



January 19, 2021

Manitoba Conservation  
1007 Century Street  
Winnipeg MB R3H 0W

Attention: Warren Rospad

Dear Mr. Rospad,

**Re: REMEDIATION PLAN – Mountain View School Division,  
Gilbert Plains Bus Garage, 16 Findlater Avenue, Gilbert  
Plains, Manitoba  
Talon Project # JNT-027-20-0164  
Manitoba Conservation File#: 79250**

At the request of the Mountain View School Division (MVSD), Talon Projects Inc. completed a Phase II ESA of the Gilbert Plains Bus Garage property in September 2020. Based on the results of the assessment, Manitoba Conservation designated the property (16 Findlater Avenue, Gilbert Plains, Manitoba) an impacted site.

The following remediation plan is provided to your office in partial fulfillment of the requirements outlined in Manitoba Conservation's letter of October 26, 2020.

## 1.0 BACKGROUND

The remediation plan is based on the results of the Phase II ESA completed in 2020. The site investigation delineated approximately 1800 m<sup>3</sup> of petroleum hydrocarbon (PHC) impacted soil on the property (Figure 1). The protection of groundwater pathway was considered applicable in the site sensitivity assessment. With respect to remediation options, the liability associated with monitoring in place was considered acceptable at this time. However, the owner is considering divestiture of the property and therefore prefers an excavate and backfill approach.

Of the total estimated volume, approximately 1300 m<sup>3</sup> of impacted soil meets the Manitoba Conservation criteria for use as landfill cover. The remaining 500 m<sup>3</sup> will require transport to a licensed PHC soil remediation facility for treatment and final disposal.

A full rationale for the remediation plan is provided in the Phase II ESA report (Talon Projects Inc., 2020).

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## **2.0 SUMMARY OF RECOMMENDED REMEDIATION ACTIONS**

1. Removal of all impacted soil in the areas of concern defined in the Phase II ESA report (Figure 1).
2. Field screening of impacted soils to designate as either:
  - a. meeting criteria for use as landfill soil cover (local municipal landfill disposal), or
  - b. requiring further treatment and disposal at a licensed PHC soil treatment facility.
3. Excavated areas to be backfilled with both non-impacted soil from excavation and imported fill, and compacted to meet requirements for future site use/development.
4. All remediation site work to be completed by a competent contractor.
5. Contract administration & site monitoring overseen by qualified project manager.

## **3.0 REMEDIATION PLAN**

### **3.1 Remediation Objective and Criteria**

The objective of the remediation program is to remove all impacted soils with contaminant concentrations exceeding the applicable CCME guidelines for BTEX and Canada Wide Standards for Petroleum Hydrocarbon (CWS for PHC) Fractions F1 thru F4. Based on the site sensitivity analysis in the Phase II ESA, the following criteria will be used during remediation activities:

1. CCME commercial values for fine-grained surface soil above 1.5 m below ground level (BGL), in a potable water situation:
  - a. Inhalation of indoor air check (slab on grade) human health guideline exposure pathway for benzene
  - b. Soil contact environmental health guideline exposure pathway for toluene, ethylbenzene, xylenes, F1 thru F4
2. CCME commercial values for fine-grained subsurface soil below 1.5 BGL, in a potable water situation:
  - a. Inhalation of indoor air check (slab on grade) human health guideline exposure path for BTEX
  - b. Management Limits for F1 thru F4

### **3.2 Authorization and Permits**

Prior to implementing remediation, authorization must be obtained from Manitoba Conservation to proceed. Additional municipal permits may be required prior to construction.

The owner (MVSD) will require an agreement with the Municipality of Gilbert Plains prior to transport of impacted soil to the local landfill (for use as cover). Arrangements for receiving impacted soil by the City of Dauphin Landfill soil treatment facility will be made during the selection of the contractor, prior to construction activities.

### **3.3 Underground Services**

The property is serviced by sewer, water, and natural gas lines. These underground services are not located in the impacted area. There is an underground electrical line from the bus garage to the block heater plugs located on the northside of the property (Figure 1).

Prior to beginning site work, the location of all active underground services at the site will be confirmed. The underground electrical line feeding the block heater outlets will be decommissioned during the remediation.

### **3.4 Excavation Near Sensitive Areas**

The property is designated commercial and is located within the Municipality of Gilbert Plains. The nearest sensitive aquatic environment is the Valley River (approximately 1 km north of the subject property) and will not be impacted by the remediation activities.

There are no known potable water wells located either on the subject property or on adjacent properties. A water well search was completed in the Phase II ESA and there were no registered wells within 500 m of the site.

There are residential dwellings on adjacent properties. Construction activities will adhere to all local bylaws, provincial health and safety regulations/guidelines, and accepted best practices.

### **3.5 Excavation Activities**

The remediation work will commence with the removal and on-site storage of near surface non-impacted soils. Following the exposure of the impacted sub-soils, the impacted material will be excavated and placed into truck transports for immediate removal from the site. Direct placement of impacted soil into truck transports reduces both the material handling costs and the risk of spreading contaminants to other locations on the property. If stockpiling of impacted materials is required, then the stockpile will be kept as close to the impacted area as possible, and over-excavation of the stockpile floor will be completed when the material is removed.

As the contaminant plume appears to be encroaching on the northeast corner of the bus garage (Figure 1), extra care will be required when excavating near the building foundation.

All provincial health and safety guidelines will be adhered to during excavation activities and for the duration of site activities. The contractor will be expected to conduct regular safety “tail-gate” meetings.

Soil sampling and characterization of the excavated soil will be completed as excavation activities progress (Section 3.7).

### **3.6 Transport and Disposal of Impacted Soils**

All impacted soils will be transported to the appropriate treatment facility in licensed truck transports. The concentration of BTEX and PHC compounds found in the soil are well below the threshold for hazardous material classification and therefore special transport and handling of the impacted soil is not required. Trucks will be equipped accordingly to prevent windblown particles of soil, and residual soil liquids will either be contained or permitted to drain back into the excavation prior to loading.

The Municipality of Gilbert Plains has been contacted with respect to receiving the impacted soil for use as landfill cover. The operations department was interested in accepting the impacted soil, provided it met all Manitoba Conservation guidelines for using PHC impacted soils as landfill cover.

The remaining impacted soil exceeding the guidelines for use as landfill cover will be hauled to the City of Dauphin Landfill for treatment and disposal.

Quantities will be by measured truck box volume and supplemented with scale measurements wherever practical.

### **3.7 Soil Characterization**

For purposes of transportation and disposal of impacted soils at an off-site location, soil characterization under the CCME guidelines is applicable. For purposes of classifying soil and waste materials, four categories are recognized:

1. Wastes that contain visually recognizable plastic, glass, metal, wood, small appliances, etc. and other “unnatural” materials
  - a. Waste materials will be segregated from the soil material and disposed of accordingly (recycling, landfill waste, etc.)
2. Soils with either no measured impacts or impacts below the commercial criteria for BTEX and CWS for PHC
  - a. Non-impacted soil will be kept separate from impacted soil and stored on the site for use as backfill

3. Soils exceeding the applicable CCME BTEX and CWS for PHC commercial criteria but not exceeding the BTEX and PHC fraction parameters for using impacted soil as landfill cover (as outlined in Guideline 2002-02E, “Guideline: Criteria for Acceptance of Contaminated Soil at Licensed Waste Disposal Grounds”)
  - a. Impacted soil characterized as landfill cover will be sorted separately and transported to the local municipal landfill
4. Soils exceeding the applicable CCME BTEX and CWS for PHC commercial criteria and exceeding the BTEX and PHC fraction parameters for using impacted soil as landfill cover (as outlined in Guideline 2002-02E, “Guideline: Criteria for Acceptance of Contaminated Soil at Licensed Waste Disposal Grounds”)
  - a. Impacted soil requiring additional treatment before disposal will be sorted separately and transported to the City of Dauphin Landfill

Based on review of the site investigation data, soils classified as hazardous waste under the provincial Hazardous Waste Regulation (195/2015) are not anticipated to be encountered.

Impacted soil will be screened for headspace as it is removed from the excavation. Select samples of in-situ and loaded impacted soil will be sent to the laboratory for additional testing. The characterization sample rate will be approximately one composite sample (from several truck loads) for each 150 m<sup>3</sup> of material removed from the site. Some variation in this sample rate may be necessary due to the two different treatment streams (local landfill vs City of Dauphin Landfill).

### **3.8 Backfilling of Excavation**

The excavation will be backfilled using a combination of “clean” soil stockpiled from the excavation and imported structural fill. Clean soils are defined as having contaminant concentrations below CCME guidelines and are structurally suitable for backfill. Imported structural fill will likely be from a local aggregate supplier and may either be granular or cohesive.

### **3.9 Dewatering**

The degree of dewatering required will depend on the excavation sequence, seasonal groundwater levels, and weather conditions (precipitation). The quality of water ponding in the excavation is expected to contain trace levels of PHC constituents. The water table was encountered close to surface during the Phase II ESA (1.2 – 1.8 m BGL).

Based on the drill hole logs of the Phase II ESA, it will be necessary to store or dispose of groundwater seepage generated in the excavation. If possible, the contractor will be permitted to section the excavation to keep groundwater to one location within the

excavation. This will allow monitoring of the groundwater quality during the excavation process. If groundwater infiltrating the excavation appears to be impacted, the water will be removed and disposed off-site as per Manitoba Conservation guidelines.

It is noted the target contaminants are light non-aqueous phase liquids (LNAPL), with a density less than water. It is also noted, that some PHC constituents will dissolve in the water. Water tests will be completed to characterize groundwater quality as work progresses.

### **3.10 Confirmatory Sampling**

Following excavation of suspect contaminated soils, confirmatory soil samples will be collected and analyzed from the base and walls of the excavations. All stockpile sampling, confirmatory soil sampling, and assessment of results (including determination of stockpile soil classification and adequacy of confirmatory sampling) will be conducted by a qualified inspector retained by the owner acting independently of the remediation contractor.

Confirmatory sampling will include (a) soils from the side walls and base of the excavation, (b) soil vapour sampling from the impacted soil, and (c) groundwater from the excavation if encountered. A grid system will be used to select samples from the wall and base of the excavation. Headspace testing will be completed on these samples, followed by submission of select samples to the laboratory for analytical testing.

A remediation report will be submitted to Manitoba Conservation following completion of the remedial program. The report will summarize the remedial actions completed at the site, include supporting documentation such as laboratory reports, and provide a determination of the environmental condition of the property at the conclusion of site activities.

### **3.11 Scheduling Factors**

Once all necessary consultation and approvals/authorizations have been obtained, the remediation program is expected to take approximately three to four weeks. This will involve mobilization, site preparation, excavation, stockpiling, waste and contaminated soil disposal, confirmatory sampling, dewatering, backfilling, site clean-up, and demobilization. The remediation schedule is expected to be shorter if the work is undertaken during dry weather and longer during wet weather.

Following approval of the remediation plan by Manitoba Conservation, the owner prefers to remediate the site during the 2021 construction season. Communication between the contract administrator and the local Manitoba Conservation Environment Officer will be maintained throughout the duration of the project.

### **3.12 Anticipated Outcome of Remediation**

Contaminated soils located at 16 Findlater Avenue, as indicated in Figure 1, will be completely or substantively removed, such that:

1. Soil quality will meet the CCME guidelines and will be suitable for a variety of future land uses
2. Leachable contaminants that may migrate into the underlying aquifer will be removed
3. Generation of volatile contaminants into soil vapour will be removed such that engineered vapour management systems will not be required for building structures
4. Replacement backfill will provide a suitable foundation for future site access and use

## **4.0 CLOSURE**

I trust this remediation plan fulfils your requirements at present. If you require further information, please contact our office.

Yours very sincerely,

**Talon Projects Inc.**

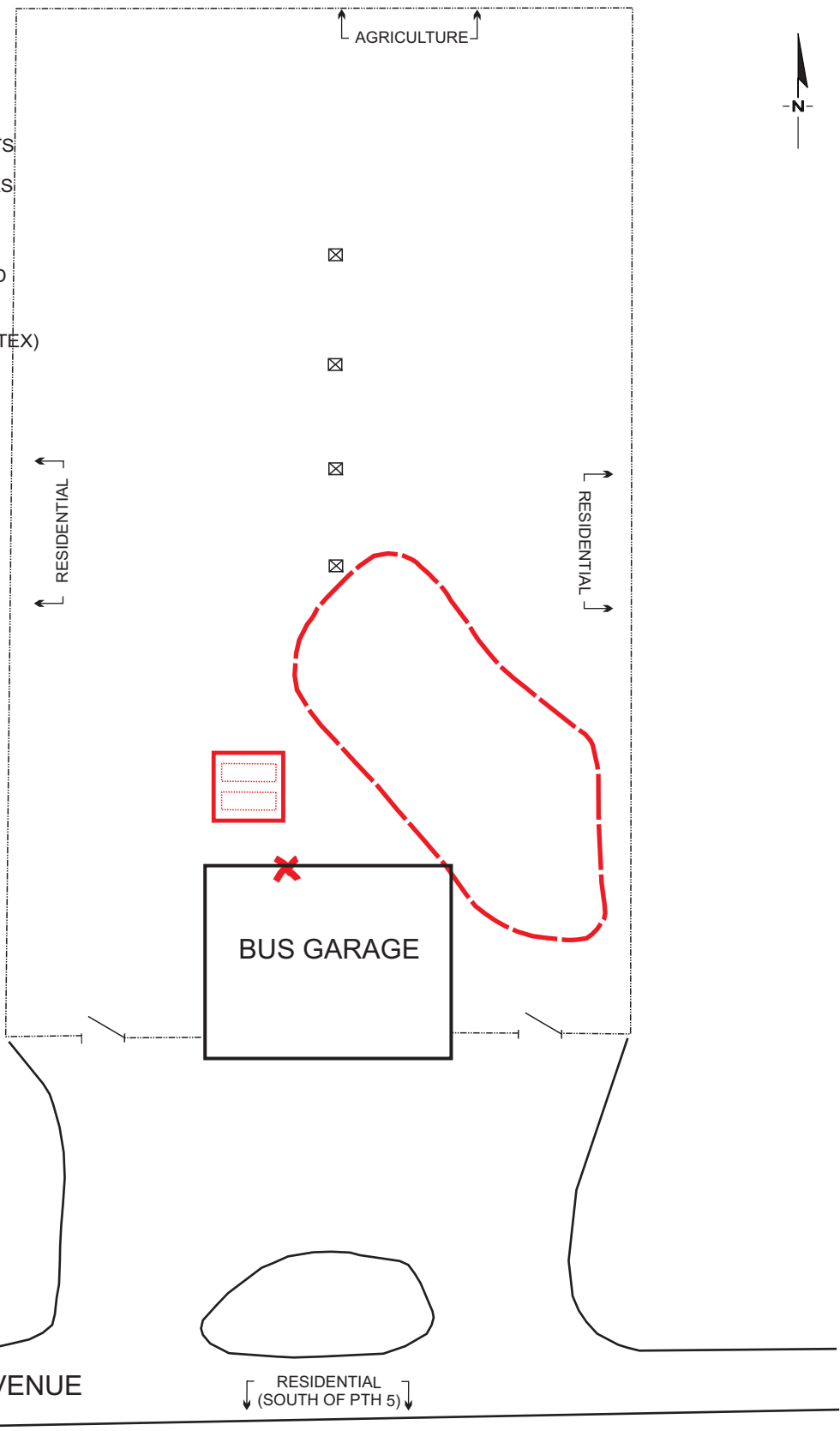


Wayne Pitura, P.Eng.  
Project Manager

cc. Ernest Karpiak, MVSD

**LEGEND**

- FENCE
- ☒ BLOCK HEATER OUTLETS
- ☐ CONCRETE DYKE (TANKS REMOVED)
- ⊕ TEST HOLE LOCATIONS
- ✗ BENCH MARK (ASSUMED ELEV: 100.00m)
- ⬮ IMPACTED AREA (F1 & BTEX)



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MOUNTAIN VIEW SCHOOL DIVISION

GILBERT PLAINS, MANITOBA

REMEDICATION PLAN

BUS GARAGE IMPACTED AREA - FIGURE 1

DESIGNED BY:  
 CHECKED BY:  
 DATE: NOVEMBER 2020

DRAWN BY: EJ  
 APPROVED FOR CONSTRUCTION:  
 SCALE: 1:500

DRAWING NO. JNT-027-20-0164-A-FIG 1