PRIVILEGED AND CONFIDENTIAL

September 7, 2022

Manitoba Environment, Climate and Parks
1007 Century Street
Winnipeg, Manitoba
R3H 0W4

Attention: Mr. Warren Rospad

Dear Warren:

**Re: Environmental Risk Assessment and Remediation Action Plan**
**Excavation 2 – Outdoor Oil Spill**
**Industrial Property**
**2445 Ferrier Street, Winnipeg, MB**

M.P. Wiebe Environmental Engineering, a division of 4969821 Manitoba Ltd. (Wiebe) is pleased to present this Environmental Risk Assessment (ERA) and Remediation Action Plan (RAP) on behalf of SCMS Inc. and Mr. Billy Stefanchuk for the above referenced site (the "Property"). The purpose of this letter is to document the methodology proposed to manage the environmental issue pertaining to Excavation 2 at the Property. The following details site background information, the ERA and our proposed RAP.

## BACKGROUND

Wiebe reviewed the following environmental report(s) for the Property (the "Report"):

- Pinchin Group, Remedial Excavation – 2445 Ferrier Street, Winnipeg, Manitoba, September 25, 2018 (the "Report").

SCMS Inc. retained Pinchin to supervise the removal of soil that had been impacted with used oil along the south perimeter of the warehouse building (Excavation 2) on Property. In addition, impacted soil was removed from another location on Property (Excavation 1). However, this remedial work is not relevant to this matter.

A used oil spill previously occurred below the covered portion of the warehouse building. A separate investigation is currently being completed to address this potential issue.

The PHCs were detected in imported sand and gravel materials. The remaining soil in the excavation area is expected to be low permeability clays.

The area of the excavation was 7.5 metres (m) by 4 m by 0.7 m deep for a total volume of 21 $m^3$. The limits of the excavation were determined by SCMS Inc. The soil was bagged and subsequently removed for off-site treatment at the Waste Connections of Canada landfill in the RM of Rosser, Manitoba. The excavation was backfilled with imported granular material (crushed limestone).

The remediation targets for the soils were the CCME guidelines for eco environmental soil contact on industrial sites. Four soil samples did not meet this target. However, all of the soil samples met the more applicable remedial target for direct human contact on industrial sites. These soil quality guidelines were not included in the Report.

Two soil samples (NW2 and SW2) exceeded the secondary soil quality guideline (management limit), which considers explosion hazards, free phase formation and damage to buried infrastructure. However, none of these conditions are deemed to exist on Property. These soil quality guidelines were not included in the Report.

Specifically, the Report documents that eight soil samples were collected from the limits of the excavation. The soil samples were analysed for Benzene, Toluene, Ethylbenzene and Xylenes (BTEX) and petroleum hydrocarbon (PHC) Fractions F1 to F4. The soil samples were collected at depths ranging from 0.6 m to 0.8 m below grade.

Laboratory analysis revealed notable concentrations of the PHC Fraction 2 concentrations of 3600 mg/kg, 570 mg/kg and 350 mg/kg in soil samples collected from NW2, WW2 and F6. The results exceed the referenced soil quality guideline of 260 mg/kg (for eco soil contact) but are well below the most applicable soil quality guideline of greater than 30 000 mg/kg for coarse and fine grained soils (direct human contact).

A PHC Fraction 3 concentration of 17 000 mg/kg was detected in the soil sample NW2. The result exceeds the eco soil contact guideline of 2500 mg/kg (fine grained soil) and 1700 mg/kg (coarse grained soil). However, the results are well below the soil quality guideline of greater than 30 000 mg/kg for coarse and fine grained soils (direct human contact).

A PHC Fraction 4 concentration of 22 000 mg/kg was detected in SW2. The result exceeds the eco soil contact guideline of 6600 mg/kg (fine grained soil) and 3300 mg/kg (coarse grained soil). However, the results are well below the soil quality guideline of greater than 30 000 mg/kg for coarse and fine grained soils (direct human contact).

PHC F2, F3 and F4 are complex, heavy chained hydrocarbons and typically not volatile, readily mobile or water soluble in the natural environment.

## ENVIRONMENTAL RISK ASSESSMENT

The Report documents that the Property has historically been used as a bulk materials handling facility for sand, gravel and used concrete. The owner of the Property advises that the Property continues in industrial uses in accordance with its M2 zoning, at the present time for laydown and storage. The owner reported that a residence underlain by a partial concrete basement and a concrete slab on grade is situated on Property, ±30 m west of the area of Excavation 2. The owner occupies the residence. The residence includes a yard that is separated from the remainder of the Property by a fence.

An evaluation of applicable exposure pathways was completed as part of the ERA to determine which SQGs are the most suitable for the Property. The Property continues in industrial use. Based on the findings of the Report, coarse grained soils are predominant at the surface but are expected to be underlain by fine grained native soils on Property.

There is no surface water body in the vicinity of the Property (within 10 m) that supports fresh water aquatic life or livestock watering. There are three deep water wells on Property situated ±20 m to ±50 m from the area of Excavation 2. The wells are set in the carbonate bedrock aquifer. One well is situated in the basement of the residence. Groundwater is rarely used as the residence is connected to the municipal water supply and distribution system. The other two wells are situated to the northeast and southwest of the area of Excavation 2. The groundwater from these two wells is used for industrial purposes. The carbonate bedrock aquifer underlying the Property is protected by clays and tills exhibiting a low permeability with a combined thickness of at least 21.6 m. Residents in Winnipeg obtain drinking water from a municipal water supply and distribution system. The industrial building on Property is underlain by a concrete slab on grade. The portion of the Property surrounding the buildings is covered with gravel fill. The entire perimeter of the Property is secured with a chain link fence and cargo containers, which will limit access by children or animals. Another fence separates the residence's yard from the remainder of the Property. As no topsoil or fill with a high organic content was encountered at grade, the presence of invertebrates is expected to be minimal. A representative of the Property reported that no children attend at Property. The implied groundwater flow direction is likely easterly toward the Red River. However, migration of the PHCs is expected to be minimal. There are no dwellings or buildings with basements situated adjacent to the Property. The Property is bordered by industrial development to the north, south and west (across Ferrier Street) and vacant land and a railway right of way to the east. The closest residence is situated ±30 metres to the southwest of the Property. Based on Wiebe's experience, the probability is deemed to be low that the residual PHCs in the soils on Property will result in a significant impact to human or environmental receptors either on- or off-site. Table 1 summarizes the ERA for the Property.

Based on the results of the ERA, the soil quality guidelines for direct human contact for coarse and fine grained soils on industrial sites are deemed to be the most applicable. None of the residual PHC concentrations in the soils exceed these soil quality guidelines.

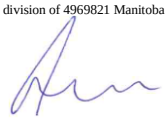
## REMEDIATION ACTION PLAN

The PHCs in the soils will be remediated passively over time by natural attenuation. Provided that the concrete floor of the building and the gravel layer (in the yard) are maintained to prevent any direct contact by human or environmental receptors, no other action appears to be required.

If you should require further information, please do not hesitate to contact the undersigned. We await your reply.

Sincerely,

M.P. WIEBE ENVIRONMENTAL ENGINEERING
(a division of 4969821 Manitoba Ltd.)



Per: Mike Wiebe, P.Eng.
President and Chief Engineer

File: Wiebe Projects\2445 Ferrier – environmental risk assessment

Copy: Ms. Sheryl Rosenberg, Thompson Dorfman Sweatman

Attachment

**Table 1**
**Environmental Risk Assessment**
**Excavation 2 (Outdoor Oil Spill)**
**2445 Ferrier Street, Winnipeg, MB**

| Receptor | Pathway for PHCs | Receptor Sensitivity | Likelihood of Impact | Risk Ranking |
|---|---|---|---|---|
| **Human Health** | Soil Ingestion | High | Low | Low |
| | Soil Dermal Contact | **High** | **Low** | **Low** |
| | Inhalation Indoor Air (slab) | High | Low | Low |
| | Off-site Migration | High | Low | Low |
| | Groundwater (drinking) | High | Low | Low |
| | Produce, Meat and Milk | High | Low | Low |
| **Environmental Health** | Soil Contact | High | Low | Low |
| | Soil and Food Ingestion | High | Low | Low |
| | Nutrient and Energy Cycling | High | Low | Low |
| | Off-site Migration | High | Low | Low |
| | Groundwater (livestock) | High | Low | Low |
| | Groundwater (aquatic life) | High | Low | Low |

Note: NA = Not Applicable
Pathway, Receptor Sensitivity, Likelihood of Impact and Risk in **BOLD** print is most applicable