March 13, 2023

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Via Email:
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Re: OTT-22009213-B0 Remediation Action Plan
266 and 268 Carruthers Avenue, Ottawa, Ontario

1. Introduction

EXP Services Inc. (EXP) was retained by McCormick Park Developments Incorporated to prepare a Remediation Action Plan (RAP) for the property at 266 and 268 Carruthers Avenue in Ottawa, Ontario, herein referred to as the "Site".

It is understood that the work is required in support of a Record of Site Condition (RSC) under Ontario Regulation (O. Reg.) 153/04.

2. Background

The Site has the municipal address of 266 and 268 Carruthers Avenue and is located within a residential neighbourhood on the west side of Carruthers Avenue, approximately 40 m north of Armstrong Street. The Site is L-shaped and has an area of 0.04 hectares.

Based on a review of historical aerial photographs, historical maps, and other records, it appears that the Site was first developed for residential use between 1902 and 1912. The existing residence at 266 Carruthers Avenue appears to have been present since it was first developed. The property at 268 Carruthers Avenue was vacant, as the former building was demolished in May 2022.

EXP prepared a report entitled *Phase One Environmental Site Assessment,* 266 Carruthers Avenue*, Ottawa, Ontario* dated June 7, 2022. Based on the results of the Phase One ESA, EXP identified one APEC at 266 Carruthers Avenue.

Table 2.1: Areas of Potential Environmental Concern

Area of Potential Environmental Concern (APEC)	Location of APEC on Phase One Property	Potentially Contaminating Activity (PCA)	Location of PCA (On-Site or Off-Site)	Contaminants of Potential Concern	Media Potentially Impacted (Groundwater, Soil and/or Sediment)
APEC #1	Entire Site (266 Carruthers Avenue)	PCA#30 – Imported Fill Material of Unknown Quality	On-Site	petroleum hydrocarbons (PHC), volatile organic compounds (VOC), polycyclic aromatic hydrocarbons (PAH), metals	Soil

EXP also prepared the reports entitled *Phase One Environmental Site Assessment, 177 Armstrong Street and 268 Carruthers Avenue, Ottawa, Ontario* dated May 18, 2022, and *Phase Two Environmental Site Assessment, 177 Armstrong Street and 268 Carruthers Avenue, Ottawa, Ontario* dated June 27, 2022, which included the property parcel at 268 Carruthers Avenue. Impacted fill material was identified at 268 Carruthers Avenue.

The property at 268 Carruthers Avenue was subsequently remediated in conjunction with development on the adjacent property (177 Armstrong Street). All soil was removed from 268 Carruthers Avenue as part of the remediation, and a Record of Site Condition was obtained for 177 Armstrong Street and 268 Carruthers Avenue in September 2022. No APECs are considered to remain at 268 Carruthers Avenue.

A Phase Two ESA was completed at 266 Carruthers Avenue by EXP in October 2022, the following summary is provided:

- The Phase Two ESA consisted of advancing a total of six boreholes to investigate the quality of fill on the property. Two of the boreholes were completed as monitoring wells. A worst-case sample of the fill material from four of the boreholes was submitted for laboratory analysis of PHCs, VOC, PAH, and/or metals. A groundwater sample was collected from MW-6 and submitted for laboratory analysis of PHC and VOC.
- A 75 mm to 350 mm layer of granular fill was observed at the ground surface of several boreholes. Soil generally consisted of sand and gravel fill material. The fill layer ranged in thickness from 0.4 to 1.6 m and was encountered in all boreholes. Limestone bedrock was present underlying the fill material. No native soil was present at the Site.
- Groundwater was encountered at depths ranging from 1.70 m to 3.10 m in August 2022. The groundwater flow direction could not be calculated since there were only two water levels available on the Site property in August 2022.
- Three soil samples, plus one blind duplicate, were submitted for chemical analysis of PHC, VOC, PAH, and metals. The concentrations of all of the parameters analysed in the soil samples were less than MECP 2011 Table 7 site condition standards (SCS), with the exception of PHC F3 and F4 in the soil sample collected from one borehole at a depth of 0.15 to 0.75 m, and cadmium, lead, mercury and zinc in all three soil samples. Based on these results, the fill on the property is considered to be impacted.
- The concentrations of VOC and PHC in the analyzed groundwater sample were less than the 2011 MECP Table 7 SCS.

3. Contaminants of Concern

The contaminants of concern at the Site that exceed the applicable MECP Table 7 SCS are petroleum hydrocarbons (PHC) and various metals in soil. The groundwater at the Site was not impacted.

In summary, most, if not all, of the soil at 266 Carruthers Avenue has been impacted with PHC and/or metals. Since the site is to be redeveloped, this soil will require landfill disposal.

4. Remediation Action Plan (RAP)

The following will briefly identify the required tasks that will need to be undertaken in order to remediate the Site and permit the proposed development to occur:

1. *Underground Utility Locates*: All underground utility locations will need to be clearly marked, exposed, and disconnected or capped prior to any subsurface works.
2. *Well Decommissioning:* Prior to remediation, both of the monitoring wells on the site will need to be decommissioned by a licensed well driller in accordance with O. Reg. 903 (as amended).
3. *Soil Excavation*: It is assumed that all of the soil on the 266 Carruthers Avenue exceeds the MECP Table 7 SCS, therefore, it is likely that approximately 700 m^3 of soil will require disposal at a licensed landfill. This is assuming an average depth of 1.5 m to bedrock and a parcel area of 475 m^2. All of the soil at 268 Carruthers Avenue was removed from the site in May 2022.

   Since the excavation will be completed to bedrock surface and will extend to the property limits, no confirmatory soil samples will need to be collected from the base of the excavation. Confirmatory wall samples will need to be collected for laboratory analysis of the contaminants of concern. Daily dust and odour monitoring will be required by the contractor. Based on the soil analytical results, it is not expected that there will be off-site soil impacts.
4. *Remediation Report:* A remediation report will be prepared summarising all of the remediation activities performed. The report will include such information as: volume of impacted soil disposed of at the landfill site; location of landfill site; confirmatory soil sampling results; conclusions and recommendations.

5. Limitations

This letter has been prepared for and is intended for the exclusive use of McCormick Park Developments Incorporated. Any use that any other third party makes of this letter, or any part thereof, or any reliance on or decisions made based on it, are the responsibility of such third parties. EXP accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this letter.

We trust the aforementioned meets your immediate requirements. If you have any questions, or require any additional information, please do not hesitate to contact the undersigned at your earliest convenience.

Yours truly,

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