SD in Log Scale	2.169
95% t UCL (assumes normality of ROS data)	0.0317	95% Percentile Bootstrap UCL	0.0326
95% BCA Bootstrap UCL	0.0361	95% Bootstrap t UCL	0.0416
95% H-UCL (Log ROS)	0.0649		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-4.714	KM Geo Mean	0.00897
KM SD (logged)	1.035	95% Critical H Value (KM-Log)	2.271
KM Standard Error of Mean (logged)	0.114	95% H-UCL (KM -Log)	0.0198
KM SD (logged)	1.035	95% Critical H Value (KM-Log)	2.271
KM Standard Error of Mean (logged)	0.114		

TABLE B.1
PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) WITHIN RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.0213	Mean in Log Scale	-5.179
SD in Original Scale	0.0606	SD in Log Scale	1.32
95% t UCL (Assumes normality)	0.0322	95% H-Stat UCL	0.0195

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Lognormal Distributed at 5% Significance Level

Suggested UCL to Use

KM H-UCL 0.0198

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

result (cn row_so_surface soil 0-1.5m_benzo(g,h,i)perylene_191-24-2)

General Statistics

Total Number of Observations	85	Number of Distinct Observations	25
Number of Detects	27	Number of Non-Detects	58
Number of Distinct Detects	24	Number of Distinct Non-Detects	1
Minimum Detect	0.0055	Minimum Non-Detect	0.005
Maximum Detect	0.24	Maximum Non-Detect	0.005
Variance Detects	0.00335	Percent Non-Detects	68.24%
Mean Detects	0.0416	SD Detects	0.0579
Median Detects	0.02	CV Detects	1.389
Skewness Detects	2.556	Kurtosis Detects	6.267
Mean of Logged Detects	-3.758	SD of Logged Detects	1.006

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.616	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.923	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.299	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.167	Detected Data Not Normal at 5% Significance Level	

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.0166	KM Standard Error of Mean	0.00401
KM SD	0.0363	95% KM (BCA) UCL	0.024
95% KM (t) UCL	0.0233	95% KM (Percentile Bootstrap) UCL	0.0237
95% KM (z) UCL	0.0232	95% KM Bootstrap t UCL	0.0292
90% KM Chebyshev UCL	0.0287	95% KM Chebyshev UCL	0.0341
97.5% KM Chebyshev UCL	0.0417	99% KM Chebyshev UCL	0.0565

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	1.552	**Anderson-Darling GOF Test**	
5% A-D Critical Value	0.773	Detected Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.205	**Kolmogorov-Smirnov GOF**	
5% K-S Critical Value	0.173	Detected Data Not Gamma Distributed at 5% Significance Level	

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.997	k star (bias corrected MLE)	0.911
Theta hat (MLE)	0.0418	Theta star (bias corrected MLE)	0.0457
nu hat (MLE)	53.82	nu star (bias corrected)	49.17
Mean (detects)	0.0416		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

TABLE B.1

PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) WITHIN RIGHT-OF-WAY

CN MILE 197.4, RIVERS SUBDIVISION

SOUTHEAST OF ST. LAZARE, MANITOBA

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0055	Mean	0.0201
Maximum	0.24	Median	0.01
SD	0.0354	CV	1.767
k hat (MLE)	1.314	k star (bias corrected MLE)	1.275
Theta hat (MLE)	0.0153	Theta star (bias corrected MLE)	0.0157
nu hat (MLE)	223.3	nu star (bias corrected)	216.8
Adjusted Level of Significance (β)	0.0472		
Approximate Chi Square Value (216.77, α)	183.7	Adjusted Chi Square Value (216.77, β)	183.2
95% Gamma Approximate UCL (use when n>=50)	0.0237	95% Gamma Adjusted UCL (use when n<50)	0.0237

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.0166	SD (KM)	0.0363
Variance (KM)	0.00131	SE of Mean (KM)	0.00401
k hat (KM)	0.211	k star (KM)	0.211
nu hat (KM)	35.8	nu star (KM)	35.87
theta hat (KM)	0.079	theta star (KM)	0.0789
80% gamma percentile (KM)	0.0225	90% gamma percentile (KM)	0.0503
95% gamma percentile (KM)	0.0845	99% gamma percentile (KM)	0.178

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (35.87, α)	23.16	Adjusted Chi Square Value (35.87, β)	22.99
95% Gamma Approximate KM-UCL (use when n>=50)	0.0258	95% Gamma Adjusted KM-UCL (use when n<50)	0.026

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.934	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.923	Detected Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.135	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.167	Detected Data appear Lognormal at 5% Significance Level	

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.0143	Mean in Log Scale	-6.084
SD in Original Scale	0.0373	SD in Log Scale	2.047
95% t UCL (assumes normality of ROS data)	0.021	95% Percentile Bootstrap UCL	0.0217
95% BCA Bootstrap UCL	0.0237	95% Bootstrap t UCL	0.0268
95% H-UCL (Log ROS)	0.0399		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-4.809	KM Geo Mean	0.00816
KM SD (logged)	0.908	95% Critical H Value (KM-Log)	2.153
KM Standard Error of Mean (logged)	0.1	95% H-UCL (KM -Log)	0.0152
KM SD (logged)	0.908	95% Critical H Value (KM-Log)	2.153
KM Standard Error of Mean (logged)	0.1		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.0149	Mean in Log Scale	-5.282
SD in Original Scale	0.037	SD in Log Scale	1.186
95% t UCL (Assumes normality)	0.0216	95% H-Stat UCL	0.0141

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Lognormal Distributed at 5% Significance Level

Suggested UCL to Use

KM H-UCL 0.0152

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

TABLE B.1
PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) WITHIN RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

result (cn row_so_surface soil 0-1.5m_chrysene_218-01-9)

General Statistics

Total Number of Observations	85	Number of Distinct Observations	25
Number of Detects	27	Number of Non-Detects	58
Number of Distinct Detects	24	Number of Distinct Non-Detects	1
Minimum Detect	0.0053	Minimum Non-Detect	0.005
Maximum Detect	0.36	Maximum Non-Detect	0.005
Variance Detects	0.00917	Percent Non-Detects	68.24%
Mean Detects	0.0682	SD Detects	0.0958
Median Detects	0.032	CV Detects	1.405
Skewness Detects	2.412	Kurtosis Detects	5.273
Mean of Logged Detects	-3.333	SD of Logged Detects	1.104

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.62	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.923	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.32	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.167	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.0251	KM Standard Error of Mean	0.0067
KM SD	0.0606	95% KM (BCA) UCL	0.037
95% KM (t) UCL	0.0362	95% KM (Percentile Bootstrap) UCL	0.0359
95% KM (z) UCL	0.0361	95% KM Bootstrap t UCL	0.0447
90% KM Chebyshev UCL	0.0452	95% KM Chebyshev UCL	0.0543
97.5% KM Chebyshev UCL	0.0669	99% KM Chebyshev UCL	0.0917

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	1.264	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.777	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.195	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.174	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.903	k star (bias corrected MLE)	0.827
Theta hat (MLE)	0.0755	Theta star (bias corrected MLE)	0.0824
nu hat (MLE)	48.76	nu star (bias corrected)	44.68
Mean (detects)	0.0682		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)
For such situations, GROS method may yield incorrect values of UCLs and BTVs
This is especially true when the sample size is small.
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0053	Mean	0.0285
Maximum	0.36	Median	0.01
SD	0.0598	CV	2.101
k hat (MLE)	0.909	k star (bias corrected MLE)	0.885
Theta hat (MLE)	0.0313	Theta star (bias corrected MLE)	0.0322
nu hat (MLE)	154.5	nu star (bias corrected)	150.4
Adjusted Level of Significance (β)	0.0472		
Approximate Chi Square Value (150.38, α)	123	Adjusted Chi Square Value (150.38, β)	122.6
95% Gamma Approximate UCL (use when n>=50)	0.0348	95% Gamma Adjusted UCL (use when n<50)	0.0349

TABLE B.1
PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) WITHIN RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.0251	SD (KM)	0.0606
Variance (KM)	0.00367	SE of Mean (KM)	0.0067
k hat (KM)	0.171	k star (KM)	0.173
nu hat (KM)	29.11	nu star (KM)	29.41
theta hat (KM)	0.146	theta star (KM)	0.145
80% gamma percentile (KM)	0.0303	90% gamma percentile (KM)	0.0754
95% gamma percentile (KM)	0.134	99% gamma percentile (KM)	0.299

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (29.41, α)	18.03	Adjusted Chi Square Value (29.41, β)	17.88
95% Gamma Approximate KM-UCL (use when n>=50)	0.0409	95% Gamma Adjusted KM-UCL (use when n<50)	0.0412

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.958	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.923	Detected Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.129	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.167	Detected Data appear Lognormal at 5% Significance Level	

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.023	Mean in Log Scale	-5.858
SD in Original Scale	0.0617	SD in Log Scale	2.224
95% t UCL (assumes normality of ROS data)	0.0341	95% Percentile Bootstrap UCL	0.0348
95% BCA Bootstrap UCL	0.0378	95% Bootstrap t UCL	0.0413
95% H-UCL (Log ROS)	0.0823		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-4.674	KM Geo Mean	0.00934
KM SD (logged)	1.1	95% Critical H Value (KM-Log)	2.334
KM Standard Error of Mean (logged)	0.122	95% H-UCL (KM -Log)	0.0226
KM SD (logged)	1.1	95% Critical H Value (KM-Log)	2.334
KM Standard Error of Mean (logged)	0.122		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.0234	Mean in Log Scale	-5.147
SD in Original Scale	0.0615	SD in Log Scale	1.388
95% t UCL (Assumes normality)	0.0345	95% H-Stat UCL	0.0227

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Lognormal Distributed at 5% Significance Level

Suggested UCL to Use

KM H-UCL 0.0226

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

result (cn row_so_surface soil 0-1.5m_fluorene_86-73-7)

General Statistics

Total Number of Observations	85	Number of Distinct Observations	21
Number of Detects	20	Number of Non-Detects	65
Number of Distinct Detects	20	Number of Distinct Non-Detects	1
Minimum Detect	0.0057	Minimum Non-Detect	0.005
Maximum Detect	0.38	Maximum Non-Detect	0.005
Variance Detects	0.00682	Percent Non-Detects	76.47%
Mean Detects	0.046	SD Detects	0.0826

TABLE B.1
PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) WITHIN RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Median Detects	0.0175	CV Detects	1.796
Skewness Detects	3.826	Kurtosis Detects	15.81
Mean of Logged Detects	-3.809	SD of Logged Detects	1.121

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.486	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.905	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.313	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.192	Detected Data Not Normal at 5% Significance Level	

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.0146	KM Standard Error of Mean	0.00476
KM SD	0.0428	95% KM (BCA) UCL	0.0241
95% KM (t) UCL	0.0226	95% KM (Percentile Bootstrap) UCL	0.0233
95% KM (z) UCL	0.0225	95% KM Bootstrap t UCL	0.0372
90% KM Chebyshev UCL	0.0289	95% KM Chebyshev UCL	0.0354
97.5% KM Chebyshev UCL	0.0444	99% KM Chebyshev UCL	0.062

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	1.118	**Anderson-Darling GOF Test**	
5% A-D Critical Value	0.777	Detected Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.183	**Kolmogorov-Smirnov GOF**	
5% K-S Critical Value	0.201	Detected data appear Gamma Distributed at 5% Significance Level	

Detected data follow Appr. Gamma Distribution at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.812	k star (bias corrected MLE)	0.723
Theta hat (MLE)	0.0567	Theta star (bias corrected MLE)	0.0636
nu hat (MLE)	32.46	nu star (bias corrected)	28.93
Mean (detects)	0.046		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)
For such situations, GROS method may yield incorrect values of UCLs and BTVs
This is especially true when the sample size is small.
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0057	Mean	0.0185
Maximum	0.38	Median	0.01
SD	0.0422	CV	2.284
k hat (MLE)	1.315	k star (bias corrected MLE)	1.276
Theta hat (MLE)	0.014	Theta star (bias corrected MLE)	0.0145
nu hat (MLE)	223.5	nu star (bias corrected)	216.9
Adjusted Level of Significance (β)	0.0472		
Approximate Chi Square Value (216.94, α)	183.8	Adjusted Chi Square Value (216.94, β)	183.3
95% Gamma Approximate UCL (use when n>=50)	0.0218	95% Gamma Adjusted UCL (use when n<50)	0.0219

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.0146	SD (KM)	0.0428
Variance (KM)	0.00183	SE of Mean (KM)	0.00476
k hat (KM)	0.117	k star (KM)	0.121
nu hat (KM)	19.95	nu star (KM)	20.58
theta hat (KM)	0.125	theta star (KM)	0.121
80% gamma percentile (KM)	0.013	90% gamma percentile (KM)	0.0416
95% gamma percentile (KM)	0.0835	99% gamma percentile (KM)	0.211

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (20.58, α)	11.28	Adjusted Chi Square Value (20.58, β)	11.16
95% Gamma Approximate KM-UCL (use when n>=50)	0.0267	95% Gamma Adjusted KM-UCL (use when n<50)	0.027

Lognormal GOF Test on Detected Observations Only

TABLE B.1
PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) WITHIN RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Shapiro Wilk Test Statistic	0.921	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.905	Detected Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.134	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.192	Detected Data appear Lognormal at 5% Significance Level	

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.0115	Mean in Log Scale	-7.13
SD in Original Scale	0.0438	SD in Log Scale	2.514
95% t UCL (assumes normality of ROS data)	0.0194	95% Percentile Bootstrap UCL	0.0197
95% BCA Bootstrap UCL	0.0262	95% Bootstrap t UCL	0.0321
95% H-UCL (Log ROS)	0.0571		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-4.948	KM Geo Mean	0.0071
KM SD (logged)	0.825	95% Critical H Value (KM-Log)	2.079
KM Standard Error of Mean (logged)	0.0918	95% H-UCL (KM -Log)	0.012
KM SD (logged)	0.825	95% Critical H Value (KM-Log)	2.079
KM Standard Error of Mean (logged)	0.0918		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.0127	Mean in Log Scale	-5.478
SD in Original Scale	0.0435	SD in Log Scale	1.073
95% t UCL (Assumes normality)	0.0206	95% H-Stat UCL	0.00974

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Approximate Gamma Distributed at 5% Significance Level

Suggested UCL to Use

95% KM Approximate Gamma UCL 0.0267

When a data set follows an approximate (e.g., normal) distribution passing one of the GOF test
When applicable, it is suggested to use a UCL based upon a distribution (e.g., gamma) passing both GOF tests in ProUCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

result (cn row_so_surface soil 0-1.5m_methylnaphthalene, 2-_91-57-6)

General Statistics

Total Number of Observations	85	Number of Distinct Observations	19
Number of Detects	21	Number of Non-Detects	64
Number of Distinct Detects	18	Number of Distinct Non-Detects	1
Minimum Detect	0.0066	Minimum Non-Detect	0.005
Maximum Detect	0.071	Maximum Non-Detect	0.005
Variance Detects	3.0428E-4	Percent Non-Detects	75.29%
Mean Detects	0.023	SD Detects	0.0174
Median Detects	0.017	CV Detects	0.759
Skewness Detects	1.348	Kurtosis Detects	1.572
Mean of Logged Detects	-4.029	SD of Logged Detects	0.734

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.853	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.908	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.187	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.188	Detected Data appear Normal at 5% Significance Level	

Detected Data appear Approximate Normal at 5% Significance Level

TABLE B.1
PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) WITHIN RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.00944	KM Standard Error of Mean	0.00128
KM SD	0.0115	95% KM (BCA) UCL	0.0117
95% KM (t) UCL	0.0116	95% KM (Percentile Bootstrap) UCL	0.0116
95% KM (z) UCL	0.0115	95% KM Bootstrap t UCL	0.0125
90% KM Chebyshev UCL	0.0133	95% KM Chebyshev UCL	0.015
97.5% KM Chebyshev UCL	0.0174	99% KM Chebyshev UCL	0.0221

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.46	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.753	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.142	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.192	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	2.101	k star (bias corrected MLE)	1.832
Theta hat (MLE)	0.0109	Theta star (bias corrected MLE)	0.0125
nu hat (MLE)	88.23	nu star (bias corrected)	76.96
Mean (detects)	0.023		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)
For such situations, GROS method may yield incorrect values of UCLs and BTVs
This is especially true when the sample size is small.
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0066	Mean	0.0132
Maximum	0.071	Median	0.01
SD	0.0102	CV	0.773
k hat (MLE)	3.835	k star (bias corrected MLE)	3.708
Theta hat (MLE)	0.00344	Theta star (bias corrected MLE)	0.00356
nu hat (MLE)	652	nu star (bias corrected)	630.3
Adjusted Level of Significance (β)	0.0472		
Approximate Chi Square Value (630.28, α)	573	Adjusted Chi Square Value (630.28, β)	572.1
95% Gamma Approximate UCL (use when n>=50)	0.0145	95% Gamma Adjusted UCL (use when n<50)	0.0146

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.00944	SD (KM)	0.0115
Variance (KM)	1.3177E-4	SE of Mean (KM)	0.00128
k hat (KM)	0.677	k star (KM)	0.661
nu hat (KM)	115.1	nu star (KM)	112.3
theta hat (KM)	0.014	theta star (KM)	0.0143
80% gamma percentile (KM)	0.0155	90% gamma percentile (KM)	0.024
95% gamma percentile (KM)	0.0328	99% gamma percentile (KM)	0.0539

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (112.33, α)	88.86	Adjusted Chi Square Value (112.33, β)	88.5
95% Gamma Approximate KM-UCL (use when n>=50)	0.0119	95% Gamma Adjusted KM-UCL (use when n<50)	0.012

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.948	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.908	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.125	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.188	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.00712	Mean in Log Scale	-6.1
SD in Original Scale	0.0126	SD in Log Scale	1.603
95% t UCL (assumes normality of ROS data)	0.00939	95% Percentile Bootstrap UCL	0.00954
95% BCA Bootstrap UCL	0.00999	95% Bootstrap t UCL	0.0102

TABLE B.1
PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) WITHIN RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

95% H-UCL (Log ROS)	0.0134		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-4.985	KM Geo Mean	0.00684
KM SD (logged)	0.653	95% Critical H Value (KM-Log)	1.956
KM Standard Error of Mean (logged)	0.0726	95% H-UCL (KM -Log)	0.00973
KM SD (logged)	0.653	95% Critical H Value (KM-Log)	1.956
KM Standard Error of Mean (logged)	0.0726		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.00756	Mean in Log Scale	-5.507
SD in Original Scale	0.0123	SD in Log Scale	0.924
95% t UCL (Assumes normality)	0.00978	95% H-Stat UCL	0.00774

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Approximate Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL 0.0116

When a data set follows an approximate (e.g., normal) distribution passing one of the GOF test
When applicable, it is suggested to use a UCL based upon a distribution (e.g., gamma) passing both GOF tests in ProUCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

result (cn row_so_surface soil 0-1.5m_naphthalene_91-20-3)

General Statistics

Total Number of Observations	85	Number of Distinct Observations	15
Number of Detects	17	Number of Non-Detects	68
Number of Distinct Detects	14	Number of Distinct Non-Detects	1
Minimum Detect	0.0065	Minimum Non-Detect	0.005
Maximum Detect	0.088	Maximum Non-Detect	0.005
Variance Detects	3.7204E-4	Percent Non-Detects	80%
Mean Detects	0.0176	SD Detects	0.0193
Median Detects	0.011	CV Detects	1.098
Skewness Detects	3.416	Kurtosis Detects	12.59
Mean of Logged Detects	-4.308	SD of Logged Detects	0.637

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.527	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.892	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.338	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.207	Detected Data Not Normal at 5% Significance Level	

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.00751	KM Standard Error of Mean	0.00109
KM SD	0.00976	95% KM (BCA) UCL	0.0095
95% KM (t) UCL	0.00933	95% KM (Percentile Bootstrap) UCL	0.00951
95% KM (z) UCL	0.00931	95% KM Bootstrap t UCL	0.0122
90% KM Chebyshev UCL	0.0108	95% KM Chebyshev UCL	0.0123
97.5% KM Chebyshev UCL	0.0143	99% KM Chebyshev UCL	0.0184

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	1.673	**Anderson-Darling GOF Test**	
5% A-D Critical Value	0.749	Detected Data Not Gamma Distributed at 5% Significance Level	

TABLE B.1
PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) WITHIN RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

K-S Test Statistic	0.293	**Kolmogorov-Smirnov GOF**	
5% K-S Critical Value	0.212	Detected Data Not Gamma Distributed at 5% Significance Level	

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	2.026	k star (bias corrected MLE)	1.708
Theta hat (MLE)	0.00867	Theta star (bias corrected MLE)	0.0103
nu hat (MLE)	68.89	nu star (bias corrected)	58.07
Mean (detects)	0.0176		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)
For such situations, GROS method may yield incorrect values of UCLs and BTVs
This is especially true when the sample size is small.
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0065	Mean	0.0115
Maximum	0.088	Median	0.01
SD	0.00895	CV	0.778
k hat (MLE)	6.29	k star (bias corrected MLE)	6.076
Theta hat (MLE)	0.00183	Theta star (bias corrected MLE)	0.00189
nu hat (MLE)	1069	nu star (bias corrected)	1033
Adjusted Level of Significance (β)	0.0472		
Approximate Chi Square Value (N/A, α)	959.4	Adjusted Chi Square Value (N/A, β)	958.2
95% Gamma Approximate UCL (use when n>=50)	0.0124	95% Gamma Adjusted UCL (use when n<50)	0.0124

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.00751	SD (KM)	0.00976
Variance (KM)	9.5315E-5	SE of Mean (KM)	0.00109
k hat (KM)	0.592	k star (KM)	0.579
nu hat (KM)	100.7	nu star (KM)	98.48
theta hat (KM)	0.0127	theta star (KM)	0.013
80% gamma percentile (KM)	0.0124	90% gamma percentile (KM)	0.0197
95% gamma percentile (KM)	0.0274	99% gamma percentile (KM)	0.046

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (98.48, α)	76.59	Adjusted Chi Square Value (98.48, β)	76.26
95% Gamma Approximate KM-UCL (use when n>=50)	0.00966	95% Gamma Adjusted KM-UCL (use when n<50)	0.0097

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.831	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.892	Detected Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.24	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.207	Detected Data Not Lognormal at 5% Significance Level	

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.00483	Mean in Log Scale	-6.38
SD in Original Scale	0.0107	SD in Log Scale	1.467
95% t UCL (assumes normality of ROS data)	0.00675	95% Percentile Bootstrap UCL	0.00698
95% BCA Bootstrap UCL	0.00767	95% Bootstrap t UCL	0.00866
95% H-UCL (Log ROS)	0.00769		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-5.1	KM Geo Mean	0.0061
KM SD (logged)	0.483	95% Critical H Value (KM-Log)	1.834
KM Standard Error of Mean (logged)	0.054	95% H-UCL (KM -Log)	0.00754
KM SD (logged)	0.483	95% Critical H Value (KM-Log)	1.834
KM Standard Error of Mean (logged)	0.054		

DL/2 Statistics

DL/2 Normal	**DL/2 Log-Transformed**

TABLE B.1
PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) WITHIN RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Mean in Original Scale	0.00551	Mean in Log Scale	-5.655
SD in Original Scale	0.0104	SD in Log Scale	0.732
95% t UCL (Assumes normality)	0.00739	95% H-Stat UCL	0.00538

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

95% KM (Chebyshev) UCL 0.0123

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

result (cn row_so_surface soil 0-1.5m_perylene_198-55-0)

General Statistics

Total Number of Observations	85	Number of Distinct Observations	30
Number of Detects	39	Number of Non-Detects	46
Number of Distinct Detects	29	Number of Distinct Non-Detects	1
Minimum Detect	0.0052	Minimum Non-Detect	0.005
Maximum Detect	0.1	Maximum Non-Detect	0.005
Variance Detects	4.9994E-4	Percent Non-Detects	54.12%
Mean Detects	0.0203	SD Detects	0.0224
Median Detects	0.012	CV Detects	1.099
Skewness Detects	2.44	Kurtosis Detects	5.406
Mean of Logged Detects	-4.247	SD of Logged Detects	0.762

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.631	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.939	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.261	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.14	Detected Data Not Normal at 5% Significance Level	

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.012	KM Standard Error of Mean	0.00185
KM SD	0.0168	95% KM (BCA) UCL	0.015
95% KM (t) UCL	0.0151	95% KM (Percentile Bootstrap) UCL	0.0152
95% KM (z) UCL	0.0151	95% KM Bootstrap t UCL	0.0168
90% KM Chebyshev UCL	0.0176	95% KM Chebyshev UCL	0.0201
97.5% KM Chebyshev UCL	0.0236	99% KM Chebyshev UCL	0.0304

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	2.576	**Anderson-Darling GOF Test**	
5% A-D Critical Value	0.765	Detected Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.202	**Kolmogorov-Smirnov GOF**	
5% K-S Critical Value	0.144	Detected Data Not Gamma Distributed at 5% Significance Level	

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	1.566	k star (bias corrected MLE)	1.463
Theta hat (MLE)	0.013	Theta star (bias corrected MLE)	0.0139
nu hat (MLE)	122.1	nu star (bias corrected)	114.1
Mean (detects)	0.0203		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)
For such situations, GROS method may yield incorrect values of UCLs and BTVs

TABLE B.1
PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) WITHIN RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0052	Mean	0.0147
Maximum	0.1	Median	0.01
SD	0.0159	CV	1.079
k hat (MLE)	2.385	k star (bias corrected MLE)	2.308
Theta hat (MLE)	0.00618	Theta star (bias corrected MLE)	0.00639
nu hat (MLE)	405.4	nu star (bias corrected)	392.4
Adjusted Level of Significance (β)	0.0472		
Approximate Chi Square Value (392.41, α)	347.5	Adjusted Chi Square Value (392.41, β)	346.8
95% Gamma Approximate UCL (use when n>=50)	0.0167	95% Gamma Adjusted UCL (use when n<50)	0.0167

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.012	SD (KM)	0.0168
Variance (KM)	2.8198E-4	SE of Mean (KM)	0.00185
k hat (KM)	0.514	k star (KM)	0.504
nu hat (KM)	87.41	nu star (KM)	85.66
theta hat (KM)	0.0234	theta star (KM)	0.0239
80% gamma percentile (KM)	0.0198	90% gamma percentile (KM)	0.0325
95% gamma percentile (KM)	0.0461	99% gamma percentile (KM)	0.0796

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (85.66, α)	65.33	Adjusted Chi Square Value (85.66, β)	65.02
95% Gamma Approximate KM-UCL (use when n>=50)	0.0158	95% Gamma Adjusted KM-UCL (use when n<50)	0.0159

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.886	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.939	Detected Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.142	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.14	Detected Data Not Lognormal at 5% Significance Level	

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.0105	Mean in Log Scale	-5.42
SD in Original Scale	0.0176	SD in Log Scale	1.339
95% t UCL (assumes normality of ROS data)	0.0137	95% Percentile Bootstrap UCL	0.0139
95% BCA Bootstrap UCL	0.0146	95% Bootstrap t UCL	0.0152
95% H-UCL (Log ROS)	0.0158		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-4.816	KM Geo Mean	0.0081
KM SD (logged)	0.731	95% Critical H Value (KM-Log)	2.026
KM Standard Error of Mean (logged)	0.0803	95% H-UCL (KM -Log)	0.0124
KM SD (logged)	0.731	95% Critical H Value (KM-Log)	2.026
KM Standard Error of Mean (logged)	0.0803		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.0107	Mean in Log Scale	-5.191
SD in Original Scale	0.0175	SD in Log Scale	1.014
95% t UCL (Assumes normality)	0.0138	95% H-Stat UCL	0.0119

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

95% KM (Chebyshev) UCL 0.0201

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

TABLE B.1
PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) WITHIN RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

result (cn row_so_surface soil 0-1.5m_phenanthrene_85-01-8)

General Statistics

Total Number of Observations	85	Number of Distinct Observations	35
Number of Detects	41	Number of Non-Detects	44
Number of Distinct Detects	34	Number of Distinct Non-Detects	1
Minimum Detect	0.0056	Minimum Non-Detect	0.005
Maximum Detect	0.79	Maximum Non-Detect	0.005
Variance Detects	0.0187	Percent Non-Detects	51.76%
Mean Detects	0.0728	SD Detects	0.137
Median Detects	0.02	CV Detects	1.879
Skewness Detects	3.979	Kurtosis Detects	19.05
Mean of Logged Detects	-3.524	SD of Logged Detects	1.24

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.52	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.941	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.312	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.137	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.0377	KM Standard Error of Mean	0.011
KM SD	0.0998	95% KM (BCA) UCL	0.0594
95% KM (t) UCL	0.056	95% KM (Percentile Bootstrap) UCL	0.057
95% KM (z) UCL	0.0558	95% KM Bootstrap t UCL	0.0714
90% KM Chebyshev UCL	0.0706	95% KM Chebyshev UCL	0.0855
97.5% KM Chebyshev UCL	0.106	99% KM Chebyshev UCL	0.147

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	2.754	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.797	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.211	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.144	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.672	k star (bias corrected MLE)	0.639
Theta hat (MLE)	0.108	Theta star (bias corrected MLE)	0.114
nu hat (MLE)	55.07	nu star (bias corrected)	52.38
Mean (detects)	0.0728		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)
For such situations, GROS method may yield incorrect values of UCLs and BTVs
This is especially true when the sample size is small.
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0056	Mean	0.0403
Maximum	0.79	Median	0.01
SD	0.0996	CV	2.471
k hat (MLE)	0.693	k star (bias corrected MLE)	0.677
Theta hat (MLE)	0.0581	Theta star (bias corrected MLE)	0.0596
nu hat (MLE)	117.9	nu star (bias corrected)	115
Adjusted Level of Significance (β)	0.0472		
Approximate Chi Square Value (115.04, α)	91.28	Adjusted Chi Square Value (115.04, β)	90.91
95% Gamma Approximate UCL (use when n>=50)	0.0508	95% Gamma Adjusted UCL (use when n<50)	0.051

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.0377	SD (KM)	0.0998

TABLE B.1
PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) WITHIN RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Variance (KM)	0.00997	SE of Mean (KM)	0.011
k hat (KM)	0.143	k star (KM)	0.146
nu hat (KM)	24.27	nu star (KM)	24.75
theta hat (KM)	0.264	theta star (KM)	0.259
80% gamma percentile (KM)	0.0401	90% gamma percentile (KM)	0.111
95% gamma percentile (KM)	0.209	99% gamma percentile (KM)	0.493

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (24.75, α)	14.42	Adjusted Chi Square Value (24.75, β)	14.29
95% Gamma Approximate KM-UCL (use when n>=50)	0.0647	95% Gamma Adjusted KM-UCL (use when n<50)	0.0654

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.91	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.941	Detected Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.154	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.137	Detected Data Not Lognormal at 5% Significance Level	

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.036	Mean in Log Scale	-5.32
SD in Original Scale	0.101	SD in Log Scale	2.145
95% t UCL (assumes normality of ROS data)	0.0542	95% Percentile Bootstrap UCL	0.0563
95% BCA Bootstrap UCL	0.0637	95% Bootstrap t UCL	0.07
95% H-UCL (Log ROS)	0.112		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-4.443	KM Geo Mean	0.0118
KM SD (logged)	1.228	95% Critical H Value (KM-Log)	2.467
KM Standard Error of Mean (logged)	0.135	95% H-UCL (KM -Log)	0.0348
KM SD (logged)	1.228	95% Critical H Value (KM-Log)	2.467
KM Standard Error of Mean (logged)	0.135		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.0364	Mean in Log Scale	-4.802
SD in Original Scale	0.101	SD in Log Scale	1.507
95% t UCL (Assumes normality)	0.0546	95% H-Stat UCL	0.0403

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

95% KM (Chebyshev) UCL 0.0855

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

result (cn row_so_surface soil 0-1.5m_quinoline_91-22-5)

General Statistics

Total Number of Observations	85	Number of Distinct Observations	5
Number of Detects	5	Number of Non-Detects	80
Number of Distinct Detects	4	Number of Distinct Non-Detects	1
Minimum Detect	0.013	Minimum Non-Detect	0.01
Maximum Detect	0.08	Maximum Non-Detect	0.01
Variance Detects	8.2600E-4	Percent Non-Detects	94.12%
Mean Detects	0.03	SD Detects	0.0287
Median Detects	0.015	CV Detects	0.958
Skewness Detects	1.962	Kurtosis Detects	3.849

TABLE B.1
PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) WITHIN RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Mean of Logged Detects	-3.79	SD of Logged Detects	0.781

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.709	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.762	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.314	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.343	Detected Data appear Normal at 5% Significance Level	

Detected Data appear Approximate Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.0112	KM Standard Error of Mean	9.4726E-4
KM SD	0.00781	95% KM (BCA) UCL	N/A
95% KM (t) UCL	0.0128	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	0.0127	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	0.014	95% KM Chebyshev UCL	0.0153
97.5% KM Chebyshev UCL	0.0171	99% KM Chebyshev UCL	0.0206

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.655	**Anderson-Darling GOF Test**	
5% A-D Critical Value	0.685	Detected data appear Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.327	**Kolmogorov-Smirnov GOF**	
5% K-S Critical Value	0.361	Detected data appear Gamma Distributed at 5% Significance Level	

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	1.912	k star (bias corrected MLE)	0.898
Theta hat (MLE)	0.0157	Theta star (bias corrected MLE)	0.0334
nu hat (MLE)	19.12	nu star (bias corrected)	8.981
Mean (detects)	0.03		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)
For such situations, GROS method may yield incorrect values of UCLs and BTVs
This is especially true when the sample size is small.
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	0.0112
Maximum	0.08	Median	0.01
SD	0.00786	CV	0.703
k hat (MLE)	8.063	k star (bias corrected MLE)	7.786
Theta hat (MLE)	0.00139	Theta star (bias corrected MLE)	0.00144
nu hat (MLE)	1371	nu star (bias corrected)	1324
Adjusted Level of Significance (β)	0.0472		
Approximate Chi Square Value (N/A, α)	1240	Adjusted Chi Square Value (N/A, β)	1239
95% Gamma Approximate UCL (use when n>=50)	0.0119	95% Gamma Adjusted UCL (use when n<50)	0.0119

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.0112	SD (KM)	0.00781
Variance (KM)	6.1016E-5	SE of Mean (KM)	9.4726E-4
k hat (KM)	2.047	k star (KM)	1.983
nu hat (KM)	348	nu star (KM)	337.1
theta hat (KM)	0.00546	theta star (KM)	0.00564
80% gamma percentile (KM)	0.0167	90% gamma percentile (KM)	0.0218
95% gamma percentile (KM)	0.0266	99% gamma percentile (KM)	0.0372

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (337.08, α)	295.5	Adjusted Chi Square Value (337.08, β)	294.9
95% Gamma Approximate KM-UCL (use when n>=50)	0.0127	95% Gamma Adjusted KM-UCL (use when n<50)	0.0128

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.805	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.762	Detected Data appear Lognormal at 5% Significance Level	

TABLE B.1

PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) WITHIN RIGHT-OF-WAY

CN MILE 197.4, RIVERS SUBDIVISION

SOUTHEAST OF ST. LAZARE, MANITOBA

Lilliefors Test Statistic	0.3	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.343	Detected Data appear Lognormal at 5% Significance Level	

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.00226	Mean in Log Scale	-9.242
SD in Original Scale	0.00944	SD in Log Scale	2.728
95% t UCL (assumes normality of ROS data)	0.00396	95% Percentile Bootstrap UCL	0.00407
95% BCA Bootstrap UCL	0.00546	95% Bootstrap t UCL	0.00749
95% H-UCL (Log ROS)	0.0145		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-4.557	KM Geo Mean	0.0105
KM SD (logged)	0.256	95% Critical H Value (KM-Log)	1.724
KM Standard Error of Mean (logged)	0.031	95% H-UCL (KM -Log)	0.0114
KM SD (logged)	0.256	95% Critical H Value (KM-Log)	1.724
KM Standard Error of Mean (logged)	0.031		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.00647	Mean in Log Scale	-5.21
SD in Original Scale	0.00862	SD in Log Scale	0.396
95% t UCL (Assumes normality)	0.00803	95% H-Stat UCL	0.00638

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Approximate Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL 0.0128

When a data set follows an approximate (e.g., normal) distribution passing one of the GOF test

When applicable, it is suggested to use a UCL based upon a distribution (e.g., gamma) passing both GOF tests in ProUCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

TABLE B.3

PROUCL OUTPUT FOR CULVERT SURFACE WATER OUTSIDE OF RIGHT-OF-WAY

CN MILE 197.4, RIVERS SUBDIVISION

SOUTHEAST OF ST. LAZARE, MANITOBA

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	ProUCL 5.111/15/2019 7:46:48 AM
From File	WorkSheet.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

result (outside cn row_ws_culvert_benzo(k)fluoranthene_207-08-9)

General Statistics

Total Number of Observations	1	Number of Distinct Observations	1
		Number of Missing Observations	0
Minimum	0.0099	Mean	0.0099
Maximum	0.0099	Median	0.0099

Warning: This data set only has 1 observations!

Data set is too small to compute reliable and meaningful statistics and estimates!

The data set for variable result (outside cn row_ws_culvert_benzo(k)fluoranthene_207-08-9) was not processed!

It is suggested to collect at least 8 to 10 observations before using these statistical methods!

If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.

TABLE B.2
PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	ProUCL 5.14/2/2020 1:25:34 PM
From File	WorkSheet.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

result (outside cn row_so_surface soil 0-1.5m_acridine_260-94-6)

General Statistics

Total Number of Observations	57	Number of Distinct Observations	5
Number of Detects	2	Number of Non-Detects	55
Number of Distinct Detects	2	Number of Distinct Non-Detects	3
Minimum Detect	0.015	Minimum Non-Detect	0.01
Maximum Detect	0.068	Maximum Non-Detect	0.021
Variance Detects	0.0014	Percent Non-Detects	96.49%
Mean Detects	0.0415	SD Detects	0.0375
Median Detects	0.0415	CV Detects	0.903
Skewness Detects	N/A	Kurtosis Detects	N/A
Mean of Logged Detects	-3.444	SD of Logged Detects	1.069

Warning: Data set has only 2 Detected Values.
This is not enough to compute meaningful or reliable statistics and estimates.

Normal GOF Test on Detects Only
Not Enough Data to Perform GOF Test

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.0111	KM Standard Error of Mean	0.00143
KM SD	0.00763	95% KM (BCA) UCL	N/A
95% KM (t) UCL	0.0135	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	0.0135	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	0.0154	95% KM Chebyshev UCL	0.0173
97.5% KM Chebyshev UCL	0.02	99% KM Chebyshev UCL	0.0253

Gamma GOF Tests on Detected Observations Only
Not Enough Data to Perform GOF Test

Gamma Statistics on Detected Data Only

k hat (MLE)	2.06	k star (bias corrected MLE)	N/A
Theta hat (MLE)	0.0201	Theta star (bias corrected MLE)	N/A
nu hat (MLE)	8.241	nu star (bias corrected)	N/A
Mean (detects)	0.0415		

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.0111	SD (KM)	0.00763
Variance (KM)	5.8248E-5	SE of Mean (KM)	0.00143
k hat (KM)	2.119	k star (KM)	2.019
nu hat (KM)	241.6	nu star (KM)	230.2
theta hat (KM)	0.00524	theta star (KM)	0.0055
80% gamma percentile (KM)	0.0166	90% gamma percentile (KM)	0.0216
95% gamma percentile (KM)	0.0263	99% gamma percentile (KM)	0.0367

Gamma Kaplan-Meier (KM) Statistics

		Adjusted Level of Significance (β)	0.0458
Approximate Chi Square Value (230.20, α)	196.1	Adjusted Chi Square Value (230.20, β)	195.3
95% Gamma Approximate KM-UCL (use when n>=50)	0.013	95% Gamma Adjusted KM-UCL (use when n<50)	0.0131

Lognormal GOF Test on Detected Observations Only

TABLE B.2
PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Not Enough Data to Perform GOF Test

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.00175	Mean in Log Scale	-10.73
SD in Original Scale	0.00918	SD in Log Scale	3.193
95% t UCL (assumes normality of ROS data)	0.00378	95% Percentile Bootstrap UCL	0.00409
95% BCA Bootstrap UCL	0.00592	95% Bootstrap t UCL	0.0209
95% H-UCL (Log ROS)	0.0412		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-4.564	KM Geo Mean	0.0104
KM SD (logged)	0.257	95% Critical H Value (KM-Log)	1.714
KM Standard Error of Mean (logged)	0.0481	95% H-UCL (KM -Log)	0.0114
KM SD (logged)	0.257	95% Critical H Value (KM-Log)	1.714
KM Standard Error of Mean (logged)	0.0481		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.00655	Mean in Log Scale	-5.196
SD in Original Scale	0.00846	SD in Log Scale	0.399
95% t UCL (Assumes normality)	0.00843	95% H-Stat UCL	0.00661

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

95% KM (Chebyshev) UCL 0.0173

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

result (outside cn row_so_surface soil 0-1.5m_benzo(a)anthracene_56-55-3)

General Statistics

Total Number of Observations	57	Number of Distinct Observations	12
Number of Detects	12	Number of Non-Detects	45
Number of Distinct Detects	10	Number of Distinct Non-Detects	3
Minimum Detect	0.0053	Minimum Non-Detect	0.005
Maximum Detect	0.12	Maximum Non-Detect	0.011
Variance Detects	0.0011	Percent Non-Detects	78.95%
Mean Detects	0.0258	SD Detects	0.0332
Median Detects	0.0125	CV Detects	1.288
Skewness Detects	2.525	Kurtosis Detects	6.467
Mean of Logged Detects	-4.122	SD of Logged Detects	0.898

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.618	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.859	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.355	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.243	Detected Data Not Normal at 5% Significance Level	

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.00939	KM Standard Error of Mean	0.00233
KM SD	0.0169	95% KM (BCA) UCL	0.0131
95% KM (t) UCL	0.0133	95% KM (Percentile Bootstrap) UCL	0.0136
95% KM (z) UCL	0.0132	95% KM Bootstrap t UCL	0.0241
90% KM Chebyshev UCL	0.0164	95% KM Chebyshev UCL	0.0196
97.5% KM Chebyshev UCL	0.024	99% KM Chebyshev UCL	0.0326

TABLE B.2
PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	1.036	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.752	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.243	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.251	Detected data appear Gamma Distributed at 5% Significance Level

Detected data follow Appr. Gamma Distribution at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	1.217	k star (bias corrected MLE)	0.969
Theta hat (MLE)	0.0212	Theta star (bias corrected MLE)	0.0266
nu hat (MLE)	29.22	nu star (bias corrected)	23.25
Mean (detects)	0.0258		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)
For such situations, GROS method may yield incorrect values of UCLs and BTVs
This is especially true when the sample size is small.
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0053	Mean	0.0133
Maximum	0.12	Median	0.01
SD	0.0161	CV	1.207
k hat (MLE)	2.857	k star (bias corrected MLE)	2.718
Theta hat (MLE)	0.00466	Theta star (bias corrected MLE)	0.0049
nu hat (MLE)	325.7	nu star (bias corrected)	309.9
Adjusted Level of Significance (β)	0.0458		
Approximate Chi Square Value (309.89, α)	270.1	Adjusted Chi Square Value (309.89, β)	269.1
95% Gamma Approximate UCL (use when n>=50)	0.0153	95% Gamma Adjusted UCL (use when n<50)	0.0153

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.00939	SD (KM)	0.0169
Variance (KM)	2.8436E-4	SE of Mean (KM)	0.00233
k hat (KM)	0.31	k star (KM)	0.305
nu hat (KM)	35.31	nu star (KM)	34.79
theta hat (KM)	0.0303	theta star (KM)	0.0308
80% gamma percentile (KM)	0.0145	90% gamma percentile (KM)	0.0276
95% gamma percentile (KM)	0.0427	99% gamma percentile (KM)	0.0818

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (34.79, α)	22.3	Adjusted Chi Square Value (34.79, β)	22.04
95% Gamma Approximate KM-UCL (use when n>=50)	0.0146	95% Gamma Adjusted KM-UCL (use when n<50)	0.0148

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.891	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.859	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.167	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.243	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.0062	Mean in Log Scale	-6.971
SD in Original Scale	0.0179	SD in Log Scale	2.025
95% t UCL (assumes normality of ROS data)	0.0102	95% Percentile Bootstrap UCL	0.0104
95% BCA Bootstrap UCL	0.013	95% Bootstrap t UCL	0.0179
95% H-UCL (Log ROS)	0.0205		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-5.049	KM Geo Mean	0.00642
KM SD (logged)	0.621	95% Critical H Value (KM-Log)	1.972
KM Standard Error of Mean (logged)	0.086	95% H-UCL (KM -Log)	0.00916
KM SD (logged)	0.621	95% Critical H Value (KM-Log)	1.972

TABLE B.2
PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

KM Standard Error of Mean (logged)	0.086

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.00754	Mean in Log Scale	-5.559
SD in Original Scale	0.0175	SD in Log Scale	0.864
95% t UCL (Assumes normality)	0.0114	95% H-Stat UCL	0.0072

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Approximate Gamma Distributed at 5% Significance Level

Suggested UCL to Use

95% KM Approximate Gamma UCL 0.0146

When a data set follows an approximate (e.g., normal) distribution passing one of the GOF test
When applicable, it is suggested to use a UCL based upon a distribution (e.g., gamma) passing both GOF tests in ProUCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

result (outside cn row_so_surface soil 0-1.5m_benzo(b&j)fluoranthene_205-99-2_205-82-3)

General Statistics

Total Number of Observations	57	Number of Distinct Observations	24
Number of Detects	29	Number of Non-Detects	28
Number of Distinct Detects	23	Number of Distinct Non-Detects	1
Minimum Detect	0.0054	Minimum Non-Detect	0.005
Maximum Detect	0.24	Maximum Non-Detect	0.005
Variance Detects	0.00259	Percent Non-Detects	49.12%
Mean Detects	0.0383	SD Detects	0.0509
Median Detects	0.019	CV Detects	1.331
Skewness Detects	3.027	Kurtosis Detects	9.644
Mean of Logged Detects	-3.733	SD of Logged Detects	0.895

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.587	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.926	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.315	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.161	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.0219	KM Standard Error of Mean	0.00531
KM SD	0.0394	95% KM (BCA) UCL	0.0312
95% KM (t) UCL	0.0308	95% KM (Percentile Bootstrap) UCL	0.0314
95% KM (z) UCL	0.0306	95% KM Bootstrap t UCL	0.0415
90% KM Chebyshev UCL	0.0378	95% KM Chebyshev UCL	0.045
97.5% KM Chebyshev UCL	0.0551	99% KM Chebyshev UCL	0.0747

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	1.662	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.769	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.223	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.167	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	1.205	k star (bias corrected MLE)	1.103
Theta hat (MLE)	0.0317	Theta star (bias corrected MLE)	0.0347

TABLE B.2
PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

nu hat (MLE)	69.89	nu star (bias corrected)	64
Mean (detects)	0.0383		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)
For such situations, GROS method may yield incorrect values of UCLs and BTVs
This is especially true when the sample size is small.
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0054	Mean	0.0244
Maximum	0.24	Median	0.01
SD	0.0387	CV	1.589
k hat (MLE)	1.259	k star (bias corrected MLE)	1.204
Theta hat (MLE)	0.0194	Theta star (bias corrected MLE)	0.0202
nu hat (MLE)	143.5	nu star (bias corrected)	137.3
Adjusted Level of Significance (β)	0.0458		
Approximate Chi Square Value (137.30, α)	111.2	Adjusted Chi Square Value (137.30, β)	110.6
95% Gamma Approximate UCL (use when n>=50)	0.0301	95% Gamma Adjusted UCL (use when n<50)	0.0303

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.0219	SD (KM)	0.0394
Variance (KM)	0.00155	SE of Mean (KM)	0.00531
k hat (KM)	0.31	k star (KM)	0.305
nu hat (KM)	35.34	nu star (KM)	34.81
theta hat (KM)	0.0707	theta star (KM)	0.0718
80% gamma percentile (KM)	0.0338	90% gamma percentile (KM)	0.0645
95% gamma percentile (KM)	0.0997	99% gamma percentile (KM)	0.191

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (34.81, α)	22.31	Adjusted Chi Square Value (34.81, β)	22.05
95% Gamma Approximate KM-UCL (use when n>=50)	0.0342	95% Gamma Adjusted KM-UCL (use when n<50)	0.0346

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.94	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.926	Detected Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.145	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.161	Detected Data appear Lognormal at 5% Significance Level	

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.0208	Mean in Log Scale	-4.932
SD in Original Scale	0.0402	SD in Log Scale	1.509
95% t UCL (assumes normality of ROS data)	0.0297	95% Percentile Bootstrap UCL	0.0309
95% BCA Bootstrap UCL	0.0341	95% Bootstrap t UCL	0.0386
95% H-UCL (Log ROS)	0.042		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-4.502	KM Geo Mean	0.0111
KM SD (logged)	1.003	95% Critical H Value (KM-Log)	2.343
KM Standard Error of Mean (logged)	0.135	95% H-UCL (KM -Log)	0.0251
KM SD (logged)	1.003	95% Critical H Value (KM-Log)	2.343
KM Standard Error of Mean (logged)	0.135		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.0207	Mean in Log Scale	-4.842
SD in Original Scale	0.0403	SD in Log Scale	1.303
95% t UCL (Assumes normality)	0.0296	95% H-Stat UCL	0.0303

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Lognormal Distributed at 5% Significance Level

TABLE B.2
PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Suggested UCL to Use

KM H-UCL 0.0251

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

result (outside cn row_so_surface soil 0-1.5m_benzo(c)phenanthrene_195-19-7)

General Statistics

Total Number of Observations	57	Number of Distinct Observations	6
Number of Detects	3	Number of Non-Detects	54
Number of Distinct Detects	3	Number of Distinct Non-Detects	3
Minimum Detect	0.008	Minimum Non-Detect	0.005
Maximum Detect	0.021	Maximum Non-Detect	0.011
Variance Detects	4.3000E-5	Percent Non-Detects	94.74%
Mean Detects	0.014	SD Detects	0.00656
Median Detects	0.013	CV Detects	0.468
Skewness Detects	0.67	Kurtosis Detects	N/A
Mean of Logged Detects	-4.345	SD of Logged Detects	0.483

Warning: Data set has only 3 Detected Values.
This is not enough to compute meaningful or reliable statistics and estimates.

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.983	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.767	Detected Data appear Normal at 5% Significance Level	
Lilliefors Test Statistic	0.227	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.425	Detected Data appear Normal at 5% Significance Level	

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.00548	KM Standard Error of Mean	3.8262E-4
KM SD	0.00236	95% KM (BCA) UCL	N/A
95% KM (t) UCL	0.00612	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	0.00611	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	0.00662	95% KM Chebyshev UCL	0.00714
97.5% KM Chebyshev UCL	0.00787	99% KM Chebyshev UCL	0.00928

Gamma GOF Tests on Detected Observations Only

Not Enough Data to Perform GOF Test

Gamma Statistics on Detected Data Only

k hat (MLE)	6.734	k star (bias corrected MLE)	N/A
Theta hat (MLE)	0.00208	Theta star (bias corrected MLE)	N/A
nu hat (MLE)	40.4	nu star (bias corrected)	N/A
Mean (detects)	0.014		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)
For such situations, GROS method may yield incorrect values of UCLs and BTVs
This is especially true when the sample size is small.
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.008	Mean	0.0102
Maximum	0.021	Median	0.01
SD	0.00153	CV	0.15
k hat (MLE)	70.3	k star (bias corrected MLE)	66.61
Theta hat (MLE)	1.4525E-4	Theta star (bias corrected MLE)	1.5329E-4

TABLE B.2
PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

nu hat (MLE)	8014	nu star (bias corrected)	7593
Adjusted Level of Significance (β)	0.0458		
Approximate Chi Square Value (N/A, α)	7392	Adjusted Chi Square Value (N/A, β)	7387
95% Gamma Approximate UCL (use when n>=50)	0.0105	95% Gamma Adjusted UCL (use when n<50)	N/A

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.00548	SD (KM)	0.00236
Variance (KM)	5.5538E-6	SE of Mean (KM)	3.8262E-4
k hat (KM)	5.401	k star (KM)	5.128
nu hat (KM)	615.7	nu star (KM)	584.6
theta hat (KM)	0.00101	theta star (KM)	0.00107
80% gamma percentile (KM)	0.00734	90% gamma percentile (KM)	0.00871
95% gamma percentile (KM)	0.00996	99% gamma percentile (KM)	0.0126

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (584.61, α)	529.5	Adjusted Chi Square Value (584.61, β)	528.2
95% Gamma Approximate KM-UCL (use when n>=50)	0.00605	95% Gamma Adjusted KM-UCL (use when n<50)	0.00606

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	1	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.767	Detected Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.175	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.425	Detected Data appear Lognormal at 5% Significance Level	

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.00154	Mean in Log Scale	-7.725
SD in Original Scale	0.0034	SD in Log Scale	1.608
95% t UCL (assumes normality of ROS data)	0.00229	95% Percentile Bootstrap UCL	0.00232
95% BCA Bootstrap UCL	0.00267	95% Bootstrap t UCL	0.00317
95% H-UCL (Log ROS)	0.00322		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-5.248	KM Geo Mean	0.00526
KM SD (logged)	0.232	95% Critical H Value (KM-Log)	1.72
KM Standard Error of Mean (logged)	0.0377	95% H-UCL (KM -Log)	0.0057
KM SD (logged)	0.232	95% Critical H Value (KM-Log)	1.72
KM Standard Error of Mean (logged)	0.0377		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.00325	Mean in Log Scale	-5.866
SD in Original Scale	0.00291	SD in Log Scale	0.409
95% t UCL (Assumes normality)	0.00389	95% H-Stat UCL	0.00341

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL 0.00612

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

result (outside cn row_so_surface soil 0-1.5m_benzo(e)pyrene_192-97-2)

General Statistics

Total Number of Observations	57	Number of Distinct Observations	21
Number of Detects	22	Number of Non-Detects	35

TABLE B.2

PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) OUTSIDE OF RIGHT-OF-WAY

CN MILE 197.4, RIVERS SUBDIVISION

SOUTHEAST OF ST. LAZARE, MANITOBA

Number of Distinct Detects	19	Number of Distinct Non-Detects	3
Minimum Detect	0.0071	Minimum Non-Detect	0.005
Maximum Detect	0.11	Maximum Non-Detect	0.011
Variance Detects	7.3965E-4	Percent Non-Detects	61.4%
Mean Detects	0.026	SD Detects	0.0272
Median Detects	0.0145	CV Detects	1.048
Skewness Detects	2.361	Kurtosis Detects	5.191
Mean of Logged Detects	-3.982	SD of Logged Detects	0.755

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.652	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.911	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.283	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.184	Detected Data Not Normal at 5% Significance Level	

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.0131	KM Standard Error of Mean	0.00263
KM SD	0.0194	95% KM (BCA) UCL	0.0179
95% KM (t) UCL	0.0175	95% KM (Percentile Bootstrap) UCL	0.0175
95% KM (z) UCL	0.0174	95% KM Bootstrap t UCL	0.0213
90% KM Chebyshev UCL	0.021	95% KM Chebyshev UCL	0.0246
97.5% KM Chebyshev UCL	0.0295	99% KM Chebyshev UCL	0.0393

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	1.406	**Anderson-Darling GOF Test**	
5% A-D Critical Value	0.758	Detected Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.228	**Kolmogorov-Smirnov GOF**	
5% K-S Critical Value	0.188	Detected Data Not Gamma Distributed at 5% Significance Level	

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	1.661	k star (bias corrected MLE)	1.465
Theta hat (MLE)	0.0156	Theta star (bias corrected MLE)	0.0177
nu hat (MLE)	73.07	nu star (bias corrected)	64.44
Mean (detects)	0.026		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0071	Mean	0.0162
Maximum	0.11	Median	0.01
SD	0.0184	CV	1.139
k hat (MLE)	2.242	k star (bias corrected MLE)	2.136
Theta hat (MLE)	0.00721	Theta star (bias corrected MLE)	0.00757
nu hat (MLE)	255.6	nu star (bias corrected)	243.5
Adjusted Level of Significance (β)	0.0458		
Approximate Chi Square Value (243.51, α)	208.4	Adjusted Chi Square Value (243.51, β)	207.5
95% Gamma Approximate UCL (use when n>=50)	0.0189	95% Gamma Adjusted UCL (use when n<50)	0.019

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.0131	SD (KM)	0.0194
Variance (KM)	3.7635E-4	SE of Mean (KM)	0.00263
k hat (KM)	0.457	k star (KM)	0.444
nu hat (KM)	52.07	nu star (KM)	50.66
theta hat (KM)	0.0287	theta star (KM)	0.0295
80% gamma percentile (KM)	0.0214	90% gamma percentile (KM)	0.0363
95% gamma percentile (KM)	0.0525	99% gamma percentile (KM)	0.0928

TABLE B.2
PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (50.66, α)	35.32	Adjusted Chi Square Value (50.66, β)	34.98
95% Gamma Approximate KM-UCL (use when n>=50)	0.0188	95% Gamma Adjusted KM-UCL (use when n<50)	0.019

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.903	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.911	Detected Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.172	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.184	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Approximate Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.0115	Mean in Log Scale	-5.404
SD in Original Scale	0.0203	SD in Log Scale	1.403
95% t UCL (assumes normality of ROS data)	0.016	95% Percentile Bootstrap UCL	0.0163
95% BCA Bootstrap UCL	0.0173	95% Bootstrap t UCL	0.0198
95% H-UCL (Log ROS)	0.021		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-4.787	KM Geo Mean	0.00834
KM SD (logged)	0.787	95% Critical H Value (KM-Log)	2.114
KM Standard Error of Mean (logged)	0.107	95% H-UCL (KM -Log)	0.0142
KM SD (logged)	0.787	95% Critical H Value (KM-Log)	2.114
KM Standard Error of Mean (logged)	0.107		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.0117	Mean in Log Scale	-5.177
SD in Original Scale	0.0202	SD in Log Scale	1.075
95% t UCL (Assumes normality)	0.0162	95% H-Stat UCL	0.0143

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Approximate Lognormal Distributed at 5% Significance Level

Suggested UCL to Use

KM H-UCL 0.0142

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

result (outside cn row_so_surface soil 0-1.5m_benzo(g,h,i)perylene_191-24-2)

General Statistics

Total Number of Observations	57	Number of Distinct Observations	19
Number of Detects	18	Number of Non-Detects	39
Number of Distinct Detects	17	Number of Distinct Non-Detects	3
Minimum Detect	0.0055	Minimum Non-Detect	0.005
Maximum Detect	0.077	Maximum Non-Detect	0.011
Variance Detects	3.9930E-4	Percent Non-Detects	68.42%
Mean Detects	0.021	SD Detects	0.02
Median Detects	0.012	CV Detects	0.95
Skewness Detects	2.016	Kurtosis Detects	3.512
Mean of Logged Detects	-4.164	SD of Logged Detects	0.742

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.711	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.897	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.243	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.202	Detected Data Not Normal at 5% Significance Level

TABLE B.2
PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.0101	KM Standard Error of Mean	0.0018
KM SD	0.0132	95% KM (BCA) UCL	0.0139
95% KM (t) UCL	0.0131	95% KM (Percentile Bootstrap) UCL	0.0132
95% KM (z) UCL	0.013	95% KM Bootstrap t UCL	0.016
90% KM Chebyshev UCL	0.0155	95% KM Chebyshev UCL	0.0179
97.5% KM Chebyshev UCL	0.0213	99% KM Chebyshev UCL	0.028

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	1.027	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.754	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.2	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.207	Detected data appear Gamma Distributed at 5% Significance Level

Detected data follow Appr. Gamma Distribution at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	1.807	k star (bias corrected MLE)	1.543
Theta hat (MLE)	0.0116	Theta star (bias corrected MLE)	0.0136
nu hat (MLE)	65.04	nu star (bias corrected)	55.53
Mean (detects)	0.021		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)
For such situations, GROS method may yield incorrect values of UCLs and BTVs
This is especially true when the sample size is small.
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0055	Mean	0.0135
Maximum	0.077	Median	0.01
SD	0.0122	CV	0.902
k hat (MLE)	3.295	k star (bias corrected MLE)	3.134
Theta hat (MLE)	0.00409	Theta star (bias corrected MLE)	0.0043
nu hat (MLE)	375.7	nu star (bias corrected)	357.2
Adjusted Level of Significance (β)	0.0458		
Approximate Chi Square Value (357.24, α)	314.4	Adjusted Chi Square Value (357.24, β)	313.4
95% Gamma Approximate UCL (use when n>=50)	0.0153	95% Gamma Adjusted UCL (use when n<50)	0.0154

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.0101	SD (KM)	0.0132
Variance (KM)	1.7443E-4	SE of Mean (KM)	0.0018
k hat (KM)	0.583	k star (KM)	0.564
nu hat (KM)	66.51	nu star (KM)	64.35
theta hat (KM)	0.0173	theta star (KM)	0.0179
80% gamma percentile (KM)	0.0166	90% gamma percentile (KM)	0.0266
95% gamma percentile (KM)	0.0371	99% gamma percentile (KM)	0.0627

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (64.35, α)	46.89	Adjusted Chi Square Value (64.35, β)	46.51
95% Gamma Approximate KM-UCL (use when n>=50)	0.0138	95% Gamma Adjusted KM-UCL (use when n<50)	0.014

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.917	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.897	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.18	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.202	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.00794	Mean in Log Scale	-5.852
SD in Original Scale	0.0143	SD in Log Scale	1.466

TABLE B.2
PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

95% t UCL (assumes normality of ROS data)	0.0111	95% Percentile Bootstrap UCL	0.0113
95% BCA Bootstrap UCL	0.0123	95% Bootstrap t UCL	0.0131
95% H-UCL (Log ROS)	0.0153		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-4.936	KM Geo Mean	0.00718
KM SD (logged)	0.665	95% Critical H Value (KM-Log)	2.008
KM Standard Error of Mean (logged)	0.0908	95% H-UCL (KM -Log)	0.0107
KM SD (logged)	0.665	95% Critical H Value (KM-Log)	2.008
KM Standard Error of Mean (logged)	0.0908		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.0085	Mean in Log Scale	-5.375
SD in Original Scale	0.014	SD in Log Scale	0.94
95% t UCL (Assumes normality)	0.0116	95% H-Stat UCL	0.00958

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Approximate Gamma Distributed at 5% Significance Level

Suggested UCL to Use

95% KM Approximate Gamma UCL	0.0138	95% GROS Approximate Gamma UCL	0.0153

When a data set follows an approximate (e.g., normal) distribution passing one of the GOF test
When applicable, it is suggested to use a UCL based upon a distribution (e.g., gamma) passing both GOF tests in ProUCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

result (outside cn row_so_surface soil 0-1.5m_methylnaphthalene, 2-_91-57-6)

General Statistics

Total Number of Observations	57	Number of Distinct Observations	12
Number of Detects	10	Number of Non-Detects	47
Number of Distinct Detects	9	Number of Distinct Non-Detects	3
Minimum Detect	0.0079	Minimum Non-Detect	0.005
Maximum Detect	0.031	Maximum Non-Detect	0.011
Variance Detects	5.2343E-5	Percent Non-Detects	82.46%
Mean Detects	0.0137	SD Detects	0.00723
Median Detects	0.0115	CV Detects	0.53
Skewness Detects	1.853	Kurtosis Detects	3.339
Mean of Logged Detects	-4.391	SD of Logged Detects	0.438

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.767	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.842	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.281	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.262	Detected Data Not Normal at 5% Significance Level	

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.00654	KM Standard Error of Mean	6.1141E-4
KM SD	0.00437	95% KM (BCA) UCL	0.00768
95% KM (t) UCL	0.00756	95% KM (Percentile Bootstrap) UCL	0.00762
95% KM (z) UCL	0.00754	95% KM Bootstrap t UCL	0.00828
90% KM Chebyshev UCL	0.00837	95% KM Chebyshev UCL	0.0092
97.5% KM Chebyshev UCL	0.0104	99% KM Chebyshev UCL	0.0126

Gamma GOF Tests on Detected Observations Only

TABLE B.2
PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

A-D Test Statistic	0.697	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.729	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.219	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.267	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	5.295	k star (bias corrected MLE)	3.773
Theta hat (MLE)	0.00258	Theta star (bias corrected MLE)	0.00362
nu hat (MLE)	105.9	nu star (bias corrected)	75.47
Mean (detects)	0.0137		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)
For such situations, GROS method may yield incorrect values of UCLs and BTVs
This is especially true when the sample size is small.
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0079	Mean	0.0106
Maximum	0.031	Median	0.01
SD	0.00322	CV	0.303
k hat (MLE)	20.52	k star (bias corrected MLE)	19.45
Theta hat (MLE)	5.1856E-4	Theta star (bias corrected MLE)	5.4704E-4
nu hat (MLE)	2339	nu star (bias corrected)	2217
Adjusted Level of Significance (β)	0.0458		
Approximate Chi Square Value (N/A, α)	2109	Adjusted Chi Square Value (N/A, β)	2106
95% Gamma Approximate UCL (use when n>=50)	0.0112	95% Gamma Adjusted UCL (use when n<50)	0.0112

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.00654	SD (KM)	0.00437
Variance (KM)	1.9105E-5	SE of Mean (KM)	6.1141E-4
k hat (KM)	2.237	k star (KM)	2.131
nu hat (KM)	255	nu star (KM)	242.9
theta hat (KM)	0.00292	theta star (KM)	0.00307
80% gamma percentile (KM)	0.00971	90% gamma percentile (KM)	0.0125
95% gamma percentile (KM)	0.0152	99% gamma percentile (KM)	0.0211

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (242.88, α)	207.8	Adjusted Chi Square Value (242.88, β)	207
95% Gamma Approximate KM-UCL (use when n>=50)	0.00764	95% Gamma Adjusted KM-UCL (use when n<50)	0.00767

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.873	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.842	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.19	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.262	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.00444	Mean in Log Scale	-5.927
SD in Original Scale	0.00539	SD in Log Scale	1.017
95% t UCL (assumes normality of ROS data)	0.00563	95% Percentile Bootstrap UCL	0.00567
95% BCA Bootstrap UCL	0.00599	95% Bootstrap t UCL	0.00598
95% H-UCL (Log ROS)	0.00616		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-5.136	KM Geo Mean	0.00588
KM SD (logged)	0.387	95% Critical H Value (KM-Log)	1.795
KM Standard Error of Mean (logged)	0.0543	95% H-UCL (KM -Log)	0.00695
KM SD (logged)	0.387	95% Critical H Value (KM-Log)	1.795
KM Standard Error of Mean (logged)	0.0543		

TABLE B.2
PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.0046	Mean in Log Scale	-5.672
SD in Original Scale	0.00515	SD in Log Scale	0.643
95% t UCL (Assumes normality)	0.00574	95% H-Stat UCL	0.00502

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Gamma Distributed at 5% Significance Level

Suggested UCL to Use

95% KM Approximate Gamma UCL	0.00764	95% GROS Approximate Gamma UCL	0.0112

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

result (outside cn row_so_surface soil 0-1.5m_perylene_198-55-0)

General Statistics

Total Number of Observations	57	Number of Distinct Observations	31
Number of Detects	50	Number of Non-Detects	7
Number of Distinct Detects	30	Number of Distinct Non-Detects	1
Minimum Detect	0.0058	Minimum Non-Detect	0.005
Maximum Detect	0.26	Maximum Non-Detect	0.005
Variance Detects	0.00396	Percent Non-Detects	12.28%
Mean Detects	0.04	SD Detects	0.0629
Median Detects	0.0175	CV Detects	1.574
Skewness Detects	2.719	Kurtosis Detects	6.37
Mean of Logged Detects	-3.848	SD of Logged Detects	0.979

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.528	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.947	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.345	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.125	Detected Data Not Normal at 5% Significance Level	

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.0357	KM Standard Error of Mean	0.00796
KM SD	0.0595	95% KM (BCA) UCL	0.0506
95% KM (t) UCL	0.049	95% KM (Percentile Bootstrap) UCL	0.0495
95% KM (z) UCL	0.0488	95% KM Bootstrap t UCL	0.0554
90% KM Chebyshev UCL	0.0596	95% KM Chebyshev UCL	0.0704
97.5% KM Chebyshev UCL	0.0854	99% KM Chebyshev UCL	0.115

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	4.405	**Anderson-Darling GOF Test**	
5% A-D Critical Value	0.784	Detected Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.23	**Kolmogorov-Smirnov GOF**	
5% K-S Critical Value	0.129	Detected Data Not Gamma Distributed at 5% Significance Level	

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.926	k star (bias corrected MLE)	0.884
Theta hat (MLE)	0.0432	Theta star (bias corrected MLE)	0.0453
nu hat (MLE)	92.58	nu star (bias corrected)	88.36
Mean (detects)	0.04		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

TABLE B.2

PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) OUTSIDE OF RIGHT-OF-WAY

CN MILE 197.4, RIVERS SUBDIVISION

SOUTHEAST OF ST. LAZARE, MANITOBA

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0058	Mean	0.0363
Maximum	0.26	Median	0.014
SD	0.0597	CV	1.644
k hat (MLE)	0.931	k star (bias corrected MLE)	0.893
Theta hat (MLE)	0.039	Theta star (bias corrected MLE)	0.0407
nu hat (MLE)	106.1	nu star (bias corrected)	101.8
Adjusted Level of Significance (β)	0.0458		
Approximate Chi Square Value (101.84, α)	79.56	Adjusted Chi Square Value (101.84, β)	79.05
95% Gamma Approximate UCL (use when n>=50)	0.0465	95% Gamma Adjusted UCL (use when n<50)	0.0468

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.0357	SD (KM)	0.0595
Variance (KM)	0.00354	SE of Mean (KM)	0.00796
k hat (KM)	0.36	k star (KM)	0.353
nu hat (KM)	41.07	nu star (KM)	40.24
theta hat (KM)	0.0991	theta star (KM)	0.101
80% gamma percentile (KM)	0.0566	90% gamma percentile (KM)	0.103
95% gamma percentile (KM)	0.155	99% gamma percentile (KM)	0.287

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (40.24, α)	26.71	Adjusted Chi Square Value (40.24, β)	26.42
95% Gamma Approximate KM-UCL (use when n>=50)	0.0538	95% Gamma Adjusted KM-UCL (use when n<50)	0.0544

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.872	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.947	Detected Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.129	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.125	Detected Data Not Lognormal at 5% Significance Level	

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.0354	Mean in Log Scale	-4.118
SD in Original Scale	0.0602	SD in Log Scale	1.176
95% t UCL (assumes normality of ROS data)	0.0487	95% Percentile Bootstrap UCL	0.0494
95% BCA Bootstrap UCL	0.0517	95% Bootstrap t UCL	0.0564
95% H-UCL (Log ROS)	0.049		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-4.026	KM Geo Mean	0.0178
KM SD (logged)	1.025	95% Critical H Value (KM-Log)	2.372
KM Standard Error of Mean (logged)	0.137	95% H-UCL (KM -Log)	0.0417
KM SD (logged)	1.025	95% Critical H Value (KM-Log)	2.372
KM Standard Error of Mean (logged)	0.137		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.0354	Mean in Log Scale	-4.111
SD in Original Scale	0.0602	SD in Log Scale	1.158
95% t UCL (Assumes normality)	0.0487	95% H-Stat UCL	0.0478

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

95% KM (Chebyshev) UCL 0.0704

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

TABLE B.2
PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

result (outside cn row_so_surface soil 0-1.5m_phenanthrene_85-01-8)

General Statistics

Total Number of Observations	57	Number of Distinct Observations	21
Number of Detects	24	Number of Non-Detects	33
Number of Distinct Detects	19	Number of Distinct Non-Detects	3
Minimum Detect	0.0056	Minimum Non-Detect	0.005
Maximum Detect	0.2	Maximum Non-Detect	0.011
Variance Detects	0.00152	Percent Non-Detects	57.89%
Mean Detects	0.0237	SD Detects	0.039
Median Detects	0.0135	CV Detects	1.641
Skewness Detects	4.379	Kurtosis Detects	20.25
Mean of Logged Detects	-4.173	SD of Logged Detects	0.758

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.408	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.916	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.361	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.177	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.0129	KM Standard Error of Mean	0.00357
KM SD	0.0264	95% KM (BCA) UCL	0.0194
95% KM (t) UCL	0.0189	95% KM (Percentile Bootstrap) UCL	0.0192
95% KM (z) UCL	0.0188	95% KM Bootstrap t UCL	0.0333
90% KM Chebyshev UCL	0.0236	95% KM Chebyshev UCL	0.0285
97.5% KM Chebyshev UCL	0.0352	99% KM Chebyshev UCL	0.0485

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	2.388	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.766	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.292	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.182	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	1.298	k star (bias corrected MLE)	1.164
Theta hat (MLE)	0.0183	Theta star (bias corrected MLE)	0.0204
nu hat (MLE)	62.33	nu star (bias corrected)	55.87
Mean (detects)	0.0237		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)
For such situations, GROS method may yield incorrect values of UCLs and BTVs
This is especially true when the sample size is small.
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0056	Mean	0.0158
Maximum	0.2	Median	0.01
SD	0.0259	CV	1.64
k hat (MLE)	1.973	k star (bias corrected MLE)	1.881
Theta hat (MLE)	0.008	Theta star (bias corrected MLE)	0.00839
nu hat (MLE)	224.9	nu star (bias corrected)	214.4
Adjusted Level of Significance (β)	0.0458		
Approximate Chi Square Value (214.39, α)	181.5	Adjusted Chi Square Value (214.39, β)	180.7
95% Gamma Approximate UCL (use when n>=50)	0.0186	95% Gamma Adjusted UCL (use when n<50)	0.0187

TABLE B.2
PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.0129	SD (KM)	0.0264
Variance (KM)	6.9793E-4	SE of Mean (KM)	0.00357
k hat (KM)	0.239	k star (KM)	0.238
nu hat (KM)	27.2	nu star (KM)	27.1
theta hat (KM)	0.0541	theta star (KM)	0.0543
80% gamma percentile (KM)	0.0184	90% gamma percentile (KM)	0.0389
95% gamma percentile (KM)	0.0634	99% gamma percentile (KM)	0.129

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (27.10, α)	16.23	Adjusted Chi Square Value (27.10, β)	16.01
95% Gamma Approximate KM-UCL (use when n>=50)	0.0215	95% Gamma Adjusted KM-UCL (use when n<50)	0.0218

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.853	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.916	Detected Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.21	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.177	Detected Data Not Lognormal at 5% Significance Level	

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.0113	Mean in Log Scale	-5.413
SD in Original Scale	0.0272	SD in Log Scale	1.316
95% t UCL (assumes normality of ROS data)	0.0174	95% Percentile Bootstrap UCL	0.0179
95% BCA Bootstrap UCL	0.0218	95% Bootstrap t UCL	0.0289
95% H-UCL (Log ROS)	0.0175		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-4.822	KM Geo Mean	0.00805
KM SD (logged)	0.735	95% Critical H Value (KM-Log)	2.067
KM Standard Error of Mean (logged)	0.0995	95% H-UCL (KM -Log)	0.0129
KM SD (logged)	0.735	95% Critical H Value (KM-Log)	2.067
KM Standard Error of Mean (logged)	0.0995		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.0115	Mean in Log Scale	-5.201
SD in Original Scale	0.0271	SD in Log Scale	1.018
95% t UCL (Assumes normality)	0.0175	95% H-Stat UCL	0.0128

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

95% KM (Chebyshev) UCL	0.0285

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

result (outside cn row_so_surface soil 0-1.5m_pyrene_129-00-0)

General Statistics

Total Number of Observations	57	Number of Distinct Observations	22
Number of Detects	26	Number of Non-Detects	31
Number of Distinct Detects	21	Number of Distinct Non-Detects	2
Minimum Detect	0.0075	Minimum Non-Detect	0.005
Maximum Detect	0.2	Maximum Non-Detect	0.011
Variance Detects	0.00158	Percent Non-Detects	54.39%
Mean Detects	0.032	SD Detects	0.0397

TABLE B.2
PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Median Detects	0.019	CV Detects	1.24
Skewness Detects	3.452	Kurtosis Detects	13.36
Mean of Logged Detects	-3.798	SD of Logged Detects	0.747

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.555	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.92	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.298	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.17	Detected Data Not Normal at 5% Significance Level	

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.0173	KM Standard Error of Mean	0.00399
KM SD	0.0296	95% KM (BCA) UCL	0.026
95% KM (t) UCL	0.024	95% KM (Percentile Bootstrap) UCL	0.0244
95% KM (z) UCL	0.0239	95% KM Bootstrap t UCL	0.0316
90% KM Chebyshev UCL	0.0293	95% KM Chebyshev UCL	0.0347
97.5% KM Chebyshev UCL	0.0423	99% KM Chebyshev UCL	0.0571

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	1.885	**Anderson-Darling GOF Test**	
5% A-D Critical Value	0.761	Detected Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.238	**Kolmogorov-Smirnov GOF**	
5% K-S Critical Value	0.174	Detected Data Not Gamma Distributed at 5% Significance Level	

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	1.546	k star (bias corrected MLE)	1.393
Theta hat (MLE)	0.0207	Theta star (bias corrected MLE)	0.023
nu hat (MLE)	80.4	nu star (bias corrected)	72.46
Mean (detects)	0.032		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)
For such situations, GROS method may yield incorrect values of UCLs and BTVs
This is especially true when the sample size is small.
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0075	Mean	0.0201
Maximum	0.2	Median	0.01
SD	0.0288	CV	1.434
k hat (MLE)	1.674	k star (bias corrected MLE)	1.597
Theta hat (MLE)	0.012	Theta star (bias corrected MLE)	0.0126
nu hat (MLE)	190.8	nu star (bias corrected)	182.1
Adjusted Level of Significance (β)	0.0458		
Approximate Chi Square Value (182.10, α)	151.9	Adjusted Chi Square Value (182.10, β)	151.2
95% Gamma Approximate UCL (use when n>=50)	0.024	95% Gamma Adjusted UCL (use when n<50)	0.0242

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.0173	SD (KM)	0.0296
Variance (KM)	8.7333E-4	SE of Mean (KM)	0.00399
k hat (KM)	0.344	k star (KM)	0.338
nu hat (KM)	39.24	nu star (KM)	38.51
theta hat (KM)	0.0504	theta star (KM)	0.0513
80% gamma percentile (KM)	0.0273	90% gamma percentile (KM)	0.0503
95% gamma percentile (KM)	0.0763	99% gamma percentile (KM)	0.143

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (38.51, α)	25.3	Adjusted Chi Square Value (38.51, β)	25.02
95% Gamma Approximate KM-UCL (use when n>=50)	0.0264	95% Gamma Adjusted KM-UCL (use when n<50)	0.0267

Lognormal GOF Test on Detected Observations Only

TABLE B.2

PROUCL OUTPUT FOR SURFACE SOIL (0-1.5 M) OUTSIDE OF RIGHT-OF-WAY

CN MILE 197.4, RIVERS SUBDIVISION

SOUTHEAST OF ST. LAZARE, MANITOBA

Shapiro Wilk Test Statistic	0.897	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.92	Detected Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.179	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.17	Detected Data Not Lognormal at 5% Significance Level	

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.0165	Mean in Log Scale	-4.959
SD in Original Scale	0.0302	SD in Log Scale	1.313
95% t UCL (assumes normality of ROS data)	0.0231	95% Percentile Bootstrap UCL	0.0238
95% BCA Bootstrap UCL	0.0269	95% Bootstrap t UCL	0.0296
95% H-UCL (Log ROS)	0.0274		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-4.613	KM Geo Mean	0.00992
KM SD (logged)	0.896	95% Critical H Value (KM-Log)	2.219
KM Standard Error of Mean (logged)	0.121	95% H-UCL (KM -Log)	0.0193
KM SD (logged)	0.896	95% Critical H Value (KM-Log)	2.219
KM Standard Error of Mean (logged)	0.121		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.016	Mean in Log Scale	-4.977
SD in Original Scale	0.0304	SD in Log Scale	1.203
95% t UCL (Assumes normality)	0.0228	95% H-Stat UCL	0.0218

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

95% KM (Chebyshev) UCL 0.0347

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

TABLE B.4
PROUCL OUTPUT FOR CULVERT SURFACE WATER WITHIN RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	ProUCL 5.111/15/2019 7:40:06 AM
From File	WorkSheet.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

result (cn row_ws_culvert_anthracene_120-12-7)

General Statistics

Total Number of Observations	3	Number of Distinct Observations	2
Number of Detects	1	Number of Non-Detects	2
Number of Distinct Detects	1	Number of Distinct Non-Detects	1

Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!
It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable result (cn row_ws_culvert_anthracene_120-12-7) was not processed!

result (cn row_ws_culvert_benzo(b&j)fluoranthene_205-99-2_205-82-3)

General Statistics

Total Number of Observations	3	Number of Distinct Observations	2
Number of Detects	1	Number of Non-Detects	2
Number of Distinct Detects	1	Number of Distinct Non-Detects	1

Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!
It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable result (cn row_ws_culvert_benzo(b&j)fluoranthene_205-99-2_205-82-3) was not processed!

result (cn row_ws_culvert_benzo(k)fluoranthene_207-08-9)

General Statistics

Total Number of Observations	3	Number of Distinct Observations	2
Number of Detects	1	Number of Non-Detects	2
Number of Distinct Detects	1	Number of Distinct Non-Detects	1

Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!
It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable result (cn row_ws_culvert_benzo(k)fluoranthene_207-08-9) was not processed!

result (cn row_ws_culvert_chrysene_218-01-9)

General Statistics

Total Number of Observations	3	Number of Distinct Observations	2
Number of Detects	1	Number of Non-Detects	2
Number of Distinct Detects	1	Number of Distinct Non-Detects	1

Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!
It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable result (cn row_ws_culvert_chrysene_218-01-9) was not processed!

result (cn row_ws_culvert_fluoranthene_206-44-0)

TABLE B.4
PROUCL OUTPUT FOR CULVERT SURFACE WATER WITHIN RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
Number of Detects	2	Number of Non-Detects	1
Number of Distinct Detects	2	Number of Distinct Non-Detects	1
Minimum Detect	0.025	Minimum Non-Detect	0.01
Maximum Detect	0.13	Maximum Non-Detect	0.01
Variance Detects	0.00551	Percent Non-Detects	33.33%
Mean Detects	0.0775	SD Detects	0.0742
Median Detects	0.0775	CV Detects	0.958
Skewness Detects	N/A	Kurtosis Detects	N/A
Mean of Logged Detects	-2.865	SD of Logged Detects	1.166

Warning: Data set has only 2 Detected Values.
This is not enough to compute meaningful or reliable statistics and estimates.

Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest.
For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1

Normal GOF Test on Detects Only
Not Enough Data to Perform GOF Test

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.055	KM Standard Error of Mean	0.0436
KM SD	0.0534	95% KM (BCA) UCL	N/A
95% KM (t) UCL	0.182	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	0.127	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	0.186	95% KM Chebyshev UCL	0.245
97.5% KM Chebyshev UCL	0.327	99% KM Chebyshev UCL	0.489

Gamma GOF Tests on Detected Observations Only
Not Enough Data to Perform GOF Test

Gamma Statistics on Detected Data Only

k hat (MLE)	1.777	k star (bias corrected MLE)	N/A
Theta hat (MLE)	0.0436	Theta star (bias corrected MLE)	N/A
nu hat (MLE)	7.107	nu star (bias corrected)	N/A
Mean (detects)	0.0775		

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.055	SD (KM)	0.0534
Variance (KM)	0.00285	SE of Mean (KM)	0.0436
k hat (KM)	1.061	k star (KM)	N/A
nu hat (KM)	6.368	nu star (KM)	N/A
theta hat (KM)	0.0518	theta star (KM)	N/A
80% gamma percentile (KM)	N/A	90% gamma percentile (KM)	N/A
95% gamma percentile (KM)	N/A	99% gamma percentile (KM)	N/A

Gamma Kaplan-Meier (KM) Statistics

		Adjusted Level of Significance (β)	0.00136
Approximate Chi Square Value (N/A, α)	N/A	Adjusted Chi Square Value (N/A, β)	N/A
95% Gamma Approximate KM-UCL (use when n>=50)	N/A	95% Gamma Adjusted KM-UCL (use when n<50)	N/A

Lognormal GOF Test on Detected Observations Only
Not Enough Data to Perform GOF Test

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.0521	Mean in Log Scale	-4.113
SD in Original Scale	0.0685	SD in Log Scale	2.314

TABLE B.4
PROUCL OUTPUT FOR CULVERT SURFACE WATER WITHIN RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

95% t UCL (assumes normality of ROS data)	0.168	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A	95% Bootstrap t UCL	N/A
95% H-UCL (Log ROS)	7.436E+20		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-3.445	KM Geo Mean	0.0319
KM SD (logged)	1.061	95% Critical H Value (KM-Log)	13.85
KM Standard Error of Mean (logged)	0.867	95% H-UCL (KM -Log)	1834
KM SD (logged)	1.061	95% Critical H Value (KM-Log)	13.85
KM Standard Error of Mean (logged)	0.867		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.0533	Mean in Log Scale	-3.676
SD in Original Scale	0.0671	SD in Log Scale	1.629
95% t UCL (Assumes normality)	0.167	95% H-Stat UCL	4.267E+9

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

95% KM (Chebyshev) UCL 0.245

Warning: Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

result (cn row_ws_culvert_methylnaphthalene, 2-_91-57-6)

General Statistics

Total Number of Observations	3	Number of Distinct Observations	2
Number of Detects	1	Number of Non-Detects	2
Number of Distinct Detects	1	Number of Distinct Non-Detects	1

Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!
It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable result (cn row_ws_culvert_methylnaphthalene, 2-_91-57-6) was not processed!

result (cn row_ws_culvert_naphthalene_91-20-3)

General Statistics

Total Number of Observations	3	Number of Distinct Observations	2
Number of Detects	1	Number of Non-Detects	2
Number of Distinct Detects	1	Number of Distinct Non-Detects	1

Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!
It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable result (cn row_ws_culvert_naphthalene_91-20-3) was not processed!

result (cn row_ws_culvert_pyrene_129-00-0)

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
Number of Detects	2	Number of Non-Detects	1
Number of Distinct Detects	2	Number of Distinct Non-Detects	1

TABLE B.4
PROUCL OUTPUT FOR CULVERT SURFACE WATER WITHIN RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Minimum Detect	0.03	Minimum Non-Detect	0.02
Maximum Detect	0.13	Maximum Non-Detect	0.02
Variance Detects	0.005	Percent Non-Detects	33.33%
Mean Detects	0.08	SD Detects	0.0707
Median Detects	0.08	CV Detects	0.884
Skewness Detects	N/A	Kurtosis Detects	N/A
Mean of Logged Detects	-2.773	SD of Logged Detects	1.037

Warning: Data set has only 2 Detected Values.
This is not enough to compute meaningful or reliable statistics and estimates.

Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest. For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1

Normal GOF Test on Detects Only
Not Enough Data to Perform GOF Test

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.06	KM Standard Error of Mean	0.0406
KM SD	0.0497	95% KM (BCA) UCL	N/A
95% KM (t) UCL	0.178	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	0.127	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	0.182	95% KM Chebyshev UCL	0.237
97.5% KM Chebyshev UCL	0.313	99% KM Chebyshev UCL	0.463

Gamma GOF Tests on Detected Observations Only
Not Enough Data to Perform GOF Test

Gamma Statistics on Detected Data Only

k hat (MLE)	2.171	k star (bias corrected MLE)	N/A
Theta hat (MLE)	0.0369	Theta star (bias corrected MLE)	N/A
nu hat (MLE)	8.684	nu star (bias corrected)	N/A
Mean (detects)	0.08		

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.06	SD (KM)	0.0497
Variance (KM)	0.00247	SE of Mean (KM)	0.0406
k hat (KM)	1.459	k star (KM)	N/A
nu hat (KM)	8.757	nu star (KM)	N/A
theta hat (KM)	0.0411	theta star (KM)	N/A
80% gamma percentile (KM)	N/A	90% gamma percentile (KM)	N/A
95% gamma percentile (KM)	N/A	99% gamma percentile (KM)	N/A

Gamma Kaplan-Meier (KM) Statistics

		Adjusted Level of Significance (β)	0.00136
Approximate Chi Square Value (N/A, α)	N/A	Adjusted Chi Square Value (N/A, β)	N/A
95% Gamma Approximate KM-UCL (use when n>=50)	N/A	95% Gamma Adjusted KM-UCL (use when n<50)	N/A

Lognormal GOF Test on Detected Observations Only
Not Enough Data to Perform GOF Test

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.0541	Mean in Log Scale	-3.884
SD in Original Scale	0.0672	SD in Log Scale	2.058
95% t UCL (assumes normality of ROS data)	0.167	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A	95% Bootstrap t UCL	N/A
95% H-UCL (Log ROS)	1.710E+16		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

TABLE B.4

PROUCL OUTPUT FOR CULVERT SURFACE WATER WITHIN RIGHT-OF-WAY

CN MILE 197.4, RIVERS SUBDIVISION

SOUTHEAST OF ST. LAZARE, MANITOBA

KM Mean (logged)	-3.153	KM Geo Mean	0.0427
KM SD (logged)	0.804	95% Critical H Value (KM-Log)	10.48
KM Standard Error of Mean (logged)	0.656	95% H-UCL (KM -Log)	22.88
KM SD (logged)	0.804	95% Critical H Value (KM-Log)	10.48
KM Standard Error of Mean (logged)	0.656		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.0567	Mean in Log Scale	-3.384
SD in Original Scale	0.0643	SD in Log Scale	1.287
95% t UCL (Assumes normality)	0.165	95% H-Stat UCL	342065

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

95% KM (Chebyshev) UCL 0.237

Warning: Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

TABLE B.5
PROUCL OUTPUT FOR SEDIMENT OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	ProUCL 5.14/2/2020 1:19:06 PM
From File	WorkSheet.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

result (outside cn row_se_na_acenaphthene_83-32-9)

General Statistics

Total Number of Observations	41	Number of Distinct Observations	4
Number of Detects	3	Number of Non-Detects	38
Number of Distinct Detects	3	Number of Distinct Non-Detects	1
Minimum Detect	0.009	Minimum Non-Detect	0.005
Maximum Detect	0.02	Maximum Non-Detect	0.005
Variance Detects	3.4333E-5	Percent Non-Detects	92.68%
Mean Detects	0.0133	SD Detects	0.00586
Median Detects	0.011	CV Detects	0.439
Skewness Detects	1.508	Kurtosis Detects	N/A
Mean of Logged Detects	-4.377	SD of Logged Detects	0.415

Warning: Data set has only 3 Detected Values.
This is not enough to compute meaningful or reliable statistics and estimates.

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.881	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.767	Detected Data appear Normal at 5% Significance Level	
Lilliefors Test Statistic	0.321	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.425	Detected Data appear Normal at 5% Significance Level	

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.00561	KM Standard Error of Mean	4.8329E-4
KM SD	0.00253	95% KM (BCA) UCL	N/A
95% KM (t) UCL	0.00642	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	0.0064	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	0.00706	95% KM Chebyshev UCL	0.00772
97.5% KM Chebyshev UCL	0.00863	99% KM Chebyshev UCL	0.0104

Gamma GOF Tests on Detected Observations Only

Not Enough Data to Perform GOF Test

Gamma Statistics on Detected Data Only

k hat (MLE)	8.499	k star (bias corrected MLE)	N/A
Theta hat (MLE)	0.00157	Theta star (bias corrected MLE)	N/A
nu hat (MLE)	50.99	nu star (bias corrected)	N/A
Mean (detects)	0.0133		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)
For such situations, GROS method may yield incorrect values of UCLs and BTVs
This is especially true when the sample size is small.
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.009	Mean	0.0102
Maximum	0.02	Median	0.01
SD	0.00158	CV	0.154
k hat (MLE)	67.4	k star (bias corrected MLE)	62.49
Theta hat (MLE)	1.5198E-4	Theta star (bias corrected MLE)	1.6394E-4

TABLE B.5
PROUCL OUTPUT FOR SEDIMENT OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

nu hat (MLE)	5527	nu star (bias corrected)	5124
Adjusted Level of Significance (β)	0.0441		
Approximate Chi Square Value (N/A, α)	4958	Adjusted Chi Square Value (N/A, β)	4953
95% Gamma Approximate UCL (use when n>=50)	0.0106	95% Gamma Adjusted UCL (use when n<50)	N/A

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.00561	SD (KM)	0.00253
Variance (KM)	6.3843E-6	SE of Mean (KM)	4.8329E-4
k hat (KM)	4.929	k star (KM)	4.585
nu hat (KM)	404.2	nu star (KM)	376
theta hat (KM)	0.00114	theta star (KM)	0.00122
80% gamma percentile (KM)	0.00761	90% gamma percentile (KM)	0.00912
95% gamma percentile (KM)	0.0105	99% gamma percentile (KM)	0.0134

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (375.95, α)	332	Adjusted Chi Square Value (375.95, β)	330.5
95% Gamma Approximate KM-UCL (use when n>=50)	0.00635	95% Gamma Adjusted KM-UCL (use when n<50)	0.00638

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.924	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.767	Detected Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.292	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.425	Detected Data appear Lognormal at 5% Significance Level	

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.00193	Mean in Log Scale	-7.397
SD in Original Scale	0.0037	SD in Log Scale	1.575
95% t UCL (assumes normality of ROS data)	0.0029	95% Percentile Bootstrap UCL	0.00289
95% BCA Bootstrap UCL	0.00323	95% Bootstrap t UCL	0.00388
95% H-UCL (Log ROS)	0.00453		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-5.231	KM Geo Mean	0.00535
KM SD (logged)	0.257	95% Critical H Value (KM-Log)	1.752
KM Standard Error of Mean (logged)	0.0491	95% H-UCL (KM -Log)	0.00594
KM SD (logged)	0.257	95% Critical H Value (KM-Log)	1.752
KM Standard Error of Mean (logged)	0.0491		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.00329	Mean in Log Scale	-5.873
SD in Original Scale	0.00314	SD in Log Scale	0.436
95% t UCL (Assumes normality)	0.00412	95% H-Stat UCL	0.00351

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL 0.00642

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

result (outside cn row_se_na_acenaphthylene_208-96-8)

General Statistics

Total Number of Observations	41	Number of Distinct Observations	2
Number of Detects	1	Number of Non-Detects	40

TABLE B.5
PROUCL OUTPUT FOR SEDIMENT OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Number of Distinct Detects	1	Number of Distinct Non-Detects	1

Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!
It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable result (outside cn row_se_na_acenaphthylene_208-96-8) was not processed!

result (outside cn row_se_na_acridine_260-94-6)

General Statistics

Total Number of Observations	41	Number of Distinct Observations	3
Number of Detects	3	Number of Non-Detects	38
Number of Distinct Detects	2	Number of Distinct Non-Detects	1
Minimum Detect	0.012	Minimum Non-Detect	0.01
Maximum Detect	0.015	Maximum Non-Detect	0.01
Variance Detects	3.0000E-6	Percent Non-Detects	92.68%
Mean Detects	0.013	SD Detects	0.00173
Median Detects	0.012	CV Detects	0.133
Skewness Detects	1.732	Kurtosis Detects	N/A
Mean of Logged Detects	-4.348	SD of Logged Detects	0.129

Warning: Data set has only 3 Detected Values.
This is not enough to compute meaningful or reliable statistics and estimates.

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.75	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.767	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.385	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.425	Detected Data appear Normal at 5% Significance Level	

Detected Data appear Approximate Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.0102	KM Standard Error of Mean	1.6638E-4
KM SD	8.6988E-4	95% KM (BCA) UCL	N/A
95% KM (t) UCL	0.0105	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	0.0105	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	0.0107	95% KM Chebyshev UCL	0.0109
97.5% KM Chebyshev UCL	0.0113	99% KM Chebyshev UCL	0.0119

Gamma GOF Tests on Detected Observations Only
Not Enough Data to Perform GOF Test

Gamma Statistics on Detected Data Only

k hat (MLE)	88.48	k star (bias corrected MLE)	N/A
Theta hat (MLE)	1.4692E-4	Theta star (bias corrected MLE)	N/A
nu hat (MLE)	530.9	nu star (bias corrected)	N/A
Mean (detects)	0.013		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)
For such situations, GROS method may yield incorrect values of UCLs and BTVs
This is especially true when the sample size is small.
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	0.0102
Maximum	0.015	Median	0.01
SD	8.8069E-4	CV	0.0862
k hat (MLE)	170.8	k star (bias corrected MLE)	158.3
Theta hat (MLE)	5.9841E-5	Theta star (bias corrected MLE)	6.4559E-5
nu hat (MLE)	14004	nu star (bias corrected)	12980

TABLE B.5
PROUCL OUTPUT FOR SEDIMENT OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Adjusted Level of Significance (β)	0.0441		
Approximate Chi Square Value (N/A, α)	12717	Adjusted Chi Square Value (N/A, β)	12707
95% Gamma Approximate UCL (use when n>=50)	0.0104	95% Gamma Adjusted UCL (use when n<50)	N/A

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.0102	SD (KM)	8.6988E-4
Variance (KM)	7.5669E-7	SE of Mean (KM)	1.6638E-4
k hat (KM)	138	k star (KM)	127.9
nu hat (KM)	11318	nu star (KM)	10491
theta hat (KM)	7.4044E-5	theta star (KM)	7.9879E-5
80% gamma percentile (KM)	0.011	90% gamma percentile (KM)	0.0114
95% gamma percentile (KM)	0.0117	99% gamma percentile (KM)	0.0124

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (N/A, α)	10254	Adjusted Chi Square Value (N/A, β)	10245
95% Gamma Approximate KM-UCL (use when n>=50)	0.0105	95% Gamma Adjusted KM-UCL (use when n<50)	0.0105

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.75	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.767	Detected Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.385	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.425	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Approximate Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.00597	Mean in Log Scale	-5.222
SD in Original Scale	0.00284	SD in Log Scale	0.456
95% t UCL (assumes normality of ROS data)	0.00672	95% Percentile Bootstrap UCL	0.00673
95% BCA Bootstrap UCL	0.00679	95% Bootstrap t UCL	0.00684
95% H-UCL (Log ROS)	0.00685		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-4.586	KM Geo Mean	0.0102
KM SD (logged)	0.0727	95% Critical H Value (KM-Log)	N/A
KM Standard Error of Mean (logged)	0.0139	95% H-UCL (KM -Log)	N/A
KM SD (logged)	0.0727	95% Critical H Value (KM-Log)	N/A
KM Standard Error of Mean (logged)	0.0139		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.00559	Mean in Log Scale	-5.229
SD in Original Scale	0.00214	SD in Log Scale	0.252
95% t UCL (Assumes normality)	0.00615	95% H-Stat UCL	0.00593

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Approximate Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL 0.0105

When a data set follows an approximate (e.g., normal) distribution passing one of the GOF test
When applicable, it is suggested to use a UCL based upon a distribution (e.g., gamma) passing both GOF tests in ProUCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

result (outside cn row_se_na_benzo(a)anthracene_56-55-3)

General Statistics

TABLE B.5
PROUCL OUTPUT FOR SEDIMENT OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Total Number of Observations	41	Number of Distinct Observations	6
Number of Detects	5	Number of Non-Detects	36
Number of Distinct Detects	5	Number of Distinct Non-Detects	1
Minimum Detect	0.0081	Minimum Non-Detect	0.005
Maximum Detect	0.044	Maximum Non-Detect	0.005
Variance Detects	2.0908E-4	Percent Non-Detects	87.8%
Mean Detects	0.0215	SD Detects	0.0145
Median Detects	0.022	CV Detects	0.672
Skewness Detects	0.995	Kurtosis Detects	0.828
Mean of Logged Detects	-4.028	SD of Logged Detects	0.701

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.895	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.762	Detected Data appear Normal at 5% Significance Level	
Lilliefors Test Statistic	0.232	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.343	Detected Data appear Normal at 5% Significance Level	

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.00701	KM Standard Error of Mean	0.00123
KM SD	0.00704	95% KM (BCA) UCL	0.00895
95% KM (t) UCL	0.00909	95% KM (Percentile Bootstrap) UCL	0.00895
95% KM (z) UCL	0.00904	95% KM Bootstrap t UCL	0.00947
90% KM Chebyshev UCL	0.0107	95% KM Chebyshev UCL	0.0124
97.5% KM Chebyshev UCL	0.0147	99% KM Chebyshev UCL	0.0193

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.322	**Anderson-Darling GOF Test**	
5% A-D Critical Value	0.683	Detected data appear Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.239	**Kolmogorov-Smirnov GOF**	
5% K-S Critical Value	0.36	Detected data appear Gamma Distributed at 5% Significance Level	

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	2.791	k star (bias corrected MLE)	1.25
Theta hat (MLE)	0.00771	Theta star (bias corrected MLE)	0.0172
nu hat (MLE)	27.91	nu star (bias corrected)	12.5
Mean (detects)	0.0215		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)
For such situations, GROS method may yield incorrect values of UCLs and BTVs
This is especially true when the sample size is small.
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0081	Mean	0.0114
Maximum	0.044	Median	0.01
SD	0.00596	CV	0.522
k hat (MLE)	8.343	k star (bias corrected MLE)	7.749
Theta hat (MLE)	0.00137	Theta star (bias corrected MLE)	0.00147
nu hat (MLE)	684.1	nu star (bias corrected)	635.4
Adjusted Level of Significance (β)	0.0441		
Approximate Chi Square Value (635.40, α)	577.9	Adjusted Chi Square Value (635.40, β)	575.9
95% Gamma Approximate UCL (use when n>=50)	0.0125	95% Gamma Adjusted UCL (use when n<50)	0.0126

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.00701	SD (KM)	0.00704
Variance (KM)	4.9621E-5	SE of Mean (KM)	0.00123
k hat (KM)	0.992	k star (KM)	0.935
nu hat (KM)	81.31	nu star (KM)	76.7
theta hat (KM)	0.00707	theta star (KM)	0.0075
80% gamma percentile (KM)	0.0113	90% gamma percentile (KM)	0.0164

TABLE B.5
PROUCL OUTPUT FOR SEDIMENT OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

95% gamma percentile (KM)	0.0215	99% gamma percentile (KM)	0.0334

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (76.70, α)	57.52	Adjusted Chi Square Value (76.70, β)	56.92
95% Gamma Approximate KM-UCL (use when n>=50)	0.00935	95% Gamma Adjusted KM-UCL (use when n<50)	0.00945

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.924	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.762	Detected Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.219	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.343	Detected Data appear Lognormal at 5% Significance Level	

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.00345	Mean in Log Scale	-7.553
SD in Original Scale	0.0083	SD in Log Scale	2.097
95% t UCL (assumes normality of ROS data)	0.00563	95% Percentile Bootstrap UCL	0.00586
95% BCA Bootstrap UCL	0.00672	95% Bootstrap t UCL	0.00769
95% H-UCL (Log ROS)	0.0166		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-5.143	KM Geo Mean	0.00584
KM SD (logged)	0.47	95% Critical H Value (KM-Log)	1.875
KM Standard Error of Mean (logged)	0.082	95% H-UCL (KM -Log)	0.00749
KM SD (logged)	0.47	95% Critical H Value (KM-Log)	1.875
KM Standard Error of Mean (logged)	0.082		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.00482	Mean in Log Scale	-5.752
SD in Original Scale	0.00779	SD in Log Scale	0.687
95% t UCL (Assumes normality)	0.00687	95% H-Stat UCL	0.00502

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	0.00909

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

result (outside cn row_se_na_benzo(a)pyrene_50-32-8)

General Statistics

Total Number of Observations	41	Number of Distinct Observations	5
Number of Detects	4	Number of Non-Detects	37
Number of Distinct Detects	4	Number of Distinct Non-Detects	1
Minimum Detect	0.011	Minimum Non-Detect	0.005
Maximum Detect	0.047	Maximum Non-Detect	0.005
Variance Detects	2.1958E-4	Percent Non-Detects	90.24%
Mean Detects	0.0278	SD Detects	0.0148
Median Detects	0.0265	CV Detects	0.534
Skewness Detects	0.494	Kurtosis Detects	1.439
Mean of Logged Detects	-3.708	SD of Logged Detects	0.601

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.967	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.748	Detected Data appear Normal at 5% Significance Level	

TABLE B.5
PROUCL OUTPUT FOR SEDIMENT OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Lilliefors Test Statistic	0.243	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.375	Detected Data appear Normal at 5% Significance Level	

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.00722	KM Standard Error of Mean	0.00142
KM SD	0.00785	95% KM (BCA) UCL	N/A
95% KM (t) UCL	0.0096	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	0.00955	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	0.0115	95% KM Chebyshev UCL	0.0134
97.5% KM Chebyshev UCL	0.0161	99% KM Chebyshev UCL	0.0213

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.262	**Anderson-Darling GOF Test**	
5% A-D Critical Value	0.659	Detected data appear Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.232	**Kolmogorov-Smirnov GOF**	
5% K-S Critical Value	0.396	Detected data appear Gamma Distributed at 5% Significance Level	

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	4.21	k star (bias corrected MLE)	1.219
Theta hat (MLE)	0.00659	Theta star (bias corrected MLE)	0.0228
nu hat (MLE)	33.68	nu star (bias corrected)	9.752
Mean (detects)	0.0278		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)
For such situations, GROS method may yield incorrect values of UCLs and BTVs
This is especially true when the sample size is small.
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	0.0117
Maximum	0.047	Median	0.01
SD	0.0067	CV	0.571
k hat (MLE)	7.09	k star (bias corrected MLE)	6.587
Theta hat (MLE)	0.00165	Theta star (bias corrected MLE)	0.00178
nu hat (MLE)	581.4	nu star (bias corrected)	540.2
Adjusted Level of Significance (β)	0.0441		
Approximate Chi Square Value (540.16, α)	487.3	Adjusted Chi Square Value (540.16, β)	485.4
95% Gamma Approximate UCL (use when n>=50)	0.013	95% Gamma Adjusted UCL (use when n<50)	N/A

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.00722	SD (KM)	0.00785
Variance (KM)	6.1635E-5	SE of Mean (KM)	0.00142
k hat (KM)	0.846	k star (KM)	0.8
nu hat (KM)	69.34	nu star (KM)	65.6
theta hat (KM)	0.00854	theta star (KM)	0.00902
80% gamma percentile (KM)	0.0118	90% gamma percentile (KM)	0.0176
95% gamma percentile (KM)	0.0234	99% gamma percentile (KM)	0.0373

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (65.60, α)	47.97	Adjusted Chi Square Value (65.60, β)	47.41
95% Gamma Approximate KM-UCL (use when n>=50)	0.00987	95% Gamma Adjusted KM-UCL (use when n<50)	0.00999

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.954	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.748	Detected Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.263	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.375	Detected Data appear Lognormal at 5% Significance Level	

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

TABLE B.5
PROUCL OUTPUT FOR SEDIMENT OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Mean in Original Scale	0.00406	Mean in Log Scale	-7.114
SD in Original Scale	0.00907	SD in Log Scale	1.907
95% t UCL (assumes normality of ROS data)	0.00644	95% Percentile Bootstrap UCL	0.00661
95% BCA Bootstrap UCL	0.00729	95% Bootstrap t UCL	0.00945
95% H-UCL (Log ROS)	0.0144		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-5.143	KM Geo Mean	0.00584
KM SD (logged)	0.499	95% Critical H Value (KM-Log)	1.895
KM Standard Error of Mean (logged)	0.09	95% H-UCL (KM -Log)	0.00768
KM SD (logged)	0.499	95% Critical H Value (KM-Log)	1.895
KM Standard Error of Mean (logged)	0.09		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.00496	Mean in Log Scale	-5.769
SD in Original Scale	0.0086	SD in Log Scale	0.705
95% t UCL (Assumes normality)	0.00723	95% H-Stat UCL	0.00504

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL 0.0096

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

result (outside cn row_se_na_benzo(b&j)fluoranthene_205-99-2_205-82-3)

General Statistics

Total Number of Observations	41	Number of Distinct Observations	14
Number of Detects	15	Number of Non-Detects	26
Number of Distinct Detects	13	Number of Distinct Non-Detects	1
Minimum Detect	0.0072	Minimum Non-Detect	0.005
Maximum Detect	0.074	Maximum Non-Detect	0.005
Variance Detects	5.6307E-4	Percent Non-Detects	63.41%
Mean Detects	0.0252	SD Detects	0.0237
Median Detects	0.014	CV Detects	0.941
Skewness Detects	1.489	Kurtosis Detects	0.547
Mean of Logged Detects	-4	SD of Logged Detects	0.768

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.679	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.881	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.369	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.22	Detected Data Not Normal at 5% Significance Level	

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.0124	KM Standard Error of Mean	0.00274
KM SD	0.0169	95% KM (BCA) UCL	0.0176
95% KM (t) UCL	0.017	95% KM (Percentile Bootstrap) UCL	0.017
95% KM (z) UCL	0.0169	95% KM Bootstrap t UCL	0.0197
90% KM Chebyshev UCL	0.0206	95% KM Chebyshev UCL	0.0243
97.5% KM Chebyshev UCL	0.0295	99% KM Chebyshev UCL	0.0396

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	1.56	**Anderson-Darling GOF Test**

TABLE B.5
PROUCL OUTPUT FOR SEDIMENT OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

5% A-D Critical Value	0.751	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.32	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.225	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	1.714	k star (bias corrected MLE)	1.416
Theta hat (MLE)	0.0147	Theta star (bias corrected MLE)	0.0178
nu hat (MLE)	51.42	nu star (bias corrected)	42.47
Mean (detects)	0.0252		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)
For such situations, GROS method may yield incorrect values of UCLs and BTVs
This is especially true when the sample size is small.
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0072	Mean	0.0156
Maximum	0.074	Median	0.01
SD	0.0159	CV	1.02
k hat (MLE)	2.416	k star (bias corrected MLE)	2.256
Theta hat (MLE)	0.00644	Theta star (bias corrected MLE)	0.0069
nu hat (MLE)	198.1	nu star (bias corrected)	185
Adjusted Level of Significance (β)	0.0441		
Approximate Chi Square Value (184.98, α)	154.5	Adjusted Chi Square Value (184.98, β)	153.5
95% Gamma Approximate UCL (use when n>=50)	0.0186	95% Gamma Adjusted UCL (use when n<50)	0.0188

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.0124	SD (KM)	0.0169
Variance (KM)	2.8706E-4	SE of Mean (KM)	0.00274
k hat (KM)	0.535	k star (KM)	0.512
nu hat (KM)	43.89	nu star (KM)	42.01
theta hat (KM)	0.0232	theta star (KM)	0.0242
80% gamma percentile (KM)	0.0204	90% gamma percentile (KM)	0.0334
95% gamma percentile (KM)	0.0472	99% gamma percentile (KM)	0.0812

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (42.01, α)	28.15	Adjusted Chi Square Value (42.01, β)	27.74
95% Gamma Approximate KM-UCL (use when n>=50)	0.0185	95% Gamma Adjusted KM-UCL (use when n<50)	0.0188

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.834	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.881	Detected Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.272	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.22	Detected Data Not Lognormal at 5% Significance Level

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.0107	Mean in Log Scale	-5.55
SD in Original Scale	0.018	SD in Log Scale	1.483
95% t UCL (assumes normality of ROS data)	0.0154	95% Percentile Bootstrap UCL	0.0159
95% BCA Bootstrap UCL	0.0167	95% Bootstrap t UCL	0.0178
95% H-UCL (Log ROS)	0.0232		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-4.823	KM Geo Mean	0.00804
KM SD (logged)	0.77	95% Critical H Value (KM-Log)	2.118
KM Standard Error of Mean (logged)	0.124	95% H-UCL (KM -Log)	0.014
KM SD (logged)	0.77	95% Critical H Value (KM-Log)	2.118
KM Standard Error of Mean (logged)	0.124		

DL/2 Statistics

TABLE B.5
PROUCL OUTPUT FOR SEDIMENT OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.0108	Mean in Log Scale	-5.263
SD in Original Scale	0.0179	SD in Log Scale	1.072
95% t UCL (Assumes normality)	0.0155	95% H-Stat UCL	0.0139

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

95% KM (Chebyshev) UCL 0.0243

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

result (outside cn row_se_na_benzo(c)phenanthrene_195-19-7)

General Statistics

Total Number of Observations	41	Number of Distinct Observations	3
Number of Detects	2	Number of Non-Detects	39
Number of Distinct Detects	2	Number of Distinct Non-Detects	1
Minimum Detect	0.0082	Minimum Non-Detect	0.005
Maximum Detect	0.0088	Maximum Non-Detect	0.005
Variance Detects	1.8000E-7	Percent Non-Detects	95.12%
Mean Detects	0.0085	SD Detects	4.2426E-4
Median Detects	0.0085	CV Detects	0.0499
Skewness Detects	N/A	Kurtosis Detects	N/A
Mean of Logged Detects	-4.768	SD of Logged Detects	0.0499

Warning: Data set has only 2 Detected Values.
This is not enough to compute meaningful or reliable statistics and estimates.

Normal GOF Test on Detects Only

Not Enough Data to Perform GOF Test

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.00517	KM Standard Error of Mean	1.6716E-4
KM SD	7.5684E-4	95% KM (BCA) UCL	N/A
95% KM (t) UCL	0.00545	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	0.00545	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	0.00567	95% KM Chebyshev UCL	0.0059
97.5% KM Chebyshev UCL	0.00621	99% KM Chebyshev UCL	0.00683

Gamma GOF Tests on Detected Observations Only

Not Enough Data to Perform GOF Test

Gamma Statistics on Detected Data Only

k hat (MLE)	802.4	k star (bias corrected MLE)	N/A
Theta hat (MLE)	1.0593E-5	Theta star (bias corrected MLE)	N/A
nu hat (MLE)	3210	nu star (bias corrected)	N/A
Mean (detects)	0.0085		

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.00517	SD (KM)	7.5684E-4
Variance (KM)	5.7280E-7	SE of Mean (KM)	1.6716E-4
k hat (KM)	46.68	k star (KM)	43.28
nu hat (KM)	3827	nu star (KM)	3549
theta hat (KM)	1.1078E-4	theta star (KM)	1.1948E-4
80% gamma percentile (KM)	0.00582	90% gamma percentile (KM)	0.0062

TABLE B.5
PROUCL OUTPUT FOR SEDIMENT OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

95% gamma percentile (KM)	0.00653	99% gamma percentile (KM)	0.00717

Gamma Kaplan-Meier (KM) Statistics

		Adjusted Level of Significance (β)	0.0441
Approximate Chi Square Value (N/A, α)	3411	Adjusted Chi Square Value (N/A, β)	3406
95% Gamma Approximate KM-UCL (use when n>=50)	0.00538	95% Gamma Adjusted KM-UCL (use when n<50)	0.00539

Lognormal GOF Test on Detected Observations Only

Not Enough Data to Perform GOF Test

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.0054	Mean in Log Scale	-5.247
SD in Original Scale	0.00126	SD in Log Scale	0.229
95% t UCL (assumes normality of ROS data)	0.00573	95% Percentile Bootstrap UCL	0.00572
95% BCA Bootstrap UCL	0.00576	95% Bootstrap t UCL	0.00574
95% H-UCL (Log ROS)	0.00575		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-5.272	KM Geo Mean	0.00513
KM SD (logged)	0.114	95% Critical H Value (KM-Log)	1.695
KM Standard Error of Mean (logged)	0.0253	95% H-UCL (KM -Log)	0.00533
KM SD (logged)	0.114	95% Critical H Value (KM-Log)	1.695
KM Standard Error of Mean (logged)	0.0253		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.00279	Mean in Log Scale	-5.932
SD in Original Scale	0.00131	SD in Log Scale	0.267
95% t UCL (Assumes normality)	0.00314	95% H-Stat UCL	0.00296

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	0.00545	KM H-UCL	0.00533
95% KM (BCA) UCL	N/A		

Warning: One or more Recommended UCL(s) not available!

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

result (outside cn row_se_na_benzo(e)pyrene_192-97-2)

General Statistics

Total Number of Observations	41	Number of Distinct Observations	11
Number of Detects	10	Number of Non-Detects	31
Number of Distinct Detects	10	Number of Distinct Non-Detects	1
Minimum Detect	0.0074	Minimum Non-Detect	0.005
Maximum Detect	0.041	Maximum Non-Detect	0.005
Variance Detects	1.8875E-4	Percent Non-Detects	75.61%
Mean Detects	0.0187	SD Detects	0.0137
Median Detects	0.00985	CV Detects	0.734
Skewness Detects	0.898	Kurtosis Detects	-1.253
Mean of Logged Detects	-4.206	SD of Logged Detects	0.691

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.747	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.842	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.337	**Lilliefors GOF Test**	

TABLE B.5
PROUCL OUTPUT FOR SEDIMENT OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

5% Lilliefors Critical Value	0.262	Detected Data Not Normal at 5% Significance Level	

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.00834	KM Standard Error of Mean	0.00144
KM SD	0.00872	95% KM (BCA) UCL	0.0106
95% KM (t) UCL	0.0108	95% KM (Percentile Bootstrap) UCL	0.0108
95% KM (z) UCL	0.0107	95% KM Bootstrap t UCL	0.0118
90% KM Chebyshev UCL	0.0127	95% KM Chebyshev UCL	0.0146
97.5% KM Chebyshev UCL	0.0173	99% KM Chebyshev UCL	0.0226

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	1.118	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.734	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.34	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.269	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	2.353	k star (bias corrected MLE)	1.713
Theta hat (MLE)	0.00795	Theta star (bias corrected MLE)	0.0109
nu hat (MLE)	47.05	nu star (bias corrected)	34.27
Mean (detects)	0.0187		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)
For such situations, GROS method may yield incorrect values of UCLs and BTVs
This is especially true when the sample size is small.
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0074	Mean	0.0121
Maximum	0.041	Median	0.01
SD	0.00754	CV	0.622
k hat (MLE)	5.409	k star (bias corrected MLE)	5.029
Theta hat (MLE)	0.00224	Theta star (bias corrected MLE)	0.00241
nu hat (MLE)	443.5	nu star (bias corrected)	412.4
Adjusted Level of Significance (β)	0.0441		
Approximate Chi Square Value (412.39, α)	366.3	Adjusted Chi Square Value (412.39, β)	364.7
95% Gamma Approximate UCL (use when n>=50)	0.0136	95% Gamma Adjusted UCL (use when n<50)	0.0137

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.00834	SD (KM)	0.00872
Variance (KM)	7.6095E-5	SE of Mean (KM)	0.00144
k hat (KM)	0.915	k star (KM)	0.864
nu hat (KM)	75.02	nu star (KM)	70.87
theta hat (KM)	0.00912	theta star (KM)	0.00965
80% gamma percentile (KM)	0.0136	90% gamma percentile (KM)	0.0199
95% gamma percentile (KM)	0.0263	99% gamma percentile (KM)	0.0414

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (70.87, α)	52.49	Adjusted Chi Square Value (70.87, β)	51.91
95% Gamma Approximate KM-UCL (use when n>=50)	0.0113	95% Gamma Adjusted KM-UCL (use when n<50)	0.0114

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.797	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.842	Detected Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.318	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.262	Detected Data Not Lognormal at 5% Significance Level

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.00583	Mean in Log Scale	-6.223

TABLE B.5
PROUCL OUTPUT FOR SEDIMENT OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

SD in Original Scale	0.00995	SD in Log Scale	1.544
95% t UCL (assumes normality of ROS data)	0.00845	95% Percentile Bootstrap UCL	0.00858
95% BCA Bootstrap UCL	0.00938	95% Bootstrap t UCL	0.00969
95% H-UCL (Log ROS)	0.0136		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-5.032	KM Geo Mean	0.00653
KM SD (logged)	0.57	95% Critical H Value (KM-Log)	1.947
KM Standard Error of Mean (logged)	0.0938	95% H-UCL (KM -Log)	0.00915
KM SD (logged)	0.57	95% Critical H Value (KM-Log)	1.947
KM Standard Error of Mean (logged)	0.0938		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.00645	Mean in Log Scale	-5.556
SD in Original Scale	0.0096	SD in Log Scale	0.843
95% t UCL (Assumes normality)	0.00898	95% H-Stat UCL	0.00738

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

95% KM (Chebyshev) UCL	0.0146

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

result (outside cn row_se_na_benzo(g,h,i)perylene_191-24-2)

General Statistics

Total Number of Observations	41	Number of Distinct Observations	6
Number of Detects	5	Number of Non-Detects	36
Number of Distinct Detects	5	Number of Distinct Non-Detects	1
Minimum Detect	0.0075	Minimum Non-Detect	0.005
Maximum Detect	0.034	Maximum Non-Detect	0.005
Variance Detects	1.1595E-4	Percent Non-Detects	87.8%
Mean Detects	0.0207	SD Detects	0.0108
Median Detects	0.021	CV Detects	0.52
Skewness Detects	-0.00495	Kurtosis Detects	-1.677
Mean of Logged Detects	-4.011	SD of Logged Detects	0.611

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.972	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.762	Detected Data appear Normal at 5% Significance Level	
Lilliefors Test Statistic	0.163	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.343	Detected Data appear Normal at 5% Significance Level	

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.00691	KM Standard Error of Mean	0.00107
KM SD	0.00614	95% KM (BCA) UCL	0.00868
95% KM (t) UCL	0.00872	95% KM (Percentile Bootstrap) UCL	0.00856
95% KM (z) UCL	0.00868	95% KM Bootstrap t UCL	0.0083
90% KM Chebyshev UCL	0.0101	95% KM Chebyshev UCL	0.0116
97.5% KM Chebyshev UCL	0.0136	99% KM Chebyshev UCL	0.0176

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.231	**Anderson-Darling GOF Test**	
5% A-D Critical Value	0.681	Detected data appear Gamma Distributed at 5% Significance Level	

TABLE B.5
PROUCL OUTPUT FOR SEDIMENT OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

K-S Test Statistic	0.186	**Kolmogorov-Smirnov GOF**	
5% K-S Critical Value	0.359	Detected data appear Gamma Distributed at 5% Significance Level	

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	3.903	k star (bias corrected MLE)	1.694
Theta hat (MLE)	0.0053	Theta star (bias corrected MLE)	0.0122
nu hat (MLE)	39.03	nu star (bias corrected)	16.94
Mean (detects)	0.0207		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)
For such situations, GROS method may yield incorrect values of UCLs and BTVs
This is especially true when the sample size is small.
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0075	Mean	0.0113
Maximum	0.034	Median	0.01
SD	0.00492	CV	0.435
k hat (MLE)	10.12	k star (bias corrected MLE)	9.398
Theta hat (MLE)	0.00112	Theta star (bias corrected MLE)	0.0012
nu hat (MLE)	830	nu star (bias corrected)	770.6
Adjusted Level of Significance (β)	0.0441		
Approximate Chi Square Value (770.61, α)	707.2	Adjusted Chi Square Value (770.61, β)	705
95% Gamma Approximate UCL (use when n>=50)	0.0123	95% Gamma Adjusted UCL (use when n<50)	0.0124

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.00691	SD (KM)	0.00614
Variance (KM)	3.7706E-5	SE of Mean (KM)	0.00107
k hat (KM)	1.268	k star (KM)	1.191
nu hat (KM)	104	nu star (KM)	97.7
theta hat (KM)	0.00545	theta star (KM)	0.0058
80% gamma percentile (KM)	0.011	90% gamma percentile (KM)	0.0152
95% gamma percentile (KM)	0.0195	99% gamma percentile (KM)	0.0292

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (97.70, α)	75.9	Adjusted Chi Square Value (97.70, β)	75.2
95% Gamma Approximate KM-UCL (use when n>=50)	0.0089	95% Gamma Adjusted KM-UCL (use when n<50)	0.00898

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.946	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.762	Detected Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.196	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.343	Detected Data appear Lognormal at 5% Significance Level	

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.00373	Mean in Log Scale	-6.98
SD in Original Scale	0.00741	SD in Log Scale	1.768
95% t UCL (assumes normality of ROS data)	0.00568	95% Percentile Bootstrap UCL	0.00577
95% BCA Bootstrap UCL	0.00644	95% Bootstrap t UCL	0.00724
95% H-UCL (Log ROS)	0.0112		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-5.141	KM Geo Mean	0.00585
KM SD (logged)	0.462	95% Critical H Value (KM-Log)	1.87
KM Standard Error of Mean (logged)	0.0808	95% H-UCL (KM -Log)	0.00746
KM SD (logged)	0.462	95% Critical H Value (KM-Log)	1.87
KM Standard Error of Mean (logged)	0.0808		

DL/2 Statistics

DL/2 Normal	**DL/2 Log-Transformed**

TABLE B.5
PROUCL OUTPUT FOR SEDIMENT OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Mean in Original Scale	0.00472	Mean in Log Scale	-5.75
SD in Original Scale	0.00692	SD in Log Scale	0.684
95% t UCL (Assumes normality)	0.00654	95% H-Stat UCL	0.00501

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL 0.00872

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

result (outside cn row_se_na_benzo(k)fluoranthene_207-08-9)

General Statistics

Total Number of Observations	41	Number of Distinct Observations	5
Number of Detects	4	Number of Non-Detects	37
Number of Distinct Detects	4	Number of Distinct Non-Detects	1
Minimum Detect	0.0098	Minimum Non-Detect	0.005
Maximum Detect	0.026	Maximum Non-Detect	0.005
Variance Detects	4.8227E-5	Percent Non-Detects	90.24%
Mean Detects	0.0197	SD Detects	0.00694
Median Detects	0.0215	CV Detects	0.353
Skewness Detects	-1.405	Kurtosis Detects	2.569
Mean of Logged Detects	-3.989	SD of Logged Detects	0.434

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.883	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.748	Detected Data appear Normal at 5% Significance Level	
Lilliefors Test Statistic	0.324	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.375	Detected Data appear Normal at 5% Significance Level	

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.00643	KM Standard Error of Mean	8.5642E-4
KM SD	0.00475	95% KM (BCA) UCL	N/A
95% KM (t) UCL	0.00788	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	0.00784	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	0.009	95% KM Chebyshev UCL	0.0102
97.5% KM Chebyshev UCL	0.0118	99% KM Chebyshev UCL	0.015

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.516	**Anderson-Darling GOF Test**	
5% A-D Critical Value	0.658	Detected data appear Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.368	**Kolmogorov-Smirnov GOF**	
5% K-S Critical Value	0.395	Detected data appear Gamma Distributed at 5% Significance Level	

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	8.279	k star (bias corrected MLE)	2.236
Theta hat (MLE)	0.00238	Theta star (bias corrected MLE)	0.00881
nu hat (MLE)	66.23	nu star (bias corrected)	17.89
Mean (detects)	0.0197		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)
For such situations, GROS method may yield incorrect values of UCLs and BTVs

TABLE B.5
PROUCL OUTPUT FOR SEDIMENT OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0098	Mean	0.0109
Maximum	0.026	Median	0.01
SD	0.00348	CV	0.318
k hat (MLE)	16.68	k star (bias corrected MLE)	15.47
Theta hat (MLE)	6.5638E-4	Theta star (bias corrected MLE)	7.0745E-4
nu hat (MLE)	1368	nu star (bias corrected)	1269
Adjusted Level of Significance (β)	0.0441		
Approximate Chi Square Value (N/A, α)	1187	Adjusted Chi Square Value (N/A, β)	1184
95% Gamma Approximate UCL (use when n>=50)	0.0117	95% Gamma Adjusted UCL (use when n<50)	N/A

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.00643	SD (KM)	0.00475
Variance (KM)	2.2554E-5	SE of Mean (KM)	8.5642E-4
k hat (KM)	1.836	k star (KM)	1.717
nu hat (KM)	150.5	nu star (KM)	140.8
theta hat (KM)	0.00351	theta star (KM)	0.00375
80% gamma percentile (KM)	0.00981	90% gamma percentile (KM)	0.013
95% gamma percentile (KM)	0.016	99% gamma percentile (KM)	0.0229

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (140.83, α)	114.4	Adjusted Chi Square Value (140.83, β)	113.5
95% Gamma Approximate KM-UCL (use when n>=50)	0.00792	95% Gamma Adjusted KM-UCL (use when n<50)	0.00798

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.813	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.748	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.364	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.375	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.00428	Mean in Log Scale	-6.147
SD in Original Scale	0.00591	SD in Log Scale	1.21
95% t UCL (assumes normality of ROS data)	0.00584	95% Percentile Bootstrap UCL	0.00586
95% BCA Bootstrap UCL	0.00624	95% Bootstrap t UCL	0.00637
95% H-UCL (Log ROS)	0.0073		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-5.171	KM Geo Mean	0.00568
KM SD (logged)	0.406	95% Critical H Value (KM-Log)	1.834
KM Standard Error of Mean (logged)	0.0732	95% H-UCL (KM -Log)	0.00694
KM SD (logged)	0.406	95% Critical H Value (KM-Log)	1.834
KM Standard Error of Mean (logged)	0.0732		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.00418	Mean in Log Scale	-5.796
SD in Original Scale	0.00551	SD in Log Scale	0.613
95% t UCL (Assumes normality)	0.00563	95% H-Stat UCL	0.00445

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	0.00788

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

TABLE B.5
PROUCL OUTPUT FOR SEDIMENT OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

result (outside cn row_se_na_fluoranthene_206-44-0)

General Statistics

Total Number of Observations	41	Number of Distinct Observations	15
Number of Detects	17	Number of Non-Detects	24
Number of Distinct Detects	14	Number of Distinct Non-Detects	1
Minimum Detect	0.0074	Minimum Non-Detect	0.005
Maximum Detect	0.15	Maximum Non-Detect	0.005
Variance Detects	0.0014	Percent Non-Detects	58.54%
Mean Detects	0.0305	SD Detects	0.0374
Median Detects	0.016	CV Detects	1.226
Skewness Detects	2.53	Kurtosis Detects	6.572
Mean of Logged Detects	-3.927	SD of Logged Detects	0.868

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.635	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.892	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.306	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.207	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.0156	KM Standard Error of Mean	0.00427
KM SD	0.0265	95% KM (BCA) UCL	0.0232
95% KM (t) UCL	0.0228	95% KM (Percentile Bootstrap) UCL	0.0229
95% KM (z) UCL	0.0226	95% KM Bootstrap t UCL	0.0328
90% KM Chebyshev UCL	0.0284	95% KM Chebyshev UCL	0.0342
97.5% KM Chebyshev UCL	0.0422	99% KM Chebyshev UCL	0.0581

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	1.251	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.76	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.263	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.214	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	1.286	k star (bias corrected MLE)	1.098
Theta hat (MLE)	0.0237	Theta star (bias corrected MLE)	0.0278
nu hat (MLE)	43.71	nu star (bias corrected)	37.33
Mean (detects)	0.0305		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)
For such situations, GROS method may yield incorrect values of UCLs and BTVs
This is especially true when the sample size is small.
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0074	Mean	0.0185
Maximum	0.15	Median	0.01
SD	0.0258	CV	1.393
k hat (MLE)	1.644	k star (bias corrected MLE)	1.54
Theta hat (MLE)	0.0113	Theta star (bias corrected MLE)	0.012
nu hat (MLE)	134.8	nu star (bias corrected)	126.3
Adjusted Level of Significance (β)	0.0441		
Approximate Chi Square Value (126.29, α)	101.3	Adjusted Chi Square Value (126.29, β)	100.5
95% Gamma Approximate UCL (use when n>=50)	0.0231	95% Gamma Adjusted UCL (use when n<50)	0.0232

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.0156	SD (KM)	0.0265

TABLE B.5
PROUCL OUTPUT FOR SEDIMENT OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Variance (KM)	7.0378E-4	SE of Mean (KM)	0.00427
k hat (KM)	0.345	k star (KM)	0.336
nu hat (KM)	28.26	nu star (KM)	27.52
theta hat (KM)	0.0452	theta star (KM)	0.0464
80% gamma percentile (KM)	0.0245	90% gamma percentile (KM)	0.0453
95% gamma percentile (KM)	0.0687	99% gamma percentile (KM)	0.129

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (27.52, α)	16.56	Adjusted Chi Square Value (27.52, β)	16.25
95% Gamma Approximate KM-UCL (use when n>=50)	0.0259	95% Gamma Adjusted KM-UCL (use when n<50)	0.0264

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.889	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.892	Detected Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.215	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.207	Detected Data Not Lognormal at 5% Significance Level	

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.0138	Mean in Log Scale	-5.495
SD in Original Scale	0.0276	SD in Log Scale	1.635
95% t UCL (assumes normality of ROS data)	0.0211	95% Percentile Bootstrap UCL	0.0222
95% BCA Bootstrap UCL	0.0248	95% Bootstrap t UCL	0.0298
95% H-UCL (Log ROS)	0.0352		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-4.73	KM Geo Mean	0.00883
KM SD (logged)	0.866	95% Critical H Value (KM-Log)	2.211
KM Standard Error of Mean (logged)	0.139	95% H-UCL (KM -Log)	0.0174
KM SD (logged)	0.866	95% Critical H Value (KM-Log)	2.211
KM Standard Error of Mean (logged)	0.139		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.0141	Mean in Log Scale	-5.135
SD in Original Scale	0.0275	SD in Log Scale	1.167
95% t UCL (Assumes normality)	0.0213	95% H-Stat UCL	0.0186

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

95% KM (Chebyshev) UCL	0.0342

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

result (outside cn row_se_na_indeno(1,2,3-cd)pyrene_193-39-5)

General Statistics

Total Number of Observations	41	Number of Distinct Observations	5
Number of Detects	4	Number of Non-Detects	37
Number of Distinct Detects	4	Number of Distinct Non-Detects	1
Minimum Detect	0.015	Minimum Non-Detect	0.005
Maximum Detect	0.033	Maximum Non-Detect	0.005
Variance Detects	7.3667E-5	Percent Non-Detects	90.24%
Mean Detects	0.0255	SD Detects	0.00858
Median Detects	0.027	CV Detects	0.337
Skewness Detects	-0.531	Kurtosis Detects	-2.902

TABLE B.5
PROUCL OUTPUT FOR SEDIMENT OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Mean of Logged Detects	-3.717	SD of Logged Detects	0.371

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.893	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.748	Detected Data appear Normal at 5% Significance Level	
Lilliefors Test Statistic	0.276	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.375	Detected Data appear Normal at 5% Significance Level	

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.007	KM Standard Error of Mean	0.00117
KM SD	0.00651	95% KM (BCA) UCL	N/A
95% KM (t) UCL	0.00898	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	0.00893	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	0.0105	95% KM Chebyshev UCL	0.0121
97.5% KM Chebyshev UCL	0.0143	99% KM Chebyshev UCL	0.0187

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.383	**Anderson-Darling GOF Test**	
5% A-D Critical Value	0.657	Detected data appear Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.307	**Kolmogorov-Smirnov GOF**	
5% K-S Critical Value	0.395	Detected data appear Gamma Distributed at 5% Significance Level	

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	10.51	k star (bias corrected MLE)	2.793
Theta hat (MLE)	0.00243	Theta star (bias corrected MLE)	0.00913
nu hat (MLE)	84.05	nu star (bias corrected)	22.35
Mean (detects)	0.0255		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)
For such situations, GROS method may yield incorrect values of UCLs and BTVs
This is especially true when the sample size is small.
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	0.0115
Maximum	0.033	Median	0.01
SD	0.00521	CV	0.451
k hat (MLE)	9.425	k star (bias corrected MLE)	8.752
Theta hat (MLE)	0.00122	Theta star (bias corrected MLE)	0.00132
nu hat (MLE)	772.9	nu star (bias corrected)	717.7
Adjusted Level of Significance (β)	0.0441		
Approximate Chi Square Value (717.66, α)	656.5	Adjusted Chi Square Value (717.66, β)	654.4
95% Gamma Approximate UCL (use when n>=50)	0.0126	95% Gamma Adjusted UCL (use when n<50)	N/A

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.007	SD (KM)	0.00651
Variance (KM)	4.2390E-5	SE of Mean (KM)	0.00117
k hat (KM)	1.156	k star (KM)	1.088
nu hat (KM)	94.79	nu star (KM)	89.18
theta hat (KM)	0.00606	theta star (KM)	0.00644
80% gamma percentile (KM)	0.0112	90% gamma percentile (KM)	0.0158
95% gamma percentile (KM)	0.0204	99% gamma percentile (KM)	0.0309

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (89.18, α)	68.41	Adjusted Chi Square Value (89.18, β)	67.75
95% Gamma Approximate KM-UCL (use when n>=50)	0.00913	95% Gamma Adjusted KM-UCL (use when n<50)	0.00922

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.887	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.748	Detected Data appear Lognormal at 5% Significance Level	

TABLE B.5
PROUCL OUTPUT FOR SEDIMENT OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Lilliefors Test Statistic	0.271	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.375	Detected Data appear Lognormal at 5% Significance Level	

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.00593	Mean in Log Scale	-5.737
SD in Original Scale	0.00758	SD in Log Scale	1.131
95% t UCL (assumes normality of ROS data)	0.00792	95% Percentile Bootstrap UCL	0.00787
95% BCA Bootstrap UCL	0.00851	95% Bootstrap t UCL	0.0088
95% H-UCL (Log ROS)	0.00955		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-5.144	KM Geo Mean	0.00583
KM SD (logged)	0.48	95% Critical H Value (KM-Log)	1.882
KM Standard Error of Mean (logged)	0.0865	95% H-UCL (KM -Log)	0.00755
KM SD (logged)	0.48	95% Critical H Value (KM-Log)	1.882
KM Standard Error of Mean (logged)	0.0865		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.00474	Mean in Log Scale	-5.77
SD in Original Scale	0.0073	SD in Log Scale	0.691
95% t UCL (Assumes normality)	0.00666	95% H-Stat UCL	0.00495

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	0.00898

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

result (outside cn row_se_na_methylnaphthalene, 2-_91-57-6)

General Statistics

Total Number of Observations	41	Number of Distinct Observations	9
Number of Detects	11	Number of Non-Detects	30
Number of Distinct Detects	8	Number of Distinct Non-Detects	1
Minimum Detect	0.008	Minimum Non-Detect	0.005
Maximum Detect	0.024	Maximum Non-Detect	0.005
Variance Detects	1.7164E-5	Percent Non-Detects	73.17%
Mean Detects	0.014	SD Detects	0.00414
Median Detects	0.014	CV Detects	0.296
Skewness Detects	1.236	Kurtosis Detects	3.13
Mean of Logged Detects	-4.307	SD of Logged Detects	0.284

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.899	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.85	Detected Data appear Normal at 5% Significance Level	
Lilliefors Test Statistic	0.222	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.251	Detected Data appear Normal at 5% Significance Level	

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.00741	KM Standard Error of Mean	7.3295E-4
KM SD	0.00447	95% KM (BCA) UCL	0.00856
95% KM (t) UCL	0.00864	95% KM (Percentile Bootstrap) UCL	0.00868
95% KM (z) UCL	0.00862	95% KM Bootstrap t UCL	0.0089

TABLE B.5
PROUCL OUTPUT FOR SEDIMENT OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

90% KM Chebyshev UCL	0.00961	95% KM Chebyshev UCL	0.0106
97.5% KM Chebyshev UCL	0.012	99% KM Chebyshev UCL	0.0147

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.328	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.729	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.184	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.255	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	13.6	k star (bias corrected MLE)	9.952
Theta hat (MLE)	0.00103	Theta star (bias corrected MLE)	0.0014
nu hat (MLE)	299.2	nu star (bias corrected)	218.9
Mean (detects)	0.014		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)
For such situations, GROS method may yield incorrect values of UCLs and BTVs
This is especially true when the sample size is small.
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.008	Mean	0.0111
Maximum	0.024	Median	0.01
SD	0.00274	CV	0.247
k hat (MLE)	23.36	k star (bias corrected MLE)	21.66
Theta hat (MLE)	4.7387E-4	Theta star (bias corrected MLE)	5.1089E-4
nu hat (MLE)	1915	nu star (bias corrected)	1776
Adjusted Level of Significance (β)	0.0441		
Approximate Chi Square Value (N/A, α)	1680	Adjusted Chi Square Value (N/A, β)	1676
95% Gamma Approximate UCL (use when n>=50)	0.0117	95% Gamma Adjusted UCL (use when n<50)	0.0117

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.00741	SD (KM)	0.00447
Variance (KM)	2.0023E-5	SE of Mean (KM)	7.3295E-4
k hat (KM)	2.742	k star (KM)	2.558
nu hat (KM)	224.8	nu star (KM)	209.7
theta hat (KM)	0.0027	theta star (KM)	0.0029
80% gamma percentile (KM)	0.0108	90% gamma percentile (KM)	0.0136
95% gamma percentile (KM)	0.0163	99% gamma percentile (KM)	0.0221

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (209.73, α)	177.2	Adjusted Chi Square Value (209.73, β)	176.1
95% Gamma Approximate KM-UCL (use when n>=50)	0.00877	95% Gamma Adjusted KM-UCL (use when n<50)	0.00882

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.958	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.85	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.182	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.251	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.00753	Mean in Log Scale	-5.068
SD in Original Scale	0.00478	SD in Log Scale	0.61
95% t UCL (assumes normality of ROS data)	0.00879	95% Percentile Bootstrap UCL	0.00883
95% BCA Bootstrap UCL	0.00903	95% Bootstrap t UCL	0.0091
95% H-UCL (Log ROS)	0.00917		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-5.032	KM Geo Mean	0.00652
KM SD (logged)	0.461	95% Critical H Value (KM-Log)	1.869

TABLE B.5
PROUCL OUTPUT FOR SEDIMENT OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

KM Standard Error of Mean (logged)	0.0755	95% H-UCL (KM -Log)	0.00831
KM SD (logged)	0.461	95% Critical H Value (KM-Log)	1.869
KM Standard Error of Mean (logged)	0.0755		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.00558	Mean in Log Scale	-5.54
SD in Original Scale	0.00555	SD in Log Scale	0.769
95% t UCL (Assumes normality)	0.00704	95% H-Stat UCL	0.00683

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	0.00864

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

result (outside cn row_se_na_naphthalene_91-20-3)

General Statistics

Total Number of Observations	41	Number of Distinct Observations	7
Number of Detects	6	Number of Non-Detects	35
Number of Distinct Detects	6	Number of Distinct Non-Detects	1
Minimum Detect	0.0085	Minimum Non-Detect	0.005
Maximum Detect	0.068	Maximum Non-Detect	0.005
Variance Detects	5.6825E-4	Percent Non-Detects	85.37%
Mean Detects	0.0196	SD Detects	0.0238
Median Detects	0.0088	CV Detects	1.215
Skewness Detects	2.39	Kurtosis Detects	5.755
Mean of Logged Detects	-4.313	SD of Logged Detects	0.826

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.565	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.788	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.41	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.325	Detected Data Not Normal at 5% Significance Level	

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.00714	KM Standard Error of Mean	0.00168
KM SD	0.0098	95% KM (BCA) UCL	0.0101
95% KM (t) UCL	0.00996	95% KM (Percentile Bootstrap) UCL	0.01
95% KM (z) UCL	0.0099	95% KM Bootstrap t UCL	0.0203
90% KM Chebyshev UCL	0.0122	95% KM Chebyshev UCL	0.0144
97.5% KM Chebyshev UCL	0.0176	99% KM Chebyshev UCL	0.0238

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	1.224	**Anderson-Darling GOF Test**	
5% A-D Critical Value	0.708	Detected Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.375	**Kolmogorov-Smirnov GOF**	
5% K-S Critical Value	0.338	Detected Data Not Gamma Distributed at 5% Significance Level	

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	1.455	k star (bias corrected MLE)	0.838
Theta hat (MLE)	0.0135	Theta star (bias corrected MLE)	0.0234
nu hat (MLE)	17.45	nu star (bias corrected)	10.06

TABLE B.5
PROUCL OUTPUT FOR SEDIMENT OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Mean (detects)	0.0196		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)
For such situations, GROS method may yield incorrect values of UCLs and BTVs
This is especially true when the sample size is small.
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0085	Mean	0.0114
Maximum	0.068	Median	0.01
SD	0.0091	CV	0.798
k hat (MLE)	5.785	k star (bias corrected MLE)	5.378
Theta hat (MLE)	0.00197	Theta star (bias corrected MLE)	0.00212
nu hat (MLE)	474.4	nu star (bias corrected)	441
Adjusted Level of Significance (β)	0.0441		
Approximate Chi Square Value (441.02, α)	393.3	Adjusted Chi Square Value (441.02, β)	391.7
95% Gamma Approximate UCL (use when n>=50)	0.0128	95% Gamma Adjusted UCL (use when n<50)	0.0128

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.00714	SD (KM)	0.0098
Variance (KM)	9.5988E-5	SE of Mean (KM)	0.00168
k hat (KM)	0.531	k star (KM)	0.508
nu hat (KM)	43.54	nu star (KM)	41.69
theta hat (KM)	0.0134	theta star (KM)	0.014
80% gamma percentile (KM)	0.0117	90% gamma percentile (KM)	0.0192
95% gamma percentile (KM)	0.0273	99% gamma percentile (KM)	0.0469

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (41.69, α)	27.89	Adjusted Chi Square Value (41.69, β)	27.47
95% Gamma Approximate KM-UCL (use when n>=50)	0.0107	95% Gamma Adjusted KM-UCL (use when n<50)	0.0108

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.656	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.788	Detected Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.356	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.325	Detected Data Not Lognormal at 5% Significance Level	

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.00349	Mean in Log Scale	-7.691
SD in Original Scale	0.0108	SD in Log Scale	2.129
95% t UCL (assumes normality of ROS data)	0.00634	95% Percentile Bootstrap UCL	0.00684
95% BCA Bootstrap UCL	0.00868	95% Bootstrap t UCL	0.0126
95% H-UCL (Log ROS)	0.0159		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-5.154	KM Geo Mean	0.00578
KM SD (logged)	0.452	95% Critical H Value (KM-Log)	1.863
KM Standard Error of Mean (logged)	0.0774	95% H-UCL (KM -Log)	0.00731
KM SD (logged)	0.452	95% Critical H Value (KM-Log)	1.863
KM Standard Error of Mean (logged)	0.0774		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.005	Mean in Log Scale	-5.746
SD in Original Scale	0.0104	SD in Log Scale	0.668
95% t UCL (Assumes normality)	0.00774	95% H-Stat UCL	0.00495

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

TABLE B.5
PROUCL OUTPUT FOR SEDIMENT OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Suggested UCL to Use

95% KM (Chebyshev) UCL 0.0144

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

result (outside cn row_se_na_perylene_198-55-0)

General Statistics

Total Number of Observations	41	Number of Distinct Observations	21
Number of Detects	35	Number of Non-Detects	6
Number of Distinct Detects	20	Number of Distinct Non-Detects	1
Minimum Detect	0.0066	Minimum Non-Detect	0.005
Maximum Detect	0.33	Maximum Non-Detect	0.005
Variance Detects	0.00382	Percent Non-Detects	14.63%
Mean Detects	0.0339	SD Detects	0.0618
Median Detects	0.016	CV Detects	1.825
Skewness Detects	4.132	Kurtosis Detects	17.52
Mean of Logged Detects	-3.894	SD of Logged Detects	0.778

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.388	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.934	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.43	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.148	Detected Data Not Normal at 5% Significance Level	

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.0296	KM Standard Error of Mean	0.00907
KM SD	0.0572	95% KM (BCA) UCL	0.0488
95% KM (t) UCL	0.0449	95% KM (Percentile Bootstrap) UCL	0.0467
95% KM (z) UCL	0.0446	95% KM Bootstrap t UCL	0.103
90% KM Chebyshev UCL	0.0568	95% KM Chebyshev UCL	0.0692
97.5% KM Chebyshev UCL	0.0863	99% KM Chebyshev UCL	0.12

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	5.187	**Anderson-Darling GOF Test**	
5% A-D Critical Value	0.774	Detected Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.349	**Kolmogorov-Smirnov GOF**	
5% K-S Critical Value	0.153	Detected Data Not Gamma Distributed at 5% Significance Level	

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	1.12	k star (bias corrected MLE)	1.043
Theta hat (MLE)	0.0302	Theta star (bias corrected MLE)	0.0325
nu hat (MLE)	78.41	nu star (bias corrected)	73.02
Mean (detects)	0.0339		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)
For such situations, GROS method may yield incorrect values of UCLs and BTVs
This is especially true when the sample size is small.
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0066	Mean	0.0304
Maximum	0.33	Median	0.016
SD	0.0576	CV	1.897
k hat (MLE)	1.13	k star (bias corrected MLE)	1.063
Theta hat (MLE)	0.0269	Theta star (bias corrected MLE)	0.0286
nu hat (MLE)	92.63	nu star (bias corrected)	87.19

TABLE B.5
PROUCL OUTPUT FOR SEDIMENT OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Adjusted Level of Significance (β)	0.0441		
Approximate Chi Square Value (87.19, α)	66.66	Adjusted Chi Square Value (87.19, β)	66.01
95% Gamma Approximate UCL (use when n>=50)	0.0397	95% Gamma Adjusted UCL (use when n<50)	0.0401

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.0296	SD (KM)	0.0572
Variance (KM)	0.00327	SE of Mean (KM)	0.00907
k hat (KM)	0.268	k star (KM)	0.265
nu hat (KM)	22.01	nu star (KM)	21.74
theta hat (KM)	0.11	theta star (KM)	0.112
80% gamma percentile (KM)	0.0439	90% gamma percentile (KM)	0.0886
95% gamma percentile (KM)	0.141	99% gamma percentile (KM)	0.279

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (21.74, α)	12.14	Adjusted Chi Square Value (21.74, β)	11.88
95% Gamma Approximate KM-UCL (use when n>=50)	0.0531	95% Gamma Adjusted KM-UCL (use when n<50)	0.0542

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.77	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.934	Detected Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.253	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.148	Detected Data Not Lognormal at 5% Significance Level	

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.0295	Mean in Log Scale	-4.129
SD in Original Scale	0.058	SD in Log Scale	0.926
95% t UCL (assumes normality of ROS data)	0.0448	95% Percentile Bootstrap UCL	0.0453
95% BCA Bootstrap UCL	0.0537	95% Bootstrap t UCL	0.101
95% H-UCL (Log ROS)	0.0345		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-4.1	KM Geo Mean	0.0166
KM SD (logged)	0.865	95% Critical H Value (KM-Log)	2.21
KM Standard Error of Mean (logged)	0.137	95% H-UCL (KM -Log)	0.0326
KM SD (logged)	0.865	95% Critical H Value (KM-Log)	2.21
KM Standard Error of Mean (logged)	0.137		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.0293	Mean in Log Scale	-4.201
SD in Original Scale	0.0581	SD in Log Scale	1.038
95% t UCL (Assumes normality)	0.0446	95% H-Stat UCL	0.038

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

95% KM (Chebyshev) UCL	0.0692

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

result (outside cn row_se_na_phenanthrene_85-01-8)

General Statistics

Total Number of Observations	41	Number of Distinct Observations	14
Number of Detects	15	Number of Non-Detects	26
Number of Distinct Detects	13	Number of Distinct Non-Detects	1

TABLE B.5
PROUCL OUTPUT FOR SEDIMENT OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Minimum Detect	0.01	Minimum Non-Detect	0.005
Maximum Detect	0.13	Maximum Non-Detect	0.005
Variance Detects	9.1778E-4	Percent Non-Detects	63.41%
Mean Detects	0.0303	SD Detects	0.0303
Median Detects	0.02	CV Detects	1.001
Skewness Detects	2.882	Kurtosis Detects	9.263
Mean of Logged Detects	-3.771	SD of Logged Detects	0.691

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.631	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.881	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.317	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.22	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.0142	KM Standard Error of Mean	0.00347
KM SD	0.0215	95% KM (BCA) UCL	0.0203
95% KM (t) UCL	0.0201	95% KM (Percentile Bootstrap) UCL	0.0203
95% KM (z) UCL	0.02	95% KM Bootstrap t UCL	0.0259
90% KM Chebyshev UCL	0.0247	95% KM Chebyshev UCL	0.0294
97.5% KM Chebyshev UCL	0.0359	99% KM Chebyshev UCL	0.0488

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.849	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.747	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.228	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.224	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	1.978	k star (bias corrected MLE)	1.626
Theta hat (MLE)	0.0153	Theta star (bias corrected MLE)	0.0186
nu hat (MLE)	59.33	nu star (bias corrected)	48.79
Mean (detects)	0.0303		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)
For such situations, GROS method may yield incorrect values of UCLs and BTVs
This is especially true when the sample size is small.
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	0.0174
Maximum	0.13	Median	0.01
SD	0.0205	CV	1.175
k hat (MLE)	2.154	k star (bias corrected MLE)	2.013
Theta hat (MLE)	0.00808	Theta star (bias corrected MLE)	0.00865
nu hat (MLE)	176.7	nu star (bias corrected)	165.1
Adjusted Level of Significance (β)	0.0441		
Approximate Chi Square Value (165.07, α)	136.4	Adjusted Chi Square Value (165.07, β)	135.4
95% Gamma Approximate UCL (use when n>=50)	0.0211	95% Gamma Adjusted UCL (use when n<50)	0.0212

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.0142	SD (KM)	0.0215
Variance (KM)	4.6150E-4	SE of Mean (KM)	0.00347
k hat (KM)	0.44	k star (KM)	0.424
nu hat (KM)	36.05	nu star (KM)	34.75
theta hat (KM)	0.0324	theta star (KM)	0.0336
80% gamma percentile (KM)	0.0231	90% gamma percentile (KM)	0.0398
95% gamma percentile (KM)	0.058	99% gamma percentile (KM)	0.103

Gamma Kaplan-Meier (KM) Statistics

TABLE B.5
PROUCL OUTPUT FOR SEDIMENT OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Approximate Chi Square Value (34.75, α)	22.26	Adjusted Chi Square Value (34.75, β)	21.89
95% Gamma Approximate KM-UCL (use when n>=50)	0.0222	95% Gamma Adjusted KM-UCL (use when n<50)	0.0226

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.912	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.881	Detected Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.169	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.22	Detected Data appear Lognormal at 5% Significance Level	

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.0132	Mean in Log Scale	-5.204
SD in Original Scale	0.0223	SD in Log Scale	1.367
95% t UCL (assumes normality of ROS data)	0.019	95% Percentile Bootstrap UCL	0.0195
95% BCA Bootstrap UCL	0.0218	95% Bootstrap t UCL	0.0243
95% H-UCL (Log ROS)	0.0255		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-4.74	KM Geo Mean	0.00874
KM SD (logged)	0.839	95% Critical H Value (KM-Log)	2.184
KM Standard Error of Mean (logged)	0.136	95% H-UCL (KM -Log)	0.0166
KM SD (logged)	0.839	95% Critical H Value (KM-Log)	2.184
KM Standard Error of Mean (logged)	0.136		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.0127	Mean in Log Scale	-5.179
SD in Original Scale	0.0225	SD in Log Scale	1.157
95% t UCL (Assumes normality)	0.0186	95% H-Stat UCL	0.0175

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Lognormal Distributed at 5% Significance Level

Suggested UCL to Use

KM H-UCL 0.0166

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

result (outside cn row_se_na_pyrene_129-00-0)

General Statistics

Total Number of Observations	41	Number of Distinct Observations	15
Number of Detects	18	Number of Non-Detects	23
Number of Distinct Detects	14	Number of Distinct Non-Detects	1
Minimum Detect	0.0082	Minimum Non-Detect	0.005
Maximum Detect	0.12	Maximum Non-Detect	0.005
Variance Detects	7.8138E-4	Percent Non-Detects	56.1%
Mean Detects	0.0243	SD Detects	0.028
Median Detects	0.014	CV Detects	1.149
Skewness Detects	2.811	Kurtosis Detects	8.401
Mean of Logged Detects	-4.06	SD of Logged Detects	0.746

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.596	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.897	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.312	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.202	Detected Data Not Normal at 5% Significance Level	

Detected Data Not Normal at 5% Significance Level

TABLE B.5
PROUCL OUTPUT FOR SEDIMENT OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.0135	KM Standard Error of Mean	0.00328
KM SD	0.0204	95% KM (BCA) UCL	0.0201
95% KM (t) UCL	0.019	95% KM (Percentile Bootstrap) UCL	0.0193
95% KM (z) UCL	0.0189	95% KM Bootstrap t UCL	0.0264
90% KM Chebyshev UCL	0.0233	95% KM Chebyshev UCL	0.0278
97.5% KM Chebyshev UCL	0.034	99% KM Chebyshev UCL	0.0461

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	1.663	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.756	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.281	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.207	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	1.601	k star (bias corrected MLE)	1.371
Theta hat (MLE)	0.0152	Theta star (bias corrected MLE)	0.0178
nu hat (MLE)	57.62	nu star (bias corrected)	49.35
Mean (detects)	0.0243		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)
For such situations, GROS method may yield incorrect values of UCLs and BTVs
This is especially true when the sample size is small.
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0082	Mean	0.0163
Maximum	0.12	Median	0.01
SD	0.0196	CV	1.203
k hat (MLE)	2.163	k star (bias corrected MLE)	2.021
Theta hat (MLE)	0.00753	Theta star (bias corrected MLE)	0.00806
nu hat (MLE)	177.3	nu star (bias corrected)	165.7
Adjusted Level of Significance (β)	0.0441		
Approximate Chi Square Value (165.69, α)	136.9	Adjusted Chi Square Value (165.69, β)	136
95% Gamma Approximate UCL (use when n>=50)	0.0197	95% Gamma Adjusted UCL (use when n<50)	0.0199

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.0135	SD (KM)	0.0204
Variance (KM)	4.1604E-4	SE of Mean (KM)	0.00328
k hat (KM)	0.437	k star (KM)	0.422
nu hat (KM)	35.86	nu star (KM)	34.57
theta hat (KM)	0.0308	theta star (KM)	0.032
80% gamma percentile (KM)	0.0219	90% gamma percentile (KM)	0.0377
95% gamma percentile (KM)	0.055	99% gamma percentile (KM)	0.0983

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (34.57, α)	22.12	Adjusted Chi Square Value (34.57, β)	21.75
95% Gamma Approximate KM-UCL (use when n>=50)	0.0211	95% Gamma Adjusted KM-UCL (use when n<50)	0.0214

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.839	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.897	Detected Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.241	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.202	Detected Data Not Lognormal at 5% Significance Level

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.0121	Mean in Log Scale	-5.295
SD in Original Scale	0.0213	SD in Log Scale	1.351
95% t UCL (assumes normality of ROS data)	0.0177	95% Percentile Bootstrap UCL	0.0175

TABLE B.5
PROUCL OUTPUT FOR SEDIMENT OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

95% BCA Bootstrap UCL	0.02	95% Bootstrap t UCL	0.0247
95% H-UCL (Log ROS)	0.0226		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-4.755	KM Geo Mean	0.00861
KM SD (logged)	0.78	95% Critical H Value (KM-Log)	2.127
KM Standard Error of Mean (logged)	0.125	95% H-UCL (KM -Log)	0.0152
KM SD (logged)	0.78	95% Critical H Value (KM-Log)	2.127
KM Standard Error of Mean (logged)	0.125		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.0121	Mean in Log Scale	-5.143
SD in Original Scale	0.0213	SD in Log Scale	1.085
95% t UCL (Assumes normality)	0.0177	95% H-Stat UCL	0.016

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

95% KM (Chebyshev) UCL	0.0278

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

result (outside cn row_se_na_quinoline_91-22-5)

General Statistics

Total Number of Observations	41	Number of Distinct Observations	3
Number of Detects	2	Number of Non-Detects	39
Number of Distinct Detects	2	Number of Distinct Non-Detects	1
Minimum Detect	0.021	Minimum Non-Detect	0.01
Maximum Detect	0.033	Maximum Non-Detect	0.01
Variance Detects	7.2000E-5	Percent Non-Detects	95.12%
Mean Detects	0.027	SD Detects	0.00849
Median Detects	0.027	CV Detects	0.314
Skewness Detects	N/A	Kurtosis Detects	N/A
Mean of Logged Detects	-3.637	SD of Logged Detects	0.32

Warning: Data set has only 2 Detected Values.
This is not enough to compute meaningful or reliable statistics and estimates.

Normal GOF Test on Detects Only

Not Enough Data to Perform GOF Test

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.0108	KM Standard Error of Mean	8.6012E-4
KM SD	0.00389	95% KM (BCA) UCL	N/A
95% KM (t) UCL	0.0123	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	0.0122	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	0.0134	95% KM Chebyshev UCL	0.0146
97.5% KM Chebyshev UCL	0.0162	99% KM Chebyshev UCL	0.0194

Gamma GOF Tests on Detected Observations Only

Not Enough Data to Perform GOF Test

Gamma Statistics on Detected Data Only

k hat (MLE)	19.91	k star (bias corrected MLE)	N/A

TABLE B.5
PROUCL OUTPUT FOR SEDIMENT OUTSIDE OF RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Theta hat (MLE)	0.00136	Theta star (bias corrected MLE)	N/A
nu hat (MLE)	79.64	nu star (bias corrected)	N/A
Mean (detects)	0.027		

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.0108	SD (KM)	0.00389
Variance (KM)	1.5166E-5	SE of Mean (KM)	8.6012E-4
k hat (KM)	7.733	k star (KM)	7.183
nu hat (KM)	634.1	nu star (KM)	589
theta hat (KM)	0.0014	theta star (KM)	0.00151
80% gamma percentile (KM)	0.014	90% gamma percentile (KM)	0.0162
95% gamma percentile (KM)	0.0182	99% gamma percentile (KM)	0.0224

Gamma Kaplan-Meier (KM) Statistics

		Adjusted Level of Significance (β)	0.0441
Approximate Chi Square Value (589.01, α)	533.7	Adjusted Chi Square Value (589.01, β)	531.8
95% Gamma Approximate KM-UCL (use when n>=50)	0.012	95% Gamma Adjusted KM-UCL (use when n<50)	0.012

Lognormal GOF Test on Detected Observations Only

Not Enough Data to Perform GOF Test

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.00338	Mean in Log Scale	-6.7
SD in Original Scale	0.00615	SD in Log Scale	1.465
95% t UCL (assumes normality of ROS data)	0.005	95% Percentile Bootstrap UCL	0.00506
95% BCA Bootstrap UCL	0.00582	95% Bootstrap t UCL	0.00684
95% H-UCL (Log ROS)	0.00706		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-4.558	KM Geo Mean	0.0105
KM SD (logged)	0.214	95% Critical H Value (KM-Log)	1.733
KM Standard Error of Mean (logged)	0.0474	95% H-UCL (KM -Log)	0.0114
KM SD (logged)	0.214	95% Critical H Value (KM-Log)	1.733
KM Standard Error of Mean (logged)	0.0474		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.00607	Mean in Log Scale	-5.217
SD in Original Scale	0.00498	SD in Log Scale	0.366
95% t UCL (Assumes normality)	0.00738	95% H-Stat UCL	0.00644

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	0.0123	KM H-UCL	0.0114
95% KM (BCA) UCL	N/A		

Warning: One or more Recommended UCL(s) not available!

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

TABLE B.6

PROUCL OUTPUT FOR CULVERT SEDIMENT OUTSIDE OF RIGHT-OF-WAY

CN MILE 197.4, RIVERS SUBDIVISION

SOUTHEAST OF ST. LAZARE, MANITOBA

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	ProUCL 5.111/15/2019 7:51:09 AM
From File	WorkSheet.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

result (outside cn row_se_culvert_perylene_198-55-0)

General Statistics

Total Number of Observations	1	Number of Distinct Observations	1
		Number of Missing Observations	0
Minimum	0.029	Mean	0.029
Maximum	0.029	Median	0.029

Warning: This data set only has 1 observations!

Data set is too small to compute reliable and meaningful statistics and estimates!

The data set for variable result (outside cn row_se_culvert_perylene_198-55-0) was not processed!

It is suggested to collect at least 8 to 10 observations before using these statistical methods!

If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.

TABLE B.7
PROUCL OUTPUT FOR CULVERT SEDIMENT WITHIN RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	ProUCL 5.111/15/2019 7:47:59 AM
From File	WorkSheet.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

result (cn row_se_culvert_acenaphthylene_208-96-8)

General Statistics

Total Number of Observations	4	Number of Distinct Observations	2
Number of Detects	1	Number of Non-Detects	3
Number of Distinct Detects	1	Number of Distinct Non-Detects	1

Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!
It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable result (cn row_se_culvert_acenaphthylene_208-96-8) was not processed!

result (cn row_se_culvert_anthracene_120-12-7)

General Statistics

Total Number of Observations	4	Number of Distinct Observations	2
Number of Detects	1	Number of Non-Detects	3
Number of Distinct Detects	1	Number of Distinct Non-Detects	1

Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!
It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable result (cn row_se_culvert_anthracene_120-12-7) was not processed!

result (cn row_se_culvert_benzo(a)pyrene_50-32-8)

General Statistics

Total Number of Observations	4	Number of Distinct Observations	2
Number of Detects	1	Number of Non-Detects	3
Number of Distinct Detects	1	Number of Distinct Non-Detects	1

Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!
It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable result (cn row_se_culvert_benzo(a)pyrene_50-32-8) was not processed!

result (cn row_se_culvert_benzo(b&j)fluoranthene_205-99-2_205-82-3)

General Statistics

Total Number of Observations	4	Number of Distinct Observations	2
Number of Detects	1	Number of Non-Detects	3
Number of Distinct Detects	1	Number of Distinct Non-Detects	1

Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!
It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable result (cn row_se_culvert_benzo(b&j)fluoranthene_205-99-2_205-82-3) was not processed!

result (cn row_se_culvert_benzo(e)pyrene_192-97-2)

TABLE B.7
PROUCL OUTPUT FOR CULVERT SEDIMENT WITHIN RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

General Statistics

Total Number of Observations	4	Number of Distinct Observations	2
Number of Detects	1	Number of Non-Detects	3
Number of Distinct Detects	1	Number of Distinct Non-Detects	1

Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!
It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable result (cn row_se_culvert_benzo(e)pyrene_192-97-2) was not processed!

result (cn row_se_culvert_benzo(g,h,i)perylene_191-24-2)

General Statistics

Total Number of Observations	4	Number of Distinct Observations	2
Number of Detects	1	Number of Non-Detects	3
Number of Distinct Detects	1	Number of Distinct Non-Detects	1

Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!
It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable result (cn row_se_culvert_benzo(g,h,i)perylene_191-24-2) was not processed!

result (cn row_se_culvert_benzo(k)fluoranthene_207-08-9)

General Statistics

Total Number of Observations	4	Number of Distinct Observations	2
Number of Detects	1	Number of Non-Detects	3
Number of Distinct Detects	1	Number of Distinct Non-Detects	1

Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!
It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable result (cn row_se_culvert_benzo(k)fluoranthene_207-08-9) was not processed!

result (cn row_se_culvert_dibenz(a,h)anthracene_53-70-3)

General Statistics

Total Number of Observations	4	Number of Distinct Observations	2
Number of Detects	1	Number of Non-Detects	3
Number of Distinct Detects	1	Number of Distinct Non-Detects	1

Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!
It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable result (cn row_se_culvert_dibenz(a,h)anthracene_53-70-3) was not processed!

result (cn row_se_culvert_indeno(1,2,3-cd)pyrene_193-39-5)

General Statistics

Total Number of Observations	4	Number of Distinct Observations	2
Number of Detects	1	Number of Non-Detects	3
Number of Distinct Detects	1	Number of Distinct Non-Detects	1

Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!
It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable result (cn row_se_culvert_indeno(1,2,3-cd)pyrene_193-39-5) was not processed!

TABLE B.7
PROUCL OUTPUT FOR CULVERT SEDIMENT WITHIN RIGHT-OF-WAY
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

result (cn row_se_culvert_perylene_198-55-0)

General Statistics

Total Number of Observations	4	Number of Distinct Observations	2
Number of Detects	1	Number of Non-Detects	3
Number of Distinct Detects	1	Number of Distinct Non-Detects	1

Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!
It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable result (cn row_se_culvert_perylene_198-55-0) was not processed!

TABLE B.8
DATA INPUT FOR PROUCL SOFTWARE
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Notes:
The maximum of the field duplicate and parent sample pairs were applied and a detect was chosen over a non-detect value.

ProUCL Group	ProUCL Result	ProUCL Flag	Medium	Soil Zone	Location	Sample ID	Sample Type	Sample Date	Start Depth (m)	End Depth (m)	COPC	CASRN	Qualifier	Detection Limit for Non-Detects	Unit
CN RoW_SE_Culvert_Acenaphthylene_208-96-8	0.005	0	SE	Culvert	AFTER CULVERT3	AFTER CULVERT3_20191016_SE	N	10/16/2019	0	0	Acenaphthylene	208-96-8	U	0.005	mg/kg
CN RoW_SE_Culvert_Acenaphthylene_208-96-8	0.005	0	SE	Culvert	AFTER CULVERT2	AFTER CULVERT2_20191016_SE	N	10/16/2019	0	0	Acenaphthylene	208-96-8	U	0.005	mg/kg
CN RoW_SE_Culvert_Acenaphthylene_208-96-8	0.005	0	SE	Culvert	MID CULVERT	MID CULVERT_20190828_SE	N	8/28/2019	0	0	Acenaphthylene	208-96-8	U	0.005	mg/kg
CN RoW_SE_Culvert_Acenaphthylene_208-96-8	0.029	1	SE	Culvert	MID CULVERT 2	MID CULVERT 2_20190828_SE	N	8/28/2019	0	0	Acenaphthylene	208-96-8			mg/kg
CN RoW_SE_Culvert_Anthracene_120-12-7	0.004	0	SE	Culvert	AFTER CULVERT3	AFTER CULVERT3_20191016_SE	N	10/16/2019	0	0	Anthracene	120-12-7	U	0.004	mg/kg
CN RoW_SE_Culvert_Anthracene_120-12-7	0.054	1	SE	Culvert	MID CULVERT 2	MID CULVERT 2_20190828_SE	N	8/28/2019	0	0	Anthracene	120-12-7			mg/kg
CN RoW_SE_Culvert_Anthracene_120-12-7	0.004	0	SE	Culvert	AFTER CULVERT2	AFTER CULVERT2_20191016_SE	N	10/16/2019	0	0	Anthracene	120-12-7	U	0.004	mg/kg
CN RoW_SE_Culvert_Anthracene_120-12-7	0.004	0	SE	Culvert	MID CULVERT	MID CULVERT_20190828_SE	N	8/28/2019	0	0	Anthracene	120-12-7	U	0.004	mg/kg
CN RoW_SE_Culvert_Benzo(a)pyrene_50-32-8	0.005	0	SE	Culvert	AFTER CULVERT3	AFTER CULVERT3_20191016_SE	N	10/16/2019	0	0	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
CN RoW_SE_Culvert_Benzo(a)pyrene_50-32-8	0.005	0	SE	Culvert	AFTER CULVERT2	AFTER CULVERT2_20191016_SE	N	10/16/2019	0	0	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
CN RoW_SE_Culvert_Benzo(a)pyrene_50-32-8	0.059	1	SE	Culvert	MID CULVERT 2	MID CULVERT 2_20190828_SE	N	8/28/2019	0	0	Benzo(a)pyrene	50-32-8			mg/kg
CN RoW_SE_Culvert_Benzo(a)pyrene_50-32-8	0.005	0	SE	Culvert	MID CULVERT	MID CULVERT_20190828_SE	N	8/28/2019	0	0	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
CN RoW_SE_Culvert_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SE	Culvert	MID CULVERT	MID CULVERT_20190828_SE	N	8/28/2019	0	0	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
CN RoW_SE_Culvert_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.17	1	SE	Culvert	MID CULVERT 2	MID CULVERT 2_20190828_SE	N	8/28/2019	0	0	Benzo(b&j)fluoranthene	205-99-2_205-82-3			mg/kg
CN RoW_SE_Culvert_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SE	Culvert	AFTER CULVERT2	AFTER CULVERT2_20191016_SE	N	10/16/2019	0	0	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
CN RoW_SE_Culvert_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SE	Culvert	AFTER CULVERT3	AFTER CULVERT3_20191016_SE	N	10/16/2019	0	0	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
CN RoW_SE_Culvert_Benzo(e)pyrene_192-97-2	0.005	0	SE	Culvert	AFTER CULVERT2	AFTER CULVERT2_20191016_SE	N	10/16/2019	0	0	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SE_Culvert_Benzo(e)pyrene_192-97-2	0.11	1	SE	Culvert	MID CULVERT 2	MID CULVERT 2_20190828_SE	N	8/28/2019	0	0	Benzo(e)pyrene	192-97-2			mg/kg
CN RoW_SE_Culvert_Benzo(e)pyrene_192-97-2	0.005	0	SE	Culvert	MID CULVERT	MID CULVERT_20190828_SE	N	8/28/2019	0	0	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SE_Culvert_Benzo(e)pyrene_192-97-2	0.005	0	SE	Culvert	AFTER CULVERT3	AFTER CULVERT3_20191016_SE	N	10/16/2019	0	0	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SE_Culvert_Benzo(g,h,i)perylene_191-24-2	0.049	1	SE	Culvert	MID CULVERT 2	MID CULVERT 2_20190828_SE	N	8/28/2019	0	0	Benzo(g,h,i)perylene	191-24-2			mg/kg
CN RoW_SE_Culvert_Benzo(g,h,i)perylene_191-24-2	0.005	0	SE	Culvert	MID CULVERT	MID CULVERT_20190828_SE	N	8/28/2019	0	0	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SE_Culvert_Benzo(g,h,i)perylene_191-24-2	0.005	0	SE	Culvert	AFTER CULVERT2	AFTER CULVERT2_20191016_SE	N	10/16/2019	0	0	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SE_Culvert_Benzo(g,h,i)perylene_191-24-2	0.005	0	SE	Culvert	AFTER CULVERT3	AFTER CULVERT3_20191016_SE	N	10/16/2019	0	0	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SE_Culvert_Benzo(k)fluoranthene_207-08-9	0.005	0	SE	Culvert	MID CULVERT	MID CULVERT_20190828_SE	N	8/28/2019	0	0	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
CN RoW_SE_Culvert_Benzo(k)fluoranthene_207-08-9	0.048	1	SE	Culvert	MID CULVERT 2	MID CULVERT 2_20190828_SE	N	8/28/2019	0	0	Benzo(k)fluoranthene	207-08-9			mg/kg
CN RoW_SE_Culvert_Benzo(k)fluoranthene_207-08-9	0.005	0	SE	Culvert	AFTER CULVERT2	AFTER CULVERT2_20191016_SE	N	10/16/2019	0	0	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
CN RoW_SE_Culvert_Benzo(k)fluoranthene_207-08-9	0.005	0	SE	Culvert	AFTER CULVERT3	AFTER CULVERT3_20191016_SE	N	10/16/2019	0	0	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
CN RoW_SE_Culvert_Dibenz(a,h)anthracene_53-70-3	0.017	1	SE	Culvert	MID CULVERT 2	MID CULVERT 2_20190828_SE	N	8/28/2019	0	0	Dibenz(a,h)anthracene	53-70-3			mg/kg
CN RoW_SE_Culvert_Dibenz(a,h)anthracene_53-70-3	0.005	0	SE	Culvert	MID CULVERT	MID CULVERT_20190828_SE	N	8/28/2019	0	0	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
CN RoW_SE_Culvert_Dibenz(a,h)anthracene_53-70-3	0.005	0	SE	Culvert	AFTER CULVERT2	AFTER CULVERT2_20191016_SE	N	10/16/2019	0	0	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
CN RoW_SE_Culvert_Dibenz(a,h)anthracene_53-70-3	0.005	0	SE	Culvert	AFTER CULVERT3	AFTER CULVERT3_20191016_SE	N	10/16/2019	0	0	Dibenz(a,h)anthracene	53-70-3	U	0.005	mg/kg
CN RoW_SE_Culvert_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SE	Culvert	AFTER CULVERT2	AFTER CULVERT2_20191016_SE	N	10/16/2019	0	0	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
CN RoW_SE_Culvert_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SE	Culvert	AFTER CULVERT3	AFTER CULVERT3_20191016_SE	N	10/16/2019	0	0	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
CN RoW_SE_Culvert_Indeno(1,2,3-cd)pyrene_193-39-5	0.05	1	SE	Culvert	MID CULVERT 2	MID CULVERT 2_20190828_SE	N	8/28/2019	0	0	Indeno (1,2,3-cd)pyrene	193-39-5			mg/kg
CN RoW_SE_Culvert_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SE	Culvert	MID CULVERT	MID CULVERT_20190828_SE	N	8/28/2019	0	0	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
CN RoW_SE_Culvert_Perylene_198-55-0	0.005	0	SE	Culvert	AFTER CULVERT3	AFTER CULVERT3_20191016_SE	N	10/16/2019	0	0	Perylene	198-55-0	U	0.005	mg/kg
CN RoW_SE_Culvert_Perylene_198-55-0	0.005	0	SE	Culvert	MID CULVERT	MID CULVERT_20190828_SE	N	8/28/2019	0	0	Perylene	198-55-0	U	0.005	mg/kg
CN RoW_SE_Culvert_Perylene_198-55-0	0.021	1	SE	Culvert	MID CULVERT 2	MID CULVERT 2_20190828_SE	N	8/28/2019	0	0	Perylene	198-55-0			mg/kg
CN RoW_SE_Culvert_Perylene_198-55-0	0.005	0	SE	Culvert	AFTER CULVERT2	AFTER CULVERT2_20191016_SE	N	10/16/2019	0	0	Perylene	198-55-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	S-212W-C	S-212W-C_20190307_SO	N	3/7/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	S-063	S-063_20190227_SO	N	2/27/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	S-074B	S-074B_20190227_SO	N	2/27/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	S-097	S-097_20190227_SO	N	2/27/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	S-025	S-025_20190227_SO	N	2/27/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	S-101-C	S-101-C_20190308_SO	N	3/8/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	S-088	S-088_20190227_SO	N	2/27/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	S-093B	S-093B_20190227_SO	N	2/27/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	S-054A	S-054A_20190227_SO	N	2/27/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	S-098	S-098_20190227_SO	N	2/27/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	S-065A	S-065A_20190227_SO	N	2/27/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	S323F	S323F_20190302_SO	N	3/2/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	S-023B	S-023B_20190227_SO	N	2/27/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	S-051B	S-051B_20190227_SO	N	2/27/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	S-075	S-075_20190227_SO	N	2/27/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	S-085	S-085_20190227_SO	N	2/27/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	S-073	S-073_20190227_SO	N	2/27/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	SLOT2-1	SLOT2-1_20190606_SO	N	6/6/2019	1.34	1.34	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	C-2136C	C-2136C_20200224_SO	N	2/24/2020	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	BH19-120-2	BH19-120-2_20191205_SO	N	12/5/2019	1.22	1.52	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.027	1	SO	Surface Soil 0-1.5m	E_BH19-16	E_BH19-16_20190507_SO	N	5/7/2019	0	0.15	Acenaphthene	83-32-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.39	1	SO	Surface Soil 0-1.5m	D_BH19-15	D_BH19-15_20190507_SO	N	5/7/2019	0	0.15	Acenaphthene	83-32-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	19-H1-001	19-H1-001_20190609_SO	N	6/9/2019	0	0.15	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	19-H10-002	19-H10-002_20190609_SO	N	6/9/2019	1	1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	19-H2-001	19-H2-001_20190609_SO	N	6/9/2019	0	0.15	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.0085	1	SO	Surface Soil 0-1.5m	19-H9-001	19-H9-001_20190609_SO	N	6/9/2019	0	0.15	Acenaphthene	83-32-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	19-H10-001	19-H10-001_20190609_SO	N	6/9/2019	0	0.15	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	19-H7-001	19-H7-001_20190609_SO	N	6/9/2019	0	0.15	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	NSERIESDIL-3	NSERIESDIL-3_20191016_SO	N	10/16/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	19-H3-001	19-H3-001_20190609_SO	N	6/9/2019	0	0.15	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	19-H6-002B	19-H6-002B_20191016_SO	N	10/16/2019	1	1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	19-H6-001B	19-H6-001B_20191016_SO	N	10/16/2019	0	0.15	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	C-2028B	C-2028B_20191016_SO	N	10/16/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	S202WB	S202WB_20191016_SO	N	10/16/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	19-H5-001B	19-H5-001B_20191016_SO	N	10/16/2019	0	0.15	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	19-H4-001B	19-H4-001B_20191016_SO	N	10/16/2019	0	0.15	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	19-H4-002	19-H4-002_20190609_SO	N	6/9/2019	1	1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	DB-110-C	DB-110-C_20190311_SO	N	3/11/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	NSERIESDIL-4	NSERIESDIL-4_20191016_SO	N	10/16/2019	0	0.10	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.0088	1	SO	Surface Soil 0-1.5m	19-H1-002B	19-H1-002B_20191016_SO	N	10/16/2019	1	1	Acenaphthene	83-32-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.012	1	SO	Surface Soil 0-1.5m	19-H2-002B	19-H2-002B_20191016_SO	N	10/16/2019	1	1	Acenaphthene	83-32-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	19-H5-002	19-H5-002_20190609_SO	N	6/9/2019	1	1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	19-H3-002	19-H3-002_20190609_SO	N	6/9/2019	1	1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	19-H7-002	19-H7-002_20190609_SO	N	6/9/2019	1	1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	C-2074B	C-2074B_20191016_SO	N	10/16/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	C-2509B	C-2509B_20191016_SO	N	10/16/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	19-H8-002	19-H8-002_20190609_SO	N	6/9/2019	1	1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	C-2080B	C-2080B_20191016_SO	N	10/16/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	C-2106B	C-2106B_20191016_SO	N	10/16/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	19-H9-002	19-H9-002_20190609_SO	N	6/9/2019	1	1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	C-2180B	C-2180B_20191016_SO	N	10/16/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	19-H8-001	19-H8-001_20190609_SO	N	6/9/2019	0	0.15	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	C-1002WC	C-1002WC_20191016_SO	N	10/16/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	NSERIESDIL-1	NSERIESDIL-1_20191016_SO	N	10/16/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	S-094B	S-094B_20191016_SO	N	10/16/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	C-2058C	C-2058C_20191016_SO	N	10/16/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	NSERIESDIL-2	NSERIESDIL-2_20191016_SO	N	10/16/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	DB-004	DB-004_20190302_SO	N	3/2/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	C-2311	C-2311_20190307_SO	N	3/7/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	C-2178	C-2178_20190306_SO	N	3/6/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	N-036	N-036_20190226_SO	N	2/26/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	C-2100	C-2100_20190305_SO	N	3/5/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	C-2071	C-2071_20190305_SO	N	3/5/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	N-027	N-027_20190226_SO	N	2/26/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.029	1	SO	Surface Soil 0-1.5m	EXW2-3	EXW2-3_20190605_SO	N	6/5/2019	1.385	1.385	Acenaphthene	83-32-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	N-010	N-010_20190226_SO	N	2/26/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.036	1	SO	Surface Soil 0-1.5m	N-007	N-007_20190226_SO	N	2/26/2019	0	0.1	Acenaphthene	83-32-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	C-1004W	C-1004W_20190303_SO	N	3/3/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	C-2017	C-2017_20190305_SO	N	3/5/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.016	1	SO	Surface Soil 0-1.5m	N-031	N-031_20190226_SO	N	2/26/2019	0	0.1	Acenaphthene	83-32-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.017	1	SO	Surface Soil 0-1.5m	N-001	N-001_20190226_SO	N	2/26/2019	0	0.1	Acenaphthene	83-32-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	S-019A	S-019A_20190227_SO	N	2/27/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.094	1	SO	Surface Soil 0-1.5m	C-2033	C-2033_20190305_SO	N	3/5/2019	0	0.1	Acenaphthene	83-32-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.053	1	SO	Surface Soil 0-1.5m	N-006	N-006_20190226_SO	N	2/26/2019	0	0.1	Acenaphthene	83-32-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.011	1	SO	Surface Soil 0-1.5m	N-015	N-015_20190226_SO	N	2/26/2019	0	0.1	Acenaphthene	83-32-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	C-2176	C-2176_20190306_SO	N	3/6/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	S-014	S-014_20190227_SO	N	2/27/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	S-017	S-017_20190227_SO	N	2/27/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.052	1	SO	Surface Soil 0-1.5m	N-013	N-013_20190226_SO	N	2/26/2019	0	0.1	Acenaphthene	83-32-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	C-2160	C-2160_20190306_SO	N	3/6/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.087	1	SO	Surface Soil 0-1.5m	N-016	N-016_20190226_SO	N	2/26/2019	0	0.1	Acenaphthene	83-32-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.077	1	SO	Surface Soil 0-1.5m	N-021	N-021_20190226_SO	N	2/26/2019	0	0.1	Acenaphthene	83-32-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.016	1	SO	Surface Soil 0-1.5m	N-009	N-009_20190226_SO	N	2/26/2019	0	0.1	Acenaphthene	83-32-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	S-022	S-022_20190227_SO	N	2/27/2019	0	0.10	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acenaphthene_83-32-9	0.005	0	SO	Surface Soil 0-1.5m	C-2082	C-2082_20190305_SO	N	3/5/2019	0	0.1	Acenaphthene	83-32-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	S-075	S-075_20190227_SO	N	2/27/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	S-093B	S-093B_20190227_SO	N	2/27/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	S-097	S-097_20190227_SO	N	2/27/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	S-074B	S-074B_20190227_SO	N	2/27/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	S-088	S-088_20190227_SO	N	2/27/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	S-063	S-063_20190227_SO	N	2/27/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	S-023B	S-023B_20190227_SO	N	2/27/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	S323F	S323F_20190302_SO	N	3/2/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	S-085	S-085_20190227_SO	N	2/27/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	S-065A	S-065A_20190227_SO	N	2/27/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	S-051B	S-051B_20190227_SO	N	2/27/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.017	1	SO	Surface Soil 0-1.5m	S-025	S-025_20190227_SO	N	2/27/2019	0	0.1	Acridine	260-94-6			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	S-101-C	S-101-C_20190308_SO	N	3/8/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	S-073	S-073_20190227_SO	N	2/27/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	SLOT2-1	SLOT2-1_20190606_SO	N	6/6/2019	1.34	1.34	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	S-098	S-098_20190227_SO	N	2/27/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	S-212W-C	S-212W-C_20190307_SO	N	3/7/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	S-054A	S-054A_20190227_SO	N	2/27/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	BH19-120-2	BH19-120-2_20191205_SO	N	12/5/2019	1.22	1.52	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	C-2136C	C-2136C_20200224_SO	N	2/24/2020	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	E_BH19-16	E_BH19-16_20190507_SO	N	5/7/2019	0	0.15	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	D_BH19-15	D_BH19-15_20190507_SO	N	5/7/2019	0	0.15	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	19-H5-001B	19-H5-001B_20191016_SO	N	10/16/2019	0	0.15	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	19-H6-002B	19-H6-002B_20191016_SO	N	10/16/2019	1	1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	19-H7-001	19-H7-001_20190609_SO	N	6/9/2019	0	0.15	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	19-H4-001B	19-H4-001B_20191016_SO	N	10/16/2019	0	0.15	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	DB-110-C	DB-110-C_20190311_SO	N	3/11/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	19-H3-001	19-H3-001_20190609_SO	N	6/9/2019	0	0.15	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	C-2180B	C-2180B_20191016_SO	N	10/16/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	NSERIESDIL-2	NSERIESDIL-2_20191016_SO	N	10/16/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	C-1002WC	C-1002WC_20191016_SO	N	10/16/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	19-H4-002	19-H4-002_20190609_SO	N	6/9/2019	1	1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	S-094B	S-094B_20191016_SO	N	10/16/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	19-H8-002	19-H8-002_20190609_SO	N	6/9/2019	1	1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	19-H2-001	19-H2-001_20190609_SO	N	6/9/2019	0	0.15	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	C-2058C	C-2058C_20191016_SO	N	10/16/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	19-H3-002	19-H3-002_20190609_SO	N	6/9/2019	1	1	Acridine	260-94-6	U	0.01	mg/kg

TABLE B.8
DATA INPUT FOR PROUCL SOFTWARE
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Notes:
The maximum of the field duplicate and parent sample pairs were applied and a detect was chosen over a non-detect value.

ProUCL Group	ProUCL Result	ProUCL Flag	Medium	Soil Zone	Location	Sample ID	Sample Type	Sample Date	Start Depth (m)	End Depth (m)	COPC	CASRN	Qualifier	Detection Limit for Non-Detects	Unit
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	S202WB	S202WB_20191016_SO	N	10/16/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	19-H7-002	19-H7-002_20190609_SO	N	6/9/2019	1	1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	NSERIESDIL-1	NSERIESDIL-1_20191016_SO	N	10/16/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	NSERIESDIL-3	NSERIESDIL-3_20191016_SO	N	10/16/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	19-H9-001	19-H9-001_20190609_SO	N	6/9/2019	0	0.15	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	19-H2-002B	19-H2-002B_20191016_SO	N	10/16/2019	1	1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	C-2509B	C-2509B_20191016_SO	N	10/16/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	C-2028B	C-2028B_20191016_SO	N	10/16/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	19-H8-001	19-H8-001_20190609_SO	N	6/9/2019	0	0.15	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	19-H10-001	19-H10-001_20190609_SO	N	6/9/2019	0	0.15	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	19-H1-002B	19-H1-002B_20191016_SO	N	10/16/2019	1	1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	NSERIESDIL-4	NSERIESDIL-4_20191016_SO	N	10/16/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	19-H6-001B	19-H6-001B_20191016_SO	N	10/16/2019	0	0.15	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	19-H5-002	19-H5-002_20190609_SO	N	6/9/2019	1	1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	C-2080B	C-2080B_20191016_SO	N	10/16/2019	0	0.10	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	19-H9-002	19-H9-002_20190609_SO	N	6/9/2019	1	1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	19-H10-002	19-H10-002_20190609_SO	N	6/9/2019	1	1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	C-2074B	C-2074B_20191016_SO	N	10/16/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	C-2106B	C-2106B_20191016_SO	N	10/16/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	19-H1-001	19-H1-001_20190609_SO	N	6/9/2019	0	0.15	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	S-014	S-014_20190227_SO	N	2/27/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	N-010	N-010_20190226_SO	N	2/26/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	N-021	N-021_20190226_SO	N	2/26/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	N-016	N-016_20190226_SO	N	2/26/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	N-015	N-015_20190226_SO	N	2/26/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	C-2176	C-2176_20190306_SO	N	3/6/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	C-2082	C-2082_20190305_SO	N	3/5/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	N-013	N-013_20190226_SO	N	2/26/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	EXW2-3	EXW2-3_20190605_SO	N	6/5/2019	1.385	1.385	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.017	1	SO	Surface Soil 0-1.5m	N-009	N-009_20190226_SO	N	2/26/2019	0	0.1	Acridine	260-94-6			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	N-036	N-036_20190226_SO	N	2/26/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.012	1	SO	Surface Soil 0-1.5m	C-2100	C-2100_20190305_SO	N	3/5/2019	0	0.1	Acridine	260-94-6			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	N-027	N-027_20190226_SO	N	2/26/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	N-007	N-007_20190226_SO	N	2/26/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	C-2071	C-2071_20190305_SO	N	3/5/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	C-1004W	C-1004W_20190303_SO	N	3/3/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.023	1	SO	Surface Soil 0-1.5m	N-006	N-006_20190226_SO	N	2/26/2019	0	0.1	Acridine	260-94-6			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	DB-004	DB-004_20190302_SO	N	3/2/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	N-031	N-031_20190226_SO	N	2/26/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	N-001	N-001_20190226_SO	N	2/26/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.017	1	SO	Surface Soil 0-1.5m	C-2033	C-2033_20190305_SO	N	3/5/2019	0	0.1	Acridine	260-94-6			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	C-2160	C-2160_20190306_SO	N	3/6/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	C-2311	C-2311_20190307_SO	N	3/7/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	C-2178	C-2178_20190306_SO	N	3/6/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	S-017	S-017_20190227_SO	N	2/27/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	S-022	S-022_20190227_SO	N	2/27/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	S-019A	S-019A_20190227_SO	N	2/27/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	C-2017	C-2017_20190305_SO	N	3/5/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	S-085	S-085_20190227_SO	N	2/27/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	S-075	S-075_20190227_SO	N	2/27/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	S-063	S-063_20190227_SO	N	2/27/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	S-212W-C	S-212W-C_20190307_SO	N	3/7/2019	0	0.10	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	S-098	S-098_20190227_SO	N	2/27/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	S-054A	S-054A_20190227_SO	N	2/27/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	S-088	S-088_20190227_SO	N	2/27/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	S-051B	S-051B_20190227_SO	N	2/27/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	S-065A	S-065A_20190227_SO	N	2/27/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	S-093B	S-093B_20190227_SO	N	2/27/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	SLOT2-1	SLOT2-1_20190606_SO	N	6/6/2019	1.34	1.34	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	S-073	S-073_20190227_SO	N	2/27/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	S-074B	S-074B_20190227_SO	N	2/27/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	S-025	S-025_20190227_SO	N	2/27/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	S-097	S-097_20190227_SO	N	2/27/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	S323F	S323F_20190302_SO	N	3/2/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	S-101-C	S-101-C_20190308_SO	N	3/8/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	BH19-120-2	BH19-120-2_20191205_SO	N	12/5/2019	1.22	1.52	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	C-2136C	C-2136C_20200224_SO	N	2/24/2020	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	E_BH19-16	E_BH19-16_20190507_SO	N	5/7/2019	0	0.15	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.026	1	SO	Surface Soil 0-1.5m	D_BH19-15	D_BH19-15_20190507_SO	N	5/7/2019	0	0.15	Benzo(c)phenanthrene	195-19-7			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	19-H8-002	19-H8-002_20190609_SO	N	6/9/2019	1	1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	19-H3-001	19-H3-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	19-H10-001	19-H10-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	19-H10-002	19-H10-002_20190609_SO	N	6/9/2019	1	1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	S-094B	S-094B_20191016_SO	N	10/16/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	19-H2-001	19-H2-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	19-H5-001B	19-H5-001B_20191016_SO	N	10/16/2019	0	0.15	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	19-H1-001	19-H1-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	19-H9-001	19-H9-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	C-2028B	C-2028B_20191016_SO	N	10/16/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.0058	1	SO	Surface Soil 0-1.5m	NSERIESDIL-1	NSERIESDIL-1_20191016_SO	N	10/16/2019	0	0.1	Benzo(c)phenanthrene	195-19-7			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	19-H8-001	19-H8-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	C-2106B	C-2106B_20191016_SO	N	10/16/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.064	1	SO	Surface Soil 0-1.5m	NSERIESDIL-2	NSERIESDIL-2_20191016_SO	N	10/16/2019	0	0.1	Benzo(c)phenanthrene	195-19-7			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	S202WB	S202WB_20191016_SO	N	10/16/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	19-H9-002	19-H9-002_20190609_SO	N	6/9/2019	1	1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	19-H1-002B	19-H1-002B_20191016_SO	N	10/16/2019	1	1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	NSERIESDIL-4	NSERIESDIL-4_20191016_SO	N	10/16/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	19-H7-001	19-H7-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	19-H5-002	19-H5-002_20190609_SO	N	6/9/2019	1	1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	19-H2-002B	19-H2-002B_20191016_SO	N	10/16/2019	1	1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	19-H6-002B	19-H6-002B_20191016_SO	N	10/16/2019	1	1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	19-H4-002	19-H4-002_20190609_SO	N	6/9/2019	1	1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	C-1002WC	C-1002WC_20191016_SO	N	10/16/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	19-H7-002	19-H7-002_20190609_SO	N	6/9/2019	1	1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	C-2180B	C-2180B_20191016_SO	N	10/16/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	NSERIESDIL-3	NSERIESDIL-3_20191016_SO	N	10/16/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	19-H3-002	19-H3-002_20190609_SO	N	6/9/2019	1	1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	19-H6-001B	19-H6-001B_20191016_SO	N	10/16/2019	0	0.15	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	DB-110-C	DB-110-C_20190311_SO	N	3/11/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	19-H4-001B	19-H4-001B_20191016_SO	N	10/16/2019	0	0.15	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.0052	1	SO	Surface Soil 0-1.5m	C-2080B	C-2080B_20191016_SO	N	10/16/2019	0	0.1	Benzo(c)phenanthrene	195-19-7			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	C-2074B	C-2074B_20191016_SO	N	10/16/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	C-2509B	C-2509B_20191016_SO	N	10/16/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	C-2058C	C-2058C_20191016_SO	N	10/16/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	N-021	N-021_20190226_SO	N	2/26/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.026	1	SO	Surface Soil 0-1.5m	N-031	N-031_20190226_SO	N	2/26/2019	0	0.1	Benzo(c)phenanthrene	195-19-7			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	N-027	N-027_20190226_SO	N	2/26/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.064	1	SO	Surface Soil 0-1.5m	N-009	N-009_20190226_SO	N	2/26/2019	0	0.1	Benzo(c)phenanthrene	195-19-7			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	S-014	S-014_20190227_SO	N	2/27/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	N-015	N-015_20190226_SO	N	2/26/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	C-2176	C-2176_20190306_SO	N	3/6/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	C-1004W	C-1004W_20190303_SO	N	3/3/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.0095	1	SO	Surface Soil 0-1.5m	N-007	N-007_20190226_SO	N	2/26/2019	0	0.1	Benzo(c)phenanthrene	195-19-7			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	EXW2-3	EXW2-3_20190605_SO	N	6/5/2019	1.385	1.385	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	C-2017	C-2017_20190305_SO	N	3/5/2019	0	0.10	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	S-022	S-022_20190227_SO	N	2/27/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	DB-004	DB-004_20190302_SO	N	3/2/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.0059	1	SO	Surface Soil 0-1.5m	N-036	N-036_20190226_SO	N	2/26/2019	0	0.1	Benzo(c)phenanthrene	195-19-7			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	N-001	N-001_20190226_SO	N	2/26/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	C-2311	C-2311_20190307_SO	N	3/7/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	S-023B	S-023B_20190227_SO	N	2/27/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.0064	1	SO	Surface Soil 0-1.5m	N-013	N-013_20190226_SO	N	2/26/2019	0	0.1	Benzo(c)phenanthrene	195-19-7			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	S-017	S-017_20190227_SO	N	2/27/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.0084	1	SO	Surface Soil 0-1.5m	N-016	N-016_20190226_SO	N	2/26/2019	0	0.1	Benzo(c)phenanthrene	195-19-7			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	N-010	N-010_20190226_SO	N	2/26/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	C-2160	C-2160_20190306_SO	N	3/6/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.0074	1	SO	Surface Soil 0-1.5m	C-2033	C-2033_20190305_SO	N	3/5/2019	0	0.1	Benzo(c)phenanthrene	195-19-7			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	S-019A	S-019A_20190227_SO	N	2/27/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.0099	1	SO	Surface Soil 0-1.5m	N-006	N-006_20190226_SO	N	2/26/2019	0	0.1	Benzo(c)phenanthrene	195-19-7			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	C-2082	C-2082_20190305_SO	N	3/5/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	C-2178	C-2178_20190306_SO	N	3/6/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	C-2100	C-2100_20190305_SO	N	3/5/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	C-2071	C-2071_20190305_SO	N	3/5/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	S-088	S-088_20190227_SO	N	2/27/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	S-098	S-098_20190227_SO	N	2/27/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	S-097	S-097_20190227_SO	N	2/27/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	S-063	S-063_20190227_SO	N	2/27/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	S-054A	S-054A_20190227_SO	N	2/27/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	S-085	S-085_20190227_SO	N	2/27/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	S-075	S-075_20190227_SO	N	2/27/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	S-212W-C	S-212W-C_20190307_SO	N	3/7/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	S-074B	S-074B_20190227_SO	N	2/27/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.025	1	SO	Surface Soil 0-1.5m	S323F	S323F_20190302_SO	N	3/2/2019	0	0.1	Benzo(e)pyrene	192-97-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	S-051B	S-051B_20190227_SO	N	2/27/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	S-073	S-073_20190227_SO	N	2/27/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	S-093B	S-093B_20190227_SO	N	2/27/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	S-101-C	S-101-C_20190308_SO	N	3/8/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	SLOT2-1	SLOT2-1_20190606_SO	N	6/6/2019	1.34	1.34	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	S-065A	S-065A_20190227_SO	N	2/27/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	S-025	S-025_20190227_SO	N	2/27/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	BH19-120-2	BH19-120-2_20191205_SO	N	12/5/2019	1.22	1.52	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.089	1	SO	Surface Soil 0-1.5m	D_BH19-15	D_BH19-15_20190507_SO	N	5/7/2019	0	0.15	Benzo(e)pyrene	192-97-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.016	1	SO	Surface Soil 0-1.5m	E_BH19-16	E_BH19-16_20190507_SO	N	5/7/2019	0	0.15	Benzo(e)pyrene	192-97-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.047	1	SO	Surface Soil 0-1.5m	C-2136C	C-2136C_20200224_SO	N	2/24/2020	0	0.1	Benzo(e)pyrene	192-97-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	S-094B	S-094B_20191016_SO	N	10/16/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	19-H4-002	19-H4-002_20190609_SO	N	6/9/2019	1	1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	19-H1-002B	19-H1-002B_20191016_SO	N	10/16/2019	1	1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.0091	1	SO	Surface Soil 0-1.5m	C-2509B	C-2509B_20191016_SO	N	10/16/2019	0	0.1	Benzo(e)pyrene	192-97-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.052	1	SO	Surface Soil 0-1.5m	NSERIESDIL-1	NSERIESDIL-1_20191016_SO	N	10/16/2019	0	0.1	Benzo(e)pyrene	192-97-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	S202WB	S202WB_20191016_SO	N	10/16/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.012	1	SO	Surface Soil 0-1.5m	19-H4-001B	19-H4-001B_20191016_SO	N	10/16/2019	0	0.15	Benzo(e)pyrene	192-97-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	19-H3-002	19-H3-002_20190609_SO	N	6/9/2019	1	1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg

TABLE B.8
DATA INPUT FOR PROUCL SOFTWARE
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Notes:
The maximum of the field duplicate and parent sample pairs were applied and a detect was chosen over a non-detect value.

ProUCL Group	ProUCL Result	ProUCL Flag	Medium	Soil Zone	Location	Sample ID	Sample Type	Sample Date	Start Depth (m)	End Depth (m)	COPC	CASRN	Qualifier	Detection Limit for Non-Detects	Unit
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.019	1	SO	Surface Soil 0-1.5m	C-1002WC	C-1002WC_20191016_SO	N	10/16/2019	0	0.1	Benzo(e)pyrene	192-97-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	19-H10-002	19-H10-002_20190609_SO	N	6/9/2019	1	1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.038	1	SO	Surface Soil 0-1.5m	C-2028B	C-2028B_20191016_SO	N	10/16/2019	0	0.1	Benzo(e)pyrene	192-97-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	19-H8-002	19-H8-002_20190609_SO	N	6/9/2019	1	1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	19-H5-002	19-H5-002_20190609_SO	N	6/9/2019	1	1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.28	1	SO	Surface Soil 0-1.5m	NSERIESDIL-2	NSERIESDIL-2_20191016_SO	N	10/16/2019	0	0.1	Benzo(e)pyrene	192-97-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	NSERIESDIL-3	NSERIESDIL-3_20191016_SO	N	10/16/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	C-2058C	C-2058C_20191016_SO	N	10/16/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	19-H1-001	19-H1-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	19-H7-002	19-H7-002_20190609_SO	N	6/9/2019	1	1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	19-H6-002B	19-H6-002B_20191016_SO	N	10/16/2019	1	1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	19-H2-001	19-H2-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	19-H6-001B	19-H6-001B_20191016_SO	N	10/16/2019	0	0.15	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	19-H3-001	19-H3-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.0074	1	SO	Surface Soil 0-1.5m	NSERIESDIL-4	NSERIESDIL-4_20191016_SO	N	10/16/2019	0	0.1	Benzo(e)pyrene	192-97-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	19-H9-002	19-H9-002_20190609_SO	N	6/9/2019	1	1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	C-2180B	C-2180B_20191016_SO	N	10/16/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	19-H5-001B	19-H5-001B_20191016_SO	N	10/16/2019	0	0.15	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	19-H7-001	19-H7-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	19-H10-001	19-H10-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.027	1	SO	Surface Soil 0-1.5m	C-2074B	C-2074B_20191016_SO	N	10/16/2019	0	0.1	Benzo(e)pyrene	192-97-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	DB-110-C	DB-110-C_20190311_SO	N	3/11/2019	0	0.10	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	C-2106B	C-2106B_20191016_SO	N	10/16/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	19-H9-001	19-H9-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	19-H2-002B	19-H2-002B_20191016_SO	N	10/16/2019	1	1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.03	1	SO	Surface Soil 0-1.5m	C-2080B	C-2080B_20191016_SO	N	10/16/2019	0	0.1	Benzo(e)pyrene	192-97-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	19-H8-001	19-H8-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	DB-004	DB-004_20190302_SO	N	3/2/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.03	1	SO	Surface Soil 0-1.5m	N-013	N-013_20190226_SO	N	2/26/2019	0	0.1	Benzo(e)pyrene	192-97-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	S-014	S-014_20190227_SO	N	2/27/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	C-2176	C-2176_20190306_SO	N	3/6/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	S-017	S-017_20190227_SO	N	2/27/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	C-2017	C-2017_20190305_SO	N	3/5/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.0064	1	SO	Surface Soil 0-1.5m	N-010	N-010_20190226_SO	N	2/26/2019	0	0.1	Benzo(e)pyrene	192-97-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.037	1	SO	Surface Soil 0-1.5m	N-015	N-015_20190226_SO	N	2/26/2019	0	0.1	Benzo(e)pyrene	192-97-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.03	1	SO	Surface Soil 0-1.5m	N-016	N-016_20190226_SO	N	2/26/2019	0	0.1	Benzo(e)pyrene	192-97-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	C-2178	C-2178_20190306_SO	N	3/6/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.026	1	SO	Surface Soil 0-1.5m	N-021	N-021_20190226_SO	N	2/26/2019	0	0.1	Benzo(e)pyrene	192-97-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	S-023B	S-023B_20190227_SO	N	2/27/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	S-022	S-022_20190227_SO	N	2/27/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	C-2160	C-2160_20190306_SO	N	3/6/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	C-1004W	C-1004W_20190303_SO	N	3/3/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.24	1	SO	Surface Soil 0-1.5m	N-031	N-031_20190226_SO	N	2/26/2019	0	0.1	Benzo(e)pyrene	192-97-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.42	1	SO	Surface Soil 0-1.5m	N-009	N-009_20190226_SO	N	2/26/2019	0	0.1	Benzo(e)pyrene	192-97-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	S-019A	S-019A_20190227_SO	N	2/27/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.042	1	SO	Surface Soil 0-1.5m	N-006	N-006_20190226_SO	N	2/26/2019	0	0.1	Benzo(e)pyrene	192-97-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.026	1	SO	Surface Soil 0-1.5m	N-007	N-007_20190226_SO	N	2/26/2019	0	0.1	Benzo(e)pyrene	192-97-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	C-2100	C-2100_20190305_SO	N	3/5/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.012	1	SO	Surface Soil 0-1.5m	N-001	N-001_20190226_SO	N	2/26/2019	0	0.1	Benzo(e)pyrene	192-97-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.098	1	SO	Surface Soil 0-1.5m	N-036	N-036_20190226_SO	N	2/26/2019	0	0.1	Benzo(e)pyrene	192-97-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.0067	1	SO	Surface Soil 0-1.5m	EXW2-3	EXW2-3_20190605_SO	N	6/5/2019	1.385	1.385	Benzo(e)pyrene	192-97-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	C-2311	C-2311_20190307_SO	N	3/7/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.011	1	SO	Surface Soil 0-1.5m	C-2082	C-2082_20190305_SO	N	3/5/2019	0	0.1	Benzo(e)pyrene	192-97-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.012	1	SO	Surface Soil 0-1.5m	N-027	N-027_20190226_SO	N	2/26/2019	0	0.1	Benzo(e)pyrene	192-97-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	C-2071	C-2071_20190305_SO	N	3/5/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.019	1	SO	Surface Soil 0-1.5m	C-2033	C-2033_20190305_SO	N	3/5/2019	0	0.1	Benzo(e)pyrene	192-97-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	S-098	S-098_20190227_SO	N	2/27/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	S-073	S-073_20190227_SO	N	2/27/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	S-065A	S-065A_20190227_SO	N	2/27/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	S-085	S-085_20190227_SO	N	2/27/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	S-101-C	S-101-C_20190308_SO	N	3/8/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	S-063	S-063_20190227_SO	N	2/27/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	S-212W-C	S-212W-C_20190307_SO	N	3/7/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	S-075	S-075_20190227_SO	N	2/27/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	S-025	S-025_20190227_SO	N	2/27/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	S-074B	S-074B_20190227_SO	N	2/27/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	S-093B	S-093B_20190227_SO	N	2/27/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	S-097	S-097_20190227_SO	N	2/27/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	S-054A	S-054A_20190227_SO	N	2/27/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	SLOT2-1	SLOT2-1_20190606_SO	N	6/6/2019	1.34	1.34	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	S-051B	S-051B_20190227_SO	N	2/27/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.017	1	SO	Surface Soil 0-1.5m	S323F	S323F_20190302_SO	N	3/2/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	S-088	S-088_20190227_SO	N	2/27/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	BH19-120-2	BH19-120-2_20191205_SO	N	12/5/2019	1.22	1.52	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.036	1	SO	Surface Soil 0-1.5m	C-2136C	C-2136C_20200224_SO	N	2/24/2020	0	0.1	Benzo(g,h,i)perylene	191-24-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.018	1	SO	Surface Soil 0-1.5m	E_BH19-16	E_BH19-16_20190507_SO	N	5/7/2019	0	0.15	Benzo(g,h,i)perylene	191-24-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.078	1	SO	Surface Soil 0-1.5m	D_BH19-15	D_BH19-15_20190507_SO	N	5/7/2019	0	0.15	Benzo(g,h,i)perylene	191-24-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	19-H1-002B	19-H1-002B_20191016_SO	N	10/16/2019	1	1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	19-H6-002B	19-H6-002B_20191016_SO	N	10/16/2019	1	1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	19-H1-001	19-H1-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	19-H2-002B	19-H2-002B_20191016_SO	N	10/16/2019	1	1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	19-H7-001	19-H7-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	19-H7-002	19-H7-002_20190609_SO	N	6/9/2019	1	1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	19-H3-002	19-H3-002_20190609_SO	N	6/9/2019	1	1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	19-H10-001	19-H10-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.014	1	SO	Surface Soil 0-1.5m	C-1002WC	C-1002WC_20191016_SO	N	10/16/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.0055	1	SO	Surface Soil 0-1.5m	NSERIESDIL-4	NSERIESDIL-4_20191016_SO	N	10/16/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	19-H4-002	19-H4-002_20190609_SO	N	6/9/2019	1	1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	S202WB	S202WB_20191016_SO	N	10/16/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	19-H10-002	19-H10-002_20190609_SO	N	6/9/2019	1	1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	DB-110-C	DB-110-C_20190311_SO	N	3/11/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	19-H5-001B	19-H5-001B_20191016_SO	N	10/16/2019	0	0.15	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	19-H3-001	19-H3-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	NSERIESDIL-3	NSERIESDIL-3_20191016_SO	N	10/16/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	19-H9-002	19-H9-002_20190609_SO	N	6/9/2019	1	1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	19-H8-002	19-H8-002_20190609_SO	N	6/9/2019	1	1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.014	1	SO	Surface Soil 0-1.5m	C-2074B	C-2074B_20191016_SO	N	10/16/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	19-H6-001B	19-H6-001B_20191016_SO	N	10/16/2019	0	0.15	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	19-H9-001	19-H9-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.033	1	SO	Surface Soil 0-1.5m	NSERIESDIL-1	NSERIESDIL-1_20191016_SO	N	10/16/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	S-094B	S-094B_20191016_SO	N	10/16/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.044	1	SO	Surface Soil 0-1.5m	C-2028B	C-2028B_20191016_SO	N	10/16/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	C-2058C	C-2058C_20191016_SO	N	10/16/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.021	1	SO	Surface Soil 0-1.5m	C-2080B	C-2080B_20191016_SO	N	10/16/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	C-2106B	C-2106B_20191016_SO	N	10/16/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	C-2180B	C-2180B_20191016_SO	N	10/16/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	19-H5-002	19-H5-002_20190609_SO	N	6/9/2019	1	1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	C-2509B	C-2509B_20191016_SO	N	10/16/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	19-H2-001	19-H2-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.2	1	SO	Surface Soil 0-1.5m	NSERIESDIL-2	NSERIESDIL-2_20191016_SO	N	10/16/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.008	1	SO	Surface Soil 0-1.5m	19-H4-001B	19-H4-001B_20191016_SO	N	10/16/2019	0	0.15	Benzo(g,h,i)perylene	191-24-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	19-H8-001	19-H8-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	C-2311	C-2311_20190307_SO	N	3/7/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.073	1	SO	Surface Soil 0-1.5m	N-036	N-036_20190226_SO	N	2/26/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	EXW2-3	EXW2-3_20190605_SO	N	6/5/2019	1.385	1.385	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.026	1	SO	Surface Soil 0-1.5m	N-016	N-016_20190226_SO	N	2/26/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.042	1	SO	Surface Soil 0-1.5m	N-015	N-015_20190226_SO	N	2/26/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.013	1	SO	Surface Soil 0-1.5m	C-2033	C-2033_20190305_SO	N	3/5/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	C-2160	C-2160_20190306_SO	N	3/6/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.0091	1	SO	Surface Soil 0-1.5m	N-010	N-010_20190226_SO	N	2/26/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	S-017	S-017_20190227_SO	N	2/27/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.0096	1	SO	Surface Soil 0-1.5m	N-001	N-001_20190226_SO	N	2/26/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.0083	1	SO	Surface Soil 0-1.5m	C-2082	C-2082_20190305_SO	N	3/5/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.021	1	SO	Surface Soil 0-1.5m	N-013	N-013_20190226_SO	N	2/26/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	C-2071	C-2071_20190305_SO	N	3/5/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	S-023B	S-023B_20190227_SO	N	2/27/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.014	1	SO	Surface Soil 0-1.5m	N-007	N-007_20190226_SO	N	2/26/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.011	1	SO	Surface Soil 0-1.5m	N-027	N-027_20190226_SO	N	2/26/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.24	1	SO	Surface Soil 0-1.5m	N-009	N-009_20190226_SO	N	2/26/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	S-014	S-014_20190227_SO	N	2/27/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	DB-004	DB-004_20190302_SO	N	3/2/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.023	1	SO	Surface Soil 0-1.5m	N-006	N-006_20190226_SO	N	2/26/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	S-019A	S-019A_20190227_SO	N	2/27/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.12	1	SO	Surface Soil 0-1.5m	N-031	N-031_20190226_SO	N	2/26/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	C-2100	C-2100_20190305_SO	N	3/5/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	C-1004W	C-1004W_20190303_SO	N	3/3/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	C-2176	C-2176_20190306_SO	N	3/6/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	C-2178	C-2178_20190306_SO	N	3/6/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	S-022	S-022_20190227_SO	N	2/27/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.02	1	SO	Surface Soil 0-1.5m	N-021	N-021_20190226_SO	N	2/26/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.0059	1	SO	Surface Soil 0-1.5m	C-2017	C-2017_20190305_SO	N	3/5/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	S-073	S-073_20190227_SO	N	2/27/2019	0	0.1	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	S-054A	S-054A_20190227_SO	N	2/27/2019	0	0.1	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	S-074B	S-074B_20190227_SO	N	2/27/2019	0	0.1	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	S-075	S-075_20190227_SO	N	2/27/2019	0	0.1	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	S-085	S-085_20190227_SO	N	2/27/2019	0	0.1	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.073	1	SO	Surface Soil 0-1.5m	S323F	S323F_20190302_SO	N	3/2/2019	0	0.1	Chrysene	218-01-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	SLOT2-1	SLOT2-1_20190606_SO	N	6/6/2019	1.34	1.34	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	S-051B	S-051B_20190227_SO	N	2/27/2019	0	0.1	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	S-212W-C	S-212W-C_20190307_SO	N	3/7/2019	0	0.1	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	S-065A	S-065A_20190227_SO	N	2/27/2019	0	0.1	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	S-063	S-063_20190227_SO	N	2/27/2019	0	0.10	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	S-025	S-025_20190227_SO	N	2/27/2019	0	0.1	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	S-097	S-097_20190227_SO	N	2/27/2019	0	0.1	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	S-101-C	S-101-C_20190308_SO	N	3/8/2019	0	0.1	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	S-088	S-088_20190227_SO	N	2/27/2019	0	0.1	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	S-023B	S-023B_20190227_SO	N	2/27/2019	0	0.1	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	S-093B	S-093B_20190227_SO	N	2/27/2019	0	0.1	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	S-098	S-098_20190227_SO	N	2/27/2019	0	0.1	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	BH19-120-2	BH19-120-2_20191205_SO	N	12/5/2019	1.22	1.52	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.019	1	SO	Surface Soil 0-1.5m	E_BH19-16	E_BH19-16_20190507_SO	N	5/7/2019	0	0.15	Chrysene	218-01-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.051	1	SO	Surface Soil 0-1.5m	C-2136C	C-2136C_20200224_SO	N	2/24/2020	0	0.1	Chrysene	218-01-9			mg/kg

TABLE B.8
DATA INPUT FOR PROUCL SOFTWARE
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Notes:
The maximum of the field duplicate and parent sample pairs were applied and a detect was chosen over a non-detect value.

ProUCL Group	ProUCL Result	ProUCL Flag	Medium	Soil Zone	Location	Sample ID	Sample Type	Sample Date	Start Depth (m)	End Depth (m)	COPC	CASRN	Qualifier	Detection Limit for Non-Detects	Unit
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.17	1	SO	Surface Soil 0-1.5m	D_BH19-15	D_BH19-15_20190507_SO	N	5/7/2019	0	0.15	Chrysene	218-01-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	19-H3-002	19-H3-002_20190609_SO	N	6/9/2019	1	1	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	NSERIESDIL-3	NSERIESDIL-3_20191016_SO	N	10/16/2019	0	0.1	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	19-H2-002B	19-H2-002B_20191016_SO	N	10/16/2019	1	1	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.0096	1	SO	Surface Soil 0-1.5m	C-2509B	C-2509B_20191016_SO	N	10/16/2019	0	0.1	Chrysene	218-01-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	19-H1-002B	19-H1-002B_20191016_SO	N	10/16/2019	1	1	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	19-H3-001	19-H3-001_20190609_SO	N	6/9/2019	0	0.15	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.017	1	SO	Surface Soil 0-1.5m	C-2074B	C-2074B_20191016_SO	N	10/16/2019	0	0.1	Chrysene	218-01-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	19-H6-001B	19-H6-001B_20191016_SO	N	10/16/2019	0	0.15	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	19-H9-002	19-H9-002_20190609_SO	N	6/9/2019	1	1	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	19-H8-002	19-H8-002_20190609_SO	N	6/9/2019	1	1	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.031	1	SO	Surface Soil 0-1.5m	C-2080B	C-2080B_20191016_SO	N	10/16/2019	0	0.1	Chrysene	218-01-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.012	1	SO	Surface Soil 0-1.5m	C-2106B	C-2106B_20191016_SO	N	10/16/2019	0	0.1	Chrysene	218-01-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	S-094B	S-094B_20191016_SO	N	10/16/2019	0	0.1	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	C-2180B	C-2180B_20191016_SO	N	10/16/2019	0	0.1	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.038	1	SO	Surface Soil 0-1.5m	NSERIESDIL-1	NSERIESDIL-1_20191016_SO	N	10/16/2019	0	0.1	Chrysene	218-01-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	19-H4-001B	19-H4-001B_20191016_SO	N	10/16/2019	0	0.15	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	19-H7-002	19-H7-002_20190609_SO	N	6/9/2019	1	1	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.021	1	SO	Surface Soil 0-1.5m	C-2028B	C-2028B_20191016_SO	N	10/16/2019	0	0.1	Chrysene	218-01-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.0071	1	SO	Surface Soil 0-1.5m	19-H9-001	19-H9-001_20190609_SO	N	6/9/2019	0	0.15	Chrysene	218-01-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	19-H1-001	19-H1-001_20190609_SO	N	6/9/2019	0	0.15	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	19-H10-002	19-H10-002_20190609_SO	N	6/9/2019	1	1	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	19-H8-001	19-H8-001_20190609_SO	N	6/9/2019	0	0.15	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	19-H6-002B	19-H6-002B_20191016_SO	N	10/16/2019	1	1	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	19-H5-002	19-H5-002_20190609_SO	N	6/9/2019	1	1	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	NSERIESDIL-4	NSERIESDIL-4_20191016_SO	N	10/16/2019	0	0.1	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	19-H5-001B	19-H5-001B_20191016_SO	N	10/16/2019	0	0.15	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	DB-110-C	DB-110-C_20190311_SO	N	3/11/2019	0	0.1	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	19-H10-001	19-H10-001_20190609_SO	N	6/9/2019	0	0.15	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	19-H4-002	19-H4-002_20190609_SO	N	6/9/2019	1	1	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	C-2058C	C-2058C_20191016_SO	N	10/16/2019	0	0.1	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.021	1	SO	Surface Soil 0-1.5m	C-1002WC	C-1002WC_20191016_SO	N	10/16/2019	0	0.1	Chrysene	218-01-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.36	1	SO	Surface Soil 0-1.5m	NSERIESDIL-2	NSERIESDIL-2_20191016_SO	N	10/16/2019	0	0.1	Chrysene	218-01-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	19-H7-001	19-H7-001_20190609_SO	N	6/9/2019	0	0.15	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	S202WB	S202WB_20191016_SO	N	10/16/2019	0	0.1	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	19-H2-001	19-H2-001_20190609_SO	N	6/9/2019	0	0.15	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.012	1	SO	Surface Soil 0-1.5m	N-001	N-001_20190226_SO	N	2/26/2019	0	0.1	Chrysene	218-01-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.018	1	SO	Surface Soil 0-1.5m	EXW2-3	EXW2-3_20190605_SO	N	6/5/2019	1.385	1.385	Chrysene	218-01-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	C-2178	C-2178_20190306_SO	N	3/6/2019	0	0.1	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	DB-004	DB-004_20190302_SO	N	3/2/2019	0	0.1	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.02	1	SO	Surface Soil 0-1.5m	N-021	N-021_20190226_SO	N	2/26/2019	0	0.1	Chrysene	218-01-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.36	1	SO	Surface Soil 0-1.5m	N-009	N-009_20190226_SO	N	2/26/2019	0	0.1	Chrysene	218-01-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	S-014	S-014_20190227_SO	N	2/27/2019	0	0.1	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.048	1	SO	Surface Soil 0-1.5m	C-2033	C-2033_20190305_SO	N	3/5/2019	0	0.1	Chrysene	218-01-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	C-2071	C-2071_20190305_SO	N	3/5/2019	0	0.1	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	S-017	S-017_20190227_SO	N	2/27/2019	0	0.1	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	C-2160	C-2160_20190306_SO	N	3/6/2019	0	0.1	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.016	1	SO	Surface Soil 0-1.5m	C-2082	C-2082_20190305_SO	N	3/5/2019	0	0.1	Chrysene	218-01-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	C-2100	C-2100_20190305_SO	N	3/5/2019	0	0.1	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	C-2176	C-2176_20190306_SO	N	3/6/2019	0	0.1	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	C-1004W	C-1004W_20190303_SO	N	3/3/2019	0	0.1	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	S-022	S-022_20190227_SO	N	2/27/2019	0	0.1	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.2	1	SO	Surface Soil 0-1.5m	N-031	N-031_20190226_SO	N	2/26/2019	0	0.1	Chrysene	218-01-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.057	1	SO	Surface Soil 0-1.5m	N-006	N-006_20190226_SO	N	2/26/2019	0	0.1	Chrysene	218-01-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	C-2017	C-2017_20190305_SO	N	3/5/2019	0	0.1	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	N-010	N-010_20190226_SO	N	2/26/2019	0	0.10	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.089	1	SO	Surface Soil 0-1.5m	N-036	N-036_20190226_SO	N	2/26/2019	0	0.1	Chrysene	218-01-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.058	1	SO	Surface Soil 0-1.5m	N-007	N-007_20190226_SO	N	2/26/2019	0	0.1	Chrysene	218-01-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.032	1	SO	Surface Soil 0-1.5m	N-015	N-015_20190226_SO	N	2/26/2019	0	0.1	Chrysene	218-01-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.0053	1	SO	Surface Soil 0-1.5m	N-027	N-027_20190226_SO	N	2/26/2019	0	0.1	Chrysene	218-01-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.04	1	SO	Surface Soil 0-1.5m	N-013	N-013_20190226_SO	N	2/26/2019	0	0.1	Chrysene	218-01-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	C-2311	C-2311_20190307_SO	N	3/7/2019	0	0.1	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.005	0	SO	Surface Soil 0-1.5m	S-019A	S-019A_20190227_SO	N	2/27/2019	0	0.1	Chrysene	218-01-9	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Chrysene_218-01-9	0.056	1	SO	Surface Soil 0-1.5m	N-016	N-016_20190226_SO	N	2/26/2019	0	0.1	Chrysene	218-01-9			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	S-212W-C	S-212W-C_20190307_SO	N	3/7/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.01	1	SO	Surface Soil 0-1.5m	S-025	S-025_20190227_SO	N	2/27/2019	0	0.1	Fluorene	86-73-7			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	S-101-C	S-101-C_20190308_SO	N	3/8/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	S-098	S-098_20190227_SO	N	2/27/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	S-088	S-088_20190227_SO	N	2/27/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	S-085	S-085_20190227_SO	N	2/27/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	S-075	S-075_20190227_SO	N	2/27/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	S-074B	S-074B_20190227_SO	N	2/27/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	S-023B	S-023B_20190227_SO	N	2/27/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	S-051B	S-051B_20190227_SO	N	2/27/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	S-063	S-063_20190227_SO	N	2/27/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	S-097	S-097_20190227_SO	N	2/27/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	SLOT2-1	SLOT2-1_20190606_SO	N	6/6/2019	1.34	1.34	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	S323F	S323F_20190302_SO	N	3/2/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	S-054A	S-054A_20190227_SO	N	2/27/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	S-093B	S-093B_20190227_SO	N	2/27/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	S-073	S-073_20190227_SO	N	2/27/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	S-065A	S-065A_20190227_SO	N	2/27/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	BH19-120-2	BH19-120-2_20191205_SO	N	12/5/2019	1.22	1.52	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	C-2136C	C-2136C_20200224_SO	N	2/24/2020	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.38	1	SO	Surface Soil 0-1.5m	D_BH19-15	D_BH19-15_20190507_SO	N	5/7/2019	0	0.15	Fluorene	86-73-7			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.017	1	SO	Surface Soil 0-1.5m	E_BH19-16	E_BH19-16_20190507_SO	N	5/7/2019	0	0.15	Fluorene	86-73-7			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	C-2080B	C-2080B_20191016_SO	N	10/16/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	C-2074B	C-2074B_20191016_SO	N	10/16/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.0073	1	SO	Surface Soil 0-1.5m	19-H9-001	19-H9-001_20190609_SO	N	6/9/2019	0	0.15	Fluorene	86-73-7			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	19-H7-001	19-H7-001_20190609_SO	N	6/9/2019	0	0.15	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	19-H4-001B	19-H4-001B_20191016_SO	N	10/16/2019	0	0.15	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	DB-110-C	DB-110-C_20190311_SO	N	3/11/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	19-H10-001	19-H10-001_20190609_SO	N	6/9/2019	0	0.15	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	19-H2-001	19-H2-001_20190609_SO	N	6/9/2019	0	0.15	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	NSERIESDIL-1	NSERIESDIL-1_20191016_SO	N	10/16/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	19-H6-002B	19-H6-002B_20191016_SO	N	10/16/2019	1	1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	NSERIESDIL-4	NSERIESDIL-4_20191016_SO	N	10/16/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	C-2028B	C-2028B_20191016_SO	N	10/16/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	S-094B	S-094B_20191016_SO	N	10/16/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.0064	1	SO	Surface Soil 0-1.5m	NSERIESDIL-2	NSERIESDIL-2_20191016_SO	N	10/16/2019	0	0.1	Fluorene	86-73-7			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	19-H7-002	19-H7-002_20190609_SO	N	6/9/2019	1	1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	19-H8-001	19-H8-001_20190609_SO	N	6/9/2019	0	0.15	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	19-H9-002	19-H9-002_20190609_SO	N	6/9/2019	1	1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	19-H4-002	19-H4-002_20190609_SO	N	6/9/2019	1	1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	19-H1-001	19-H1-001_20190609_SO	N	6/9/2019	0	0.15	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	C-2180B	C-2180B_20191016_SO	N	10/16/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	19-H3-002	19-H3-002_20190609_SO	N	6/9/2019	1	1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	19-H5-001B	19-H5-001B_20191016_SO	N	10/16/2019	0	0.15	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	C-1002WC	C-1002WC_20191016_SO	N	10/16/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	19-H10-002	19-H10-002_20190609_SO	N	6/9/2019	1	1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.0084	1	SO	Surface Soil 0-1.5m	19-H1-002B	19-H1-002B_20191016_SO	N	10/16/2019	1	1	Fluorene	86-73-7			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	S202WB	S202WB_20191016_SO	N	10/16/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	19-H3-001	19-H3-001_20190609_SO	N	6/9/2019	0	0.15	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	19-H6-001B	19-H6-001B_20191016_SO	N	10/16/2019	0	0.15	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.0087	1	SO	Surface Soil 0-1.5m	19-H2-002B	19-H2-002B_20191016_SO	N	10/16/2019	1	1	Fluorene	86-73-7			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	19-H5-002	19-H5-002_20190609_SO	N	6/9/2019	1	1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	C-2058C	C-2058C_20191016_SO	N	10/16/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	C-2106B	C-2106B_20191016_SO	N	10/16/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	19-H8-002	19-H8-002_20190609_SO	N	6/9/2019	1	1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	NSERIESDIL-3	NSERIESDIL-3_20191016_SO	N	10/16/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	C-2509B	C-2509B_20191016_SO	N	10/16/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.063	1	SO	Surface Soil 0-1.5m	N-021	N-021_20190226_SO	N	2/26/2019	0	0.1	Fluorene	86-73-7			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.029	1	SO	Surface Soil 0-1.5m	N-009	N-009_20190226_SO	N	2/26/2019	0	0.1	Fluorene	86-73-7			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.0065	1	SO	Surface Soil 0-1.5m	C-2100	C-2100_20190305_SO	N	3/5/2019	0	0.1	Fluorene	86-73-7			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	C-2311	C-2311_20190307_SO	N	3/7/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	S-014	S-014_20190227_SO	N	2/27/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.068	1	SO	Surface Soil 0-1.5m	N-016	N-016_20190226_SO	N	2/26/2019	0	0.1	Fluorene	86-73-7			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	S-017	S-017_20190227_SO	N	2/27/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.018	1	SO	Surface Soil 0-1.5m	N-001	N-001_20190226_SO	N	2/26/2019	0	0.1	Fluorene	86-73-7			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	C-2160	C-2160_20190306_SO	N	3/6/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	DB-004	DB-004_20190302_SO	N	3/2/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	S-022	S-022_20190227_SO	N	2/27/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.044	1	SO	Surface Soil 0-1.5m	N-007	N-007_20190226_SO	N	2/26/2019	0	0.1	Fluorene	86-73-7			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.035	1	SO	Surface Soil 0-1.5m	EXW2-3	EXW2-3_20190605_SO	N	6/5/2019	1.385	1.385	Fluorene	86-73-7			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	N-036	N-036_20190226_SO	N	2/26/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	N-010	N-010_20190226_SO	N	2/26/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	C-2082	C-2082_20190305_SO	N	3/5/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	S-019A	S-019A_20190227_SO	N	2/27/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.049	1	SO	Surface Soil 0-1.5m	N-013	N-013_20190226_SO	N	2/26/2019	0	0.1	Fluorene	86-73-7			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.097	1	SO	Surface Soil 0-1.5m	C-2033	C-2033_20190305_SO	N	3/5/2019	0	0.1	Fluorene	86-73-7			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	C-1004W	C-1004W_20190303_SO	N	3/3/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.0057	1	SO	Surface Soil 0-1.5m	C-2017	C-2017_20190305_SO	N	3/5/2019	0	0.1	Fluorene	86-73-7			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	C-2176	C-2176_20190306_SO	N	3/6/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	C-2178	C-2178_20190306_SO	N	3/6/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	N-027	N-027_20190226_SO	N	2/26/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.005	0	SO	Surface Soil 0-1.5m	C-2071	C-2071_20190305_SO	N	3/5/2019	0	0.1	Fluorene	86-73-7	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.013	1	SO	Surface Soil 0-1.5m	N-031	N-031_20190226_SO	N	2/26/2019	0	0.1	Fluorene	86-73-7			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.011	1	SO	Surface Soil 0-1.5m	N-015	N-015_20190226_SO	N	2/26/2019	0	0.1	Fluorene	86-73-7			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Fluorene_86-73-7	0.043	1	SO	Surface Soil 0-1.5m	N-006	N-006_20190226_SO	N	2/26/2019	0	0.1	Fluorene	86-73-7			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	S-073	S-073_20190227_SO	N	2/27/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	SLOT2-1	SLOT2-1_20190606_SO	N	6/6/2019	1.34	1.34	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	S-054A	S-054A_20190227_SO	N	2/27/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	S-093B	S-093B_20190227_SO	N	2/27/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	S-097	S-097_20190227_SO	N	2/27/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	S-023B	S-023B_20190227_SO	N	2/27/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	S-212W-C	S-212W-C_20190307_SO	N	3/7/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	S-088	S-088_20190227_SO	N	2/27/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	S-085	S-085_20190227_SO	N	2/27/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	S-051B	S-051B_20190227_SO	N	2/27/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.037	1	SO	Surface Soil 0-1.5m	S-025	S-025_20190227_SO	N	2/27/2019	0	0.1	Methylnaphthalene, 2-	91-57-6			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	S-074B	S-074B_20190227_SO	N	2/27/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	S-075	S-075_20190227_SO	N	2/27/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg

TABLE B.8
DATA INPUT FOR PROUCL SOFTWARE
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Notes:
The maximum of the field duplicate and parent sample pairs were applied and a detect was chosen over a non-detect value.

ProUCL Group	ProUCL Result	ProUCL Flag	Medium	Soil Zone	Location	Sample ID	Sample Type	Sample Date	Start Depth (m)	End Depth (m)	COPC	CASRN	Qualifier	Detection Limit for Non-Detects	Unit
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	S-065A	S-065A_20190227_SO	N	2/27/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	S-063	S-063_20190227_SO	N	2/27/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	S-098	S-098_20190227_SO	N	2/27/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	S-101-C	S-101-C_20190308_SO	N	3/8/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.014	1	SO	Surface Soil 0-1.5m	S323F	S323F_20190302_SO	N	3/2/2019	0	0.1	Methylnaphthalene, 2-	91-57-6			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	BH19-120-2	BH19-120-2_20191205_SO	N	12/5/2019	1.22	1.52	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.011	1	SO	Surface Soil 0-1.5m	E_BH19-16	E_BH19-16_20190507_SO	N	5/7/2019	0	0.15	Methylnaphthalene, 2-	91-57-6			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.0083	1	SO	Surface Soil 0-1.5m	C-2136C	C-2136C_20200224_SO	N	2/24/2020	0	0.1	Methylnaphthalene, 2-	91-57-6			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.071	1	SO	Surface Soil 0-1.5m	D_BH19-15	D_BH19-15_20190507_SO	N	5/7/2019	0	0.15	Methylnaphthalene, 2-	91-57-6			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	19-H1-001	19-H1-001_20190609_SO	N	6/9/2019	0	0.15	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	19-H8-002	19-H8-002_20190609_SO	N	6/9/2019	1	1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	C-2080B	C-2080B_20191016_SO	N	10/16/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	19-H9-002	19-H9-002_20190609_SO	N	6/9/2019	1	1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	C-2028B	C-2028B_20191016_SO	N	10/16/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.0098	1	SO	Surface Soil 0-1.5m	C-2509B	C-2509B_20191016_SO	N	10/16/2019	0	0.1	Methylnaphthalene, 2-	91-57-6			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	S-094B	S-094B_20191016_SO	N	10/16/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	19-H7-002	19-H7-002_20190609_SO	N	6/9/2019	1	1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	C-2106B	C-2106B_20191016_SO	N	10/16/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	NSERIESDIL-1	NSERIESDIL-1_20191016_SO	N	10/16/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	C-2180B	C-2180B_20191016_SO	N	10/16/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	19-H3-001	19-H3-001_20190609_SO	N	6/9/2019	0	0.15	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	19-H6-001B	19-H6-001B_20191016_SO	N	10/16/2019	0	0.15	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	C-2074B	C-2074B_20191016_SO	N	10/16/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	19-H9-001	19-H9-001_20190609_SO	N	6/9/2019	0	0.15	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	19-H5-002	19-H5-002_20190609_SO	N	6/9/2019	1	1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.0074	1	SO	Surface Soil 0-1.5m	C-1002WC	C-1002WC_20191016_SO	N	10/16/2019	0	0.1	Methylnaphthalene, 2-	91-57-6			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	C-2058C	C-2058C_20191016_SO	N	10/16/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	19-H6-002B	19-H6-002B_20191016_SO	N	10/16/2019	1	1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.0069	1	SO	Surface Soil 0-1.5m	19-H5-001B	19-H5-001B_20191016_SO	N	10/16/2019	0	0.15	Methylnaphthalene, 2-	91-57-6			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.0067	1	SO	Surface Soil 0-1.5m	19-H1-002B	19-H1-002B_20191016_SO	N	10/16/2019	1	1	Methylnaphthalene, 2-	91-57-6			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.0066	1	SO	Surface Soil 0-1.5m	19-H2-002B	19-H2-002B_20191016_SO	N	10/16/2019	1	1	Methylnaphthalene, 2-	91-57-6			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	NSERIESDIL-3	NSERIESDIL-3_20191016_SO	N	10/16/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	DB-110-C	DB-110-C_20190311_SO	N	3/11/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	19-H2-001	19-H2-001_20190609_SO	N	6/9/2019	0	0.15	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	NSERIESDIL-4	NSERIESDIL-4_20191016_SO	N	10/16/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	NSERIESDIL-2	NSERIESDIL-2_20191016_SO	N	10/16/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	19-H3-002	19-H3-002_20190609_SO	N	6/9/2019	1	1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	19-H10-001	19-H10-001_20190609_SO	N	6/9/2019	0	0.15	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	19-H7-001	19-H7-001_20190609_SO	N	6/9/2019	0	0.15	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	19-H10-002	19-H10-002_20190609_SO	N	6/9/2019	1	1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	19-H4-001B	19-H4-001B_20191016_SO	N	10/16/2019	0	0.15	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	S202WB	S202WB_20191016_SO	N	10/16/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	19-H4-002	19-H4-002_20190609_SO	N	6/9/2019	1	1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	19-H8-001	19-H8-001_20190609_SO	N	6/9/2019	0	0.15	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	C-2071	C-2071_20190305_SO	N	3/5/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	S-022	S-022_20190227_SO	N	2/27/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.034	1	SO	Surface Soil 0-1.5m	N-013	N-013_20190226_SO	N	2/26/2019	0	0.1	Methylnaphthalene, 2-	91-57-6			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	S-017	S-017_20190227_SO	N	2/27/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.042	1	SO	Surface Soil 0-1.5m	N-009	N-009_20190226_SO	N	2/26/2019	0	0.1	Methylnaphthalene, 2-	91-57-6			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.031	1	SO	Surface Soil 0-1.5m	N-031	N-031_20190226_SO	N	2/26/2019	0	0.1	Methylnaphthalene, 2-	91-57-6			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	C-2178	C-2178_20190306_SO	N	3/6/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	C-1004W	C-1004W_20190303_SO	N	3/3/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.017	1	SO	Surface Soil 0-1.5m	N-016	N-016_20190226_SO	N	2/26/2019	0	0.1	Methylnaphthalene, 2-	91-57-6			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.055	1	SO	Surface Soil 0-1.5m	N-006	N-006_20190226_SO	N	2/26/2019	0	0.1	Methylnaphthalene, 2-	91-57-6			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	S-019A	S-019A_20190227_SO	N	2/27/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	C-2082	C-2082_20190305_SO	N	3/5/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	N-027	N-027_20190226_SO	N	2/26/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	EXW2-3	EXW2-3_20190605_SO	N	6/5/2019	1.385	1.385	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	C-2176	C-2176_20190306_SO	N	3/6/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	N-036	N-036_20190226_SO	N	2/26/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.011	1	SO	Surface Soil 0-1.5m	N-015	N-015_20190226_SO	N	2/26/2019	0	0.1	Methylnaphthalene, 2-	91-57-6			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	DB-004	DB-004_20190302_SO	N	3/2/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	N-010	N-010_20190226_SO	N	2/26/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.019	1	SO	Surface Soil 0-1.5m	N-007	N-007_20190226_SO	N	2/26/2019	0	0.1	Methylnaphthalene, 2-	91-57-6			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.034	1	SO	Surface Soil 0-1.5m	C-2033	C-2033_20190305_SO	N	3/5/2019	0	0.1	Methylnaphthalene, 2-	91-57-6			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	S-014	S-014_20190227_SO	N	2/27/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.02	1	SO	Surface Soil 0-1.5m	N-021	N-021_20190226_SO	N	2/26/2019	0	0.1	Methylnaphthalene, 2-	91-57-6			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	C-2311	C-2311_20190307_SO	N	3/7/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.024	1	SO	Surface Soil 0-1.5m	C-2100	C-2100_20190305_SO	N	3/5/2019	0	0.1	Methylnaphthalene, 2-	91-57-6			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.017	1	SO	Surface Soil 0-1.5m	N-001	N-001_20190226_SO	N	2/26/2019	0	0.1	Methylnaphthalene, 2-	91-57-6			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	C-2160	C-2160_20190306_SO	N	3/6/2019	0	0.10	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	C-2017	C-2017_20190305_SO	N	3/5/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	S-088	S-088_20190227_SO	N	2/27/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	S-212W-C	S-212W-C_20190307_SO	N	3/7/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	S-075	S-075_20190227_SO	N	2/27/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	S-051B	S-051B_20190227_SO	N	2/27/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	S-065A	S-065A_20190227_SO	N	2/27/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	S-063	S-063_20190227_SO	N	2/27/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	S-098	S-098_20190227_SO	N	2/27/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	S-085	S-085_20190227_SO	N	2/27/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	S-097	S-097_20190227_SO	N	2/27/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	S-074B	S-074B_20190227_SO	N	2/27/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	S-054A	S-054A_20190227_SO	N	2/27/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	S-023B	S-023B_20190227_SO	N	2/27/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.0099	1	SO	Surface Soil 0-1.5m	S323F	S323F_20190302_SO	N	3/2/2019	0	0.1	Naphthalene	91-20-3			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.0089	1	SO	Surface Soil 0-1.5m	S-025	S-025_20190227_SO	N	2/27/2019	0	0.1	Naphthalene	91-20-3			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	S-073	S-073_20190227_SO	N	2/27/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	SLOT2-1	SLOT2-1_20190606_SO	N	6/6/2019	1.34	1.34	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	S-101-C	S-101-C_20190308_SO	N	3/8/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	S-093B	S-093B_20190227_SO	N	2/27/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	BH19-120-2	BH19-120-2_20191205_SO	N	12/5/2019	1.22	1.52	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	C-2136C	C-2136C_20200224_SO	N	2/24/2020	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.014	1	SO	Surface Soil 0-1.5m	D_BH19-15	D_BH19-15_20190507_SO	N	5/7/2019	0	0.15	Naphthalene	91-20-3			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.011	1	SO	Surface Soil 0-1.5m	E_BH19-16	E_BH19-16_20190507_SO	N	5/7/2019	0	0.15	Naphthalene	91-20-3			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	19-H9-001	19-H9-001_20190609_SO	N	6/9/2019	0	0.15	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	NSERIESDIL-3	NSERIESDIL-3_20191016_SO	N	10/16/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	C-2080B	C-2080B_20191016_SO	N	10/16/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	19-H8-002	19-H8-002_20190609_SO	N	6/9/2019	1	1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	19-H9-002	19-H9-002_20190609_SO	N	6/9/2019	1	1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	C-2106B	C-2106B_20191016_SO	N	10/16/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	C-2509B	C-2509B_20191016_SO	N	10/16/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	NSERIESDIL-4	NSERIESDIL-4_20191016_SO	N	10/16/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	C-2058C	C-2058C_20191016_SO	N	10/16/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	C-2028B	C-2028B_20191016_SO	N	10/16/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	C-2074B	C-2074B_20191016_SO	N	10/16/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	C-2180B	C-2180B_20191016_SO	N	10/16/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	NSERIESDIL-2	NSERIESDIL-2_20191016_SO	N	10/16/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	NSERIESDIL-1	NSERIESDIL-1_20191016_SO	N	10/16/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	S202WB	S202WB_20191016_SO	N	10/16/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	C-1002WC	C-1002WC_20191016_SO	N	10/16/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	S-094B	S-094B_20191016_SO	N	10/16/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	19-H7-002	19-H7-002_20190609_SO	N	6/9/2019	1	1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	19-H4-001B	19-H4-001B_20191016_SO	N	10/16/2019	0	0.15	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	19-H5-002	19-H5-002_20190609_SO	N	6/9/2019	1	1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	19-H6-001B	19-H6-001B_20191016_SO	N	10/16/2019	0	0.15	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	19-H10-002	19-H10-002_20190609_SO	N	6/9/2019	1	1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	19-H4-002	19-H4-002_20190609_SO	N	6/9/2019	1	1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	19-H8-001	19-H8-001_20190609_SO	N	6/9/2019	0	0.15	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	19-H6-002B	19-H6-002B_20191016_SO	N	10/16/2019	1	1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	19-H2-001	19-H2-001_20190609_SO	N	6/9/2019	0	0.15	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	19-H3-001	19-H3-001_20190609_SO	N	6/9/2019	0	0.15	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	19-H5-001B	19-H5-001B_20191016_SO	N	10/16/2019	0	0.15	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	19-H1-001	19-H1-001_20190609_SO	N	6/9/2019	0	0.15	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	DB-110-C	DB-110-C_20190311_SO	N	3/11/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	19-H7-001	19-H7-001_20190609_SO	N	6/9/2019	0	0.15	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.011	1	SO	Surface Soil 0-1.5m	19-H1-002B	19-H1-002B_20191016_SO	N	10/16/2019	1	1	Naphthalene	91-20-3			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.0084	1	SO	Surface Soil 0-1.5m	19-H3-002	19-H3-002_20190609_SO	N	6/9/2019	1	1	Naphthalene	91-20-3			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.013	1	SO	Surface Soil 0-1.5m	19-H2-002B	19-H2-002B_20191016_SO	N	10/16/2019	1	1	Naphthalene	91-20-3			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	19-H10-001	19-H10-001_20190609_SO	N	6/9/2019	0	0.15	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	C-1004W	C-1004W_20190303_SO	N	3/3/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	C-2071	C-2071_20190305_SO	N	3/5/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	C-2311	C-2311_20190307_SO	N	3/7/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.007	1	SO	Surface Soil 0-1.5m	N-015	N-015_20190226_SO	N	2/26/2019	0	0.1	Naphthalene	91-20-3			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	S-014	S-014_20190227_SO	N	2/27/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	C-2176	C-2176_20190306_SO	N	3/6/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	C-2017	C-2017_20190305_SO	N	3/5/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.019	1	SO	Surface Soil 0-1.5m	N-013	N-013_20190226_SO	N	2/26/2019	0	0.1	Naphthalene	91-20-3			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.01	1	SO	Surface Soil 0-1.5m	N-016	N-016_20190226_SO	N	2/26/2019	0	0.1	Naphthalene	91-20-3			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	S-017	S-017_20190227_SO	N	2/27/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	C-2160	C-2160_20190306_SO	N	3/6/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	C-2178	C-2178_20190306_SO	N	3/6/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	S-019A	S-019A_20190227_SO	N	2/27/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.026	1	SO	Surface Soil 0-1.5m	N-006	N-006_20190226_SO	N	2/26/2019	0	0.1	Naphthalene	91-20-3			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	C-2033	C-2033_20190305_SO	N	3/5/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.01	1	SO	Surface Soil 0-1.5m	N-021	N-021_20190226_SO	N	2/26/2019	0	0.1	Naphthalene	91-20-3			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	N-010	N-010_20190226_SO	N	2/26/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	DB-004	DB-004_20190302_SO	N	3/2/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.088	1	SO	Surface Soil 0-1.5m	N-031	N-031_20190226_SO	N	2/26/2019	0	0.1	Naphthalene	91-20-3			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	N-027	N-027_20190226_SO	N	2/26/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.031	1	SO	Surface Soil 0-1.5m	N-009	N-009_20190226_SO	N	2/26/2019	0	0.1	Naphthalene	91-20-3			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	N-036	N-036_20190226_SO	N	2/26/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	EXW2-3	EXW2-3_20190605_SO	N	6/5/2019	1.385	1.385	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.012	1	SO	Surface Soil 0-1.5m	N-001	N-001_20190226_SO	N	2/26/2019	0	0.1	Naphthalene	91-20-3			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	S-022	S-022_20190227_SO	N	2/27/2019	0	0.10	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.013	1	SO	Surface Soil 0-1.5m	N-007	N-007_20190226_SO	N	2/26/2019	0	0.1	Naphthalene	91-20-3			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.005	0	SO	Surface Soil 0-1.5m	C-2082	C-2082_20190305_SO	N	3/5/2019	0	0.1	Naphthalene	91-20-3	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Naphthalene_91-20-3	0.0065	1	SO	Surface Soil 0-1.5m	C-2100	C-2100_20190305_SO	N	3/5/2019	0	0.1	Naphthalene	91-20-3			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	S-101-C	S-101-C_20190308_SO	N	3/8/2019	0	0.1	Perylene	198-55-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	S-074B	S-074B_20190227_SO	N	2/27/2019	0	0.1	Perylene	198-55-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.0068	1	SO	Surface Soil 0-1.5m	S-093B	S-093B_20190227_SO	N	2/27/2019	0	0.1	Perylene	198-55-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	S-051B	S-051B_20190227_SO	N	2/27/2019	0	0.1	Perylene	198-55-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	S-025	S-025_20190227_SO	N	2/27/2019	0	0.1	Perylene	198-55-0	U	0.005	mg/kg

TABLE B.8
DATA INPUT FOR PROUCL SOFTWARE
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Notes:
The maximum of the field duplicate and parent sample pairs were applied and a detect was chosen over a non-detect value.

ProUCL Group	ProUCL Result	ProUCL Flag	Medium	Soil Zone	Location	Sample ID	Sample Type	Sample Date	Start Depth (m)	End Depth (m)	COPC	CASRN	Qualifier	Detection Limit for Non-Detects	Unit
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	S-097	S-097_20190227_SO	N	2/27/2019	0	0.1	Perylene	198-55-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.011	1	SO	Surface Soil 0-1.5m	S323F	S323F_20190302_SO	N	3/2/2019	0	0.1	Perylene	198-55-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	SLOT2-1	SLOT2-1_20190606_SO	N	6/6/2019	1.34	1.34	Perylene	198-55-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.0059	1	SO	Surface Soil 0-1.5m	S-073	S-073_20190227_SO	N	2/27/2019	0	0.1	Perylene	198-55-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	S-088	S-088_20190227_SO	N	2/27/2019	0	0.1	Perylene	198-55-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	S-075	S-075_20190227_SO	N	2/27/2019	0	0.1	Perylene	198-55-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	S-063	S-063_20190227_SO	N	2/27/2019	0	0.1	Perylene	198-55-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	S-098	S-098_20190227_SO	N	2/27/2019	0	0.1	Perylene	198-55-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	S-212W-C	S-212W-C_20190307_SO	N	3/7/2019	0	0.1	Perylene	198-55-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	S-054A	S-054A_20190227_SO	N	2/27/2019	0	0.1	Perylene	198-55-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	S-085	S-085_20190227_SO	N	2/27/2019	0	0.1	Perylene	198-55-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	S-065A	S-065A_20190227_SO	N	2/27/2019	0	0.1	Perylene	198-55-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	BH19-120-2	BH19-120-2_20191205_SO	N	12/5/2019	1.22	1.52	Perylene	198-55-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.0052	1	SO	Surface Soil 0-1.5m	E_BH19-16	E_BH19-16_20190507_SO	N	5/7/2019	0	0.15	Perylene	198-55-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.021	1	SO	Surface Soil 0-1.5m	C-2136C	C-2136C_20200224_SO	N	2/24/2020	0	0.1	Perylene	198-55-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.084	1	SO	Surface Soil 0-1.5m	D_BH19-15	D_BH19-15_20190507_SO	N	5/7/2019	0	0.15	Perylene	198-55-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.009	1	SO	Surface Soil 0-1.5m	C-2028B	C-2028B_20191016_SO	N	10/16/2019	0	0.1	Perylene	198-55-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	19-H5-002	19-H5-002_20190609_SO	N	6/9/2019	1	1	Perylene	198-55-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	19-H8-002	19-H8-002_20190609_SO	N	6/9/2019	1	1	Perylene	198-55-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	C-2074B	C-2074B_20191016_SO	N	10/16/2019	0	0.1	Perylene	198-55-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	19-H8-001	19-H8-001_20190609_SO	N	6/9/2019	0	0.15	Perylene	198-55-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.0099	1	SO	Surface Soil 0-1.5m	S202WB	S202WB_20191016_SO	N	10/16/2019	0	0.1	Perylene	198-55-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.011	1	SO	Surface Soil 0-1.5m	C-2180B	C-2180B_20191016_SO	N	10/16/2019	0	0.1	Perylene	198-55-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	19-H9-002	19-H9-002_20190609_SO	N	6/9/2019	1	1	Perylene	198-55-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	19-H4-002	19-H4-002_20190609_SO	N	6/9/2019	1	1	Perylene	198-55-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.008	1	SO	Surface Soil 0-1.5m	S-094B	S-094B_20191016_SO	N	10/16/2019	0	0.1	Perylene	198-55-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.0067	1	SO	Surface Soil 0-1.5m	19-H6-001B	19-H6-001B_20191016_SO	N	10/16/2019	0	0.15	Perylene	198-55-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.074	1	SO	Surface Soil 0-1.5m	NSERIESDIL-2	NSERIESDIL-2_20191016_SO	N	10/16/2019	0	0.1	Perylene	198-55-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.015	1	SO	Surface Soil 0-1.5m	C-2058C	C-2058C_20191016_SO	N	10/16/2019	0	0.1	Perylene	198-55-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	19-H10-001	19-H10-001_20190609_SO	N	6/9/2019	0	0.15	Perylene	198-55-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.0083	1	SO	Surface Soil 0-1.5m	19-H9-001	19-H9-001_20190609_SO	N	6/9/2019	0	0.15	Perylene	198-55-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.0087	1	SO	Surface Soil 0-1.5m	19-H6-002B	19-H6-002B_20191016_SO	N	10/16/2019	1	1	Perylene	198-55-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	19-H10-002	19-H10-002_20190609_SO	N	6/9/2019	1	1	Perylene	198-55-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.012	1	SO	Surface Soil 0-1.5m	19-H1-001	19-H1-001_20190609_SO	N	6/9/2019	0	0.15	Perylene	198-55-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.0074	1	SO	Surface Soil 0-1.5m	NSERIESDIL-1	NSERIESDIL-1_20191016_SO	N	10/16/2019	0	0.1	Perylene	198-55-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	19-H7-002	19-H7-002_20190609_SO	N	6/9/2019	1	1	Perylene	198-55-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.021	1	SO	Surface Soil 0-1.5m	19-H7-001	19-H7-001_20190609_SO	N	6/9/2019	0	0.15	Perylene	198-55-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	NSERIESDIL-4	NSERIESDIL-4_20191016_SO	N	10/16/2019	0	0.1	Perylene	198-55-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.015	1	SO	Surface Soil 0-1.5m	DB-110-C	DB-110-C_20190311_SO	N	3/11/2019	0	0.1	Perylene	198-55-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.015	1	SO	Surface Soil 0-1.5m	C-1002WC	C-1002WC_20191016_SO	N	10/16/2019	0	0.1	Perylene	198-55-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.013	1	SO	Surface Soil 0-1.5m	19-H3-002	19-H3-002_20190609_SO	N	6/9/2019	1	1	Perylene	198-55-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.028	1	SO	Surface Soil 0-1.5m	NSERIESDIL-3	NSERIESDIL-3_20191016_SO	N	10/16/2019	0	0.1	Perylene	198-55-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.024	1	SO	Surface Soil 0-1.5m	19-H1-002B	19-H1-002B_20191016_SO	N	10/16/2019	1	1	Perylene	198-55-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.013	1	SO	Surface Soil 0-1.5m	C-2106B	C-2106B_20191016_SO	N	10/16/2019	0	0.1	Perylene	198-55-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.0067	1	SO	Surface Soil 0-1.5m	19-H3-001	19-H3-001_20190609_SO	N	6/9/2019	0	0.15	Perylene	198-55-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	C-2080B	C-2080B_20191016_SO	N	10/16/2019	0	0.1	Perylene	198-55-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.017	1	SO	Surface Soil 0-1.5m	19-H4-001B	19-H4-001B_20191016_SO	N	10/16/2019	0	0.15	Perylene	198-55-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.008	1	SO	Surface Soil 0-1.5m	19-H2-001	19-H2-001_20190609_SO	N	6/9/2019	0	0.15	Perylene	198-55-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.012	1	SO	Surface Soil 0-1.5m	19-H5-001B	19-H5-001B_20191016_SO	N	10/16/2019	0	0.15	Perylene	198-55-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.026	1	SO	Surface Soil 0-1.5m	C-2509B	C-2509B_20191016_SO	N	10/16/2019	0	0.1	Perylene	198-55-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.032	1	SO	Surface Soil 0-1.5m	19-H2-002B	19-H2-002B_20191016_SO	N	10/16/2019	1	1	Perylene	198-55-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.011	1	SO	Surface Soil 0-1.5m	C-2033	C-2033_20190305_SO	N	3/5/2019	0	0.1	Perylene	198-55-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	C-2176	C-2176_20190306_SO	N	3/6/2019	0	0.1	Perylene	198-55-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	S-019A	S-019A_20190227_SO	N	2/27/2019	0	0.1	Perylene	198-55-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.0086	1	SO	Surface Soil 0-1.5m	N-006	N-006_20190226_SO	N	2/26/2019	0	0.1	Perylene	198-55-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.029	1	SO	Surface Soil 0-1.5m	N-036	N-036_20190226_SO	N	2/26/2019	0	0.1	Perylene	198-55-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	N-010	N-010_20190226_SO	N	2/26/2019	0	0.1	Perylene	198-55-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	C-1004W	C-1004W_20190303_SO	N	3/3/2019	0	0.1	Perylene	198-55-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	EXW2-3	EXW2-3_20190605_SO	N	6/5/2019	1.385	1.385	Perylene	198-55-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.0076	1	SO	Surface Soil 0-1.5m	N-016	N-016_20190226_SO	N	2/26/2019	0	0.1	Perylene	198-55-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	C-2178	C-2178_20190306_SO	N	3/6/2019	0	0.1	Perylene	198-55-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	N-027	N-027_20190226_SO	N	2/26/2019	0	0.1	Perylene	198-55-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	N-001	N-001_20190226_SO	N	2/26/2019	0	0.1	Perylene	198-55-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	C-2017	C-2017_20190305_SO	N	3/5/2019	0	0.1	Perylene	198-55-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	S-022	S-022_20190227_SO	N	2/27/2019	0	0.1	Perylene	198-55-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.007	1	SO	Surface Soil 0-1.5m	C-2082	C-2082_20190305_SO	N	3/5/2019	0	0.1	Perylene	198-55-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	N-021	N-021_20190226_SO	N	2/26/2019	0	0.1	Perylene	198-55-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.0077	1	SO	Surface Soil 0-1.5m	C-2100	C-2100_20190305_SO	N	3/5/2019	0	0.1	Perylene	198-55-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	N-015	N-015_20190226_SO	N	2/26/2019	0	0.1	Perylene	198-55-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	DB-004	DB-004_20190302_SO	N	3/2/2019	0	0.1	Perylene	198-55-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.067	1	SO	Surface Soil 0-1.5m	C-2311	C-2311_20190307_SO	N	3/7/2019	0	0.1	Perylene	198-55-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	S-023B	S-023B_20190227_SO	N	2/27/2019	0	0.1	Perylene	198-55-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	S-014	S-014_20190227_SO	N	2/27/2019	0	0.1	Perylene	198-55-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	N-007	N-007_20190226_SO	N	2/26/2019	0	0.1	Perylene	198-55-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	C-2160	C-2160_20190306_SO	N	3/6/2019	0	0.1	Perylene	198-55-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.021	1	SO	Surface Soil 0-1.5m	N-031	N-031_20190226_SO	N	2/26/2019	0	0.1	Perylene	198-55-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	N-013	N-013_20190226_SO	N	2/26/2019	0	0.1	Perylene	198-55-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.1	1	SO	Surface Soil 0-1.5m	N-009	N-009_20190226_SO	N	2/26/2019	0	0.1	Perylene	198-55-0			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	S-017	S-017_20190227_SO	N	2/27/2019	0	0.1	Perylene	198-55-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	C-2071	C-2071_20190305_SO	N	3/5/2019	0	0.1	Perylene	198-55-0	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.033	1	SO	Surface Soil 0-1.5m	S-025	S-025_20190227_SO	N	2/27/2019	0	0.1	Phenanthrene	85-01-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.025	1	SO	Surface Soil 0-1.5m	S323F	S323F_20190302_SO	N	3/2/2019	0	0.1	Phenanthrene	85-01-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	S-023B	S-023B_20190227_SO	N	2/27/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	SLOT2-1	SLOT2-1_20190606_SO	N	6/6/2019	1.34	1.34	Phenanthrene	85-01-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	S-054A	S-054A_20190227_SO	N	2/27/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	S-073	S-073_20190227_SO	N	2/27/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	S-093B	S-093B_20190227_SO	N	2/27/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	S-063	S-063_20190227_SO	N	2/27/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.015	1	SO	Surface Soil 0-1.5m	S-098	S-098_20190227_SO	N	2/27/2019	0	0.1	Phenanthrene	85-01-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	S-101-C	S-101-C_20190308_SO	N	3/8/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	S-097	S-097_20190227_SO	N	2/27/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	S-065A	S-065A_20190227_SO	N	2/27/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	S-088	S-088_20190227_SO	N	2/27/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	S-085	S-085_20190227_SO	N	2/27/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	S-051B	S-051B_20190227_SO	N	2/27/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	S-075	S-075_20190227_SO	N	2/27/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	S-212W-C	S-212W-C_20190307_SO	N	3/7/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	S-074B	S-074B_20190227_SO	N	2/27/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	BH19-120-2	BH19-120-2_20191205_SO	N	12/5/2019	1.22	1.52	Phenanthrene	85-01-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.047	1	SO	Surface Soil 0-1.5m	E_BH19-16	E_BH19-16_20190507_SO	N	5/7/2019	0	0.15	Phenanthrene	85-01-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.79	1	SO	Surface Soil 0-1.5m	D_BH19-15	D_BH19-15_20190507_SO	N	5/7/2019	0	0.15	Phenanthrene	85-01-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.021	1	SO	Surface Soil 0-1.5m	C-2136C	C-2136C_20200224_SO	N	2/24/2020	0	0.1	Phenanthrene	85-01-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.036	1	SO	Surface Soil 0-1.5m	19-H2-002B	19-H2-002B_20191016_SO	N	10/16/2019	1	1	Phenanthrene	85-01-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.049	1	SO	Surface Soil 0-1.5m	19-H1-002B	19-H1-002B_20191016_SO	N	10/16/2019	1	1	Phenanthrene	85-01-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	19-H10-001	19-H10-001_20190609_SO	N	6/9/2019	0	0.15	Phenanthrene	85-01-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	DB-110-C	DB-110-C_20190311_SO	N	3/11/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	19-H10-002	19-H10-002_20190609_SO	N	6/9/2019	1	1	Phenanthrene	85-01-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.01	1	SO	Surface Soil 0-1.5m	NSERIESDIL-2	NSERIESDIL-2_20191016_SO	N	10/16/2019	0	0.1	Phenanthrene	85-01-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.0077	1	SO	Surface Soil 0-1.5m	19-H5-002	19-H5-002_20190609_SO	N	6/9/2019	1	1	Phenanthrene	85-01-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	NSERIESDIL-4	NSERIESDIL-4_20191016_SO	N	10/16/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	19-H8-001	19-H8-001_20190609_SO	N	6/9/2019	0	0.15	Phenanthrene	85-01-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	S-094B	S-094B_20191016_SO	N	10/16/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	19-H6-001B	19-H6-001B_20191016_SO	N	10/16/2019	0	0.15	Phenanthrene	85-01-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.034	1	SO	Surface Soil 0-1.5m	19-H9-001	19-H9-001_20190609_SO	N	6/9/2019	0	0.15	Phenanthrene	85-01-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	NSERIESDIL-3	NSERIESDIL-3_20191016_SO	N	10/16/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.018	1	SO	Surface Soil 0-1.5m	19-H3-002	19-H3-002_20190609_SO	N	6/9/2019	1	1	Phenanthrene	85-01-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.022	1	SO	Surface Soil 0-1.5m	19-H4-002	19-H4-002_20190609_SO	N	6/9/2019	1	1	Phenanthrene	85-01-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	19-H4-001B	19-H4-001B_20191016_SO	N	10/16/2019	0	0.15	Phenanthrene	85-01-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.013	1	SO	Surface Soil 0-1.5m	C-2180B	C-2180B_20191016_SO	N	10/16/2019	0	0.1	Phenanthrene	85-01-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.007	1	SO	Surface Soil 0-1.5m	19-H5-001B	19-H5-001B_20191016_SO	N	10/16/2019	0	0.15	Phenanthrene	85-01-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	S202WB	S202WB_20191016_SO	N	10/16/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.011	1	SO	Surface Soil 0-1.5m	C-2509B	C-2509B_20191016_SO	N	10/16/2019	0	0.1	Phenanthrene	85-01-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	19-H7-002	19-H7-002_20190609_SO	N	6/9/2019	1	1	Phenanthrene	85-01-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	19-H9-002	19-H9-002_20190609_SO	N	6/9/2019	1	1	Phenanthrene	85-01-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.02	1	SO	Surface Soil 0-1.5m	NSERIESDIL-1	NSERIESDIL-1_20191016_SO	N	10/16/2019	0	0.1	Phenanthrene	85-01-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.017	1	SO	Surface Soil 0-1.5m	C-1002WC	C-1002WC_20191016_SO	N	10/16/2019	0	0.1	Phenanthrene	85-01-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	19-H3-001	19-H3-001_20190609_SO	N	6/9/2019	0	0.15	Phenanthrene	85-01-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	C-2106B	C-2106B_20191016_SO	N	10/16/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.013	1	SO	Surface Soil 0-1.5m	19-H2-001	19-H2-001_20190609_SO	N	6/9/2019	0	0.15	Phenanthrene	85-01-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	C-2058C	C-2058C_20191016_SO	N	10/16/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.011	1	SO	Surface Soil 0-1.5m	19-H7-001	19-H7-001_20190609_SO	N	6/9/2019	0	0.15	Phenanthrene	85-01-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.0087	1	SO	Surface Soil 0-1.5m	19-H1-001	19-H1-001_20190609_SO	N	6/9/2019	0	0.15	Phenanthrene	85-01-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	19-H6-002B	19-H6-002B_20191016_SO	N	10/16/2019	1	1	Phenanthrene	85-01-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.011	1	SO	Surface Soil 0-1.5m	C-2080B	C-2080B_20191016_SO	N	10/16/2019	0	0.1	Phenanthrene	85-01-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.0078	1	SO	Surface Soil 0-1.5m	C-2028B	C-2028B_20191016_SO	N	10/16/2019	0	0.1	Phenanthrene	85-01-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.0077	1	SO	Surface Soil 0-1.5m	19-H8-002	19-H8-002_20190609_SO	N	6/9/2019	1	1	Phenanthrene	85-01-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	C-2074B	C-2074B_20191016_SO	N	10/16/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	C-2178	C-2178_20190306_SO	N	3/6/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	C-2071	C-2071_20190305_SO	N	3/5/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.092	1	SO	Surface Soil 0-1.5m	N-031	N-031_20190226_SO	N	2/26/2019	0	0.1	Phenanthrene	85-01-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.058	1	SO	Surface Soil 0-1.5m	N-001	N-001_20190226_SO	N	2/26/2019	0	0.1	Phenanthrene	85-01-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.0081	1	SO	Surface Soil 0-1.5m	N-027	N-027_20190226_SO	N	2/26/2019	0	0.1	Phenanthrene	85-01-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.17	1	SO	Surface Soil 0-1.5m	N-013	N-013_20190226_SO	N	2/26/2019	0	0.1	Phenanthrene	85-01-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.25	1	SO	Surface Soil 0-1.5m	N-006	N-006_20190226_SO	N	2/26/2019	0	0.1	Phenanthrene	85-01-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	S-014	S-014_20190227_SO	N	2/27/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.011	1	SO	Surface Soil 0-1.5m	C-2082	C-2082_20190305_SO	N	3/5/2019	0	0.1	Phenanthrene	85-01-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.017	1	SO	Surface Soil 0-1.5m	C-2017	C-2017_20190305_SO	N	3/5/2019	0	0.1	Phenanthrene	85-01-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.11	1	SO	Surface Soil 0-1.5m	EXW2-3	EXW2-3_20190605_SO	N	6/5/2019	1.385	1.385	Phenanthrene	85-01-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.02	1	SO	Surface Soil 0-1.5m	C-2100	C-2100_20190305_SO	N	3/5/2019	0	0.1	Phenanthrene	85-01-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.077	1	SO	Surface Soil 0-1.5m	N-009	N-009_20190226_SO	N	2/26/2019	0	0.1	Phenanthrene	85-01-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.13	1	SO	Surface Soil 0-1.5m	N-021	N-021_20190226_SO	N	2/26/2019	0	0.1	Phenanthrene	85-01-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.039	1	SO	Surface Soil 0-1.5m	N-015	N-015_20190226_SO	N	2/26/2019	0	0.1	Phenanthrene	85-01-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	C-2160	C-2160_20190306_SO	N	3/6/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.22	1	SO	Surface Soil 0-1.5m	N-016	N-016_20190226_SO	N	2/26/2019	0	0.1	Phenanthrene	85-01-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	DB-004	DB-004_20190302_SO	N	3/2/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	S-017	S-017_20190227_SO	N	2/27/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	C-2176	C-2176_20190306_SO	N	3/6/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	S-019A	S-019A_20190227_SO	N	2/27/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.29	1	SO	Surface Soil 0-1.5m	C-2033	C-2033_20190305_SO	N	3/5/2019	0	0.1	Phenanthrene	85-01-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	C-1004W	C-1004W_20190303_SO	N	3/3/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	S-022	S-022_20190227_SO	N	2/27/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	C-2311	C-2311_20190307_SO	N	3/7/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg

TABLE B.8
DATA INPUT FOR PROUCL SOFTWARE
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Notes:
The maximum of the field duplicate and parent sample pairs were applied and a detect was chosen over a non-detect value.

ProUCL Group	ProUCL Result	ProUCL Flag	Medium	Soil Zone	Location	Sample ID	Sample Type	Sample Date	Start Depth (m)	End Depth (m)	COPC	CASRN	Qualifier	Detection Limit for Non-Detects	Unit
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.0056	1	SO	Surface Soil 0-1.5m	N-010	N-010_20190226_SO	N	2/26/2019	0	0.1	Phenanthrene	85-01-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.24	1	SO	Surface Soil 0-1.5m	N-007	N-007_20190226_SO	N	2/26/2019	0	0.1	Phenanthrene	85-01-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.014	1	SO	Surface Soil 0-1.5m	N-036	N-036_20190226_SO	N	2/26/2019	0	0.1	Phenanthrene	85-01-8			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	SLOT2-1	SLOT2-1_20190606_SO	N	6/6/2019	1.34	1.34	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	S-093B	S-093B_20190227_SO	N	2/27/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	S323F	S323F_20190302_SO	N	3/2/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	S-085	S-085_20190227_SO	N	2/27/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	S-075	S-075_20190227_SO	N	2/27/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	S-065A	S-065A_20190227_SO	N	2/27/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	S-073	S-073_20190227_SO	N	2/27/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	S-212W-C	S-212W-C_20190307_SO	N	3/7/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	S-098	S-098_20190227_SO	N	2/27/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	S-051B	S-051B_20190227_SO	N	2/27/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	S-025	S-025_20190227_SO	N	2/27/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	S-101-C	S-101-C_20190308_SO	N	3/8/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	S-074B	S-074B_20190227_SO	N	2/27/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	S-023B	S-023B_20190227_SO	N	2/27/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	S-054A	S-054A_20190227_SO	N	2/27/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	S-088	S-088_20190227_SO	N	2/27/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	S-063	S-063_20190227_SO	N	2/27/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	S-097	S-097_20190227_SO	N	2/27/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	C-2136C	C-2136C_20200224_SO	N	2/24/2020	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	BH19-120-2	BH19-120-2_20191205_SO	N	12/5/2019	1.22	1.52	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	E_BH19-16	E_BH19-16_20190507_SO	N	5/7/2019	0	0.15	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.08	1	SO	Surface Soil 0-1.5m	D_BH19-15	D_BH19-15_20190507_SO	N	5/7/2019	0	0.15	Quinoline	91-22-5			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	NSERIESDIL-4	NSERIESDIL-4_20191016_SO	N	10/16/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	C-2080B	C-2080B_20191016_SO	N	10/16/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	19-H6-001B	19-H6-001B_20191016_SO	N	10/16/2019	0	0.15	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	19-H3-002	19-H3-002_20190609_SO	N	6/9/2019	1	1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	19-H9-001	19-H9-001_20190609_SO	N	6/9/2019	0	0.15	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	C-2028B	C-2028B_20191016_SO	N	10/16/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	NSERIESDIL-3	NSERIESDIL-3_20191016_SO	N	10/16/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	NSERIESDIL-2	NSERIESDIL-2_20191016_SO	N	10/16/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	19-H1-002B	19-H1-002B_20191016_SO	N	10/16/2019	1	1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	19-H1-001	19-H1-001_20190609_SO	N	6/9/2019	0	0.15	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	DB-110-C	DB-110-C_20190311_SO	N	3/11/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	19-H7-001	19-H7-001_20190609_SO	N	6/9/2019	0	0.15	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	19-H6-002B	19-H6-002B_20191016_SO	N	10/16/2019	1	1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	C-2058C	C-2058C_20191016_SO	N	10/16/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	C-2180B	C-2180B_20191016_SO	N	10/16/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	19-H5-001B	19-H5-001B_20191016_SO	N	10/16/2019	0	0.15	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	19-H7-002	19-H7-002_20190609_SO	N	6/9/2019	1	1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	19-H8-001	19-H8-001_20190609_SO	N	6/9/2019	0	0.15	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	19-H10-002	19-H10-002_20190609_SO	N	6/9/2019	1	1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	19-H4-002	19-H4-002_20190609_SO	N	6/9/2019	1	1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	19-H10-001	19-H10-001_20190609_SO	N	6/9/2019	0	0.15	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	C-1002WC	C-1002WC_20191016_SO	N	10/16/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	19-H9-002	19-H9-002_20190609_SO	N	6/9/2019	1	1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	19-H5-002	19-H5-002_20190609_SO	N	6/9/2019	1	1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	C-2509B	C-2509B_20191016_SO	N	10/16/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	19-H8-002	19-H8-002_20190609_SO	N	6/9/2019	1	1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	19-H4-001B	19-H4-001B_20191016_SO	N	10/16/2019	0	0.15	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	19-H2-001	19-H2-001_20190609_SO	N	6/9/2019	0	0.15	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	NSERIESDIL-1	NSERIESDIL-1_20191016_SO	N	10/16/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	19-H3-001	19-H3-001_20190609_SO	N	6/9/2019	0	0.15	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	S-094B	S-094B_20191016_SO	N	10/16/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	19-H2-002B	19-H2-002B_20191016_SO	N	10/16/2019	1	1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	C-2074B	C-2074B_20191016_SO	N	10/16/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	C-2106B	C-2106B_20191016_SO	N	10/16/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	S202WB	S202WB_20191016_SO	N	10/16/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	DB-004	DB-004_20190302_SO	N	3/2/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	C-2033	C-2033_20190305_SO	N	3/5/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	N-036	N-036_20190226_SO	N	2/26/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.029	1	SO	Surface Soil 0-1.5m	N-021	N-021_20190226_SO	N	2/26/2019	0	0.1	Quinoline	91-22-5			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	N-001	N-001_20190226_SO	N	2/26/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	S-022	S-022_20190227_SO	N	2/27/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	N-031	N-031_20190226_SO	N	2/26/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	N-027	N-027_20190226_SO	N	2/26/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	N-006	N-006_20190226_SO	N	2/26/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.013	1	SO	Surface Soil 0-1.5m	N-007	N-007_20190226_SO	N	2/26/2019	0	0.1	Quinoline	91-22-5			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	C-2160	C-2160_20190306_SO	N	3/6/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.015	1	SO	Surface Soil 0-1.5m	N-013	N-013_20190226_SO	N	2/26/2019	0	0.1	Quinoline	91-22-5			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	C-2178	C-2178_20190306_SO	N	3/6/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	C-2071	C-2071_20190305_SO	N	3/5/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	S-017	S-017_20190227_SO	N	2/27/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	C-2176	C-2176_20190306_SO	N	3/6/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	N-015	N-015_20190226_SO	N	2/26/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	S-014	S-014_20190227_SO	N	2/27/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	EXW2-3	EXW2-3_20190605_SO	N	6/5/2019	1.385	1.385	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	C-2311	C-2311_20190307_SO	N	3/7/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	N-010	N-010_20190226_SO	N	2/26/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	C-1004W	C-1004W_20190303_SO	N	3/3/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	C-2082	C-2082_20190305_SO	N	3/5/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	S-019A	S-019A_20190227_SO	N	2/27/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.013	1	SO	Surface Soil 0-1.5m	N-016	N-016_20190226_SO	N	2/26/2019	0	0.1	Quinoline	91-22-5			mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	N-009	N-009_20190226_SO	N	2/26/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	C-2100	C-2100_20190305_SO	N	3/5/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_SO_Surface Soil 0-1.5m_Quinoline_91-22-5	0.01	0	SO	Surface Soil 0-1.5m	C-2017	C-2017_20190305_SO	N	3/5/2019	0	0.1	Quinoline	91-22-5	U	0.01	mg/kg
CN RoW_WS_Culvert_Anthracene_120-12-7	0.021	1	WS	Culvert	MID CULVERT 2	MID CULVERT 2_20190828_WS	N	8/28/2019	0	0	Anthracene	120-12-7			ug/L
CN RoW_WS_Culvert_Anthracene_120-12-7	0.01	0	WS	Culvert	AFTER CULVERT	AFTER CULVERT_20190828_WS	N	8/28/2019	0	0	Anthracene	120-12-7	U	0.01	ug/L
CN RoW_WS_Culvert_Anthracene_120-12-7	0.01	0	WS	Culvert	MID CULVERT	MID CULVERT_20190828_WS	N	8/28/2019	0	0	Anthracene	120-12-7	U	0.01	ug/L
CN RoW_WS_Culvert_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.012	1	WS	Culvert	MID CULVERT 2	MID CULVERT 2_20190828_WS	N	8/28/2019	0	0	Benzo(b&j)fluoranthene	205-99-2_205-82-3			ug/L
CN RoW_WS_Culvert_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.0085	0	WS	Culvert	AFTER CULVERT	AFTER CULVERT_20190828_WS	N	8/28/2019	0	0	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.0085	ug/L
CN RoW_WS_Culvert_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.0085	0	WS	Culvert	MID CULVERT	MID CULVERT_20190828_WS	N	8/28/2019	0	0	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.0085	ug/L
CN RoW_WS_Culvert_Benzo(k)fluoranthene_207-08-9	0.0085	0	WS	Culvert	MID CULVERT	MID CULVERT_20190828_WS	N	8/28/2019	0	0	Benzo(k)fluoranthene	207-08-9	U	0.0085	ug/L
CN RoW_WS_Culvert_Benzo(k)fluoranthene_207-08-9	0.031	1	WS	Culvert	MID CULVERT 2	MID CULVERT 2_20190828_WS	N	8/28/2019	0	0	Benzo(k)fluoranthene	207-08-9			ug/L
CN RoW_WS_Culvert_Benzo(k)fluoranthene_207-08-9	0.0085	0	WS	Culvert	AFTER CULVERT	AFTER CULVERT_20190828_WS	N	8/28/2019	0	0	Benzo(k)fluoranthene	207-08-9	U	0.0085	ug/L
CN RoW_WS_Culvert_Chrysene_218-01-9	0.0085	0	WS	Culvert	MID CULVERT	MID CULVERT_20190828_WS	N	8/28/2019	0	0	Chrysene	218-01-9	U	0.0085	ug/L
CN RoW_WS_Culvert_Chrysene_218-01-9	0.017	1	WS	Culvert	MID CULVERT 2	MID CULVERT 2_20190828_WS	N	8/28/2019	0	0	Chrysene	218-01-9			ug/L
CN RoW_WS_Culvert_Chrysene_218-01-9	0.0085	0	WS	Culvert	AFTER CULVERT	AFTER CULVERT_20190828_WS	N	8/28/2019	0	0	Chrysene	218-01-9	U	0.0085	ug/L
CN RoW_WS_Culvert_Fluoranthene_206-44-0	0.01	0	WS	Culvert	AFTER CULVERT	AFTER CULVERT_20190828_WS	N	8/28/2019	0	0	Fluoranthene	206-44-0	U	0.01	ug/L
CN RoW_WS_Culvert_Fluoranthene_206-44-0	0.13	1	WS	Culvert	MID CULVERT 2	MID CULVERT 2_20190828_WS	N	8/28/2019	0	0	Fluoranthene	206-44-0			ug/L
CN RoW_WS_Culvert_Fluoranthene_206-44-0	0.025	1	WS	Culvert	MID CULVERT	MID CULVERT_20190828_WS	N	8/28/2019	0	0	Fluoranthene	206-44-0			ug/L
CN RoW_WS_Culvert_Methylnaphthalene, 2-_91-57-6	0.5	1	WS	Culvert	AFTER CULVERT	AFTER CULVERT_20190828_WS	N	8/28/2019	0	0	Methylnaphthalene, 2-	91-57-6			ug/L
CN RoW_WS_Culvert_Methylnaphthalene, 2-_91-57-6	0.1	0	WS	Culvert	MID CULVERT 2	MID CULVERT 2_20190828_WS	N	8/28/2019	0	0	Methylnaphthalene, 2-	91-57-6	U	0.1	ug/L
CN RoW_WS_Culvert_Methylnaphthalene, 2-_91-57-6	0.1	0	WS	Culvert	MID CULVERT	MID CULVERT_20190828_WS	N	8/28/2019	0	0	Methylnaphthalene, 2-	91-57-6	U	0.1	ug/L
CN RoW_WS_Culvert_Pyrene_129-00-0	0.03	1	WS	Culvert	MID CULVERT	MID CULVERT_20190828_WS	N	8/28/2019	0	0	Pyrene	129-00-0			ug/L
CN RoW_WS_Culvert_Pyrene_129-00-0	0.02	0	WS	Culvert	AFTER CULVERT	AFTER CULVERT_20190828_WS	N	8/28/2019	0	0	Pyrene	129-00-0	U	0.02	ug/L
CN RoW_WS_Culvert_Pyrene_129-00-0	0.13	1	WS	Culvert	MID CULVERT 2	MID CULVERT 2_20190828_WS	N	8/28/2019	0	0	Pyrene	129-00-0			ug/L
Outside CN RoW_SE_Culvert_Perylene_198-55-0	0.029	1	SE	Culvert	BEFORE CULVERT	BEFORE CULVERT_20190828_SE	N	8/28/2019	0	0	Perylene	198-55-0			mg/kg
Outside CN RoW_SE_NA_Acenaphthene_83-32-9	0.005	0	SE	NA	WA-SED-120	WA-SED-120_20190815_SE	N	8/15/2019	0	0	Acenaphthene	83-32-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Acenaphthene_83-32-9	0.005	0	SE	NA	WA-SED-108B	WA-SED-108B_20191016_SE	N	10/16/2019	0	0	Acenaphthene	83-32-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Acenaphthene_83-32-9	0.01	1	SE	NA	WA-SED-105B	WA-SED-105B_20191016_SE	N	10/16/2019	0	0	Acenaphthene	83-32-9			mg/kg
Outside CN RoW_SE_NA_Acenaphthene_83-32-9	0.005	0	SE	NA	WA-SED-116	WA-SED-116_20190813_SE	N	8/13/2019	0	0	Acenaphthene	83-32-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Acenaphthene_83-32-9	0.005	0	SE	NA	WA-SED-111B	WA-SED-111B_20191016_SE	N	10/16/2019	0	0	Acenaphthene	83-32-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Acenaphthene_83-32-9	0.005	0	SE	NA	WA-SED-114	WA-SED-114_20190813_SE	N	8/13/2019	0	0	Acenaphthene	83-32-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Acenaphthene_83-32-9	0.005	0	SE	NA	WA-SED-117	WA-SED-117_20190813_SE	N	8/13/2019	0	0	Acenaphthene	83-32-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Acenaphthene_83-32-9	0.005	0	SE	NA	WA-SED-118	WA-SED-118_20190813_SE	N	8/13/2019	0	0	Acenaphthene	83-32-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Acenaphthene_83-32-9	0.005	0	SE	NA	WA-SED-102B	WA-SED-102B_20191016_SE	N	10/16/2019	0	0	Acenaphthene	83-32-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Acenaphthene_83-32-9	0.005	0	SE	NA	WA-SED-109	WA-SED-109_20190813_SE	N	8/13/2019	0	0	Acenaphthene	83-32-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Acenaphthene_83-32-9	0.005	0	SE	NA	WA-SED-110B	WA-SED-110B_20191016_SE	N	10/16/2019	0	0	Acenaphthene	83-32-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Acenaphthene_83-32-9	0.005	0	SE	NA	WA-SED-119	WA-SED-119_20190813_SE	N	8/13/2019	0	0	Acenaphthene	83-32-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Acenaphthene_83-32-9	0.005	0	SE	NA	WA-SED-113	WA-SED-113_20190813_SE	N	8/13/2019	0	0	Acenaphthene	83-32-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Acenaphthene_83-32-9	0.005	0	SE	NA	C-2150C	C-2150C_20191016_SE	N	10/16/2019	0	0	Acenaphthene	83-32-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Acenaphthene_83-32-9	0.005	0	SE	NA	WA-SED-112B	WA-SED-112B_20191016_SE	N	10/16/2019	0	0	Acenaphthene	83-32-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Acenaphthene_83-32-9	0.005	0	SE	NA	WA-SED-106B	WA-SED-106B_20191016_SE	N	10/16/2019	0	0	Acenaphthene	83-32-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Acenaphthene_83-32-9	0.005	0	SE	NA	WA-SED-103	WA-SED-103_20190813_SE	N	8/13/2019	0	0	Acenaphthene	83-32-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Acenaphthene_83-32-9	0.005	0	SE	NA	S-079B	S-079B_20191016_SE	N	10/16/2019	0	0	Acenaphthene	83-32-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Acenaphthene_83-32-9	0.005	0	SE	NA	WA-SED-115B	WA-SED-115B_20191016_SE	N	10/16/2019	0	0	Acenaphthene	83-32-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Acenaphthene_83-32-9	0.005	0	SE	NA	WA-SED-101	WA-SED-101_20190813_SE	N	8/13/2019	0	0	Acenaphthene	83-32-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Acenaphthene_83-32-9	0.005	0	SE	NA	WA-SED-104	WA-SED-104_20190813_SE	N	8/13/2019	0	0	Acenaphthene	83-32-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Acenaphthene_83-32-9	0.005	0	SE	NA	WA-SED-107B	WA-SED-107B_20191016_SE	N	10/16/2019	0	0	Acenaphthene	83-32-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Acenaphthene_83-32-9	0.005	0	SE	NA	C-2140B	C-2140B_20191016_SE	N	10/16/2019	0	0	Acenaphthene	83-32-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Acenaphthylene_208-96-8	0.005	0	SE	NA	WA-SED-105B	WA-SED-105B_20191016_SE	N	10/16/2019	0	0	Acenaphthylene	208-96-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Acenaphthylene_208-96-8	0.005	0	SE	NA	WA-SED-111B	WA-SED-111B_20191016_SE	N	10/16/2019	0	0	Acenaphthylene	208-96-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Acenaphthylene_208-96-8	0.005	0	SE	NA	S-079B	S-079B_20191016_SE	N	10/16/2019	0	0	Acenaphthylene	208-96-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Acenaphthylene_208-96-8	0.005	0	SE	NA	WA-SED-102B	WA-SED-102B_20191016_SE	N	10/16/2019	0	0	Acenaphthylene	208-96-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Acenaphthylene_208-96-8	0.005	0	SE	NA	WA-SED-112B	WA-SED-112B_20191016_SE	N	10/16/2019	0	0	Acenaphthylene	208-96-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Acenaphthylene_208-96-8	0.005	0	SE	NA	WA-SED-106B	WA-SED-106B_20191016_SE	N	10/16/2019	0	0	Acenaphthylene	208-96-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Acenaphthylene_208-96-8	0.005	0	SE	NA	WA-SED-109	WA-SED-109_20190813_SE	N	8/13/2019	0	0	Acenaphthylene	208-96-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Acenaphthylene_208-96-8	0.005	0	SE	NA	WA-SED-113	WA-SED-113_20190813_SE	N	8/13/2019	0	0	Acenaphthylene	208-96-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Acenaphthylene_208-96-8	0.005	0	SE	NA	WA-SED-120	WA-SED-120_20190815_SE	N	8/15/2019	0	0	Acenaphthylene	208-96-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Acenaphthylene_208-96-8	0.005	0	SE	NA	WA-SED-103	WA-SED-103_20190813_SE	N	8/13/2019	0	0	Acenaphthylene	208-96-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Acenaphthylene_208-96-8	0.005	0	SE	NA	WA-SED-115B	WA-SED-115B_20191016_SE	N	10/16/2019	0	0	Acenaphthylene	208-96-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Acenaphthylene_208-96-8	0.01	1	SE	NA	WA-SED-110B	WA-SED-110B_20191016_SE	N	10/16/2019	0	0	Acenaphthylene	208-96-8			mg/kg
Outside CN RoW_SE_NA_Acenaphthylene_208-96-8	0.005	0	SE	NA	WA-SED-117	WA-SED-117_20190813_SE	N	8/13/2019	0	0	Acenaphthylene	208-96-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Acenaphthylene_208-96-8	0.005	0	SE	NA	WA-SED-114	WA-SED-114_20190813_SE	N	8/13/2019	0	0	Acenaphthylene	208-96-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Acenaphthylene_208-96-8	0.005	0	SE	NA	WA-SED-118	WA-SED-118_20190813_SE	N	8/13/2019	0	0	Acenaphthylene	208-96-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Acenaphthylene_208-96-8	0.005	0	SE	NA	WA-SED-116	WA-SED-116_20190813_SE	N	8/13/2019	0	0	Acenaphthylene	208-96-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Acenaphthylene_208-96-8	0.005	0	SE	NA	C-2140B	C-2140B_20191016_SE	N	10/16/2019	0	0	Acenaphthylene	208-96-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Acenaphthylene_208-96-8	0.005	0	SE	NA	WA-SED-101	WA-SED-101_20190813_SE	N	8/13/2019	0	0	Acenaphthylene	208-96-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Acenaphthylene_208-96-8	0.005	0	SE	NA	C-2150C	C-2150C_20191016_SE	N	10/16/2019	0	0	Acenaphthylene	208-96-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Acenaphthylene_208-96-8	0.005	0	SE	NA	WA-SED-104	WA-SED-104_20190813_SE	N	8/13/2019	0	0	Acenaphthylene	208-96-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Acenaphthylene_208-96-8	0.005	0	SE	NA	WA-SED-119	WA-SED-119_20190813_SE	N	8/13/2019	0	0	Acenaphthylene	208-96-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Acenaphthylene_208-96-8	0.005	0	SE	NA	WA-SED-108B	WA-SED-108B_20191016_SE	N	10/16/2019	0	0	Acenaphthylene	208-96-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Acenaphthylene_208-96-8	0.005	0	SE	NA	WA-SED-107B	WA-SED-107B_20191016_SE	N	10/16/2019	0	0	Acenaphthylene	208-96-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Acridine_260-94-6	0.01	0	SE	NA	WA-SED-117	WA-SED-117_20190813_SE	N	8/13/2019	0	0	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SE_NA_Acridine_260-94-6	0.01	0	SE	NA	WA-SED-105B	WA-SED-105B_20191016_SE	N	10/16/2019	0	0	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SE_NA_Acridine_260-94-6	0.01	0	SE	NA	WA-SED-109	WA-SED-109_20190813_SE	N	8/13/2019	0	0	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SE_NA_Acridine_260-94-6	0.01	0	SE	NA	WA-SED-107B	WA-SED-107B_20191016_SE	N	10/16/2019	0	0	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SE_NA_Acridine_260-94-6	0.01	0	SE	NA	WA-SED-114	WA-SED-114_20190813_SE	N	8/13/2019	0	0	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SE_NA_Acridine_260-94-6	0.01	0	SE	NA	WA-SED-116	WA-SED-116_20190813_SE	N	8/13/2019	0	0	Acridine	260-94-6	U	0.01	mg/kg

TABLE B.8
DATA INPUT FOR PROUCL SOFTWARE
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Notes:
The maximum of the field duplicate and parent sample pairs were applied and a detect was chosen over a non-detect value.

ProUCL Group	ProUCL Result	ProUCL Flag	Medium	Soil Zone	Location	Sample ID	Sample Type	Sample Date	Start Depth (m)	End Depth (m)	COPC	CASRN	Qualifier	Detection Limit for Non-Detects	Unit
Outside CN RoW_SE_NA_Acridine_260-94-6	0.01	0	SE	NA	WA-SED-113	WA-SED-113_20190813_SE	N	8/13/2019	0	0	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SE_NA_Acridine_260-94-6	0.01	0	SE	NA	WA-SED-108B	WA-SED-108B_20191016_SE	N	10/16/2019	0	0	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SE_NA_Acridine_260-94-6	0.01	0	SE	NA	WA-SED-102B	WA-SED-102B_20191016_SE	N	10/16/2019	0	0	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SE_NA_Acridine_260-94-6	0.01	0	SE	NA	WA-SED-103	WA-SED-103_20190813_SE	N	8/13/2019	0	0	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SE_NA_Acridine_260-94-6	0.01	0	SE	NA	WA-SED-112B	WA-SED-112B_20191016_SE	N	10/16/2019	0	0	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SE_NA_Acridine_260-94-6	0.01	0	SE	NA	WA-SED-104	WA-SED-104_20190813_SE	N	8/13/2019	0	0	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SE_NA_Acridine_260-94-6	0.01	0	SE	NA	WA-SED-111B	WA-SED-111B_20191016_SE	N	10/16/2019	0	0	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SE_NA_Acridine_260-94-6	0.01	0	SE	NA	WA-SED-118	WA-SED-118_20190813_SE	N	8/13/2019	0	0	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SE_NA_Acridine_260-94-6	0.01	0	SE	NA	WA-SED-120	WA-SED-120_20190815_SE	N	8/15/2019	0	0	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SE_NA_Acridine_260-94-6	0.01	0	SE	NA	WA-SED-106B	WA-SED-106B_20191016_SE	N	10/16/2019	0	0	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SE_NA_Acridine_260-94-6	0.01	0	SE	NA	WA-SED-119	WA-SED-119_20190813_SE	N	8/13/2019	0	0	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SE_NA_Acridine_260-94-6	0.01	0	SE	NA	C-2140B	C-2140B_20191016_SE	N	10/16/2019	0	0	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SE_NA_Acridine_260-94-6	0.01	0	SE	NA	WA-SED-101	WA-SED-101_20190813_SE	N	8/13/2019	0	0	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SE_NA_Acridine_260-94-6	0.01	0	SE	NA	WA-SED-110B	WA-SED-110B_20191016_SE	N	10/16/2019	0	0	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SE_NA_Acridine_260-94-6	0.01	0	SE	NA	WA-SED-115B	WA-SED-115B_20191016_SE	N	10/16/2019	0	0	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SE_NA_Acridine_260-94-6	0.01	0	SE	NA	S-079B	S-079B_20191016_SE	N	10/16/2019	0	0	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SE_NA_Acridine_260-94-6	0.01	0	SE	NA	C-2150C	C-2150C_20191016_SE	N	10/16/2019	0	0	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SE_NA_Benzo(a)anthracene_56-55-3	0.005	0	SE	NA	WA-SED-113	WA-SED-113_20190813_SE	N	8/13/2019	0	0	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(a)anthracene_56-55-3	0.014	1	SE	NA	WA-SED-111B	WA-SED-111B_20191016_SE	N	10/16/2019	0	0	Benzo(a)anthracene	56-55-3			mg/kg
Outside CN RoW_SE_NA_Benzo(a)anthracene_56-55-3	0.0098	1	SE	NA	WA-SED-115B	WA-SED-115B_20191016_SE	N	10/16/2019	0	0	Benzo(a)anthracene	56-55-3			mg/kg
Outside CN RoW_SE_NA_Benzo(a)anthracene_56-55-3	0.005	0	SE	NA	S-079B	S-079B_20191016_SE	N	10/16/2019	0	0	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(a)anthracene_56-55-3	0.005	0	SE	NA	C-2140B	C-2140B_20191016_SE	N	10/16/2019	0	0	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(a)anthracene_56-55-3	0.005	0	SE	NA	WA-SED-109	WA-SED-109_20190813_SE	N	8/13/2019	0	0	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(a)anthracene_56-55-3	0.005	0	SE	NA	WA-SED-114	WA-SED-114_20190813_SE	N	8/13/2019	0	0	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(a)anthracene_56-55-3	0.005	0	SE	NA	WA-SED-118	WA-SED-118_20190813_SE	N	8/13/2019	0	0	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(a)anthracene_56-55-3	0.005	0	SE	NA	WA-SED-116	WA-SED-116_20190813_SE	N	8/13/2019	0	0	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(a)anthracene_56-55-3	0.005	0	SE	NA	WA-SED-120	WA-SED-120_20190815_SE	N	8/15/2019	0	0	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(a)anthracene_56-55-3	0.005	0	SE	NA	WA-SED-117	WA-SED-117_20190813_SE	N	8/13/2019	0	0	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(a)anthracene_56-55-3	0.005	0	SE	NA	WA-SED-106B	WA-SED-106B_20191016_SE	N	10/16/2019	0	0	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(a)anthracene_56-55-3	0.005	0	SE	NA	WA-SED-119	WA-SED-119_20190813_SE	N	8/13/2019	0	0	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(a)anthracene_56-55-3	0.005	0	SE	NA	WA-SED-112B	WA-SED-112B_20191016_SE	N	10/16/2019	0	0	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(a)anthracene_56-55-3	0.058	1	SE	NA	WA-SED-105B	WA-SED-105B_20191016_SE	N	10/16/2019	0	0	Benzo(a)anthracene	56-55-3			mg/kg
Outside CN RoW_SE_NA_Benzo(a)anthracene_56-55-3	0.005	0	SE	NA	WA-SED-104	WA-SED-104_20190813_SE	N	8/13/2019	0	0	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(a)anthracene_56-55-3	0.041	1	SE	NA	WA-SED-110B	WA-SED-110B_20191016_SE	N	10/16/2019	0	0	Benzo(a)anthracene	56-55-3			mg/kg
Outside CN RoW_SE_NA_Benzo(a)anthracene_56-55-3	0.005	0	SE	NA	WA-SED-102B	WA-SED-102B_20191016_SE	N	10/16/2019	0	0	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(a)anthracene_56-55-3	0.005	0	SE	NA	WA-SED-108B	WA-SED-108B_20191016_SE	N	10/16/2019	0	0	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(a)anthracene_56-55-3	0.005	0	SE	NA	WA-SED-107B	WA-SED-107B_20191016_SE	N	10/16/2019	0	0	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(a)anthracene_56-55-3	0.005	0	SE	NA	WA-SED-101	WA-SED-101_20190813_SE	N	8/13/2019	0	0	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(a)anthracene_56-55-3	0.005	0	SE	NA	C-2150C	C-2150C_20191016_SE	N	10/16/2019	0	0	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(a)anthracene_56-55-3	0.005	0	SE	NA	WA-SED-103	WA-SED-103_20190813_SE	N	8/13/2019	0	0	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(a)pyrene_50-32-8	0.005	0	SE	NA	C-2140B	C-2140B_20191016_SE	N	10/16/2019	0	0	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(a)pyrene_50-32-8	0.058	1	SE	NA	WA-SED-110B	WA-SED-110B_20191016_SE	N	10/16/2019	0	0	Benzo(a)pyrene	50-32-8			mg/kg
Outside CN RoW_SE_NA_Benzo(a)pyrene_50-32-8	0.005	0	SE	NA	WA-SED-118	WA-SED-118_20190813_SE	N	8/13/2019	0	0	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(a)pyrene_50-32-8	0.016	1	SE	NA	WA-SED-111B	WA-SED-111B_20191016_SE	N	10/16/2019	0	0	Benzo(a)pyrene	50-32-8			mg/kg
Outside CN RoW_SE_NA_Benzo(a)pyrene_50-32-8	0.005	0	SE	NA	WA-SED-103	WA-SED-103_20190813_SE	N	8/13/2019	0	0	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(a)pyrene_50-32-8	0.005	0	SE	NA	WA-SED-101	WA-SED-101_20190813_SE	N	8/13/2019	0	0	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(a)pyrene_50-32-8	0.005	0	SE	NA	WA-SED-114	WA-SED-114_20190813_SE	N	8/13/2019	0	0	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(a)pyrene_50-32-8	0.005	0	SE	NA	WA-SED-104	WA-SED-104_20190813_SE	N	8/13/2019	0	0	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(a)pyrene_50-32-8	0.005	0	SE	NA	C-2150C	C-2150C_20191016_SE	N	10/16/2019	0	0	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(a)pyrene_50-32-8	0.005	0	SE	NA	WA-SED-107B	WA-SED-107B_20191016_SE	N	10/16/2019	0	0	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(a)pyrene_50-32-8	0.005	0	SE	NA	WA-SED-116	WA-SED-116_20190813_SE	N	8/13/2019	0	0	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(a)pyrene_50-32-8	0.005	0	SE	NA	WA-SED-117	WA-SED-117_20190813_SE	N	8/13/2019	0	0	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(a)pyrene_50-32-8	0.005	0	SE	NA	WA-SED-108B	WA-SED-108B_20191016_SE	N	10/16/2019	0	0	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(a)pyrene_50-32-8	0.005	0	SE	NA	S-079B	S-079B_20191016_SE	N	10/16/2019	0	0	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(a)pyrene_50-32-8	0.005	0	SE	NA	WA-SED-112B	WA-SED-112B_20191016_SE	N	10/16/2019	0	0	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(a)pyrene_50-32-8	0.005	0	SE	NA	WA-SED-115B	WA-SED-115B_20191016_SE	N	10/16/2019	0	0	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(a)pyrene_50-32-8	0.005	0	SE	NA	WA-SED-120	WA-SED-120_20190815_SE	N	8/15/2019	0	0	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(a)pyrene_50-32-8	0.005	0	SE	NA	WA-SED-113	WA-SED-113_20190813_SE	N	8/13/2019	0	0	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(a)pyrene_50-32-8	0.005	0	SE	NA	WA-SED-109	WA-SED-109_20190813_SE	N	8/13/2019	0	0	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(a)pyrene_50-32-8	0.005	0	SE	NA	WA-SED-102B	WA-SED-102B_20191016_SE	N	10/16/2019	0	0	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(a)pyrene_50-32-8	0.047	1	SE	NA	WA-SED-105B	WA-SED-105B_20191016_SE	N	10/16/2019	0	0	Benzo(a)pyrene	50-32-8			mg/kg
Outside CN RoW_SE_NA_Benzo(a)pyrene_50-32-8	0.005	0	SE	NA	WA-SED-119	WA-SED-119_20190813_SE	N	8/13/2019	0	0	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(a)pyrene_50-32-8	0.005	0	SE	NA	WA-SED-106B	WA-SED-106B_20191016_SE	N	10/16/2019	0	0	Benzo(a)pyrene	50-32-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SE	NA	WA-SED-113	WA-SED-113_20190813_SE	N	8/13/2019	0	0	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SE	NA	WA-SED-109	WA-SED-109_20190813_SE	N	8/13/2019	0	0	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.016	1	SE	NA	WA-SED-101	WA-SED-101_20190813_SE	N	8/13/2019	0	0	Benzo(b&j)fluoranthene	205-99-2_205-82-3			mg/kg
Outside CN RoW_SE_NA_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SE	NA	WA-SED-119	WA-SED-119_20190813_SE	N	8/13/2019	0	0	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SE	NA	WA-SED-114	WA-SED-114_20190813_SE	N	8/13/2019	0	0	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SE	NA	WA-SED-104	WA-SED-104_20190813_SE	N	8/13/2019	0	0	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SE	NA	WA-SED-116	WA-SED-116_20190813_SE	N	8/13/2019	0	0	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.0073	1	SE	NA	WA-SED-107B	WA-SED-107B_20191016_SE	N	10/16/2019	0	0	Benzo(b&j)fluoranthene	205-99-2_205-82-3			mg/kg
Outside CN RoW_SE_NA_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SE	NA	C-2150C	C-2150C_20191016_SE	N	10/16/2019	0	0	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SE	NA	WA-SED-108B	WA-SED-108B_20191016_SE	N	10/16/2019	0	0	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SE	NA	WA-SED-106B	WA-SED-106B_20191016_SE	N	10/16/2019	0	0	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.0075	1	SE	NA	WA-SED-102B	WA-SED-102B_20191016_SE	N	10/16/2019	0	0	Benzo(b&j)fluoranthene	205-99-2_205-82-3			mg/kg
Outside CN RoW_SE_NA_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.088	1	SE	NA	WA-SED-105B	WA-SED-105B_20191016_SE	N	10/16/2019	0	0	Benzo(b&j)fluoranthene	205-99-2_205-82-3			mg/kg
Outside CN RoW_SE_NA_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.13	1	SE	NA	WA-SED-110B	WA-SED-110B_20191016_SE	N	10/16/2019	0	0	Benzo(b&j)fluoranthene	205-99-2_205-82-3			mg/kg
Outside CN RoW_SE_NA_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.0099	1	SE	NA	S-079B	S-079B_20191016_SE	N	10/16/2019	0	0	Benzo(b&j)fluoranthene	205-99-2_205-82-3			mg/kg
Outside CN RoW_SE_NA_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SE	NA	C-2140B	C-2140B_20191016_SE	N	10/16/2019	0	0	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SE	NA	WA-SED-120	WA-SED-120_20190815_SE	N	8/15/2019	0	0	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.033	1	SE	NA	WA-SED-111B	WA-SED-111B_20191016_SE	N	10/16/2019	0	0	Benzo(b&j)fluoranthene	205-99-2_205-82-3			mg/kg
Outside CN RoW_SE_NA_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.014	1	SE	NA	WA-SED-117	WA-SED-117_20190813_SE	N	8/13/2019	0	0	Benzo(b&j)fluoranthene	205-99-2_205-82-3			mg/kg
Outside CN RoW_SE_NA_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.011	1	SE	NA	WA-SED-112B	WA-SED-112B_20191016_SE	N	10/16/2019	0	0	Benzo(b&j)fluoranthene	205-99-2_205-82-3			mg/kg
Outside CN RoW_SE_NA_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.02	1	SE	NA	WA-SED-115B	WA-SED-115B_20191016_SE	N	10/16/2019	0	0	Benzo(b&j)fluoranthene	205-99-2_205-82-3			mg/kg
Outside CN RoW_SE_NA_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SE	NA	WA-SED-103	WA-SED-103_20190813_SE	N	8/13/2019	0	0	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(b&j)fluoranthene_205-99-2_205-82-3	0.005	0	SE	NA	WA-SED-118	WA-SED-118_20190813_SE	N	8/13/2019	0	0	Benzo(b&j)fluoranthene	205-99-2_205-82-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(c)phenanthrene_195-19-7	0.012	1	SE	NA	WA-SED-110B	WA-SED-110B_20191016_SE	N	10/16/2019	0	0	Benzo(c)phenanthrene	195-19-7			mg/kg
Outside CN RoW_SE_NA_Benzo(c)phenanthrene_195-19-7	0.005	0	SE	NA	WA-SED-111B	WA-SED-111B_20191016_SE	N	10/16/2019	0	0	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(c)phenanthrene_195-19-7	0.005	0	SE	NA	WA-SED-118	WA-SED-118_20190813_SE	N	8/13/2019	0	0	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(c)phenanthrene_195-19-7	0.005	0	SE	NA	WA-SED-101	WA-SED-101_20190813_SE	N	8/13/2019	0	0	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(c)phenanthrene_195-19-7	0.005	0	SE	NA	WA-SED-103	WA-SED-103_20190813_SE	N	8/13/2019	0	0	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(c)phenanthrene_195-19-7	0.005	0	SE	NA	WA-SED-102B	WA-SED-102B_20191016_SE	N	10/16/2019	0	0	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(c)phenanthrene_195-19-7	0.005	0	SE	NA	S-079B	S-079B_20191016_SE	N	10/16/2019	0	0	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(c)phenanthrene_195-19-7	0.005	0	SE	NA	WA-SED-115B	WA-SED-115B_20191016_SE	N	10/16/2019	0	0	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(c)phenanthrene_195-19-7	0.011	1	SE	NA	WA-SED-105B	WA-SED-105B_20191016_SE	N	10/16/2019	0	0	Benzo(c)phenanthrene	195-19-7			mg/kg
Outside CN RoW_SE_NA_Benzo(c)phenanthrene_195-19-7	0.005	0	SE	NA	WA-SED-114	WA-SED-114_20190813_SE	N	8/13/2019	0	0	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(c)phenanthrene_195-19-7	0.005	0	SE	NA	WA-SED-104	WA-SED-104_20190813_SE	N	8/13/2019	0	0	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(c)phenanthrene_195-19-7	0.005	0	SE	NA	C-2150C	C-2150C_20191016_SE	N	10/16/2019	0	0	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(c)phenanthrene_195-19-7	0.005	0	SE	NA	WA-SED-112B	WA-SED-112B_20191016_SE	N	10/16/2019	0	0	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(c)phenanthrene_195-19-7	0.005	0	SE	NA	WA-SED-116	WA-SED-116_20190813_SE	N	8/13/2019	0	0	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(c)phenanthrene_195-19-7	0.005	0	SE	NA	WA-SED-109	WA-SED-109_20190813_SE	N	8/13/2019	0	0	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(c)phenanthrene_195-19-7	0.005	0	SE	NA	WA-SED-117	WA-SED-117_20190813_SE	N	8/13/2019	0	0	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(c)phenanthrene_195-19-7	0.005	0	SE	NA	WA-SED-120	WA-SED-120_20190815_SE	N	8/15/2019	0	0	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(c)phenanthrene_195-19-7	0.005	0	SE	NA	WA-SED-119	WA-SED-119_20190813_SE	N	8/13/2019	0	0	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(c)phenanthrene_195-19-7	0.005	0	SE	NA	WA-SED-106B	WA-SED-106B_20191016_SE	N	10/16/2019	0	0	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(c)phenanthrene_195-19-7	0.005	0	SE	NA	WA-SED-113	WA-SED-113_20190813_SE	N	8/13/2019	0	0	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(c)phenanthrene_195-19-7	0.005	0	SE	NA	C-2140B	C-2140B_20191016_SE	N	10/16/2019	0	0	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(c)phenanthrene_195-19-7	0.005	0	SE	NA	WA-SED-108B	WA-SED-108B_20191016_SE	N	10/16/2019	0	0	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(c)phenanthrene_195-19-7	0.005	0	SE	NA	WA-SED-107B	WA-SED-107B_20191016_SE	N	10/16/2019	0	0	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(e)pyrene_192-97-2	0.005	0	SE	NA	C-2150C	C-2150C_20191016_SE	N	10/16/2019	0	0	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(e)pyrene_192-97-2	0.005	0	SE	NA	WA-SED-114	WA-SED-114_20190813_SE	N	8/13/2019	0	0	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(e)pyrene_192-97-2	0.005	0	SE	NA	WA-SED-116	WA-SED-116_20190813_SE	N	8/13/2019	0	0	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(e)pyrene_192-97-2	0.005	0	SE	NA	WA-SED-120	WA-SED-120_20190815_SE	N	8/15/2019	0	0	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(e)pyrene_192-97-2	0.005	0	SE	NA	WA-SED-103	WA-SED-103_20190813_SE	N	8/13/2019	0	0	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(e)pyrene_192-97-2	0.005	0	SE	NA	WA-SED-109	WA-SED-109_20190813_SE	N	8/13/2019	0	0	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(e)pyrene_192-97-2	0.005	0	SE	NA	WA-SED-112B	WA-SED-112B_20191016_SE	N	10/16/2019	0	0	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(e)pyrene_192-97-2	0.005	0	SE	NA	WA-SED-104	WA-SED-104_20190813_SE	N	8/13/2019	0	0	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(e)pyrene_192-97-2	0.005	0	SE	NA	WA-SED-117	WA-SED-117_20190813_SE	N	8/13/2019	0	0	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(e)pyrene_192-97-2	0.005	0	SE	NA	WA-SED-118	WA-SED-118_20190813_SE	N	8/13/2019	0	0	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(e)pyrene_192-97-2	0.005	0	SE	NA	C-2140B	C-2140B_20191016_SE	N	10/16/2019	0	0	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(e)pyrene_192-97-2	0.005	0	SE	NA	WA-SED-113	WA-SED-113_20190813_SE	N	8/13/2019	0	0	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(e)pyrene_192-97-2	0.0095	1	SE	NA	WA-SED-101	WA-SED-101_20190813_SE	N	8/13/2019	0	0	Benzo(e)pyrene	192-97-2			mg/kg
Outside CN RoW_SE_NA_Benzo(e)pyrene_192-97-2	0.073	1	SE	NA	WA-SED-110B	WA-SED-110B_20191016_SE	N	10/16/2019	0	0	Benzo(e)pyrene	192-97-2			mg/kg
Outside CN RoW_SE_NA_Benzo(e)pyrene_192-97-2	0.0074	1	SE	NA	S-079B	S-079B_20191016_SE	N	10/16/2019	0	0	Benzo(e)pyrene	192-97-2			mg/kg
Outside CN RoW_SE_NA_Benzo(e)pyrene_192-97-2	0.012	1	SE	NA	WA-SED-115B	WA-SED-115B_20191016_SE	N	10/16/2019	0	0	Benzo(e)pyrene	192-97-2			mg/kg
Outside CN RoW_SE_NA_Benzo(e)pyrene_192-97-2	0.005	0	SE	NA	WA-SED-119	WA-SED-119_20190813_SE	N	8/13/2019	0	0	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(e)pyrene_192-97-2	0.017	1	SE	NA	WA-SED-111B	WA-SED-111B_20191016_SE	N	10/16/2019	0	0	Benzo(e)pyrene	192-97-2			mg/kg
Outside CN RoW_SE_NA_Benzo(e)pyrene_192-97-2	0.005	0	SE	NA	WA-SED-102B	WA-SED-102B_20191016_SE	N	10/16/2019	0	0	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(e)pyrene_192-97-2	0.005	0	SE	NA	WA-SED-106B	WA-SED-106B_20191016_SE	N	10/16/2019	0	0	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(e)pyrene_192-97-2	0.005	0	SE	NA	WA-SED-107B	WA-SED-107B_20191016_SE	N	10/16/2019	0	0	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(e)pyrene_192-97-2	0.005	0	SE	NA	WA-SED-108B	WA-SED-108B_20191016_SE	N	10/16/2019	0	0	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(e)pyrene_192-97-2	0.046	1	SE	NA	WA-SED-105B	WA-SED-105B_20191016_SE	N	10/16/2019	0	0	Benzo(e)pyrene	192-97-2			mg/kg
Outside CN RoW_SE_NA_Benzo(g,h,i)perylene_191-24-2	0.005	0	SE	NA	WA-SED-103	WA-SED-103_20190813_SE	N	8/13/2019	0	0	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(g,h,i)perylene_191-24-2	0.005	0	SE	NA	WA-SED-116	WA-SED-116_20190813_SE	N	8/13/2019	0	0	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(g,h,i)perylene_191-24-2	0.005	0	SE	NA	WA-SED-102B	WA-SED-102B_20191016_SE	N	10/16/2019	0	0	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(g,h,i)perylene_191-24-2	0.022	1	SE	NA	WA-SED-105B	WA-SED-105B_20191016_SE	N	10/16/2019	0	0	Benzo(g,h,i)perylene	191-24-2			mg/kg
Outside CN RoW_SE_NA_Benzo(g,h,i)perylene_191-24-2	0.005	0	SE	NA	WA-SED-120	WA-SED-120_20190815_SE	N	8/15/2019	0	0	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(g,h,i)perylene_191-24-2	0.005	0	SE	NA	WA-SED-119	WA-SED-119_20190813_SE	N	8/13/2019	0	0	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(g,h,i)perylene_191-24-2	0.005	0	SE	NA	WA-SED-118	WA-SED-118_20190813_SE	N	8/13/2019	0	0	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(g,h,i)perylene_191-24-2	0.005	0	SE	NA	C-2150C	C-2150C_20191016_SE	N	10/16/2019	0	0	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(g,h,i)perylene_191-24-2	0.005	0	SE	NA	WA-SED-113	WA-SED-113_20190813_SE	N	8/13/2019	0	0	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(g,h,i)perylene_191-24-2	0.051	1	SE	NA	WA-SED-110B	WA-SED-110B_20191016_SE	N	10/16/2019	0	0	Benzo(g,h,i)perylene	191-24-2			mg/kg
Outside CN RoW_SE_NA_Benzo(g,h,i)perylene_191-24-2	0.005	0	SE	NA	WA-SED-101	WA-SED-101_20190813_SE	N	8/13/2019	0	0	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(g,h,i)perylene_191-24-2	0.005	0	SE	NA	WA-SED-115B	WA-SED-115B_20191016_SE	N	10/16/2019	0	0	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(g,h,i)perylene_191-24-2	0.005	0	SE	NA	WA-SED-106B	WA-SED-106B_20191016_SE	N	10/16/2019	0	0	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(g,h,i)perylene_191-24-2	0.005	0	SE	NA	WA-SED-104	WA-SED-104_20190813_SE	N	8/13/2019	0	0	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(g,h,i)perylene_191-24-2	0.005	0	SE	NA	C-2140B	C-2140B_20191016_SE	N	10/16/2019	0	0	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(g,h,i)perylene_191-24-2	0.005	0	SE	NA	WA-SED-109	WA-SED-109_20190813_SE	N	8/13/2019	0	0	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(g,h,i)perylene_191-24-2	0.005	0	SE	NA	WA-SED-117	WA-SED-117_20190813_SE	N	8/13/2019	0	0	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(g,h,i)perylene_191-24-2	0.014	1	SE	NA	WA-SED-111B	WA-SED-111B_20191016_SE	N	10/16/2019	0	0	Benzo(g,h,i)perylene	191-24-2			mg/kg
Outside CN RoW_SE_NA_Benzo(g,h,i)perylene_191-24-2	0.005	0	SE	NA	WA-SED-112B	WA-SED-112B_20191016_SE	N	10/16/2019	0	0	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(g,h,i)perylene_191-24-2	0.005	0	SE	NA	WA-SED-108B	WA-SED-108B_20191016_SE	N	10/16/2019	0	0	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(g,h,i)perylene_191-24-2	0.005	0	SE	NA	WA-SED-107B	WA-SED-107B_20191016_SE	N	10/16/2019	0	0	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(g,h,i)perylene_191-24-2	0.005	0	SE	NA	S-079B	S-079B_20191016_SE	N	10/16/2019	0	0	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(g,h,i)perylene_191-24-2	0.005	0	SE	NA	WA-SED-114	WA-SED-114_20190813_SE	N	8/13/2019	0	0	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(k)fluoranthene_207-08-9	0.043	1	SE	NA	WA-SED-110B	WA-SED-110B_20191016_SE	N	10/16/2019	0	0	Benzo(k)fluoranthene	207-08-9			mg/kg
Outside CN RoW_SE_NA_Benzo(k)fluoranthene_207-08-9	0.005	0	SE	NA	S-079B	S-079B_20191016_SE	N	10/16/2019	0	0	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(k)fluoranthene_207-08-9	0.005	0	SE	NA	C-2150C	C-2150C_20191016_SE	N	10/16/2019	0	0	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(k)fluoranthene_207-08-9	0.005	0	SE	NA	WA-SED-115B	WA-SED-115B_20191016_SE	N	10/16/2019	0	0	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(k)fluoranthene_207-08-9	0.005	0	SE	NA	WA-SED-104	WA-SED-104_20190813_SE	N	8/13/2019	0	0	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(k)fluoranthene_207-08-9	0.005	0	SE	NA	WA-SED-101	WA-SED-101_20190813_SE	N	8/13/2019	0	0	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(k)fluoranthene_207-08-9	0.005	0	SE	NA	WA-SED-102B	WA-SED-102B_20191016_SE	N	10/16/2019	0	0	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg

TABLE B.8
DATA INPUT FOR PROUCL SOFTWARE
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Notes:
The maximum of the field duplicate and parent sample pairs were applied and a detect was chosen over a non-detect value.

ProUCL Group	ProUCL Result	ProUCL Flag	Medium	Soil Zone	Location	Sample ID	Sample Type	Sample Date	Start Depth (m)	End Depth (m)	COPC	CASRN	Qualifier	Detection Limit for Non-Detects	Unit
Outside CN RoW_SE_NA_Benzo(k)fluoranthene_207-08-9	0.005	0	SE	NA	WA-SED-112B	WA-SED-112B_20191016_SE	N	10/16/2019	0	0	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(k)fluoranthene_207-08-9	0.005	0	SE	NA	WA-SED-117	WA-SED-117_20190813_SE	N	8/13/2019	0	0	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(k)fluoranthene_207-08-9	0.005	0	SE	NA	WA-SED-116	WA-SED-116_20190813_SE	N	8/13/2019	0	0	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(k)fluoranthene_207-08-9	0.028	1	SE	NA	WA-SED-105B	WA-SED-105B_20191016_SE	N	10/16/2019	0	0	Benzo(k)fluoranthene	207-08-9			mg/kg
Outside CN RoW_SE_NA_Benzo(k)fluoranthene_207-08-9	0.005	0	SE	NA	C-2140B	C-2140B_20191016_SE	N	10/16/2019	0	0	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(k)fluoranthene_207-08-9	0.005	0	SE	NA	WA-SED-114	WA-SED-114_20190813_SE	N	8/13/2019	0	0	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(k)fluoranthene_207-08-9	0.011	1	SE	NA	WA-SED-111B	WA-SED-111B_20191016_SE	N	10/16/2019	0	0	Benzo(k)fluoranthene	207-08-9			mg/kg
Outside CN RoW_SE_NA_Benzo(k)fluoranthene_207-08-9	0.005	0	SE	NA	WA-SED-109	WA-SED-109_20190813_SE	N	8/13/2019	0	0	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(k)fluoranthene_207-08-9	0.005	0	SE	NA	WA-SED-113	WA-SED-113_20190813_SE	N	8/13/2019	0	0	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(k)fluoranthene_207-08-9	0.005	0	SE	NA	WA-SED-120	WA-SED-120_20190815_SE	N	8/15/2019	0	0	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(k)fluoranthene_207-08-9	0.005	0	SE	NA	WA-SED-106B	WA-SED-106B_20191016_SE	N	10/16/2019	0	0	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(k)fluoranthene_207-08-9	0.005	0	SE	NA	WA-SED-119	WA-SED-119_20190813_SE	N	8/13/2019	0	0	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(k)fluoranthene_207-08-9	0.005	0	SE	NA	WA-SED-118	WA-SED-118_20190813_SE	N	8/13/2019	0	0	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(k)fluoranthene_207-08-9	0.005	0	SE	NA	WA-SED-108B	WA-SED-108B_20191016_SE	N	10/16/2019	0	0	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(k)fluoranthene_207-08-9	0.005	0	SE	NA	WA-SED-107B	WA-SED-107B_20191016_SE	N	10/16/2019	0	0	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Benzo(k)fluoranthene_207-08-9	0.005	0	SE	NA	WA-SED-103	WA-SED-103_20190813_SE	N	8/13/2019	0	0	Benzo(k)fluoranthene	207-08-9	U	0.005	mg/kg
Outside CN RoW_SE_NA_Fluoranthene_206-44-0	0.005	0	SE	NA	WA-SED-103	WA-SED-103_20190813_SE	N	8/13/2019	0	0	Fluoranthene	206-44-0	U	0.005	mg/kg
Outside CN RoW_SE_NA_Fluoranthene_206-44-0	0.005	0	SE	NA	WA-SED-104	WA-SED-104_20190813_SE	N	8/13/2019	0	0	Fluoranthene	206-44-0	U	0.005	mg/kg
Outside CN RoW_SE_NA_Fluoranthene_206-44-0	0.005	0	SE	NA	WA-SED-118	WA-SED-118_20190813_SE	N	8/13/2019	0	0	Fluoranthene	206-44-0	U	0.005	mg/kg
Outside CN RoW_SE_NA_Fluoranthene_206-44-0	0.0091	1	SE	NA	WA-SED-114	WA-SED-114_20190813_SE	N	8/13/2019	0	0	Fluoranthene	206-44-0			mg/kg
Outside CN RoW_SE_NA_Fluoranthene_206-44-0	0.005	0	SE	NA	C-2140B	C-2140B_20191016_SE	N	10/16/2019	0	0	Fluoranthene	206-44-0	U	0.005	mg/kg
Outside CN RoW_SE_NA_Fluoranthene_206-44-0	0.043	1	SE	NA	WA-SED-115B	WA-SED-115B_20191016_SE	N	10/16/2019	0	0	Fluoranthene	206-44-0			mg/kg
Outside CN RoW_SE_NA_Fluoranthene_206-44-0	0.005	0	SE	NA	C-2150C	C-2150C_20191016_SE	N	10/16/2019	0	0	Fluoranthene	206-44-0	U	0.005	mg/kg
Outside CN RoW_SE_NA_Fluoranthene_206-44-0	0.0077	1	SE	NA	S-079B	S-079B_20191016_SE	N	10/16/2019	0	0	Fluoranthene	206-44-0			mg/kg
Outside CN RoW_SE_NA_Fluoranthene_206-44-0	0.01	1	SE	NA	WA-SED-112B	WA-SED-112B_20191016_SE	N	10/16/2019	0	0	Fluoranthene	206-44-0			mg/kg
Outside CN RoW_SE_NA_Fluoranthene_206-44-0	0.0082	1	SE	NA	WA-SED-106B	WA-SED-106B_20191016_SE	N	10/16/2019	0	0	Fluoranthene	206-44-0			mg/kg
Outside CN RoW_SE_NA_Fluoranthene_206-44-0	0.005	0	SE	NA	WA-SED-119	WA-SED-119_20190813_SE	N	8/13/2019	0	0	Fluoranthene	206-44-0	U	0.005	mg/kg
Outside CN RoW_SE_NA_Fluoranthene_206-44-0	0.005	0	SE	NA	WA-SED-116	WA-SED-116_20190813_SE	N	8/13/2019	0	0	Fluoranthene	206-44-0	U	0.005	mg/kg
Outside CN RoW_SE_NA_Fluoranthene_206-44-0	0.013	1	SE	NA	WA-SED-107B	WA-SED-107B_20191016_SE	N	10/16/2019	0	0	Fluoranthene	206-44-0			mg/kg
Outside CN RoW_SE_NA_Fluoranthene_206-44-0	0.017	1	SE	NA	WA-SED-101	WA-SED-101_20190813_SE	N	8/13/2019	0	0	Fluoranthene	206-44-0			mg/kg
Outside CN RoW_SE_NA_Fluoranthene_206-44-0	0.005	0	SE	NA	WA-SED-113	WA-SED-113_20190813_SE	N	8/13/2019	0	0	Fluoranthene	206-44-0	U	0.005	mg/kg
Outside CN RoW_SE_NA_Fluoranthene_206-44-0	0.005	0	SE	NA	WA-SED-109	WA-SED-109_20190813_SE	N	8/13/2019	0	0	Fluoranthene	206-44-0	U	0.005	mg/kg
Outside CN RoW_SE_NA_Fluoranthene_206-44-0	0.005	0	SE	NA	WA-SED-108B	WA-SED-108B_20191016_SE	N	10/16/2019	0	0	Fluoranthene	206-44-0	U	0.005	mg/kg
Outside CN RoW_SE_NA_Fluoranthene_206-44-0	0.005	0	SE	NA	WA-SED-120	WA-SED-120_20190815_SE	N	8/15/2019	0	0	Fluoranthene	206-44-0	U	0.005	mg/kg
Outside CN RoW_SE_NA_Fluoranthene_206-44-0	0.14	1	SE	NA	WA-SED-110B	WA-SED-110B_20191016_SE	N	10/16/2019	0	0	Fluoranthene	206-44-0			mg/kg
Outside CN RoW_SE_NA_Fluoranthene_206-44-0	0.16	1	SE	NA	WA-SED-105B	WA-SED-105B_20191016_SE	N	10/16/2019	0	0	Fluoranthene	206-44-0			mg/kg
Outside CN RoW_SE_NA_Fluoranthene_206-44-0	0.046	1	SE	NA	WA-SED-111B	WA-SED-111B_20191016_SE	N	10/16/2019	0	0	Fluoranthene	206-44-0			mg/kg
Outside CN RoW_SE_NA_Fluoranthene_206-44-0	0.0081	1	SE	NA	WA-SED-102B	WA-SED-102B_20191016_SE	N	10/16/2019	0	0	Fluoranthene	206-44-0			mg/kg
Outside CN RoW_SE_NA_Fluoranthene_206-44-0	0.012	1	SE	NA	WA-SED-117	WA-SED-117_20190813_SE	N	8/13/2019	0	0	Fluoranthene	206-44-0			mg/kg
Outside CN RoW_SE_NA_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SE	NA	C-2150C	C-2150C_20191016_SE	N	10/16/2019	0	0	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
Outside CN RoW_SE_NA_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SE	NA	WA-SED-101	WA-SED-101_20190813_SE	N	8/13/2019	0	0	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
Outside CN RoW_SE_NA_Indeno(1,2,3-cd)pyrene_193-39-5	0.054	1	SE	NA	WA-SED-110B	WA-SED-110B_20191016_SE	N	10/16/2019	0	0	Indeno (1,2,3-cd)pyrene	193-39-5			mg/kg
Outside CN RoW_SE_NA_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SE	NA	S-079B	S-079B_20191016_SE	N	10/16/2019	0	0	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
Outside CN RoW_SE_NA_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SE	NA	WA-SED-103	WA-SED-103_20190813_SE	N	8/13/2019	0	0	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
Outside CN RoW_SE_NA_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SE	NA	WA-SED-115B	WA-SED-115B_20191016_SE	N	10/16/2019	0	0	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
Outside CN RoW_SE_NA_Indeno(1,2,3-cd)pyrene_193-39-5	0.014	1	SE	NA	WA-SED-111B	WA-SED-111B_20191016_SE	N	10/16/2019	0	0	Indeno (1,2,3-cd)pyrene	193-39-5			mg/kg
Outside CN RoW_SE_NA_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SE	NA	WA-SED-112B	WA-SED-112B_20191016_SE	N	10/16/2019	0	0	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
Outside CN RoW_SE_NA_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SE	NA	WA-SED-119	WA-SED-119_20190813_SE	N	8/13/2019	0	0	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
Outside CN RoW_SE_NA_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SE	NA	WA-SED-107B	WA-SED-107B_20191016_SE	N	10/16/2019	0	0	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
Outside CN RoW_SE_NA_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SE	NA	WA-SED-102B	WA-SED-102B_20191016_SE	N	10/16/2019	0	0	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
Outside CN RoW_SE_NA_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SE	NA	WA-SED-117	WA-SED-117_20190813_SE	N	8/13/2019	0	0	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
Outside CN RoW_SE_NA_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SE	NA	WA-SED-109	WA-SED-109_20190813_SE	N	8/13/2019	0	0	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
Outside CN RoW_SE_NA_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SE	NA	WA-SED-114	WA-SED-114_20190813_SE	N	8/13/2019	0	0	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
Outside CN RoW_SE_NA_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SE	NA	WA-SED-104	WA-SED-104_20190813_SE	N	8/13/2019	0	0	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
Outside CN RoW_SE_NA_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SE	NA	C-2140B	C-2140B_20191016_SE	N	10/16/2019	0	0	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
Outside CN RoW_SE_NA_Indeno(1,2,3-cd)pyrene_193-39-5	0.022	1	SE	NA	WA-SED-105B	WA-SED-105B_20191016_SE	N	10/16/2019	0	0	Indeno (1,2,3-cd)pyrene	193-39-5			mg/kg
Outside CN RoW_SE_NA_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SE	NA	WA-SED-113	WA-SED-113_20190813_SE	N	8/13/2019	0	0	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
Outside CN RoW_SE_NA_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SE	NA	WA-SED-108B	WA-SED-108B_20191016_SE	N	10/16/2019	0	0	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
Outside CN RoW_SE_NA_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SE	NA	WA-SED-106B	WA-SED-106B_20191016_SE	N	10/16/2019	0	0	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
Outside CN RoW_SE_NA_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SE	NA	WA-SED-116	WA-SED-116_20190813_SE	N	8/13/2019	0	0	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
Outside CN RoW_SE_NA_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SE	NA	WA-SED-118	WA-SED-118_20190813_SE	N	8/13/2019	0	0	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
Outside CN RoW_SE_NA_Indeno(1,2,3-cd)pyrene_193-39-5	0.005	0	SE	NA	WA-SED-120	WA-SED-120_20190815_SE	N	8/15/2019	0	0	Indeno (1,2,3-cd)pyrene	193-39-5	U	0.005	mg/kg
Outside CN RoW_SE_NA_Methylnaphthalene, 2-_91-57-6	0.005	0	SE	NA	WA-SED-101	WA-SED-101_20190813_SE	N	8/13/2019	0	0	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SE_NA_Methylnaphthalene, 2-_91-57-6	0.005	0	SE	NA	WA-SED-109	WA-SED-109_20190813_SE	N	8/13/2019	0	0	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SE_NA_Methylnaphthalene, 2-_91-57-6	0.005	0	SE	NA	WA-SED-114	WA-SED-114_20190813_SE	N	8/13/2019	0	0	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SE_NA_Methylnaphthalene, 2-_91-57-6	0.005	0	SE	NA	WA-SED-104	WA-SED-104_20190813_SE	N	8/13/2019	0	0	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SE_NA_Methylnaphthalene, 2-_91-57-6	0.005	0	SE	NA	WA-SED-116	WA-SED-116_20190813_SE	N	8/13/2019	0	0	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SE_NA_Methylnaphthalene, 2-_91-57-6	0.005	0	SE	NA	WA-SED-117	WA-SED-117_20190813_SE	N	8/13/2019	0	0	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SE_NA_Methylnaphthalene, 2-_91-57-6	0.005	0	SE	NA	WA-SED-118	WA-SED-118_20190813_SE	N	8/13/2019	0	0	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SE_NA_Methylnaphthalene, 2-_91-57-6	0.005	0	SE	NA	WA-SED-120	WA-SED-120_20190815_SE	N	8/15/2019	0	0	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SE_NA_Methylnaphthalene, 2-_91-57-6	0.005	0	SE	NA	WA-SED-107B	WA-SED-107B_20191016_SE	N	10/16/2019	0	0	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SE_NA_Methylnaphthalene, 2-_91-57-6	0.005	0	SE	NA	WA-SED-119	WA-SED-119_20190813_SE	N	8/13/2019	0	0	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SE_NA_Methylnaphthalene, 2-_91-57-6	0.005	0	SE	NA	C-2140B	C-2140B_20191016_SE	N	10/16/2019	0	0	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SE_NA_Methylnaphthalene, 2-_91-57-6	0.005	0	SE	NA	WA-SED-103	WA-SED-103_20190813_SE	N	8/13/2019	0	0	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SE_NA_Methylnaphthalene, 2-_91-57-6	0.005	0	SE	NA	C-2150C	C-2150C_20191016_SE	N	10/16/2019	0	0	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SE_NA_Methylnaphthalene, 2-_91-57-6	0.005	0	SE	NA	WA-SED-113	WA-SED-113_20190813_SE	N	8/13/2019	0	0	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SE_NA_Methylnaphthalene, 2-_91-57-6	0.005	0	SE	NA	WA-SED-102B	WA-SED-102B_20191016_SE	N	10/16/2019	0	0	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SE_NA_Methylnaphthalene, 2-_91-57-6	0.0086	1	SE	NA	WA-SED-105B	WA-SED-105B_20191016_SE	N	10/16/2019	0	0	Methylnaphthalene, 2-	91-57-6			mg/kg
Outside CN RoW_SE_NA_Methylnaphthalene, 2-_91-57-6	0.005	0	SE	NA	WA-SED-108B	WA-SED-108B_20191016_SE	N	10/16/2019	0	0	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SE_NA_Methylnaphthalene, 2-_91-57-6	0.005	0	SE	NA	WA-SED-112B	WA-SED-112B_20191016_SE	N	10/16/2019	0	0	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SE_NA_Methylnaphthalene, 2-_91-57-6	0.005	0	SE	NA	WA-SED-106B	WA-SED-106B_20191016_SE	N	10/16/2019	0	0	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SE_NA_Methylnaphthalene, 2-_91-57-6	0.005	0	SE	NA	S-079B	S-079B_20191016_SE	N	10/16/2019	0	0	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SE_NA_Methylnaphthalene, 2-_91-57-6	0.005	0	SE	NA	WA-SED-111B	WA-SED-111B_20191016_SE	N	10/16/2019	0	0	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SE_NA_Methylnaphthalene, 2-_91-57-6	0.005	0	SE	NA	WA-SED-110B	WA-SED-110B_20191016_SE	N	10/16/2019	0	0	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SE_NA_Methylnaphthalene, 2-_91-57-6	0.0078	1	SE	NA	WA-SED-115B	WA-SED-115B_20191016_SE	N	10/16/2019	0	0	Methylnaphthalene, 2-	91-57-6			mg/kg
Outside CN RoW_SE_NA_Naphthalene_91-20-3	0.005	0	SE	NA	S-079B	S-079B_20191016_SE	N	10/16/2019	0	0	Naphthalene	91-20-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Naphthalene_91-20-3	0.005	0	SE	NA	C-2140B	C-2140B_20191016_SE	N	10/16/2019	0	0	Naphthalene	91-20-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Naphthalene_91-20-3	0.005	0	SE	NA	WA-SED-101	WA-SED-101_20190813_SE	N	8/13/2019	0	0	Naphthalene	91-20-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Naphthalene_91-20-3	0.005	0	SE	NA	WA-SED-112B	WA-SED-112B_20191016_SE	N	10/16/2019	0	0	Naphthalene	91-20-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Naphthalene_91-20-3	0.005	0	SE	NA	WA-SED-102B	WA-SED-102B_20191016_SE	N	10/16/2019	0	0	Naphthalene	91-20-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Naphthalene_91-20-3	0.005	0	SE	NA	WA-SED-105B	WA-SED-105B_20191016_SE	N	10/16/2019	0	0	Naphthalene	91-20-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Naphthalene_91-20-3	0.005	0	SE	NA	C-2150C	C-2150C_20191016_SE	N	10/16/2019	0	0	Naphthalene	91-20-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Naphthalene_91-20-3	0.005	0	SE	NA	WA-SED-111B	WA-SED-111B_20191016_SE	N	10/16/2019	0	0	Naphthalene	91-20-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Naphthalene_91-20-3	0.005	0	SE	NA	WA-SED-114	WA-SED-114_20190813_SE	N	8/13/2019	0	0	Naphthalene	91-20-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Naphthalene_91-20-3	0.005	0	SE	NA	WA-SED-115B	WA-SED-115B_20191016_SE	N	10/16/2019	0	0	Naphthalene	91-20-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Naphthalene_91-20-3	0.005	0	SE	NA	WA-SED-107B	WA-SED-107B_20191016_SE	N	10/16/2019	0	0	Naphthalene	91-20-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Naphthalene_91-20-3	0.005	0	SE	NA	WA-SED-117	WA-SED-117_20190813_SE	N	8/13/2019	0	0	Naphthalene	91-20-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Naphthalene_91-20-3	0.0069	1	SE	NA	WA-SED-110B	WA-SED-110B_20191016_SE	N	10/16/2019	0	0	Naphthalene	91-20-3			mg/kg
Outside CN RoW_SE_NA_Naphthalene_91-20-3	0.005	0	SE	NA	WA-SED-119	WA-SED-119_20190813_SE	N	8/13/2019	0	0	Naphthalene	91-20-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Naphthalene_91-20-3	0.005	0	SE	NA	WA-SED-106B	WA-SED-106B_20191016_SE	N	10/16/2019	0	0	Naphthalene	91-20-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Naphthalene_91-20-3	0.005	0	SE	NA	WA-SED-116	WA-SED-116_20190813_SE	N	8/13/2019	0	0	Naphthalene	91-20-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Naphthalene_91-20-3	0.005	0	SE	NA	WA-SED-120	WA-SED-120_20190815_SE	N	8/15/2019	0	0	Naphthalene	91-20-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Naphthalene_91-20-3	0.005	0	SE	NA	WA-SED-103	WA-SED-103_20190813_SE	N	8/13/2019	0	0	Naphthalene	91-20-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Naphthalene_91-20-3	0.005	0	SE	NA	WA-SED-108B	WA-SED-108B_20191016_SE	N	10/16/2019	0	0	Naphthalene	91-20-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Naphthalene_91-20-3	0.005	0	SE	NA	WA-SED-113	WA-SED-113_20190813_SE	N	8/13/2019	0	0	Naphthalene	91-20-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Naphthalene_91-20-3	0.005	0	SE	NA	WA-SED-104	WA-SED-104_20190813_SE	N	8/13/2019	0	0	Naphthalene	91-20-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Naphthalene_91-20-3	0.005	0	SE	NA	WA-SED-109	WA-SED-109_20190813_SE	N	8/13/2019	0	0	Naphthalene	91-20-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Naphthalene_91-20-3	0.005	0	SE	NA	WA-SED-118	WA-SED-118_20190813_SE	N	8/13/2019	0	0	Naphthalene	91-20-3	U	0.005	mg/kg
Outside CN RoW_SE_NA_Perylene_198-55-0	0.005	0	SE	NA	WA-SED-108B	WA-SED-108B_20191016_SE	N	10/16/2019	0	0	Perylene	198-55-0	U	0.005	mg/kg
Outside CN RoW_SE_NA_Perylene_198-55-0	0.025	1	SE	NA	WA-SED-117	WA-SED-117_20190813_SE	N	8/13/2019	0	0	Perylene	198-55-0			mg/kg
Outside CN RoW_SE_NA_Perylene_198-55-0	0.024	1	SE	NA	WA-SED-101	WA-SED-101_20190813_SE	N	8/13/2019	0	0	Perylene	198-55-0			mg/kg
Outside CN RoW_SE_NA_Perylene_198-55-0	0.0094	1	SE	NA	WA-SED-103	WA-SED-103_20190813_SE	N	8/13/2019	0	0	Perylene	198-55-0			mg/kg
Outside CN RoW_SE_NA_Perylene_198-55-0	0.014	1	SE	NA	WA-SED-104	WA-SED-104_20190813_SE	N	8/13/2019	0	0	Perylene	198-55-0			mg/kg
Outside CN RoW_SE_NA_Perylene_198-55-0	0.019	1	SE	NA	WA-SED-109	WA-SED-109_20190813_SE	N	8/13/2019	0	0	Perylene	198-55-0			mg/kg
Outside CN RoW_SE_NA_Perylene_198-55-0	0.014	1	SE	NA	WA-SED-114	WA-SED-114_20190813_SE	N	8/13/2019	0	0	Perylene	198-55-0			mg/kg
Outside CN RoW_SE_NA_Perylene_198-55-0	0.005	0	SE	NA	WA-SED-116	WA-SED-116_20190813_SE	N	8/13/2019	0	0	Perylene	198-55-0	U	0.005	mg/kg
Outside CN RoW_SE_NA_Perylene_198-55-0	0.0084	1	SE	NA	WA-SED-113	WA-SED-113_20190813_SE	N	8/13/2019	0	0	Perylene	198-55-0			mg/kg
Outside CN RoW_SE_NA_Perylene_198-55-0	0.005	0	SE	NA	WA-SED-118	WA-SED-118_20190813_SE	N	8/13/2019	0	0	Perylene	198-55-0	U	0.005	mg/kg
Outside CN RoW_SE_NA_Perylene_198-55-0	0.028	1	SE	NA	WA-SED-110B	WA-SED-110B_20191016_SE	N	10/16/2019	0	0	Perylene	198-55-0			mg/kg
Outside CN RoW_SE_NA_Perylene_198-55-0	0.018	1	SE	NA	WA-SED-105B	WA-SED-105B_20191016_SE	N	10/16/2019	0	0	Perylene	198-55-0			mg/kg
Outside CN RoW_SE_NA_Perylene_198-55-0	0.0075	1	SE	NA	WA-SED-111B	WA-SED-111B_20191016_SE	N	10/16/2019	0	0	Perylene	198-55-0			mg/kg
Outside CN RoW_SE_NA_Perylene_198-55-0	0.021	1	SE	NA	WA-SED-120	WA-SED-120_20190815_SE	N	8/15/2019	0	0	Perylene	198-55-0			mg/kg
Outside CN RoW_SE_NA_Perylene_198-55-0	0.005	0	SE	NA	C-2140B	C-2140B_20191016_SE	N	10/16/2019	0	0	Perylene	198-55-0	U	0.005	mg/kg
Outside CN RoW_SE_NA_Perylene_198-55-0	0.0066	1	SE	NA	C-2150C	C-2150C_20191016_SE	N	10/16/2019	0	0	Perylene	198-55-0			mg/kg
Outside CN RoW_SE_NA_Perylene_198-55-0	0.005	0	SE	NA	WA-SED-107B	WA-SED-107B_20191016_SE	N	10/16/2019	0	0	Perylene	198-55-0	U	0.005	mg/kg
Outside CN RoW_SE_NA_Perylene_198-55-0	0.021	1	SE	NA	WA-SED-115B	WA-SED-115B_20191016_SE	N	10/16/2019	0	0	Perylene	198-55-0			mg/kg
Outside CN RoW_SE_NA_Perylene_198-55-0	0.021	1	SE	NA	S-079B	S-079B_20191016_SE	N	10/16/2019	0	0	Perylene	198-55-0			mg/kg
Outside CN RoW_SE_NA_Perylene_198-55-0	0.0097	1	SE	NA	WA-SED-119	WA-SED-119_20190813_SE	N	8/13/2019	0	0	Perylene	198-55-0			mg/kg
Outside CN RoW_SE_NA_Perylene_198-55-0	0.0093	1	SE	NA	WA-SED-106B	WA-SED-106B_20191016_SE	N	10/16/2019	0	0	Perylene	198-55-0			mg/kg
Outside CN RoW_SE_NA_Perylene_198-55-0	0.017	1	SE	NA	WA-SED-112B	WA-SED-112B_20191016_SE	N	10/16/2019	0	0	Perylene	198-55-0			mg/kg
Outside CN RoW_SE_NA_Perylene_198-55-0	0.031	1	SE	NA	WA-SED-102B	WA-SED-102B_20191016_SE	N	10/16/2019	0	0	Perylene	198-55-0			mg/kg
Outside CN RoW_SE_NA_Phenanthrene_85-01-8	0.01	1	SE	NA	WA-SED-101	WA-SED-101_20190813_SE	N	8/13/2019	0	0	Phenanthrene	85-01-8			mg/kg
Outside CN RoW_SE_NA_Phenanthrene_85-01-8	0.005	0	SE	NA	S-079B	S-079B_20191016_SE	N	10/16/2019	0	0	Phenanthrene	85-01-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Phenanthrene_85-01-8	0.025	1	SE	NA	WA-SED-106B	WA-SED-106B_20191016_SE	N	10/16/2019	0	0	Phenanthrene	85-01-8			mg/kg
Outside CN RoW_SE_NA_Phenanthrene_85-01-8	0.031	1	SE	NA	WA-SED-115B	WA-SED-115B_20191016_SE	N	10/16/2019	0	0	Phenanthrene	85-01-8			mg/kg
Outside CN RoW_SE_NA_Phenanthrene_85-01-8	0.005	0	SE	NA	WA-SED-112B	WA-SED-112B_20191016_SE	N	10/16/2019	0	0	Phenanthrene	85-01-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Phenanthrene_85-01-8	0.005	0	SE	NA	C-2150C	C-2150C_20191016_SE	N	10/16/2019	0	0	Phenanthrene	85-01-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Phenanthrene_85-01-8	0.005	0	SE	NA	WA-SED-118	WA-SED-118_20190813_SE	N	8/13/2019	0	0	Phenanthrene	85-01-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Phenanthrene_85-01-8	0.005	0	SE	NA	WA-SED-107B	WA-SED-107B_20191016_SE	N	10/16/2019	0	0	Phenanthrene	85-01-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Phenanthrene_85-01-8	0.005	0	SE	NA	WA-SED-116	WA-SED-116_20190813_SE	N	8/13/2019	0	0	Phenanthrene	85-01-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Phenanthrene_85-01-8	0.0096	1	SE	NA	WA-SED-114	WA-SED-114_20190813_SE	N	8/13/2019	0	0	Phenanthrene	85-01-8			mg/kg
Outside CN RoW_SE_NA_Phenanthrene_85-01-8	0.005	0	SE	NA	WA-SED-119	WA-SED-119_20190813_SE	N	8/13/2019	0	0	Phenanthrene	85-01-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Phenanthrene_85-01-8	0.017	1	SE	NA	WA-SED-111B	WA-SED-111B_20191016_SE	N	10/16/2019	0	0	Phenanthrene	85-01-8			mg/kg
Outside CN RoW_SE_NA_Phenanthrene_85-01-8	0.048	1	SE	NA	WA-SED-105B	WA-SED-105B_20191016_SE	N	10/16/2019	0	0	Phenanthrene	85-01-8			mg/kg
Outside CN RoW_SE_NA_Phenanthrene_85-01-8	0.005	0	SE	NA	WA-SED-103	WA-SED-103_20190813_SE	N	8/13/2019	0	0	Phenanthrene	85-01-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Phenanthrene_85-01-8	0.005	0	SE	NA	WA-SED-117	WA-SED-117_20190813_SE	N	8/13/2019	0	0	Phenanthrene	85-01-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Phenanthrene_85-01-8	0.005	0	SE	NA	WA-SED-104	WA-SED-104_20190813_SE	N	8/13/2019	0	0	Phenanthrene	85-01-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Phenanthrene_85-01-8	0.005	0	SE	NA	C-2140B	C-2140B_20191016_SE	N	10/16/2019	0	0	Phenanthrene	85-01-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Phenanthrene_85-01-8	0.005	0	SE	NA	WA-SED-109	WA-SED-109_20190813_SE	N	8/13/2019	0	0	Phenanthrene	85-01-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Phenanthrene_85-01-8	0.0079	1	SE	NA	WA-SED-102B	WA-SED-102B_20191016_SE	N	10/16/2019	0	0	Phenanthrene	85-01-8			mg/kg
Outside CN RoW_SE_NA_Phenanthrene_85-01-8	0.005	0	SE	NA	WA-SED-113	WA-SED-113_20190813_SE	N	8/13/2019	0	0	Phenanthrene	85-01-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Phenanthrene_85-01-8	0.005	0	SE	NA	WA-SED-120	WA-SED-120_20190815_SE	N	8/15/2019	0	0	Phenanthrene	85-01-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Phenanthrene_85-01-8	0.034	1	SE	NA	WA-SED-110B	WA-SED-110B_20191016_SE	N	10/16/2019	0	0	Phenanthrene	85-01-8			mg/kg
Outside CN RoW_SE_NA_Phenanthrene_85-01-8	0.005	0	SE	NA	WA-SED-108B	WA-SED-108B_20191016_SE	N	10/16/2019	0	0	Phenanthrene	85-01-8	U	0.005	mg/kg
Outside CN RoW_SE_NA_Pyrene_129-00-0	0.005	0	SE	NA	WA-SED-108B	WA-SED-108B_20191016_SE	N	10/16/2019	0	0	Pyrene	129-00-0	U	0.005	mg/kg
Outside CN RoW_SE_NA_Pyrene_129-00-0	0.005	0	SE	NA	WA-SED-104	WA-SED-104_20190813_SE	N	8/13/2019	0	0	Pyrene	129-00-0	U	0.005	mg/kg
Outside CN RoW_SE_NA_Pyrene_129-00-0	0.005	0	SE	NA	WA-SED-103	WA-SED-103_20190813_SE	N	8/13/2019	0	0	Pyrene	129-00-0	U	0.005	mg/kg
Outside CN RoW_SE_NA_Pyrene_129-00-0	0.005	0	SE	NA	WA-SED-113	WA-SED-113_20190813_SE	N	8/13/2019	0	0	Pyrene	129-00-0	U	0.005	mg/kg
Outside CN RoW_SE_NA_Pyrene_129-00-0	0.036	1	SE	NA	WA-SED-115B	WA-SED-115B_20191016_SE	N	10/16/2019	0	0	Pyrene	129-00-0			mg/kg
Outside CN RoW_SE_NA_Pyrene_129-00-0	0.005	0	SE	NA	WA-SED-109	WA-SED-109_20190813_SE	N	8/13/2019	0	0	Pyrene	129-00-0	U	0.005	mg/kg
Outside CN RoW_SE_NA_Pyrene_129-00-0	0.023	1	SE	NA	WA-SED-114	WA-SED-114_20190813_SE	N	8/13/2019	0	0	Pyrene	129-00-0			mg/kg
Outside CN RoW_SE_NA_Pyrene_129-00-0	0.034	1	SE	NA	WA-SED-111B	WA-SED-111B_20191016_SE	N	10/16/2019	0	0	Pyrene	129-00-0			mg/kg

TABLE B.8
DATA INPUT FOR PROUCL SOFTWARE
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Notes:
The maximum of the field duplicate and parent sample pairs were applied and a detect was chosen over a non-detect value.

ProUCL Group	ProUCL Result	ProUCL Flag	Medium	Soil Zone	Location	Sample ID	Sample Type	Sample Date	Start Depth (m)	End Depth (m)	COPC	CASRN	Qualifier	Detection Limit for Non-Detects	Unit
Outside CN RoW_SE_NA_Pyrene_129-00-0	0.005	0	SE	NA	WA-SED-120	WA-SED-120_20190815_SE	N	8/15/2019	0	0	Pyrene	129-00-0	U	0.005	mg/kg
Outside CN RoW_SE_NA_Pyrene_129-00-0	0.005	0	SE	NA	WA-SED-116	WA-SED-116_20190813_SE	N	8/13/2019	0	0	Pyrene	129-00-0	U	0.005	mg/kg
Outside CN RoW_SE_NA_Pyrene_129-00-0	0.0087	1	SE	NA	S-079B	S-079B_20191016_SE	N	10/16/2019	0	0	Pyrene	129-00-0			mg/kg
Outside CN RoW_SE_NA_Pyrene_129-00-0	0.12	1	SE	NA	WA-SED-105B	WA-SED-105B_20191016_SE	N	10/16/2019	0	0	Pyrene	129-00-0			mg/kg
Outside CN RoW_SE_NA_Pyrene_129-00-0	0.0096	1	SE	NA	WA-SED-112B	WA-SED-112B_20191016_SE	N	10/16/2019	0	0	Pyrene	129-00-0			mg/kg
Outside CN RoW_SE_NA_Pyrene_129-00-0	0.11	1	SE	NA	WA-SED-110B	WA-SED-110B_20191016_SE	N	10/16/2019	0	0	Pyrene	129-00-0			mg/kg
Outside CN RoW_SE_NA_Pyrene_129-00-0	0.005	0	SE	NA	WA-SED-118	WA-SED-118_20190813_SE	N	8/13/2019	0	0	Pyrene	129-00-0	U	0.005	mg/kg
Outside CN RoW_SE_NA_Pyrene_129-00-0	0.014	1	SE	NA	WA-SED-107B	WA-SED-107B_20191016_SE	N	10/16/2019	0	0	Pyrene	129-00-0			mg/kg
Outside CN RoW_SE_NA_Pyrene_129-00-0	0.014	1	SE	NA	WA-SED-101	WA-SED-101_20190813_SE	N	8/13/2019	0	0	Pyrene	129-00-0			mg/kg
Outside CN RoW_SE_NA_Pyrene_129-00-0	0.005	0	SE	NA	WA-SED-106B	WA-SED-106B_20191016_SE	N	10/16/2019	0	0	Pyrene	129-00-0	U	0.005	mg/kg
Outside CN RoW_SE_NA_Pyrene_129-00-0	0.0098	1	SE	NA	WA-SED-117	WA-SED-117_20190813_SE	N	8/13/2019	0	0	Pyrene	129-00-0			mg/kg
Outside CN RoW_SE_NA_Pyrene_129-00-0	0.005	0	SE	NA	WA-SED-119	WA-SED-119_20190813_SE	N	8/13/2019	0	0	Pyrene	129-00-0	U	0.005	mg/kg
Outside CN RoW_SE_NA_Pyrene_129-00-0	0.005	0	SE	NA	C-2140B	C-2140B_20191016_SE	N	10/16/2019	0	0	Pyrene	129-00-0	U	0.005	mg/kg
Outside CN RoW_SE_NA_Pyrene_129-00-0	0.005	0	SE	NA	WA-SED-102B	WA-SED-102B_20191016_SE	N	10/16/2019	0	0	Pyrene	129-00-0	U	0.005	mg/kg
Outside CN RoW_SE_NA_Pyrene_129-00-0	0.005	0	SE	NA	C-2150C	C-2150C_20191016_SE	N	10/16/2019	0	0	Pyrene	129-00-0	U	0.005	mg/kg
Outside CN RoW_SE_NA_Quinoline_91-22-5	0.01	0	SE	NA	WA-SED-111B	WA-SED-111B_20191016_SE	N	10/16/2019	0	0	Quinoline	91-22-5	U	0.01	mg/kg
Outside CN RoW_SE_NA_Quinoline_91-22-5	0.01	0	SE	NA	WA-SED-104	WA-SED-104_20190813_SE	N	8/13/2019	0	0	Quinoline	91-22-5	U	0.01	mg/kg
Outside CN RoW_SE_NA_Quinoline_91-22-5	0.01	0	SE	NA	WA-SED-118	WA-SED-118_20190813_SE	N	8/13/2019	0	0	Quinoline	91-22-5	U	0.01	mg/kg
Outside CN RoW_SE_NA_Quinoline_91-22-5	0.01	0	SE	NA	WA-SED-115B	WA-SED-115B_20191016_SE	N	10/16/2019	0	0	Quinoline	91-22-5	U	0.01	mg/kg
Outside CN RoW_SE_NA_Quinoline_91-22-5	0.01	0	SE	NA	WA-SED-110B	WA-SED-110B_20191016_SE	N	10/16/2019	0	0	Quinoline	91-22-5	U	0.01	mg/kg
Outside CN RoW_SE_NA_Quinoline_91-22-5	0.01	0	SE	NA	WA-SED-106B	WA-SED-106B_20191016_SE	N	10/16/2019	0	0	Quinoline	91-22-5	U	0.01	mg/kg
Outside CN RoW_SE_NA_Quinoline_91-22-5	0.01	0	SE	NA	S-079B	S-079B_20191016_SE	N	10/16/2019	0	0	Quinoline	91-22-5	U	0.01	mg/kg
Outside CN RoW_SE_NA_Quinoline_91-22-5	0.01	0	SE	NA	WA-SED-105B	WA-SED-105B_20191016_SE	N	10/16/2019	0	0	Quinoline	91-22-5	U	0.01	mg/kg
Outside CN RoW_SE_NA_Quinoline_91-22-5	0.01	0	SE	NA	WA-SED-108B	WA-SED-108B_20191016_SE	N	10/16/2019	0	0	Quinoline	91-22-5	U	0.01	mg/kg
Outside CN RoW_SE_NA_Quinoline_91-22-5	0.01	0	SE	NA	WA-SED-101	WA-SED-101_20190813_SE	N	8/13/2019	0	0	Quinoline	91-22-5	U	0.01	mg/kg
Outside CN RoW_SE_NA_Quinoline_91-22-5	0.01	0	SE	NA	WA-SED-113	WA-SED-113_20190813_SE	N	8/13/2019	0	0	Quinoline	91-22-5	U	0.01	mg/kg
Outside CN RoW_SE_NA_Quinoline_91-22-5	0.01	0	SE	NA	WA-SED-103	WA-SED-103_20190813_SE	N	8/13/2019	0	0	Quinoline	91-22-5	U	0.01	mg/kg
Outside CN RoW_SE_NA_Quinoline_91-22-5	0.01	0	SE	NA	WA-SED-109	WA-SED-109_20190813_SE	N	8/13/2019	0	0	Quinoline	91-22-5	U	0.01	mg/kg
Outside CN RoW_SE_NA_Quinoline_91-22-5	0.01	0	SE	NA	C-2140B	C-2140B_20191016_SE	N	10/16/2019	0	0	Quinoline	91-22-5	U	0.01	mg/kg
Outside CN RoW_SE_NA_Quinoline_91-22-5	0.01	0	SE	NA	WA-SED-117	WA-SED-117_20190813_SE	N	8/13/2019	0	0	Quinoline	91-22-5	U	0.01	mg/kg
Outside CN RoW_SE_NA_Quinoline_91-22-5	0.01	0	SE	NA	WA-SED-114	WA-SED-114_20190813_SE	N	8/13/2019	0	0	Quinoline	91-22-5	U	0.01	mg/kg
Outside CN RoW_SE_NA_Quinoline_91-22-5	0.01	0	SE	NA	WA-SED-119	WA-SED-119_20190813_SE	N	8/13/2019	0	0	Quinoline	91-22-5	U	0.01	mg/kg
Outside CN RoW_SE_NA_Quinoline_91-22-5	0.01	0	SE	NA	WA-SED-102B	WA-SED-102B_20191016_SE	N	10/16/2019	0	0	Quinoline	91-22-5	U	0.01	mg/kg
Outside CN RoW_SE_NA_Quinoline_91-22-5	0.01	0	SE	NA	WA-SED-120	WA-SED-120_20190815_SE	N	8/15/2019	0	0	Quinoline	91-22-5	U	0.01	mg/kg
Outside CN RoW_SE_NA_Quinoline_91-22-5	0.01	0	SE	NA	WA-SED-116	WA-SED-116_20190813_SE	N	8/13/2019	0	0	Quinoline	91-22-5	U	0.01	mg/kg
Outside CN RoW_SE_NA_Quinoline_91-22-5	0.01	0	SE	NA	WA-SED-107B	WA-SED-107B_20191016_SE	N	10/16/2019	0	0	Quinoline	91-22-5	U	0.01	mg/kg
Outside CN RoW_SE_NA_Quinoline_91-22-5	0.01	0	SE	NA	C-2150C	C-2150C_20191016_SE	N	10/16/2019	0	0	Quinoline	91-22-5	U	0.01	mg/kg
Outside CN RoW_SE_NA_Quinoline_91-22-5	0.01	0	SE	NA	WA-SED-112B	WA-SED-112B_20191016_SE	N	10/16/2019	0	0	Quinoline	91-22-5	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	WA-SOIL-203	WA-SOIL-203_20190814_SO	N	8/14/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	S-032B	S-032B_20190227_SO	N	2/27/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	S-047C	S-047C_20190227_SO	N	2/27/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	WA-SOIL-201	WA-SOIL-201_20190814_SO	N	8/14/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	S-039B	S-039B_20190227_SO	N	2/27/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.021	0	SO	Surface Soil 0-1.5m	S-031	S-031_20190227_SO	N	2/27/2019	0	0.1	Acridine	260-94-6	U	0.021	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	S-048	S-048_20190227_SO	N	2/27/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	S-047G	S-047G_20190227_SO	N	2/27/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	WA-SOIL-204	WA-SOIL-204_20190814_SO	N	8/14/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	WA-SOIL-206	WA-SOIL-206_20190814_SO	N	8/14/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	S-079	S-079_20190227_SO	N	2/27/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	WA-SOIL-209	WA-SOIL-209_20190814_SO	N	8/14/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	S-044 FLOOR	S-044 FLOOR_20190227_SO	N	2/27/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	WA-SOIL-208	WA-SOIL-208_20190814_SO	N	8/14/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	S-036	S-036_20190227_SO	N	2/27/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.068	1	SO	Surface Soil 0-1.5m	WA-SOIL-202	WA-SOIL-202_20190814_SO	N	8/14/2019	0	0.1	Acridine	260-94-6			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	S-029A-B	S-029A-B_20190304_SO	N	3/4/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	WA-SOIL-205	WA-SOIL-205_20190814_SO	N	8/14/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	WA-SOIL-207	WA-SOIL-207_20190814_SO	N	8/14/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	C-2600B	C-2600B_20200225_SO	N	2/25/2020	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	19-H13-001	19-H13-001_20190609_SO	N	6/9/2019	0	0.15	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	19-H15-001	19-H15-001_20190609_SO	N	6/9/2019	0	0.15	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	S-314WB	S-314WB_20191016_SO	N	10/16/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	19-H12-001	19-H12-001_20190609_SO	N	6/9/2019	0	0.15	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	19-H14-001	19-H14-001_20190609_SO	N	6/9/2019	0	0.15	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	19-H11-001	19-H11-001_20190609_SO	N	6/9/2019	0	0.15	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	DB-011	DB-011_20190302_SO	N	3/2/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	19-H16-001	19-H16-001_20190609_SO	N	6/9/2019	0	0.15	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	19-H11-002	19-H11-002_20190609_SO	N	6/9/2019	0	0.15	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	C-6013	C-6013_20190306_SO	N	3/6/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	C-2424	C-2424_20190308_SO	N	3/8/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	C-2156	C-2156_20190306_SO	N	3/6/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	C-6204	C-6204_20190309_SO	N	3/9/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	C-6042B	C-6042B_20190814_SO	N	8/14/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.021	0	SO	Surface Soil 0-1.5m	C-6013B	C-6013B_20190814_SO	N	8/14/2019	0	0.1	Acridine	260-94-6	U	0.021	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	C-1018F	C-1018F_20190303_SO	N	3/3/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	C-6042	C-6042_20190306_SO	N	3/6/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	C-2131	C-2131_20190306_SO	N	3/6/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.019	0	SO	Surface Soil 0-1.5m	C-6035B	C-6035B_20190814_SO	N	8/14/2019	0	0.1	Acridine	260-94-6	U	0.019	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	C-1016F	C-1016F_20190303_SO	N	3/3/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	C-6015B	C-6015B_20190814_SO	N	8/14/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	C-6219	C-6219_20190309_SO	N	3/9/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	C-6020	C-6020_20190306_SO	N	3/6/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	C-2146	C-2146_20190306_SO	N	3/6/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	C-1011W	C-1011W_20190303_SO	N	3/3/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	S-008	S-008_20190227_SO	N	2/27/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	S-011	S-011_20190227_SO	N	2/27/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	C-2153	C-2153_20190306_SO	N	3/6/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.015	1	SO	Surface Soil 0-1.5m	C-2150-B	C-2150-B_20190306_SO	N	3/6/2019	0	0.1	Acridine	260-94-6			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	C-2400	C-2400_20190308_SO	N	3/8/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	C-2410	C-2410_20190308_SO	N	3/8/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	C-2422	C-2422_20190308_SO	N	3/8/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	S-007B	S-007B_20190227_SO	N	2/27/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	C-2140	C-2140_20190306_SO	N	3/6/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	C-2419	C-2419_20190308_SO	N	3/8/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	C-2406-B	C-2406-B_20190310_SO	N	3/10/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Acridine_260-94-6	0.01	0	SO	Surface Soil 0-1.5m	C-2404	C-2404_20190308_SO	N	3/8/2019	0	0.1	Acridine	260-94-6	U	0.01	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	S-032B	S-032B_20190227_SO	N	2/27/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	S-029A-B	S-029A-B_20190304_SO	N	3/4/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	S-036	S-036_20190227_SO	N	2/27/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-207	WA-SOIL-207_20190814_SO	N	8/14/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	S-048	S-048_20190227_SO	N	2/27/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-204	WA-SOIL-204_20190814_SO	N	8/14/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-203	WA-SOIL-203_20190814_SO	N	8/14/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	S-047C	S-047C_20190227_SO	N	2/27/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-209	WA-SOIL-209_20190814_SO	N	8/14/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	S-047G	S-047G_20190227_SO	N	2/27/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-201	WA-SOIL-201_20190814_SO	N	8/14/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-205	WA-SOIL-205_20190814_SO	N	8/14/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.011	0	SO	Surface Soil 0-1.5m	S-031	S-031_20190227_SO	N	2/27/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.011	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.12	1	SO	Surface Soil 0-1.5m	S-079	S-079_20190227_SO	N	2/27/2019	0	0.1	Benzo(a)anthracene	56-55-3			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-206	WA-SOIL-206_20190814_SO	N	8/14/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.0082	1	SO	Surface Soil 0-1.5m	WA-SOIL-202	WA-SOIL-202_20190814_SO	N	8/14/2019	0	0.1	Benzo(a)anthracene	56-55-3			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	S-039B	S-039B_20190227_SO	N	2/27/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-208	WA-SOIL-208_20190814_SO	N	8/14/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	S-044 FLOOR	S-044 FLOOR_20190227_SO	N	2/27/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.014	1	SO	Surface Soil 0-1.5m	19-H14-001	19-H14-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(a)anthracene	56-55-3			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	C-2600B	C-2600B_20200225_SO	N	2/25/2020	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	19-H12-001	19-H12-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	19-H11-001	19-H11-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	19-H11-002	19-H11-002_20190609_SO	N	6/9/2019	0	0.15	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	S-314WB	S-314WB_20191016_SO	N	10/16/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	19-H16-001	19-H16-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	19-H15-001	19-H15-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.011	1	SO	Surface Soil 0-1.5m	DB-011	DB-011_20190302_SO	N	3/2/2019	0	0.1	Benzo(a)anthracene	56-55-3			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	19-H13-001	19-H13-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.02	1	SO	Surface Soil 0-1.5m	S-011	S-011_20190227_SO	N	2/27/2019	0	0.1	Benzo(a)anthracene	56-55-3			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.061	1	SO	Surface Soil 0-1.5m	C-2140	C-2140_20190306_SO	N	3/6/2019	0	0.1	Benzo(a)anthracene	56-55-3			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	C-6020	C-6020_20190306_SO	N	3/6/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.0095	0	SO	Surface Soil 0-1.5m	C-6035B	C-6035B_20190814_SO	N	8/14/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.0095	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	S-008	S-008_20190227_SO	N	2/27/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	C-1011W	C-1011W_20190303_SO	N	3/3/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.0084	1	SO	Surface Soil 0-1.5m	C-2156	C-2156_20190306_SO	N	3/6/2019	0	0.1	Benzo(a)anthracene	56-55-3			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	C-6042B	C-6042B_20190814_SO	N	8/14/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	S-007B	S-007B_20190227_SO	N	2/27/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	C-6204	C-6204_20190309_SO	N	3/9/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	C-6219	C-6219_20190309_SO	N	3/9/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	C-6042	C-6042_20190306_SO	N	3/6/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	C-2406-B	C-2406-B_20190310_SO	N	3/10/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.0084	1	SO	Surface Soil 0-1.5m	C-2410	C-2410_20190308_SO	N	3/8/2019	0	0.1	Benzo(a)anthracene	56-55-3			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	C-2422	C-2422_20190308_SO	N	3/8/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	C-2400	C-2400_20190308_SO	N	3/8/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	C-6013	C-6013_20190306_SO	N	3/6/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.011	1	SO	Surface Soil 0-1.5m	C-2146	C-2146_20190306_SO	N	3/6/2019	0	0.1	Benzo(a)anthracene	56-55-3			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	C-2424	C-2424_20190308_SO	N	3/8/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.024	1	SO	Surface Soil 0-1.5m	C-2419	C-2419_20190308_SO	N	3/8/2019	0	0.1	Benzo(a)anthracene	56-55-3			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	C-1016F	C-1016F_20190303_SO	N	3/3/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.0053	1	SO	Surface Soil 0-1.5m	C-2153	C-2153_20190306_SO	N	3/6/2019	0	0.1	Benzo(a)anthracene	56-55-3			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.018	1	SO	Surface Soil 0-1.5m	C-2150-B	C-2150-B_20190306_SO	N	3/6/2019	0	0.1	Benzo(a)anthracene	56-55-3			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	C-6015B	C-6015B_20190814_SO	N	8/14/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.011	0	SO	Surface Soil 0-1.5m	C-6013B	C-6013B_20190814_SO	N	8/14/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.011	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	C-1018F	C-1018F_20190303_SO	N	3/3/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	C-2131	C-2131_20190306_SO	N	3/6/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(a)anthracene_56-55-3	0.005	0	SO	Surface Soil 0-1.5m	C-2404	C-2404_20190308_SO	N	3/8/2019	0	0.1	Benzo(a)anthracene	56-55-3	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	S-044 FLOOR	S-044 FLOOR_20190227_SO	N	2/27/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.011	0	SO	Surface Soil 0-1.5m	S-031	S-031_20190227_SO	N	2/27/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.011	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-204	WA-SOIL-204_20190814_SO	N	8/14/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	S-032B	S-032B_20190227_SO	N	2/27/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	S-036	S-036_20190227_SO	N	2/27/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	S-039B	S-039B_20190227_SO	N	2/27/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-206	WA-SOIL-206_20190814_SO	N	8/14/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-202	WA-SOIL-202_20190814_SO	N	8/14/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-201	WA-SOIL-201_20190814_SO	N	8/14/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	S-048	S-048_20190227_SO	N	2/27/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg

TABLE B.8
DATA INPUT FOR PROUCL SOFTWARE
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Notes:
The maximum of the field duplicate and parent sample pairs were applied and a detect was chosen over a non-detect value.

ProUCL Group	ProUCL Result	ProUCL Flag	Medium	Soil Zone	Location	Sample ID	Sample Type	Sample Date	Start Depth (m)	End Depth (m)	COPC	CASRN	Qualifier	Detection Limit for Non-Detects	Unit
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-209	WA-SOIL-209_20190814_SO	N	8/14/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-208	WA-SOIL-208_20190814_SO	N	8/14/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-203	WA-SOIL-203_20190814_SO	N	8/14/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	S-047G	S-047G_20190227_SO	N	2/27/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	S-047C	S-047C_20190227_SO	N	2/27/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	S-029A-B	S-029A-B_20190304_SO	N	3/4/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-205	WA-SOIL-205_20190814_SO	N	8/14/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-207	WA-SOIL-207_20190814_SO	N	8/14/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.021	1	SO	Surface Soil 0-1.5m	S-079	S-079_20190227_SO	N	2/27/2019	0	0.1	Benzo(c)phenanthrene	195-19-7			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	C-2600B	C-2600B_20200225_SO	N	2/25/2020	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	19-H16-001	19-H16-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	19-H11-002	19-H11-002_20190609_SO	N	6/9/2019	0	0.15	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	DB-011	DB-011_20190302_SO	N	3/2/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	19-H14-001	19-H14-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	19-H15-001	19-H15-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	S-314WB	S-314WB_20191016_SO	N	10/16/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	19-H11-001	19-H11-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	19-H12-001	19-H12-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	19-H13-001	19-H13-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	C-2150-B	C-2150-B_20190306_SO	N	3/6/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	C-2156	C-2156_20190306_SO	N	3/6/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.013	1	SO	Surface Soil 0-1.5m	C-2140	C-2140_20190306_SO	N	3/6/2019	0	0.1	Benzo(c)phenanthrene	195-19-7			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	C-2131	C-2131_20190306_SO	N	3/6/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	C-2146	C-2146_20190306_SO	N	3/6/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	C-2422	C-2422_20190308_SO	N	3/8/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	C-6020	C-6020_20190306_SO	N	3/6/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	C-1016F	C-1016F_20190303_SO	N	3/3/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.0095	0	SO	Surface Soil 0-1.5m	C-6035B	C-6035B_20190814_SO	N	8/14/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.0095	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	C-2153	C-2153_20190306_SO	N	3/6/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	C-1018F	C-1018F_20190303_SO	N	3/3/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.011	0	SO	Surface Soil 0-1.5m	C-6013B	C-6013B_20190814_SO	N	8/14/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.011	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	C-6042	C-6042_20190306_SO	N	3/6/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	C-6013	C-6013_20190306_SO	N	3/6/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	C-6042B	C-6042B_20190814_SO	N	8/14/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	C-1011W	C-1011W_20190303_SO	N	3/3/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	C-6015B	C-6015B_20190814_SO	N	8/14/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	C-2419	C-2419_20190308_SO	N	3/8/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	S-007B	S-007B_20190227_SO	N	2/27/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	C-2410	C-2410_20190308_SO	N	3/8/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.008	1	SO	Surface Soil 0-1.5m	S-011	S-011_20190227_SO	N	2/27/2019	0	0.1	Benzo(c)phenanthrene	195-19-7			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	C-6219	C-6219_20190309_SO	N	3/9/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	C-2406-B	C-2406-B_20190310_SO	N	3/10/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	S-008	S-008_20190227_SO	N	2/27/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	C-2400	C-2400_20190308_SO	N	3/8/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	C-6204	C-6204_20190309_SO	N	3/9/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	C-2424	C-2424_20190308_SO	N	3/8/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(c)phenanthrene_195-19-7	0.005	0	SO	Surface Soil 0-1.5m	C-2404	C-2404_20190308_SO	N	3/8/2019	0	0.1	Benzo(c)phenanthrene	195-19-7	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.015	1	SO	Surface Soil 0-1.5m	S-029A-B	S-029A-B_20190304_SO	N	3/4/2019	0	0.1	Benzo(e)pyrene	192-97-2			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	S-032B	S-032B_20190227_SO	N	2/27/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.011	0	SO	Surface Soil 0-1.5m	S-031	S-031_20190227_SO	N	2/27/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.011	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-207	WA-SOIL-207_20190814_SO	N	8/14/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-206	WA-SOIL-206_20190814_SO	N	8/14/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.013	1	SO	Surface Soil 0-1.5m	WA-SOIL-209	WA-SOIL-209_20190814_SO	N	8/14/2019	0	0.1	Benzo(e)pyrene	192-97-2			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.013	1	SO	Surface Soil 0-1.5m	S-036	S-036_20190227_SO	N	2/27/2019	0	0.1	Benzo(e)pyrene	192-97-2			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	S-047G	S-047G_20190227_SO	N	2/27/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-208	WA-SOIL-208_20190814_SO	N	8/14/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	S-044 FLOOR	S-044 FLOOR_20190227_SO	N	2/27/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-201	WA-SOIL-201_20190814_SO	N	8/14/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	S-048	S-048_20190227_SO	N	2/27/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.014	1	SO	Surface Soil 0-1.5m	WA-SOIL-202	WA-SOIL-202_20190814_SO	N	8/14/2019	0	0.1	Benzo(e)pyrene	192-97-2			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.0087	1	SO	Surface Soil 0-1.5m	S-047C	S-047C_20190227_SO	N	2/27/2019	0	0.1	Benzo(e)pyrene	192-97-2		0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-203	WA-SOIL-203_20190814_SO	N	8/14/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.11	1	SO	Surface Soil 0-1.5m	S-079	S-079_20190227_SO	N	2/27/2019	0	0.1	Benzo(e)pyrene	192-97-2			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-204	WA-SOIL-204_20190814_SO	N	8/14/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	S-039B	S-039B_20190227_SO	N	2/27/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-205	WA-SOIL-205_20190814_SO	N	8/14/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.0097	1	SO	Surface Soil 0-1.5m	C-2600B	C-2600B_20200225_SO	N	2/25/2020	0	0.1	Benzo(e)pyrene	192-97-2			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.024	1	SO	Surface Soil 0-1.5m	19-H14-001	19-H14-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(e)pyrene	192-97-2			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	S-314WB	S-314WB_20191016_SO	N	10/16/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	19-H11-002	19-H11-002_20190609_SO	N	6/9/2019	0	0.15	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	19-H13-001	19-H13-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	19-H15-001	19-H15-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	19-H16-001	19-H16-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	19-H11-001	19-H11-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	19-H12-001	19-H12-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.013	1	SO	Surface Soil 0-1.5m	DB-011	DB-011_20190302_SO	N	3/2/2019	0	0.1	Benzo(e)pyrene	192-97-2			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.042	1	SO	Surface Soil 0-1.5m	S-011	S-011_20190227_SO	N	2/27/2019	0	0.1	Benzo(e)pyrene	192-97-2			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.0095	0	SO	Surface Soil 0-1.5m	C-6035B	C-6035B_20190814_SO	N	8/14/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.0095	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	C-6042	C-6042_20190306_SO	N	3/6/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.01	1	SO	Surface Soil 0-1.5m	S-008	S-008_20190227_SO	N	2/27/2019	0	0.1	Benzo(e)pyrene	192-97-2			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	S-007B	S-007B_20190227_SO	N	2/27/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.096	1	SO	Surface Soil 0-1.5m	C-2140	C-2140_20190306_SO	N	3/6/2019	0	0.1	Benzo(e)pyrene	192-97-2			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.028	1	SO	Surface Soil 0-1.5m	C-2146	C-2146_20190306_SO	N	3/6/2019	0	0.1	Benzo(e)pyrene	192-97-2			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.0071	1	SO	Surface Soil 0-1.5m	C-6020	C-6020_20190306_SO	N	3/6/2019	0	0.1	Benzo(e)pyrene	192-97-2			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	C-6219	C-6219_20190309_SO	N	3/9/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	C-1011W	C-1011W_20190303_SO	N	3/3/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.011	1	SO	Surface Soil 0-1.5m	C-6042B	C-6042B_20190814_SO	N	8/14/2019	0	0.1	Benzo(e)pyrene	192-97-2			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	C-2424	C-2424_20190308_SO	N	3/8/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.017	1	SO	Surface Soil 0-1.5m	C-2153	C-2153_20190306_SO	N	3/6/2019	0	0.1	Benzo(e)pyrene	192-97-2			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	C-2400	C-2400_20190308_SO	N	3/8/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	C-2404	C-2404_20190308_SO	N	3/8/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	C-2406-B	C-2406-B_20190310_SO	N	3/10/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.014	1	SO	Surface Soil 0-1.5m	C-2410	C-2410_20190308_SO	N	3/8/2019	0	0.1	Benzo(e)pyrene	192-97-2			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.019	1	SO	Surface Soil 0-1.5m	C-2156	C-2156_20190306_SO	N	3/6/2019	0	0.1	Benzo(e)pyrene	192-97-2			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.045	1	SO	Surface Soil 0-1.5m	C-2419	C-2419_20190308_SO	N	3/8/2019	0	0.1	Benzo(e)pyrene	192-97-2			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.018	1	SO	Surface Soil 0-1.5m	C-2422	C-2422_20190308_SO	N	3/8/2019	0	0.1	Benzo(e)pyrene	192-97-2			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.036	1	SO	Surface Soil 0-1.5m	C-2150-B	C-2150-B_20190306_SO	N	3/6/2019	0	0.1	Benzo(e)pyrene	192-97-2			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.0076	1	SO	Surface Soil 0-1.5m	C-6013	C-6013_20190306_SO	N	3/6/2019	0	0.1	Benzo(e)pyrene	192-97-2			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	C-2131	C-2131_20190306_SO	N	3/6/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.011	0	SO	Surface Soil 0-1.5m	C-6013B	C-6013B_20190814_SO	N	8/14/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.011	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	C-1018F	C-1018F_20190303_SO	N	3/3/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	C-6015B	C-6015B_20190814_SO	N	8/14/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	C-6204	C-6204_20190309_SO	N	3/9/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(e)pyrene_192-97-2	0.005	0	SO	Surface Soil 0-1.5m	C-1016F	C-1016F_20190303_SO	N	3/3/2019	0	0.1	Benzo(e)pyrene	192-97-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	S-047C	S-047C_20190227_SO	N	2/27/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	S-047G	S-047G_20190227_SO	N	2/27/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-201	WA-SOIL-201_20190814_SO	N	8/14/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	S-048	S-048_20190227_SO	N	2/27/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.0078	1	SO	Surface Soil 0-1.5m	WA-SOIL-209	WA-SOIL-209_20190814_SO	N	8/14/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.0075	1	SO	Surface Soil 0-1.5m	WA-SOIL-202	WA-SOIL-202_20190814_SO	N	8/14/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.011	1	SO	Surface Soil 0-1.5m	S-029A-B	S-029A-B_20190304_SO	N	3/4/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-208	WA-SOIL-208_20190814_SO	N	8/14/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.0093	1	SO	Surface Soil 0-1.5m	S-036	S-036_20190227_SO	N	2/27/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	S-039B	S-039B_20190227_SO	N	2/27/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-203	WA-SOIL-203_20190814_SO	N	8/14/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-204	WA-SOIL-204_20190814_SO	N	8/14/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.077	1	SO	Surface Soil 0-1.5m	S-079	S-079_20190227_SO	N	2/27/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-205	WA-SOIL-205_20190814_SO	N	8/14/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-207	WA-SOIL-207_20190814_SO	N	8/14/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	S-044 FLOOR	S-044 FLOOR_20190227_SO	N	2/27/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.011	0	SO	Surface Soil 0-1.5m	S-031	S-031_20190227_SO	N	2/27/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.011	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-206	WA-SOIL-206_20190814_SO	N	8/14/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	S-032B	S-032B_20190227_SO	N	2/27/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	C-2600B	C-2600B_20200225_SO	N	2/25/2020	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.0094	1	SO	Surface Soil 0-1.5m	DB-011	DB-011_20190302_SO	N	3/2/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	19-H11-001	19-H11-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	19-H13-001	19-H13-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	19-H12-001	19-H12-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	19-H11-002	19-H11-002_20190609_SO	N	6/9/2019	0	0.15	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	19-H15-001	19-H15-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	S-314WB	S-314WB_20191016_SO	N	10/16/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.02	1	SO	Surface Soil 0-1.5m	19-H14-001	19-H14-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(g,h,i)perylene	191-24-2			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	19-H16-001	19-H16-001_20190609_SO	N	6/9/2019	0	0.15	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	C-1016F	C-1016F_20190303_SO	N	3/3/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	C-2131	C-2131_20190306_SO	N	3/6/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	C-1018F	C-1018F_20190303_SO	N	3/3/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.013	1	SO	Surface Soil 0-1.5m	C-2156	C-2156_20190306_SO	N	3/6/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.064	1	SO	Surface Soil 0-1.5m	C-2140	C-2140_20190306_SO	N	3/6/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.01	1	SO	Surface Soil 0-1.5m	C-2153	C-2153_20190306_SO	N	3/6/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	C-1011W	C-1011W_20190303_SO	N	3/3/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	C-2406-B	C-2406-B_20190310_SO	N	3/10/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	C-2424	C-2424_20190308_SO	N	3/8/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.0095	0	SO	Surface Soil 0-1.5m	C-6035B	C-6035B_20190814_SO	N	8/14/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.0095	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.015	1	SO	Surface Soil 0-1.5m	C-2422	C-2422_20190308_SO	N	3/8/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.039	1	SO	Surface Soil 0-1.5m	C-2419	C-2419_20190308_SO	N	3/8/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	C-6219	C-6219_20190309_SO	N	3/9/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	C-6042	C-6042_20190306_SO	N	3/6/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	C-6020	C-6020_20190306_SO	N	3/6/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.011	1	SO	Surface Soil 0-1.5m	C-2410	C-2410_20190308_SO	N	3/8/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	S-008	S-008_20190227_SO	N	2/27/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.009	1	SO	Surface Soil 0-1.5m	C-6042B	C-6042B_20190814_SO	N	8/14/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.011	0	SO	Surface Soil 0-1.5m	C-6013B	C-6013B_20190814_SO	N	8/14/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.011	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	S-007B	S-007B_20190227_SO	N	2/27/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	C-2404	C-2404_20190308_SO	N	3/8/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	C-2400	C-2400_20190308_SO	N	3/8/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	C-6204	C-6204_20190309_SO	N	3/9/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.025	1	SO	Surface Soil 0-1.5m	C-2150-B	C-2150-B_20190306_SO	N	3/6/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.0055	1	SO	Surface Soil 0-1.5m	C-6013	C-6013_20190306_SO	N	3/6/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.005	0	SO	Surface Soil 0-1.5m	C-6015B	C-6015B_20190814_SO	N	8/14/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.019	1	SO	Surface Soil 0-1.5m	C-2146	C-2146_20190306_SO	N	3/6/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Benzo(g,h,i)perylene_191-24-2	0.026	1	SO	Surface Soil 0-1.5m	S-011	S-011_20190227_SO	N	2/27/2019	0	0.1	Benzo(g,h,i)perylene	191-24-2			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.013	1	SO	Surface Soil 0-1.5m	S-029A-B	S-029A-B_20190304_SO	N	3/4/2019	0	0.1	Methylnaphthalene, 2-	91-57-6			mg/kg

TABLE B.8
DATA INPUT FOR PROUCL SOFTWARE
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Notes:
The maximum of the field duplicate and parent sample pairs were applied and a detect was chosen over a non-detect value.

ProUCL Group	ProUCL Result	ProUCL Flag	Medium	Soil Zone	Location	Sample ID	Sample Type	Sample Date	Start Depth (m)	End Depth (m)	COPC	CASRN	Qualifier	Detection Limit for Non-Detects	Unit
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.01	1	SO	Surface Soil 0-1.5m	S-036	S-036_20190227_SO	N	2/27/2019	0	0.1	Methylnaphthalene, 2-	91-57-6			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-203	WA-SOIL-203_20190814_SO	N	8/14/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	S-032B	S-032B_20190227_SO	N	2/27/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-205	WA-SOIL-205_20190814_SO	N	8/14/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	S-039B	S-039B_20190227_SO	N	2/27/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.0089	1	SO	Surface Soil 0-1.5m	WA-SOIL-202	WA-SOIL-202_20190814_SO	N	8/14/2019	0	0.1	Methylnaphthalene, 2-	91-57-6			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.011	0	SO	Surface Soil 0-1.5m	S-031	S-031_20190227_SO	N	2/27/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.011	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-206	WA-SOIL-206_20190814_SO	N	8/14/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	S-011	S-011_20190227_SO	N	2/27/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	S-079	S-079_20190227_SO	N	2/27/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-204	WA-SOIL-204_20190814_SO	N	8/14/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	S-047G	S-047G_20190227_SO	N	2/27/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	S-048	S-048_20190227_SO	N	2/27/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	S-047C	S-047C_20190227_SO	N	2/27/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.014	1	SO	Surface Soil 0-1.5m	WA-SOIL-209	WA-SOIL-209_20190814_SO	N	8/14/2019	0	0.1	Methylnaphthalene, 2-	91-57-6			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	S-044 FLOOR	S-044 FLOOR_20190227_SO	N	2/27/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-208	WA-SOIL-208_20190814_SO	N	8/14/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-207	WA-SOIL-207_20190814_SO	N	8/14/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-201	WA-SOIL-201_20190814_SO	N	8/14/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.021	1	SO	Surface Soil 0-1.5m	C-2600B	C-2600B_20200225_SO	N	2/25/2020	0	0.1	Methylnaphthalene, 2-	91-57-6			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	19-H11-002	19-H11-002_20190609_SO	N	6/9/2019	0	0.15	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	19-H11-001	19-H11-001_20190609_SO	N	6/9/2019	0	0.15	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	19-H16-001	19-H16-001_20190609_SO	N	6/9/2019	0	0.15	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.0087	1	SO	Surface Soil 0-1.5m	19-H12-001	19-H12-001_20190609_SO	N	6/9/2019	0	0.15	Methylnaphthalene, 2-	91-57-6			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	19-H15-001	19-H15-001_20190609_SO	N	6/9/2019	0	0.15	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	S-314WB	S-314WB_20191016_SO	N	10/16/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	19-H13-001	19-H13-001_20190609_SO	N	6/9/2019	0	0.15	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	DB-011	DB-011_20190302_SO	N	3/2/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	19-H14-001	19-H14-001_20190609_SO	N	6/9/2019	0	0.15	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	C-6204	C-6204_20190309_SO	N	3/9/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	C-1011W	C-1011W_20190303_SO	N	3/3/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	C-6042B	C-6042B_20190814_SO	N	8/14/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	S-008	S-008_20190227_SO	N	2/27/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.0079	1	SO	Surface Soil 0-1.5m	C-1016F	C-1016F_20190303_SO	N	3/3/2019	0	0.1	Methylnaphthalene, 2-	91-57-6			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	C-6020	C-6020_20190306_SO	N	3/6/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.0095	0	SO	Surface Soil 0-1.5m	C-6035B	C-6035B_20190814_SO	N	8/14/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.0095	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	C-6042	C-6042_20190306_SO	N	3/6/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	S-007B	S-007B_20190227_SO	N	2/27/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	C-6015B	C-6015B_20190814_SO	N	8/14/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	C-6219	C-6219_20190309_SO	N	3/9/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.013	1	SO	Surface Soil 0-1.5m	C-1018F	C-1018F_20190303_SO	N	3/3/2019	0	0.1	Methylnaphthalene, 2-	91-57-6			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	C-2406-B	C-2406-B_20190310_SO	N	3/10/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	C-2424	C-2424_20190308_SO	N	3/8/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	C-2153	C-2153_20190306_SO	N	3/6/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	C-2156	C-2156_20190306_SO	N	3/6/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	C-2422	C-2422_20190308_SO	N	3/8/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	C-2146	C-2146_20190306_SO	N	3/6/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.009	1	SO	Surface Soil 0-1.5m	C-6013	C-6013_20190306_SO	N	3/6/2019	0	0.1	Methylnaphthalene, 2-	91-57-6			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	C-2419	C-2419_20190308_SO	N	3/8/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.031	1	SO	Surface Soil 0-1.5m	C-2150-B	C-2150-B_20190306_SO	N	3/6/2019	0	0.1	Methylnaphthalene, 2-	91-57-6			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	C-2400	C-2400_20190308_SO	N	3/8/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	C-2131	C-2131_20190306_SO	N	3/6/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	C-2410	C-2410_20190308_SO	N	3/8/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	C-2140	C-2140_20190306_SO	N	3/6/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.005	0	SO	Surface Soil 0-1.5m	C-2404	C-2404_20190308_SO	N	3/8/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Methylnaphthalene, 2-_91-57-6	0.011	0	SO	Surface Soil 0-1.5m	C-6013B	C-6013B_20190814_SO	N	8/14/2019	0	0.1	Methylnaphthalene, 2-	91-57-6	U	0.011	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.027	1	SO	Surface Soil 0-1.5m	S-029A-B	S-029A-B_20190304_SO	N	3/4/2019	0	0.1	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.03	1	SO	Surface Soil 0-1.5m	S-079	S-079_20190227_SO	N	2/27/2019	0	0.1	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.036	1	SO	Surface Soil 0-1.5m	S-031	S-031_20190227_SO	N	2/27/2019	0	0.1	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.018	1	SO	Surface Soil 0-1.5m	WA-SOIL-209	WA-SOIL-209_20190814_SO	N	8/14/2019	0	0.1	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.0071	1	SO	Surface Soil 0-1.5m	WA-SOIL-201	WA-SOIL-201_20190814_SO	N	8/14/2019	0	0.1	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.011	1	SO	Surface Soil 0-1.5m	S-048	S-048_20190227_SO	N	2/27/2019	0	0.1	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-208	WA-SOIL-208_20190814_SO	N	8/14/2019	0	0.1	Perylene	198-55-0	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.021	1	SO	Surface Soil 0-1.5m	WA-SOIL-202	WA-SOIL-202_20190814_SO	N	8/14/2019	0	0.1	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.033	1	SO	Surface Soil 0-1.5m	S-047C	S-047C_20190227_SO	N	2/27/2019	0	0.1	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-206	WA-SOIL-206_20190814_SO	N	8/14/2019	0	0.1	Perylene	198-55-0	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-203	WA-SOIL-203_20190814_SO	N	8/14/2019	0	0.1	Perylene	198-55-0	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.047	1	SO	Surface Soil 0-1.5m	S-044 FLOOR	S-044 FLOOR_20190227_SO	N	2/27/2019	0	0.1	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.014	1	SO	Surface Soil 0-1.5m	S-032B	S-032B_20190227_SO	N	2/27/2019	0	0.1	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.0086	1	SO	Surface Soil 0-1.5m	WA-SOIL-205	WA-SOIL-205_20190814_SO	N	8/14/2019	0	0.1	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.014	1	SO	Surface Soil 0-1.5m	S-039B	S-039B_20190227_SO	N	2/27/2019	0	0.1	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.072	1	SO	Surface Soil 0-1.5m	S-047G	S-047G_20190227_SO	N	2/27/2019	0	0.1	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.032	1	SO	Surface Soil 0-1.5m	S-036	S-036_20190227_SO	N	2/27/2019	0	0.1	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-204	WA-SOIL-204_20190814_SO	N	8/14/2019	0	0.1	Perylene	198-55-0	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-207	WA-SOIL-207_20190814_SO	N	8/14/2019	0	0.1	Perylene	198-55-0	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.015	1	SO	Surface Soil 0-1.5m	C-2600B	C-2600B_20200225_SO	N	2/25/2020	0	0.1	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.011	1	SO	Surface Soil 0-1.5m	19-H16-001	19-H16-001_20190609_SO	N	6/9/2019	0	0.15	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	S-314WB	S-314WB_20191016_SO	N	10/16/2019	0	0.1	Perylene	198-55-0	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.011	1	SO	Surface Soil 0-1.5m	19-H14-001	19-H14-001_20190609_SO	N	6/9/2019	0	0.15	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.0058	1	SO	Surface Soil 0-1.5m	19-H11-002	19-H11-002_20190609_SO	N	6/9/2019	0	0.15	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.0086	1	SO	Surface Soil 0-1.5m	19-H13-001	19-H13-001_20190609_SO	N	6/9/2019	0	0.15	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.0076	1	SO	Surface Soil 0-1.5m	19-H11-001	19-H11-001_20190609_SO	N	6/9/2019	0	0.15	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.015	1	SO	Surface Soil 0-1.5m	DB-011	DB-011_20190302_SO	N	3/2/2019	0	0.1	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.0077	1	SO	Surface Soil 0-1.5m	19-H12-001	19-H12-001_20190609_SO	N	6/9/2019	0	0.15	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.013	1	SO	Surface Soil 0-1.5m	19-H15-001	19-H15-001_20190609_SO	N	6/9/2019	0	0.15	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.023	1	SO	Surface Soil 0-1.5m	C-2140	C-2140_20190306_SO	N	3/6/2019	0	0.1	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.061	1	SO	Surface Soil 0-1.5m	C-2406-B	C-2406-B_20190310_SO	N	3/10/2019	0	0.1	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.013	1	SO	Surface Soil 0-1.5m	C-2153	C-2153_20190306_SO	N	3/6/2019	0	0.1	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.0097	1	SO	Surface Soil 0-1.5m	S-011	S-011_20190227_SO	N	2/27/2019	0	0.1	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.018	1	SO	Surface Soil 0-1.5m	C-2146	C-2146_20190306_SO	N	3/6/2019	0	0.1	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.02	1	SO	Surface Soil 0-1.5m	C-2400	C-2400_20190308_SO	N	3/8/2019	0	0.1	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.014	1	SO	Surface Soil 0-1.5m	S-007B	S-007B_20190227_SO	N	2/27/2019	0	0.1	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.0077	1	SO	Surface Soil 0-1.5m	C-6204	C-6204_20190309_SO	N	3/9/2019	0	0.1	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.0099	1	SO	Surface Soil 0-1.5m	C-1011W	C-1011W_20190303_SO	N	3/3/2019	0	0.1	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.0086	1	SO	Surface Soil 0-1.5m	C-6219	C-6219_20190309_SO	N	3/9/2019	0	0.1	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.14	1	SO	Surface Soil 0-1.5m	C-6042B	C-6042B_20190814_SO	N	8/14/2019	0	0.1	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.032	1	SO	Surface Soil 0-1.5m	S-008	S-008_20190227_SO	N	2/27/2019	0	0.1	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.0069	1	SO	Surface Soil 0-1.5m	C-2131	C-2131_20190306_SO	N	3/6/2019	0	0.1	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.014	1	SO	Surface Soil 0-1.5m	C-2156	C-2156_20190306_SO	N	3/6/2019	0	0.1	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.018	1	SO	Surface Soil 0-1.5m	C-2150-B	C-2150-B_20190306_SO	N	3/6/2019	0	0.1	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.017	1	SO	Surface Soil 0-1.5m	C-2404	C-2404_20190308_SO	N	3/8/2019	0	0.1	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.005	0	SO	Surface Soil 0-1.5m	C-2424	C-2424_20190308_SO	N	3/8/2019	0	0.1	Perylene	198-55-0	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.25	1	SO	Surface Soil 0-1.5m	C-6015B	C-6015B_20190814_SO	N	8/14/2019	0	0.1	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.22	1	SO	Surface Soil 0-1.5m	C-6035B	C-6035B_20190814_SO	N	8/14/2019	0	0.1	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.027	1	SO	Surface Soil 0-1.5m	C-2422	C-2422_20190308_SO	N	3/8/2019	0	0.1	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.26	1	SO	Surface Soil 0-1.5m	C-6013B	C-6013B_20190814_SO	N	8/14/2019	0	0.1	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.03	1	SO	Surface Soil 0-1.5m	C-2419	C-2419_20190308_SO	N	3/8/2019	0	0.1	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.013	1	SO	Surface Soil 0-1.5m	C-1016F	C-1016F_20190303_SO	N	3/3/2019	0	0.1	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.0079	1	SO	Surface Soil 0-1.5m	C-1018F	C-1018F_20190303_SO	N	3/3/2019	0	0.1	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.02	1	SO	Surface Soil 0-1.5m	C-2410	C-2410_20190308_SO	N	3/8/2019	0	0.1	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.027	1	SO	Surface Soil 0-1.5m	C-6020	C-6020_20190306_SO	N	3/6/2019	0	0.1	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.22	1	SO	Surface Soil 0-1.5m	C-6013	C-6013_20190306_SO	N	3/6/2019	0	0.1	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Perylene_198-55-0	0.047	1	SO	Surface Soil 0-1.5m	C-6042	C-6042_20190306_SO	N	3/6/2019	0	0.1	Perylene	198-55-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.018	1	SO	Surface Soil 0-1.5m	WA-SOIL-209	WA-SOIL-209_20190814_SO	N	8/14/2019	0	0.1	Phenanthrene	85-01-8			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.2	1	SO	Surface Soil 0-1.5m	S-079	S-079_20190227_SO	N	2/27/2019	0	0.1	Phenanthrene	85-01-8			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-207	WA-SOIL-207_20190814_SO	N	8/14/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.041	1	SO	Surface Soil 0-1.5m	WA-SOIL-202	WA-SOIL-202_20190814_SO	N	8/14/2019	0	0.1	Phenanthrene	85-01-8			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.0079	1	SO	Surface Soil 0-1.5m	WA-SOIL-208	WA-SOIL-208_20190814_SO	N	8/14/2019	0	0.1	Phenanthrene	85-01-8			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	S-047C	S-047C_20190227_SO	N	2/27/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-206	WA-SOIL-206_20190814_SO	N	8/14/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-204	WA-SOIL-204_20190814_SO	N	8/14/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	S-048	S-048_20190227_SO	N	2/27/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.016	1	SO	Surface Soil 0-1.5m	S-036	S-036_20190227_SO	N	2/27/2019	0	0.1	Phenanthrene	85-01-8			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.011	0	SO	Surface Soil 0-1.5m	S-031	S-031_20190227_SO	N	2/27/2019	0	0.1	Phenanthrene	85-01-8	U	0.011	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	S-047G	S-047G_20190227_SO	N	2/27/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	S-039B	S-039B_20190227_SO	N	2/27/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-205	WA-SOIL-205_20190814_SO	N	8/14/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.016	1	SO	Surface Soil 0-1.5m	S-029A-B	S-029A-B_20190304_SO	N	3/4/2019	0	0.1	Phenanthrene	85-01-8			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	S-032B	S-032B_20190227_SO	N	2/27/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-201	WA-SOIL-201_20190814_SO	N	8/14/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-203	WA-SOIL-203_20190814_SO	N	8/14/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	S-044 FLOOR	S-044 FLOOR_20190227_SO	N	2/27/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.027	1	SO	Surface Soil 0-1.5m	C-2600B	C-2600B_20200225_SO	N	2/25/2020	0	0.1	Phenanthrene	85-01-8			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.012	1	SO	Surface Soil 0-1.5m	19-H15-001	19-H15-001_20190609_SO	N	6/9/2019	0	0.15	Phenanthrene	85-01-8			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.011	1	SO	Surface Soil 0-1.5m	DB-011	DB-011_20190302_SO	N	3/2/2019	0	0.1	Phenanthrene	85-01-8			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.0083	1	SO	Surface Soil 0-1.5m	19-H16-001	19-H16-001_20190609_SO	N	6/9/2019	0	0.15	Phenanthrene	85-01-8			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.007	1	SO	Surface Soil 0-1.5m	19-H11-002	19-H11-002_20190609_SO	N	6/9/2019	0	0.15	Phenanthrene	85-01-8			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	19-H13-001	19-H13-001_20190609_SO	N	6/9/2019	0	0.15	Phenanthrene	85-01-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.018	1	SO	Surface Soil 0-1.5m	19-H14-001	19-H14-001_20190609_SO	N	6/9/2019	0	0.15	Phenanthrene	85-01-8			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.015	1	SO	Surface Soil 0-1.5m	19-H12-001	19-H12-001_20190609_SO	N	6/9/2019	0	0.15	Phenanthrene	85-01-8			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.018	1	SO	Surface Soil 0-1.5m	19-H11-001	19-H11-001_20190609_SO	N	6/9/2019	0	0.15	Phenanthrene	85-01-8			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	S-314WB	S-314WB_20191016_SO	N	10/16/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	C-6015B	C-6015B_20190814_SO	N	8/14/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	C-6219	C-6219_20190309_SO	N	3/9/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.0072	1	SO	Surface Soil 0-1.5m	C-2153	C-2153_20190306_SO	N	3/6/2019	0	0.1	Phenanthrene	85-01-8			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.014	1	SO	Surface Soil 0-1.5m	C-2419	C-2419_20190308_SO	N	3/8/2019	0	0.1	Phenanthrene	85-01-8			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	S-007B	S-007B_20190227_SO	N	2/27/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.013	1	SO	Surface Soil 0-1.5m	C-6013	C-6013_20190306_SO	N	3/6/2019	0	0.1	Phenanthrene	85-01-8			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.0056	1	SO	Surface Soil 0-1.5m	C-6020	C-6020_20190306_SO	N	3/6/2019	0	0.1	Phenanthrene	85-01-8			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.0097	1	SO	Surface Soil 0-1.5m	C-2146	C-2146_20190306_SO	N	3/6/2019	0	0.1	Phenanthrene	85-01-8			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	C-2131	C-2131_20190306_SO	N	3/6/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	C-6204	C-6204_20190309_SO	N	3/9/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.05	1	SO	Surface Soil 0-1.5m	C-2150-B	C-2150-B_20190306_SO	N	3/6/2019	0	0.1	Phenanthrene	85-01-8			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	C-2424	C-2424_20190308_SO	N	3/8/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.021	1	SO	Surface Soil 0-1.5m	C-2140	C-2140_20190306_SO	N	3/6/2019	0	0.1	Phenanthrene	85-01-8			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	C-2404	C-2404_20190308_SO	N	3/8/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	C-2406-B	C-2406-B_20190310_SO	N	3/10/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	C-1011W	C-1011W_20190303_SO	N	3/3/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.01	1	SO	Surface Soil 0-1.5m	C-6042B	C-6042B_20190814_SO	N	8/14/2019	0	0.1	Phenanthrene	85-01-8			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	C-2156	C-2156_20190306_SO	N	3/6/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	C-6042	C-6042_20190306_SO	N	3/6/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	S-011	S-011_20190227_SO	N	2/27/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg

TABLE B.8
DATA INPUT FOR PROUCL SOFTWARE
CN MILE 197.4, RIVERS SUBDIVISION
SOUTHEAST OF ST. LAZARE, MANITOBA

Notes:
The maximum of the field duplicate and parent sample pairs were applied and a detect was chosen over a non-detect value.

ProUCL Group	ProUCL Result	ProUCL Flag	Medium	Soil Zone	Location	Sample ID	Sample Type	Sample Date	Start Depth (m)	End Depth (m)	COPC	CASRN	Qualifier	Detection Limit for Non-Detects	Unit
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.0095	0	SO	Surface Soil 0-1.5m	C-6035B	C-6035B_20190814_SO	N	8/14/2019	0	0.1	Phenanthrene	85-01-8	U	0.0095	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.013	1	SO	Surface Soil 0-1.5m	C-6013B	C-6013B_20190814_SO	N	8/14/2019	0	0.1	Phenanthrene	85-01-8			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	C-1016F	C-1016F_20190303_SO	N	3/3/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	C-2410	C-2410_20190308_SO	N	3/8/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	S-008	S-008_20190227_SO	N	2/27/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.011	1	SO	Surface Soil 0-1.5m	C-2422	C-2422_20190308_SO	N	3/8/2019	0	0.1	Phenanthrene	85-01-8			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	C-2400	C-2400_20190308_SO	N	3/8/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Phenanthrene_85-01-8	0.005	0	SO	Surface Soil 0-1.5m	C-1018F	C-1018F_20190303_SO	N	3/3/2019	0	0.1	Phenanthrene	85-01-8	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-207	WA-SOIL-207_20190814_SO	N	8/14/2019	0	0.1	Pyrene	129-00-0	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-208	WA-SOIL-208_20190814_SO	N	8/14/2019	0	0.1	Pyrene	129-00-0	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-204	WA-SOIL-204_20190814_SO	N	8/14/2019	0	0.1	Pyrene	129-00-0	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	S-044 FLOOR	S-044 FLOOR_20190227_SO	N	2/27/2019	0	0.1	Pyrene	129-00-0	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.018	1	SO	Surface Soil 0-1.5m	WA-SOIL-209	WA-SOIL-209_20190814_SO	N	8/14/2019	0	0.1	Pyrene	129-00-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	S-032B	S-032B_20190227_SO	N	2/27/2019	0	0.1	Pyrene	129-00-0	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.033	1	SO	Surface Soil 0-1.5m	WA-SOIL-202	WA-SOIL-202_20190814_SO	N	8/14/2019	0	0.1	Pyrene	129-00-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.011	0	SO	Surface Soil 0-1.5m	S-031	S-031_20190227_SO	N	2/27/2019	0	0.1	Pyrene	129-00-0	U	0.011	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-203	WA-SOIL-203_20190814_SO	N	8/14/2019	0	0.1	Pyrene	129-00-0	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-201	WA-SOIL-201_20190814_SO	N	8/14/2019	0	0.1	Pyrene	129-00-0	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.2	1	SO	Surface Soil 0-1.5m	S-079	S-079_20190227_SO	N	2/27/2019	0	0.1	Pyrene	129-00-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	S-048	S-048_20190227_SO	N	2/27/2019	0	0.1	Pyrene	129-00-0	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	S-039B	S-039B_20190227_SO	N	2/27/2019	0	0.1	Pyrene	129-00-0	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.021	1	SO	Surface Soil 0-1.5m	S-029A-B	S-029A-B_20190304_SO	N	3/4/2019	0	0.1	Pyrene	129-00-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.014	1	SO	Surface Soil 0-1.5m	S-047C	S-047C_20190227_SO	N	2/27/2019	0	0.1	Pyrene	129-00-0		0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.014	1	SO	Surface Soil 0-1.5m	S-036	S-036_20190227_SO	N	2/27/2019	0	0.1	Pyrene	129-00-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	S-047G	S-047G_20190227_SO	N	2/27/2019	0	0.1	Pyrene	129-00-0	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-205	WA-SOIL-205_20190814_SO	N	8/14/2019	0	0.1	Pyrene	129-00-0	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	WA-SOIL-206	WA-SOIL-206_20190814_SO	N	8/14/2019	0	0.1	Pyrene	129-00-0	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.021	1	SO	Surface Soil 0-1.5m	C-2600B	C-2600B_20200225_SO	N	2/25/2020	0	0.1	Pyrene	129-00-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	S-314WB	S-314WB_20191016_SO	N	10/16/2019	0	0.1	Pyrene	129-00-0	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	19-H11-002	19-H11-002_20190609_SO	N	6/9/2019	0	0.15	Pyrene	129-00-0	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	19-H12-001	19-H12-001_20190609_SO	N	6/9/2019	0	0.15	Pyrene	129-00-0	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	19-H15-001	19-H15-001_20190609_SO	N	6/9/2019	0	0.15	Pyrene	129-00-0	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	19-H16-001	19-H16-001_20190609_SO	N	6/9/2019	0	0.15	Pyrene	129-00-0	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.022	1	SO	Surface Soil 0-1.5m	19-H14-001	19-H14-001_20190609_SO	N	6/9/2019	0	0.15	Pyrene	129-00-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	19-H13-001	19-H13-001_20190609_SO	N	6/9/2019	0	0.15	Pyrene	129-00-0	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.0096	1	SO	Surface Soil 0-1.5m	19-H11-001	19-H11-001_20190609_SO	N	6/9/2019	0	0.15	Pyrene	129-00-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	C-1016F	C-1016F_20190303_SO	N	3/3/2019	0	0.1	Pyrene	129-00-0	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.013	1	SO	Surface Soil 0-1.5m	C-6015B	C-6015B_20190814_SO	N	8/14/2019	0	0.1	Pyrene	129-00-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.029	1	SO	Surface Soil 0-1.5m	DB-011	DB-011_20190302_SO	N	3/2/2019	0	0.1	Pyrene	129-00-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	S-007B	S-007B_20190227_SO	N	2/27/2019	0	0.1	Pyrene	129-00-0	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.031	1	SO	Surface Soil 0-1.5m	C-2146	C-2146_20190306_SO	N	3/6/2019	0	0.1	Pyrene	129-00-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	C-1018F	C-1018F_20190303_SO	N	3/3/2019	0	0.1	Pyrene	129-00-0	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.1	1	SO	Surface Soil 0-1.5m	C-2140	C-2140_20190306_SO	N	3/6/2019	0	0.1	Pyrene	129-00-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.057	1	SO	Surface Soil 0-1.5m	S-011	S-011_20190227_SO	N	2/27/2019	0	0.1	Pyrene	129-00-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.059	1	SO	Surface Soil 0-1.5m	C-2150-B	C-2150-B_20190306_SO	N	3/6/2019	0	0.1	Pyrene	129-00-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.013	1	SO	Surface Soil 0-1.5m	S-008	S-008_20190227_SO	N	2/27/2019	0	0.1	Pyrene	129-00-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	C-2424	C-2424_20190308_SO	N	3/8/2019	0	0.1	Pyrene	129-00-0	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.023	1	SO	Surface Soil 0-1.5m	C-2156	C-2156_20190306_SO	N	3/6/2019	0	0.1	Pyrene	129-00-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	C-2131	C-2131_20190306_SO	N	3/6/2019	0	0.1	Pyrene	129-00-0	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	C-1011W	C-1011W_20190303_SO	N	3/3/2019	0	0.1	Pyrene	129-00-0	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.014	1	SO	Surface Soil 0-1.5m	C-6013B	C-6013B_20190814_SO	N	8/14/2019	0	0.1	Pyrene	129-00-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.017	1	SO	Surface Soil 0-1.5m	C-2153	C-2153_20190306_SO	N	3/6/2019	0	0.1	Pyrene	129-00-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.015	1	SO	Surface Soil 0-1.5m	C-6013	C-6013_20190306_SO	N	3/6/2019	0	0.1	Pyrene	129-00-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.042	1	SO	Surface Soil 0-1.5m	C-2419	C-2419_20190308_SO	N	3/8/2019	0	0.1	Pyrene	129-00-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.02	1	SO	Surface Soil 0-1.5m	C-2422	C-2422_20190308_SO	N	3/8/2019	0	0.1	Pyrene	129-00-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	C-6204	C-6204_20190309_SO	N	3/9/2019	0	0.1	Pyrene	129-00-0	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.011	1	SO	Surface Soil 0-1.5m	C-6035B	C-6035B_20190814_SO	N	8/14/2019	0	0.1	Pyrene	129-00-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.016	1	SO	Surface Soil 0-1.5m	C-6042B	C-6042B_20190814_SO	N	8/14/2019	0	0.1	Pyrene	129-00-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	C-2400	C-2400_20190308_SO	N	3/8/2019	0	0.1	Pyrene	129-00-0	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.0075	1	SO	Surface Soil 0-1.5m	C-6020	C-6020_20190306_SO	N	3/6/2019	0	0.1	Pyrene	129-00-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.013	1	SO	Surface Soil 0-1.5m	C-2410	C-2410_20190308_SO	N	3/8/2019	0	0.1	Pyrene	129-00-0			mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	C-2404	C-2404_20190308_SO	N	3/8/2019	0	0.1	Pyrene	129-00-0	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	C-6219	C-6219_20190309_SO	N	3/9/2019	0	0.1	Pyrene	129-00-0	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	C-6042	C-6042_20190306_SO	N	3/6/2019	0	0.1	Pyrene	129-00-0	U	0.005	mg/kg
Outside CN RoW_SO_Surface Soil 0-1.5m_Pyrene_129-00-0	0.005	0	SO	Surface Soil 0-1.5m	C-2406-B	C-2406-B_20190310_SO	N	3/10/2019	0	0.1	Pyrene	129-00-0	U	0.005	mg/kg
Outside CN RoW_WS_Culvert_Benzo(k)fluoranthene_207-08-9	0.0099	1	WS	Culvert	BEFORE CULVERT	BEFORE CULVERT_20190828_WS	N	8/28/2019	0	0	Benzo(k)fluoranthene	207-08-9			ug/L

Appendix I

Laboratory Results – Due to the quantity of the results and the size of the associated files, analytical reports have been provided on the CN External SharePoint for the Site. A flash drive containing all analytical reports can be provided.