2019 Annual Report

Certificate of Property Use No. 0371-8TYQMY
Lansdowne Park- Urban Park (Zone C)
450 Queen Elizabeth Driveway (Part of 945 Bank Street)
Ottawa, Ontario
Project No. TZ10100106

Prepared for:

Ontario Ministry of the Environment, Conservation and Parks Ottawa District Office

2430 Don Reid Drive, Ottawa, Ontario K1H 1E1

March 2020

Wood Environment & Infrastructure Solutions,
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27 March 2020

Reference No. TZ10100106

VIA EMAIL

Ontario Ministry of the Environment, Conservation and Parks
Ottawa District Office
2430 Don Reid Drive
Ottawa, Ontario K1H 1E1

Attention: Tracy Hart
Ottawa District Manager

Dear Ms. Hart;

RE: 2019 Annual Report - Certificate of Property Use (CPU) No. 0371-8TYQMY
Lansdowne Park – Urban Park (Zone C)
450 Queen Elizabeth Driveway (Part of 945 Bank Street), Ottawa, Ontario

Please find enclosed an electronic copy, in PDF format, of the 2019 Annual Report prepared in reference to the above noted property. The report has been prepared on behalf of the City of Ottawa to meet the annual reporting requirements stipulated under condition 4.2.10 of Certificate of Property Use No. 0371-8TYQMY.

Should you have any questions or require any additional information, please do not hesitate to contact the undersigned.

Yours truly,

Wood Environment & Infrastructure Solutions,
A Division of Wood Canada Limited

Kevin D. Hicks, M.Sc., P.Geo., QP_{ESA}
Principal Hydrogeologist

Enclosure (1)

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Executive Summary

Certificate of Property Use (CPU) No. 0371-8TYQMY was issued by the Ontario Ministry of Environment and Climate Change (MOECC), now the Ministry of Environment, Conservation and Parks (MECP), to the City of Ottawa (the "City") for the Lansdowne Park – Urban Park (Zone C) property located at 450 Queen Elizabeth Driveway (part of 945 Bank Street) in Ottawa, Ontario (hereinafter referred to as the "CPU Property") on November 25, 2013.

Condition 4.2.10 of the CPU stipulates that an annual report shall be prepared each year to document the activities carried out by the Owner in relation to the Risk Management Measures (RMM) that have been implemented and that are to be maintained at the CPU Property, and the report submitted to the MECP by March 31 of the following year. This report has been prepared by Wood Environment & Infrastructure Solutions, a Division of Wood Canada Limited ("Wood"), on behalf of the City of Ottawa (the "City") to meet the annual reporting requirements for 2019 as stipulated by Condition 4.2.10 of the CPU.

Inspections of the RMM implemented at the CPU Property were conducted in 2019 in accordance with the Inspection and Maintenance Plan (IMP). RMM in the area immediately surrounding the Screen on the East Berm, a portion of the area of the former McElroy Building, and part of the Eastern Swale south of the Beacon were disturbed by shallow excavations in the spring and fall of 2019, respectively. The thickness of the cover in these areas was preserved by matching the existing grades with the new surfacing material. These improvements only required shallow excavation within these areas and did not disturb the demarcation layer or impacted soils beneath these areas.

Visual inspections of other RMM at the Site identified several areas of soil erosion throughout the South Berm area as evidenced by surface rutting, areas of washed out soil, bare patches, and areas of down slope sediment accumulation. Although the survey of the South Berm did not identify any deficient areas in 2018, deteriorated soil cap conditions continue to be present on the South Berm and should be addressed to prevent further deterioration of the RMM.

The 2019 groundwater monitoring and sampling program was conducted on a semi-annual basis in accordance with the Groundwater Monitoring Plan (GWMP). Results of the groundwater monitoring inferred groundwater flow patterns beneath the CPU Property similar to those observed since inception of the groundwater monitoring program in 2015. Shallow groundwater, beneath the southern half of the CPU property, generally flows to the east and northeast in a quasi-inward radial flow pattern towards a groundwater low in the vicinity of the former McElroy Building. Mounding near the northeast corner of the CPU property results in localized outward radial flow to the west and south and is likely due to leakage from the Rideau Canal migrating to the west within the historic fill materials placed within the former inlet of the Rideau Canal that extends beneath the CPU Property.

All groundwater samples collected from the monitoring well network located at the CPU property in 2019 reported parameter concentrations below 2011 Table 3 SCS for residential / parkland / institutional property use and coarse textured soil, where established, and for ammonia, chloroform and iron, below

the Property Specific Standards (PSS) derived from the Risk Assessment as provided in CPU 0371-8TYQMY.

Methane concentrations measured at the landfill gas probes located at the CPU Property in 2019 as per the MMP were below the methane concentrations limits as outlined in O.Reg. 232/98 and the recommended methane alert levels provided in Procedure D-4-1: Assessing Methane Hazards from Landfill (MOE, 1987).

No revisions were deemed necessary to the SMP or the HASP.

Based on the results of the GWMP, Methane Monitoring Plan (MMP) and IMP completed in 2019, no contingency measures were deemed necessary at the CPU Property and therefore no such measures or activities were implemented in 2019. Based on inspections conducted as per the IMP, no significant deterioration of the RMM that would result in an increase in potential risk to human health at the CPU property was observed and therefore no immediate site restoration activities were deemed necessary and therefore no such activities were undertaken at the CPU Property in 2019.

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List of Acronyms and Abbreviations

BOD	Biochemical Oxygen Demand
COC	Contaminant of Concern
COD	Chemical Oxygen Demand
CPU	Certificate of Property Use
DO	Dissolved Oxygen
DOC	Dissolved Organic Carbon
GWMP	Groundwater Monitoring Program
HASP	Health and Safety Plan
IMP	Inspection and Maintenance Plan
LFG	Landfill Gas
LSLP	Lansdowne Stadium Limited Partnership Ltd.
MMP	Methane Monitoring Plan
MOE	Ministry of the Environment
MECP	Ministry of the Environment, Conservation and Parks
MOECC	Ministry of the Environment and Climate Change
OHSA	Occupational Health and Safety Act
ORP	Oxidation-Reduction Potential
OSEG	Ottawa Sports and Entertainment Group
PAH	Polynuclear Aromatic Hydrocarbons
PCB	Polychlorinated Biphenyls
PHC	Petroleum Hydrocarbons
PSS	Property Specific Standards
PVC	Polyvinyl Chloride
QA	Quality Assurance
QC	Quality Control
QP	Qualified Person
RA	Risk Assessment
RDL	Reporting Detection Limit
RL	Reporting Limit
RMM	Risk Management Measure
RMP	Risk Management Plan
RPD	Relative Percent Difference
RSC	Record of Site Condition
SCS	Site Condition Standards
SMP	Soil Management Plan
SOP	Standards Operating Procedure
VOC	Volatile Organic Compound

1.0 Introduction

On November 25, 2013 Certificate of Property Use (CPU) No. 0371-8TYQMY was issued by the Ontario Ministry of the Environment and Climate Change (MOECC), now the Ministry of the Environment, Conservation and Parks (MECP), for the Lansdowne Park – Urban Park (Zone C) property located at 450 Queen Elizabeth Driveway (part of 945 Bank Street) in Ottawa, Ontario (hereinafter referred to as the "CPU Property"). A key plan showing the location of the CPU Property is provided on Figure 1.

The CPU Property is legally described as Part of Lots 20, 21 and 22 (Block 6), Part of Lot 29 (Block 7) and Part of O'Connor Street (Formerly Mary Street) (closed by Judge's Order Instrument LT1245216) on Plan 26085, Part of Lots 57, 58, 59 and 60 and Part of Lansdowne Avenue (closed by Judge's Order Instrument LT1245216) on Plan 35722, Part of Lots 45 to 50 (Inclusive) on Plan 30307 and Part of Lots I and K, Concession C (Rideau Front), Nepean, being Parts 1, 16, 17, 32 and 33 on Plan 4R-26535; City Of Ottawa and being all of PIN 04139-0264.

Condition 4.2.10 of the CPU stipulates that an annual report shall be prepared each year to document the activities carried out by the Owner in relation to the Risk Management Measures (RMM) that have been implemented and are to be maintained at the CPU Property and submitted to the MECP by March 31 of the following year. This report has been prepared by Wood Environment & Infrastructure Solutions ("Wood"), on behalf of the City of Ottawa (the "City") to meet the annual reporting requirements stipulated by Condition 4.2.10 of CPU No. 0371-8TYQMY for 2019.

1.1 Background

Lansdowne Park, which also includes the former adjacent Sylvia Holden Commemorative Park, comprises an area of 15.64 hectares located on the east side of Bank Street in the Glebe neighbourhood of the City of Ottawa, Ontario. Lansdowne Park is bordered by Bank Street to the west, Holmwood Avenue to the north and Queen Elizabeth Driveway followed by the Rideau Canal to the east and south.

Lansdowne Park was a historic exhibition, sports and entertainment facility originally developed in the mid-1800s as an agricultural fairground. Through well over 100 years of continuous use the site has undergone numerous changes including both the site infrastructure and physiography.

In 2007 the City of Ottawa initiated a review to redevelop Lansdowne Park. The Ottawa Sports and Entertainment Group (OSEG) proposed a public-private partnership with the City to rebuild the stadium and redevelop Lansdowne Park. The redevelopment plan was initiated in 2012 and included three major components:

- Constructing a mixed-use area that includes retail, office, and residential property uses along the north and west portions of the site (Zone A);
- Refurbishing Frank Clair Stadium (sports stadium) / Civic Centre (arena complex) and re-locating and refurbishing the Horticultural Building (Zone B); and,
- Creating a large urban park along the east and south portions of the site (Zone C).

The CPU Property (i.e., Zone C) portion of the redevelopment was completed in the summer of 2015. A generalized site plan depicting the redeveloped Lansdowne Park is provided on Figure 2.

2.0 Certificate of Property Use

In recognition of the redevelopment to a more sensitive property use within Zone C, Wood (2012) submitted a Risk Assessment (RA) to the Environmental Assessment and Approvals Branch of the MECP on March 16, 2012 in support of the filing of a Record of Site Condition (RSC). The RA (3678-8JPR93) was accepted by the Director in its letter to the City of Ottawa dated April 20, 2012. In recognition of its acceptance of the RA for Zone C, CPU No. 0371-8TYQMY was issued by the MECP on November 25, 2013. CPU No. 0371-8TYQMY addresses the RMM to be implemented and maintained at the CPU Property to mitigate unacceptable risks to human health as described in the Risk Assessment (RA) and/or Part 4 of the CPU. The CPU also provides Property-Specific Standards (PSS) for specific contaminants of concern (COC) present in soil and groundwater beneath the CPU Property.

2.1 Risk Management Measures

The RMM to be implemented and maintained at the CPU Property are generalized as follows:

1. **Geotechnical Engineering:** Quality assurance and quality control for such earthworks as the placement and compaction of geotechnical materials and soils impacted by any COC shall be carried out by the representative of the geotechnical engineering firm responsible for the supervision of construction based on professional judgment.
2. **Former Eastern Landfill:** Construction of a non-woven geotextile marker horizon overlain by a combination soft soil and hard cap barrier, both extending 5 metres outward beyond the periphery of the former Eastern Landfill. The hard cap shall consist of approved structural elements. The soft soil cap shall include 0.5 to 1.5 metres of clean soil meeting the 2011 Table 3 Site Conditions Standards (SCS) for residential / parkland / institutional property use as provided in *Soil, Groundwater and Sediment Standards for Use under Part XV.1 of the Environmental Protection Act* (MOE, 2011a).
3. **East Berm:** Construction of an earthen berm to contain impacted soil excavated from Zone A. The berm shall be underlain by non-woven geotextile to demarcate the elevation above which impacted soils have been placed. The contoured surface of the impacted soils shall be covered with a non-woven geotextile to demarcate the zone of impacted soils present underneath and covered with a minimum of one metre of clean soil meeting the 2011 Table 3 SCS for residential / parkland / institutional property use and/or other approved structural elements.
4. **Former McElroy Building:** Construction of a non-woven geotextile marker horizon overlain by a combination soft soil and hard cap barrier over the east portion of the footprint of the Former McElroy Building. The hard cap shall consist of approved structural elements. The soft soil cap shall include 0.5 to 1.5 metres of clean soil meeting the 2011 Table 3 SCS for residential / parkland / institutional property use.

5. **Soil Management Plan:** Development and implementation of a Soil Management Plan (SMP) to establish best practices and procedures to mitigate adverse effects and potential exposure risks associated with the excavation, transportation, storage and handling of soil at the CPU Property. This includes earthworks undertaken during site redevelopment as well as during any post-development construction activities while the RMM are required to be maintained in place.
6. **Health and Safety Plan:** Development and implementation of a Health and Safety Plan (HASP) to provide guidance for the protection of workers from potential exposure to the COC known to be present at the CPU Property.
7. **Groundwater Monitoring Program:** Development and implementation of a Groundwater Monitoring Program (GWMP), for a minimum of five years, to identify any changes in the hydrological components and groundwater quality resulting from implementation of the risk management measures and establishing trigger levels and contingency activities in the event that the monitoring results show any concentration(s) greater than the PSS.
8. **Methane Monitoring Program:** Development and implementation of a Methane Monitoring Program (MMP), for a minimum of five years, to address the influence of seasonal variations on landfill gas concentrations in the vicinity of the former Eastern Landfill and related RMM and establishing trigger levels and contingency activities in case monitoring results show any concentration greater than the PSS that are or may be related to the production of landfill gas.
9. **Inspection and Maintenance Plan:** Development and implementation of an Inspection and Maintenance Plan (IMP) to assess the integrity of the RMM on a routine and as-needed basis and identify any depreciation or failure of the RMM requiring repair or reinstatement.
10. **Annual Report:** An annual report shall be submitted to the MECP by no later than March 31 of each year to document activities carried out by the Owner in relation to the RMM during the previous calendar year, including any activities in relation to: East Berm, former Eastern Landfill, Former McElroy Building, SMP, HASP, GWMP, MMP and IMP.

A copy of the CPU is available on request.

3.0 RMM Implementation

3.1 East and South Berm RMM

The construction of the East Berm was initiated in the summer of 2012 using impacted soil exceeding 2011 Table 3 SCS for residential / parkland / institutional property use excavated from within Zone A. The impacted soil was excavated concurrently with the areas excavated to construct underground parking structure located within Zones A and B. Following removal of the impacted soil a generic RSC was obtained for Zone A. COC present in soil excavated from within Zone A exceeding the applicable 2011 Table 3 SCS included various metals, polycyclic aromatic hydrocarbons (PAH) and petroleum hydrocarbons (PHC). Impacted soil which could not be accommodated in the East Berm were temporarily

stockpiled within Zone C while awaiting placement in the South Berm, a western extension of the East Berm located south of the Stadium.

Construction of the South Berm began in the spring of 2013 using soil sourced from the temporary stockpile of impacted soil as well as non-impacted soil sourced from areas excavated to construct the underground parking structures. Impacted soil that could not be accommodated in the berms due to on-site temporary storage/stockpile limitations or other site logistics was transported and disposed off-site in accordance with applicable legislation.

While constructing the East and South Berms the following RMM were implemented:

- The existing ground surface beneath the berms was prepared by removing the existing asphalt where present, levelling and covering by eight-ounce non-woven geotextile fabric. The geotextile was placed to demarcate the interface between clean and impacted soil and to mitigate the potential for soil mixing.
- Soil known or suspected of being impacted was placed, compacted and contoured to a maximum elevation of at least 1 metre less than the final design elevation of the berms.
- Impacted soil contained within the East and South Berm was covered by eight-ounce non-woven geotextile fabric. The geotextile was installed per the manufacturer's instructions. At the toe of the berms, both the bottom and overlying geotextiles were placed in an anchor trench measuring 0.5 wide by 0.5 m deep. The anchor trench was then backfilled with clean sand. Based on a design slope of 3H:1V, the geotextile and impacted soil is set-back of approximately 2.56 metres from the toe of the berms.
- The geotextile overlying the impacted soil was covered with no less than 1 metre of clean fill (i.e., soil meeting *Table 3 Site Condition Standards in a Non-Potable Groundwater Condition - Residential/Parkland/Institutional Property Use*), which includes an upper layer of topsoil sufficient to support landscaping needs.
- In areas where trees were planted, sufficient soil depth was maintained around the rooting zones such that the roots of the mature trees would not have the potential for penetrating the underlying geotextile. At a minimum, trees were planted on compacted soil to prevent downward growth of rootmass. No plant species with tap root systems were placed above or within 5 metres of any areas subject to soil capping.
- To ensure that migration of contaminants does not occur, utility trenches installed through the area of impacted soil contained within the berms were sealed with clay plugs at the transition from impacted to non-impacted soil. The clay seals were constructed to a minimum thickness of 100 cm and extended from the base of the utility trench to the sub-base.
- With respect to utility conduit materials, concrete or polyvinyl chloride (PVC) conduits are generally not affected by the COC at the site. Therefore, either concrete or PVC conduits were used as utility conduits at the site. Gaskets used to connect conduct pipe sections within the area of impact were composed of chemically resistant materials, such as nitrile or fluorocarbon.

- As-built surveys were made during construction of the berms to ensure compliance with the design requirements stipulated in the CPU and that the berms were constructed with the required minimum thicknesses of clean cover soil.
- The East and South Berms will be surveyed on an annual basis for two consecutive years following construction to assess any differential settlement or consolidation of materials that could result in unwanted thinning of the clean cover. The survey will note and record any areas showing evidence of erosion of surficial soil, slope failure and/or soil caving. Any areas subject to settlement greater than 0.10 metres will be subject to restoration using clean fill/topsoil. The first of these surveys was conducted in November of 2016 and the second was conducted in December of 2018.
- The as-built survey and annual settlement/consolidation surveys will be maintained by the City per Section 3.12 of the Risk Management Plan provided in Appendix I the Risk Assessment (AMEC, 2012).

In 2019, Wood conducted inspections of the RMM implemented in the area of the East and South Berms as part of the Inspection and Maintenance Plan developed for the Site to satisfy the requirements of Condition 4.2.8 of the CPU. Details of the inspections including photo logs are provided in the Risk Management Measures Inspection Logs in Appendix B. The extent of the RMM for the Berm areas is provided on Figure 3.

3.2 Former Eastern Landfill RMM

In addition to putrescible and non-putrescible waste, COC in soil requiring risk management in the area of the former Eastern Landfill include various metals, PAH and PHC. Based on the pre-construction grades, the zone impacted soil and/or waste extended from approximately 0.8 metres below ground surface to 4.8 mbgs. Potential risks were mitigated via capping the impacted soil and waste with a combination soft soil cap and hard cap. A non-woven geotextile was placed between the cap and the underlying impacted soil/waste to demarcate the transition between the two. Capping of the former Eastern Landfill was initiated in September 2013 and was conducted concurrently with the redevelopment construction activities. The capping was completed over several stages due to limited space availability during the construction works.

Utilities were installed prior to the installation of the overlying geotextile and capping materials. The extent of the former landfill was verified through visual inspection of deleterious materials in the soil and locating the physical limits of the former landfill observed as being the wood cribbing of the former inlet to the Rideau Canal. Final soft soil and hard caps placement over areas of the former Eastern Landfill was completed in the summer 2015. Excess impacted soil excavated during utility trenching and cap placement was transported and disposed off-site in accordance with applicable legislation.

The following RMM were implemented during the construction of the soft soil and hard caps over the former Eastern Landfill:

- The existing surface cover consisting of asphalt and granular subbase was removed to the required depth. The surface was contoured to accommodate the final design grades and placement of eight-

ounce non-woven geotextile fabric. The geotextile was placed to demarcate the separation between underlying waste / impacted soil and the overlying soft soil and hard caps. The eight-ounce non-woven geotextile was extended a minimum of 5 metres beyond the limits of the former Eastern Landfill.

- The geotextile was capped with a soft soil cover consisting of clean soil (i.e., soil meeting *Table 3 Site Condition Standards in a Non-Potable Groundwater Condition - Residential/Parkland/Institutional Property Use*), a hard surface cap (i.e., asphalt, concrete or interlocking pavers and granular subbase), or a combination thereof. The thickness of the soft soil cap overlying the geotextile was determined based on landscaping needs but was not less than 500 millimetres inclusive of topsoil and grass sod. Examples of the different hard cap surface treatments include;
  - Concrete Unit Paving on Grade;
  - Granite Paving;
  - Reinforced and coloured asphalt paving;
  - Resilient Play Surface; and,
  - Refrigerated Concrete Slab for skating rink.
- Where features were constructed that penetrated the geotextile such as foundations for light standards or playground equipment, at the point of penetration, the geotextile was placed to extend 0.3 m up and around the penetration point.
- In areas where trees were planted, sufficient soil depth was maintained around the rooting zones such that the roots of the mature trees would not have the potential for penetrating the underlying geotextile. At a minimum, trees were planted on compacted soil to prevent downward growth of rootmass. No plant species with tap root systems were placed above or within 5 metres of any areas subject to soil capping.
- To ensure that migration of contaminants does not occur, utility trenches installed through the area of impacted soil contained within the berms were sealed with clay plugs at the transition from impacted to non-impacted soil. The clay seals were constructed to a minimum thickness of 100 cm and extended from the base of the utility trench to the sub-base.
- With respect to utility conduit materials, concrete or PVC conduits are generally not affected by the COC at the site. Therefore, either concrete or PVC conduits were used as utility conduits at the site. Gaskets used to connect conduct pipe sections within the area of impact were composed of chemically resistant materials, such as nitrile or fluorocarbon.
- The on-site storm water management system includes an underground stormwater retention tank encroaching the western limit of the former Eastern Landfill. The retention tank was installed such that the geotextile liner was placed along the side of the tank and secured in place with backfilled soil. Trenches for any storm sewers flowing into or out of the tank passing through the impacted soil were sealed as noted above. Soil excavated during the installation of the tank was managed as per the risk management plan.
- Once completed, the boundaries defined by the RMM developed for the former Eastern Landfill were surveyed. An as-built drawing will be maintained by the City as per the risk management plan.

In 2019, Wood conducted inspections of the RMM implemented in the area of the former Eastern Landfill as part of the Inspection and Maintenance Plan developed for the Site to satisfy the requirements of Condition 4.2.8 of the CPU. Details of the inspections including photo logs are provided in the Risk Management Measures Inspection Logs in Appendix B. The extent of the RMM for the former Eastern Landfill area is provided on Figure 3.

3.3 Former McElroy Building RMM

In the area of the former McElroy Building, COC requiring risk management included PAHs in soil. Contaminants in soil were managed via covering the impacted soil with non-woven geotextile that was overlain with a combination soft soil cap and hard cap (i.e., soil and paving structures and granular subbase). In October 2014 a test pit sampling program was completed to further delineate the extent of the PAH impacted soil. The extent of the RMM was based on the refined extent of the impacted soil.

The following RMM were implemented during the construction of the soft and/or hard cap over the Former McElroy Building:

- The existing surface cover consisting of asphalt and granular subbase was removed to the required depth. The surface was contoured to accommodate the final design grades and placement of eight-ounce non-woven geotextile fabric. The geotextile was placed to demarcate the separation between underlying waste / impacted soil and the overlying soft soil and hard caps. The eight-ounce non-woven geotextile was placed to extend a minimum of 5 metres beyond the limits of the define limits of the impacted soil.
- The geotextile was capped with a soft soil cover consisting of clean soil (i.e., soil meeting *Table 3 Site Condition Standards in a Non-Potable Groundwater Condition - Residential/Parkland/Institutional Property Use*), a hard surface cap (i.e., asphalt, concrete or interlocking pavers and granular subbase), or a combination thereof. The thickness of the soft soil cap overlying the geotextile was determined based on landscaping needs but was not less than 500 millimetres inclusive of topsoil and grass sod.
- Where features were constructed that penetrated the geotextile such as foundations for light standards, at the point of penetration, the geotextile was placed to extend 0.3 m up and around the penetration point.
- In areas where trees were planted, sufficient soil depth was maintained around the rooting zones such that the roots of the mature trees would not have the potential for penetrating the underlying geotextile. At a minimum, trees were planted on compacted soil to prevent downward growth of rootmass. No plant species with tap root systems were placed above or within 5 metres of any areas subject to soil capping.
- To ensure that migration of contaminants does not occur, utility trenches installed through the area of impacted soil contained within the berms were sealed with clay plugs at the transition from impacted to non-impacted soil. The clay seals were a minimum of 100 cm thick and extended from the base of the utility trench to the sub-base.

- With respect to utility conduit materials, concrete or PVC conduits are generally not affected by the COC at the site. Therefore, either concrete or PVC conduits were used as utility conduits at the site. Gaskets used to connect conduct pipe sections within the area of impact were composed of chemically resistant materials, such as nitrile or fluorocarbon.
- Once completed, the boundaries defined by the risk management measures developed for the McElroy Building were surveyed. An as-built drawing will be maintained by the City as per the risk management plan.

In 2019, Wood conducted inspections of the RMM implemented in the area of the former McElroy Building as part of the Inspection and Maintenance Plan developed for the Site to satisfy the requirements of Condition 4.2.8 of the CPU. Details of the inspections including photo logs are provided in the Risk Management Measures Inspection Logs in Appendix B. The extent of the RMM for the former McElroy Building area is provided on Figure 3.

4.0 Soil Management Plan

A SMP was developed in support of the Lansdowne Park redevelopment project in February 2012. The SMP was revised in May 2014 (AMEC, 2014a) to meet Condition 4.2.5 of the CPU. The objectives of the SMP for the RA RSC Property are as follows:

- Ensure that impacted soil and groundwater encountered during any earthworks are managed in compliance with all applicable environmental laws including a CPU specific to the RA RSC Property portion of the site. In this context, "impacted" soil is interpreted to mean soil that does not meet the standards for soil as laid out in the 2011 MOE document entitled "*Soil, Groundwater and Sediment Standards for Use under Part XV.1 of the Environmental Protection Act*", Table 3 Full Depth Generic SCS in a Non-Potable Groundwater Condition for Residential/Parkland/Institutional (R/P/I) Land Use, coarse soil type (2011 Table 3 SCS);
- Provide a process to manage impacted soil and/or groundwater, including any excess soil;
- Provide a contingency plan to identify and manage any unknown contamination identified during the construction process or produced due to a spill or release during construction;
- Support the execution of the site health and safety plan as it relates to the safety of the construction workforce and the neighbouring community where contamination is encountered;
- Outline the methodology and procedures to minimize dust created during the excavation, loading and importation, placement and compaction of soil;
- Outline the procedures for notification and reporting; and,
- Integrate into other management plans and procedures that could include quality, environmental management, emergency response, and sustainability.

The revised SMP to meet the requirements of Condition 4.2.5 of the CPU was submitted to the MECP on June 2, 2014. The SMP was included in contract documents and provided to contractors during the

redevelopment project and Wood was retained by the City to ensure implementation of the SMP during construction works. No changes or amendments to the SMP were made in 2019.

5.0 Health and Safety Plan

The health and safety requirements mandated under the *Occupational Health and Safety Act* (OHSA), including the development and implementation of any Health and Safety Plan (HASP) is the responsibility of the Constructor deemed to be in charge of any works being undertaken at the site. This includes contractors retained by the owner working on its behalf. To assist contractors working at the CPU Property, a HASP addendum was developed to establish the health and safety requirements and provide guidance for the protection of workers from potential exposure to the COC known to be present at the CPU Property. The HASP addendum does not address other Health and Safety requirements.

The HASP addendum identifies the COC present at the CPU Property and the potential exposure pathways through which workers at the CPU Property may be exposed to those COC. Recommendations for personal protective equipment (PPE), personal hygiene and fugitive dust control are also provided in the addendum.

The HASP addendum was developed in July 2013 (AMEC, 2013). No changes or amendments to the HASP were made in 2019.

6.0 Inspection and Maintenance Plan

An IMP outlining the monitoring program to be implemented at the site to satisfy the requirements of Condition 4.2.8 of the CPU was submitted to the MECP on June 30, 2014 (AMEC, 2014b). The primary objectives of the IMP include, but are not necessarily limited to, addressing the following items:

1. Inspection and maintenance during construction activities;
2. Inspection frequencies and routine maintenance requirements for the non-woven geotextile, and for the final surfaces of each of the East Berm, the former Eastern Landfill and the Former McElroy Building;
3. Event-specific inspection and maintenance;
4. Weather-related inspection and maintenance, and,
5. Non-routine and incident inspection and maintenance.

In 2019 Wood conducted inspections, as per the IMP, of the RMM implemented at the CPU property including; prominent drainage features, the cap over the East Berm and its extension referred to as the South Berm as well as the cap over the former Eastern Landfill and former McElroy Building areas.

The following inspections were conducted in 2019:

1. April 24, 2019 – Routine spring and weather-related inspection, following significant rainfall events of 32.2 mm between April 14th and 15th and 46.4 mm between April 18th and 20th, including a one-day total of 35.4 mm on April 19th, that included all RMM;
2. September 20, 2019 – Event specific inspection, following the Ottawa CityFolk Festival held between September 12th and 15th, that included all RMM; and,
3. November 11, 2019 – Routine fall and weather-related inspection, following significant rainfall events of 29.5 mm and 35.2 mm on October 27th and 31st, respectively, that included all RMM.

Details of the inspections including photo logs are provided in the Risk Management Measures Inspection Logs in Appendix B.

In the spring of 2019, the grass in the area immediately surrounding the Screen on the East Berm was replaced with new similar soft landscaping.

In the fall of 2019, a portion of the area of the former McElroy Building and the Eastern Swale south of the Beacon was stripped of topsoil and was resurfaced with gravel. This area has routinely been used as a staging area as well as for storage of equipment and temporary facilities during events held at the park constantly stressing the vegetation in this area.

There was no significant deterioration of the RMM that would result in an increase in potential risk to human health on the CPU property observed during any of the inspections conducted in 2019 and therefore no immediate actions were recommended throughout the year. No changes or amendments to the IMP were made in 2019.

7.0 Groundwater Monitoring Program

A proposed GWMP outlining the proposed monitoring program to satisfy the requirements of Condition 4.2.7 of the CPU was submitted to the MECP for its approval on September 2, 2014 (AMEC, 2014c). Communication from the MECP indicating that the City should proceed with the GWMP was provided in its letter to the City dated March 20, 2015. The primary objectives of the GWMP include, but are not necessarily limited to, addressing the following:

1. Identifying changes in the hydrological components having a direct interaction with the CPU Property soils including well water levels, groundwater flow details, infiltration rates and interflow details;
2. Identifying any changes in groundwater quality resulting from establishing the RMM;
3. Establishing the location and installation details of all groundwater monitoring wells to be included in the program;
4. Establishing the frequency of all groundwater sampling and monitoring events;

5. Establishing an itemized list of chemical parameters to be analyzed at each monitoring well location, including those identified in Schedule 5, Column 2 – Indicator List for Groundwater and Leachate contained in the Landfill Standards: A Guideline on the Regulatory and Approval Requirements for New or Expanding Landfilling Sites (PIBS 7792e) published by the MOE and dated January 2012, as it may be amended from time to time; and,
6. Establishing trigger levels and contingency activities in the event that the monitoring results show any concentration(s) greater than the PSS.

7.1 Groundwater Monitoring Well Construction

As per the GWMP, a total of twelve (12) monitoring wells (MW15-1 to MW15-12) were installed at strategic locations to facilitate monitoring and sampling of the near surface groundwater beneath the CPU Property. As the GWMP was designed to detect changes to both physical flow characteristics and groundwater quality, the monitoring well locations were selected in consideration of the groundwater flow patterns previously identified at the Site and the proposed locations of the RMM implemented at the Site. Monitoring locations were therefore established both upgradient and downgradient of the RMM as well as within the immediate areas of the RMM. The groundwater monitoring well locations are shown on Figure 4.

The groundwater monitoring well construction details are summarized in Table 1. Monitoring wells were constructed by Strata Drilling Group from October 21 to 23, 2015 in accordance with the monitoring well construction details provided in the GWMP. Details of the borehole drilling and monitoring well installations are shown on the stratigraphic and instrumentation logs provided in Appendix C.

All groundwater monitoring wells installed at the Site were instrumented with dedicated Waterra inertial lift pumps and sufficient lengths of 12 mm inside diameter low density polyethylene (LDPE) tubing to facilitate well development and purging requirements. Following a minimum period of 48 hours after installation, each monitoring well was developed by extracting approximately five to ten well volumes to remove any residual sediment and/or drill cuttings introduced during the borehole drilling and well installation process, stabilize and grade the filter pack, improve connectivity between the well and the formation, and restore groundwater that may have been disturbed or otherwise altered during the drilling and well installation process. Once developed, the wells were instrumented with 6 mm inside diameter LDPE tubing to facilitate low-flow sampling using a peristaltic pump.

7.2 Groundwater Monitoring and Sampling

Groundwater monitoring was conducted on May 27th, 2019 and October 21st, 2019 and included all monitoring wells installed at the CPU Property, with the exception of MW15-8 which could not be located during the May 2019 event. In addition to these monitoring wells, five monitoring wells located on the National Capital Commission (NCC) property to the immediate east were also monitored during the May 27th and October 21st monitoring events. The locations of the NCC monitoring wells are shown on Figure 4 and their construction details provided in Table 1.

The depths to groundwater and the static groundwater elevations recorded at the monitoring wells are summarized in Table 2. In the spring, groundwater was present at depths ranging from 2.663 metres below ground surface (mbgs) at MW15-1 to 5.321 mbgs at MW15-2. Water table elevations recorded at the monitoring wells varied between 59.907 metres above sea level (masl) at MW15-2 and 62.913 masl at MW09-1. A groundwater elevation contour plan for the May 27, 2019 monitoring event depicting the inferred groundwater flow pattern beneath the CPU Property is provided on Figure 5a.

In the fall, groundwater was present at depths ranging from 2.873 mbgs at MW15-1 to 5.075 mbgs at MW09-6. Water table elevations recorded at the monitoring wells varied between 60.127 masl at MW09-5 and 62.689 masl at MW09-1. A groundwater elevation contour plan for the October 21, 2019 monitoring event depicting the inferred groundwater flow pattern beneath the CPU Property is provided on Figure 5b.

The inferred groundwater flow patterns beneath the CPU Property observed during the spring and fall monitoring events are generally similar to those observed during previous monitoring events conducted since inception in 2015. Shallow groundwater beneath the southern half of the CPU property generally flows to the east and northeast in a quasi-inward radial flow pattern to a groundwater low located in the vicinity of the former McElroy Building. Mounding near the northeast corner of the CPU property results in localized outward radial flow to the west and south and is likely due to water originating from the portion of the Rideau Canal located north of the Site migrating within the fill materials placed within the reclaimed former inlet of the Rideau Canal.

Groundwater samples were collected on May 28 and 29, 2019 during the spring sampling event and on October 23 and 24, 2019 during the fall sampling event. Groundwater samples were collected from each of the monitoring wells installed at the CPU Property with the exception of monitoring wells MW15-8 during the May sampling event as it could not be located.

Groundwater samples were collected using low-flow sampling techniques in order to minimize potential sample biasing due to sediment entrainment. Groundwater field parameters measured during sampling including pH, temperature, dissolved oxygen (DO), conductivity and oxidation-reduction potential (ORP) and general observations made during sampling are provided in Table 3. Each of the groundwater samples collected was analyzed for the following COC: PAH, PHC F1 - F4, chloroform, metals and landfill leachate indicator parameters as identified in Schedule 5, Column 2 – Indicator List for Groundwater and Leachate contained in the *Landfill Standards: A Guideline on the Regulatory and Approval Requirements for New or Expanding Landfilling Sites* (PIBS 7792e) including alkalinity, ammonia, calcium, chloride, conductivity, iron, magnesium, nitrate (as N), pH, sodium, total dissolved solids (TDS), sulphate, biochemical oxygen demand (BOD), chemical oxygen demand (COD), dissolved organic carbon (DOC). Samples collected for metals analysis were field filtered using 0.45 µm disposable filter capsules. With the exception of chloride, 2011 Table 3 SCS do not exist for these landfill indicator parameters. A PSS was developed for ammonia as it was identified as a COC resulting from former ice making plants at the former Curl-o-Drome and former McElroy Building. These parameters have been analyzed to facilitate the identification of any trends which may be indicative of the deterioration of groundwater quality resulting from the implementation of the RMM.

Two (2) blind duplicate samples were collected during each sampling event for analysis of one or more COC including PAHs, PHC F1-F4, chloroform, metals, and landfill leachate indicator parameters for quality assurance / quality control (QA/QC) purposes. Samples DUP-1 and DUP-2 are blind duplicate samples of MW15-12 and MW15-6 respectively for the spring sampling event and samples DUP-1 and DUP-2 are blind duplicate samples of MW15-9 and MW15-7 for the fall sampling event. Two (2) trip blanks were used during both the spring and fall sampling event, for analysis of chloroform to assess potential cross contamination during sample storage and transport.

7.3 Groundwater Sample Analysis

Groundwater sample analyses were performed by Paracel Laboratories Ltd. of Ottawa, Ontario. Analytical results for groundwater samples collected from the monitoring wells located on the CPU Property were evaluated through comparison with the 2011 Table 3 SCS for residential / parkland / institutional property use and coarse textured soil, where established, and for ammonia, chloroform and iron, to the PSS derived from the Risk Assessment as provided in CPU 0371-8TYQMY.

The MECP recently released the document entitled *Guidance for Addressing Chloroform at a Record of Site Condition Property* ("Chloroform Guidance"). The purpose of the document is to provide guidance which can be used by Qualified Persons (QP) and property owners where an RSC is being sought under *Ontario Regulation 153/04 – Records of Site Condition, as amended* ("O.Reg. 153/04") at a property and when addressing chloroform in soil and/or groundwater where the source of the chloroform is from a treated municipal water supply.

The Chloroform Guidance states that if two criteria can be met and documented in the Conceptual Site Model (CSM) as part of a RA and/or RSC submission, then the applicable SCS for chloroform need not be considered to be exceeded. The two criteria are:

1. The source of chloroform is only associated with water from a treated municipal water supply; and,
2. All soil and groundwater concentrations are numerically equal to or lower than the values listed in Table A of this guidance.

As the chloroform groundwater impacts identified beneath the CPU Property were attributed to leaking municipal infrastructure, the groundwater value for chloroform provided in Table A of the Chloroform Guidance was adopted for the CPU property replacing the Table 3 SCS. The groundwater value for chloroform for non-potable groundwater situations, residential / parkland / institutional property use, and coarse textured soil is 240 µg/L.

O.Reg. 153/04 was subject to various amendments via O.Reg. 407/19 filed on December 4, 2019. Section 49.1 was amended to include provisions to address certain exceedances of applicable site conditions standards at a property. One such provision was provided for chloroform, whereby if the qualified person has determined, based on a phase one environmental site assessment or a phase two environmental site assessment, that there has been a discharge of drinking water within the meaning of the Safe Drinking

Water Act, 2002, then the applicable site condition standard is deemed not to be exceeded for the purpose of Part XV.1 of the Act.

The results of the spring and fall groundwater sample analyses, and their respective 2011 Table 3 SCS and PSS derived from the Risk Assessment are summarized in Table 4a and 4b respectively.

Copies of the Certificates of Analysis issued by the laboratory are provided in Appendix D.

7.3.1 Spring Monitoring Event

Thirteen (13) groundwater samples, including two blind QA/QC duplicate sample, were collected from on-Site monitoring wells in the spring on May 27th and 28th. The results of the analysis are summarized in Table 4a.

7.3.1.1 Petroleum Hydrocarbons

PHC were not detected in any of the groundwater samples. Based on the analytical reporting detection limits (RDL) reported by the laboratory, all samples are deemed to be below the applicable 2011 Table 3 SCS.

7.3.1.2 Chloroform

Chloroform was detected in four (4) groundwater sample collected from MW15-2, MW15-3, MW15-6 and MW15-9, located on the CPU Property. Chloroform concentrations ranged between 1.6 µg/L and 4.3 µg/L, below the PSS value of 22 µg/L and well below the applicable Table A Chloroform Guidance value of 240 µg/L. All other groundwater samples collected reported concentrations of chloroform below analytical RDL, and therefore below the PSS and Table A Chloroform Guidance value.

7.3.1.3 Polynuclear Aromatic Hydrocarbons

Up to nine (9) PAH parameters, including anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, chrysene, fluoranthene, indeno(1,2,3,c,d)pyrene and pyrene were detected in groundwater samples collected from monitoring wells MW15-1, MW15-3 and MW15-5, located on the CPU property. The concentrations reported for the various PAH parameters were below their respective 2011 Table 3 SCS. Samples reporting PAH concentrations below RDL are deemed to be below the applicable 2011 Table 3 SCS based on the RDL reported by the laboratory.

7.3.1.4 Metals

Up to eighteen (18) metals, including 15 or more of antimony, arsenic, barium, boron, calcium, chromium, cobalt, copper, iron, lead, magnesium, molybdenum, nickel, selenium, sodium, uranium, vanadium and zinc were detected in each of the groundwater samples. All groundwater samples collected reported

metals parameter concentrations below their respective 2011 Table 3 SCS where established or the PSS for iron.

7.3.1.5 General Chemistry Parameters

None of the general chemistry parameters exceeded their 2011 Table 3 SCS or PSS, where established, during the spring monitoring event.

7.3.2 Fall Monitoring Event

Fourteen (14) groundwater samples, including two blind QA/QC duplicate sample, were collected from on-Site monitoring wells in the fall on October 23rd and 24th, 2019. The results of the analysis are summarized in Table 4b.

7.3.2.1 Petroleum Hydrocarbons

PHC were not detected in any of the groundwater samples. Based on the analytical RDL reported by the laboratory, all samples are deemed to be below the applicable 2011 Table 3 SCS.

7.3.2.2 Chloroform

Chloroform was detected in groundwater samples collected from two (2) monitoring wells located on the CPU Property including MW15-2 and MW15-3 at reported concentrations of 1.8 µg/L and 1.7 µg/L, respectively. These concentrations are below the PSS value of 22 µg/L and well below the applicable Table A Chloroform Guidance value of 240 µg/L. All other groundwater samples collected reported concentrations of chloroform below analytical RDL, and therefore below the PSS and Table A Chloroform Guidance value.

7.3.2.3 Polynuclear Aromatic Hydrocarbons

Two (2) PAH parameters, fluoranthene and pyrene, were detected in groundwater samples collected from monitoring wells MW15-1, MW15-3 and MW15-8. Fluoranthene and pyrene concentrations were reported between 0.03 µg/L and 0.05µg/L, which are below their applicable 2011 Table 3 SCS. All other PAH parameters reported during the fall monitoring event reported concentrations below RDL. Concentrations below RDL are deemed to be below the applicable 2011 Table 3 SCS based on the RDL reported by the laboratory.

7.3.2.4 Metals

Up to eighteen (18) metals including seventeen (17) or more of antimony, arsenic, barium, boron, calcium, chromium, cobalt, copper, iron, lead, magnesium, molybdenum, nickel, selenium, sodium, uranium, vanadium and zinc were detected in each of the groundwater samples. All groundwater samples

collected reported metals parameter concentrations below their respective 2011 Table 3 SCS where established or the PSS for iron.

7.3.2.5 General Chemistry Parameters

None of the general chemistry parameters exceeded their 2011 Table 3 SCS or PSS, where established, during the fall monitoring event.

7.4 Field Quality Assurance Program

7.4.1 Field Duplicates

Field duplicates consist of samples collected at the same time and location placed into separate containers and are submitted for laboratory analysis to evaluate laboratory precision and field sampling and handling procedures, as well as to assess potential sample heterogeneity. For water samples, duplicates are prepared by alternately filling the sample bottles. The relative percent difference (RPD) is defined as the absolute value of the variation between a sample and its duplicate, when compared to the average concentration of the original and the duplicate. It is used to assess the validity of the field and laboratory analytical procedures. Meaningful RPDs can only be calculated if concentrations of a parameter are greater than the analytical RDL in both the primary and duplicate samples. Lower precision in the RPD calculation is expected when concentrations are less than five (5) times the RDL.

The results of the groundwater field duplicate sample analyses indicate that the sampling results are generally reproducible. In most cases RPDs for the primary and duplicate samples could not be calculated as results were either below MDL or were less than ten times the reported MDL and thus not considered statistically significant. Where RPD was calculated values were within the acceptable limits, with the exception of hardness and several metals in the sample and its duplicate collected from MW15-7 in the fall. The metals reporting elevated RPDs included barium, calcium, magnesium and sodium. These metals are common constituents in rock-forming minerals such as feldspar, micas, amphiboles, pyroxenes and olivines as well as weathered minerals such as clays. Comparison of the duplicate results to other samples collected at the site suggests the concentrations reported in the duplicate sample are below expected levels, however the reason or cause behind the suspected low levels is not known.

7.4.2 Trip Blanks

Trip blanks, also known as travel blanks, are employed to assess potential cross contamination of volatile organic compounds from other samples, ambient conditions, or other sources during sample storage and shipment prior to receipt at the laboratory. Trip blanks consist of analyte free media (soil or water) prepared and placed in the sample storage and shipping cooler by the laboratory, taken to the site, and returned unopened to the laboratory with the sample submission.

Trip blanks employed during the spring and fall sampling programs reported non-detect concentrations for chloroform. PHC F1 was analyzed in the trip blanks in the fall and reported non-detect concentrations. PHC F1 was not detected in any of the samples collected at the Site during either sampling event.

7.5 Laboratory QA/QC Program

7.5.1 Laboratory Accreditation

The analytical laboratory employed to perform the laboratory analyses (Paracel) is accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA) in accordance with *ISO/IEC 17025:2017– "General Requirements for the Competence of Testing and Calibration Laboratories"* for the tested parameters set out in the "*Soil, Ground Water and Sediment Standards for Use under Part XV.1 of the Environmental Protection Act*" dated 15 April 2011.

7.5.2 Performance Criteria

The *Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act* (the "Analytical Protocol"), dated March 9, 2004 (amended as of July 1, 2011), establishes performance criteria for use when assessing the reliability of data reported by analytical laboratories. These include maximum hold times for the storage of samples/sample extracts between collection and analysis, specified/approved analytical methods, required field and/or laboratory quality assurance samples such as blanks and field and laboratory duplicates, specified recovery ranges for spiked samples and surrogates (compounds added to samples in known concentrations for calibration purposes), Reporting Limits (RL) and specified precision required when analyzing laboratory duplicate and spike/controlled reference material samples.

7.5.3 Laboratory Data Validation

Sample analysis dates provided on the reports of analysis issued by Paracel indicate that all sample analyses were performed within the required sample/extract hold times. The RLs were met for all tested parameters.

Laboratory Blank Samples

Laboratory blank samples include method blanks and blank spikes. Method blanks consist of an uncontaminated media sample which is free of the target analytes or any other parameters that may interfere with the analysis and are subject to the entire analytical procedure including extraction, digestion, or any other preparation procedure. Method blanks are used to monitor laboratory background level of the target analytes and laboratory artefacts or anomalies. Method blanks are also used to monitor cross contamination of carry-over between samples, notable when high concentrations of the target analytes are present.

Blank spikes consist of an uncontaminated media sample free of the target analytes or interferences which is fortified with a known concentration of target analytes. The blank spike is processed through the entire

analytical method including any extraction, digestion or any other preparation procedure. Spike blanks are used to monitor analyte recovery and potential loss during the preparation procedures as well as to validate the calibration of the instrumentation or technique.

Based on the laboratory Reports of Analysis, laboratory sample blank analyses met MECP requirements.

Matrix Spike Samples

Matrix spike samples consist of an aliquot from a randomly chosen sample that is fortified with a known concentration of target analytes. Matrix spike samples are processed through the entire analytical method including any extraction, digestion or any other preparation procedure. The matrix spike sample is used to evaluate laboratory precision and to evaluate any "matrix effects" that may exist in a sample due to its composition that may affect the recovery of the target analytes. An example is the presence of peat in soils which tends to adsorb organic analytes resulting in a poor matrix spike recovery.

Based on the laboratory Reports of Analysis, recoveries reported for spiked samples/blanks were acceptable.

Laboratory Replicates

Laboratory replicates (or duplicates) consist of an aliquot from a randomly chosen sample within an analytical batch that is processed through the entire analytical method to evaluate analytical precision and sample homogeneity. The differences between the two sample results are expressed as RPDs.

Based on the laboratory Reports of Analysis, RPDs for laboratory replicate sample analyses met MECP requirements, with the exception of conductivity on report of analyses 1922264 and 1922365 which reported elevated RPD values. The results of the remaining QA/QC batch were acceptable.

Surrogate Recoveries

Surrogates are deuterated analogues or compounds not normally found in nature but behave chemically and physically similar to the target analytes in the analysis. Known surrogate concentrations are added to samples prior to analysis and recoveries calculated and expressed as a percentage. Surrogates are employed to monitor the efficiency of organic extractions, instrument performance and provide within run quality control. The results are reported as percentage recoveries based on the known concentrations added to the sample.

Laboratory surrogate recoveries reported as part of the laboratory Reports of Analysis were found to be within acceptable ranges.

7.5.4 QA/QC Summary

In summary, the laboratory and field QA/QC data indicate that the groundwater data have met the performance criteria of the Analytical Protocol and have not been biased or compromised in any way. The

analytical results are thus considered to be representative of the site conditions and can be relied upon in the context of this report and its intended objectives.

8.0 Methane Monitoring Program

A proposed MMP outlining the proposed monitoring program to satisfy the requirements of Condition 4.2.8 of the CPU was submitted to the MECP for its approval on September 2, 2014 (AMEC, 2014d). Communication from the MECP indicating that the City should proceed with the MMP was provided in its letter to the City dated March 20, 2015. The primary objectives of the MMP include, but are not necessarily limited to, addressing the following:

- the influence of seasonal variations on landfill gas concentrations in the vicinity of the former Eastern Landfill and related risk management measures at the Property;
- location and installation details of all boreholes and landfill gas probes included in the program;
- frequency of all sampling and monitoring events;
- trigger levels and contingency activities in case monitoring results show any concentration greater than the PSS that are or may be related to the production of landfill gas; and,
- the correlation between methane measured at the Property and changes in concentration for the chemical parameters identified in Schedule 5, Column 2 – Indicator List for Groundwater and Leachate contained in the Landfill Standards: A Guideline on the Regulatory and Approval Requirements for New or Expanding Landfilling Sites (PIBS 7792e) published by the MOECC and dated January 2012, as it may be amended from time to time.

The MMP shall be overseen by a QP as defined by O. Reg. 153/04.

8.1 Landfill Gas Probe Installations

As per the MMP, a total of ten (10) LFG probes were installed either independently (GP15-4 through GP15-7) or as a nested couplet with groundwater monitoring wells (GP15-1 through GP 15-3 and GP15-8 through GP15-10) to permit monitoring of LFG composition and subsurface pressure, to verify the current levels of methane in the subsoil environment and to identify areas of potential gas impingement. Each LFG probe was constructed as per the details provided in the MMP.

The locations of the LFG probes are shown on Figure 6 while the LFG probe construction details are shown on the stratigraphic and instrumentation logs provided in Appendix C.

8.2 LFG Regulatory Requirements

The concern with methane gas is that it creates an explosion hazard under certain conditions. Methane monitoring is therefore required to ensure that elevated methane concentrations are detected before they present an explosion hazard. The concentration level at which methane has the potential to explode is

called the explosive limit. Methane is explosive when mixed with air at concentrations between 5% by volume in air (vol. %) and 15 vol. %. At concentrations below 5 vol. % and above 15 vol. %, methane is not explosive. Therefore, the Lower Explosive Limit (LEL) of methane is 5 vol. % and the Upper Explosive Limit (UEL) is defined at 15 vol. %. Methane is lighter than air and is likely to dissipate unless trapped inside enclosed spaces.

Ontario Regulation 232/98 – Landfilling Sites, as amended ("O. Reg. 232/98"), provides threshold criteria for landfill gas concentrations at new or expanding landfill sites. While this regulation does not apply to the former Eastern Landfill as it was closed before the regulation came into effect, the criteria outlined in O. Reg. 232/98 provide a basis for assessing the potential impacts due to landfill gas migration. The concentration limits specified in O.Reg. 232/98 are:

- Less than 2.5% methane by volume in the subsurface at the property boundary;
- Less than 1.0% methane by volume in any on-site building, and in the area immediately outside the foundation if the building or structure is accessible to any person or contains electrical equipment or a potential source of ignition; and,
- Less than 0.05% methane by volume in any off-site building, and in the area immediately outside the foundation if the building or structure is accessible to any person or contains electrical equipment or a potential source of ignition.

Guidance on assessment and management of methane gas is provided by the MOECC under *Guideline D-4: Land Use on or Near Landfills and Dumps* (revised April 1994) and Appendix A - Assessing Methane Hazards from Landfill Sites (Procedure D-4-1; November 1987) provided therein. In accordance with the Procedure D-4-1, methane cannot cause an explosion unless it enters an enclosed space and methane accumulates to a concentration above its LEL, and the gas has a high entry rate and high enough accumulation time, such that the methane concentration will be still above the LEL, after dilution by ventilation of the enclosed space. Procedure D-4-1 considers that methane concentrations in air (or in an enclosed space) greater than 20% LEL (equivalent to 1% by volume) may be associated with still higher concentrations, exceeding the LEL. Therefore, methane concentrations greater than 20% LEL warn of conditions which could potentially hazardous in enclosed structures and gas control systems should be designed to maintain methane concentrations below this level.

8.3 Landfill Gas Monitoring

Landfill gas monitoring was performed on a quarterly basis on February 19th, May 27th, August 7th and November 28th, 2019. Prior to monitoring, the condition of all LFG probes was verified in the field. Each LFG probe was inspected to determine its condition and whether or not it was capable of yielding LFG monitoring data representative of the subsurface conditions (i.e., the stopcock valve was in the closed position to prevent subsurface gas from readily venting via the LFG probe). Pressure measurements were taken prior to the gas composition measurement by connecting the hose barb on the stopcock to a magnehelic differential pressure gauge and opening the stopcock to record the pressure or vacuum on the pressure gauge.

Gas composition including percent by volume methane (CH_4), oxygen (O_2), carbon dioxide (CO_2) and balance gases and percentage of the lower explosive limit (%LEL) were measured using a Landtec GEM 2000 or 5000 Landfill Gas Monitor. The GEM was calibrated by the equipment provider prior to use in the field. Initial, peak and stabilized gas readings were measured. Initial readings were taken immediately after connecting the monitor to the LFG probe and opening the stopcock. Stabilized readings were taken after the probe had been purged a volume equal to one to three times the combined volume of the probe filter pack.

The results of the LFG monitoring program including LFG composition and subsurface pressure are summarized in Table 5 and are shown on Figure 7. Stable methane concentrations were detected at GP15-6 (0.2 vol. % in May, and 0.3 vol. % in November) and GP15-9 (0.1 vol. % in February). Based on the methane concentrations noted above, the Site meets the on-site methane concentrations limits as outlined in O.Reg. 232/98 and the recommended methane alert levels provided in Procedure D-4-1.

8.4 Landfill Gas Data Analyses

The fairly consistent presence of low level initial and stable methane concentrations measured at GP15-6 indicate that methane impacts are predominantly confined within the footprint of the former Eastern Landfill. The methane concentrations recorded suggest that any methane present is closely associated with waste deposits and is likely present as pockets trapped beneath less permeable materials. Slight positive pressures were recorded at one or more monitoring events at GP15-2, GP15-3, GP15-4, GP15-6, GP15-7, GP15-8 and GP15-10. The slight positive pressures observed suggests that the subsurface methane is not likely to migrate beyond the immediate areas in which it is encountered. With the exception of a slight methane detection at GP15-9 in February 2019, the lack of consistent detectable methane at the LFG probes surrounding the former Eastern Landfill footprint indicates that the subsurface methane is not likely migrating beyond the boundaries of the former landfill.

9.0 Contingency Measures

Based on the results of the GWMP, MMP and IMP completed in 2019, no contingency measures were deemed necessary and therefore no such measures were implemented at the CPU Property in 2019.

10.0 Site Restoration Activities

RMM in the area immediately surrounding the Screen on the East Berm, a portion of the area of the former McElroy Building, and part of the Eastern Swale south of the Beacon, were disturbed by shallow excavations in the spring and fall of 2019, respectively. The area immediately surrounding the Screen on the East Berm was excavated in order to prepare the area for soft landscaping while the area of the former McElroy Building and a part of the Eastern Swale south of the Beacon were excavated in order to resurface the area with granular material to better use this area as a staging area as well as for temporary storage and facilities during events at the property. The thickness of the cover in these areas was preserved by

matching the existing grades with the new surfacing material. These improvements only required shallow excavations within these areas and did not disturb the non-woven geotextile demarcation layer or impacted soils beneath these areas. Photographs of these areas are provided in the RMM inspection logs in Appendix B. with shallow surface soils

Visual inspections undertaken in 2019 noted findings similar to those of reported in 2018 with respect to several areas of soil erosion identified throughout the South Berm area as evidenced by surface rutting, areas of soil washout, bare patches, and areas of down slope sediment accumulation. The areas are not considered to result in any increase in the levels of risk to potential receptors at the CPU Property, however, reparations to these areas should be undertaken to prevent continued erosion due to loss of stabilizing vegetation in these areas.

Based on inspections conducted as per the IMP no significant deterioration of the RMM that would result in an increase in potential risk to human health on the CPU property was observed and therefore no immediate site restoration activities were deemed necessary at the CPU Property in 2019.

11.0 Conclusions and Recommendations

The findings and results of the monitoring, sampling and inspection programs carried out at the CPU Property in 2019 to meet the annual reporting requirements are as follows:

- Inspections of the RMM implemented at the CPU Property were conducted in 2019 in accordance with the Inspection and Maintenance Plan (IMP). RMM in the area immediately surrounding the Screen on the East Berm, a portion of the area of the former McElroy Building, and part of the Eastern Swale south of the Beacon were disturbed by shallow excavations in the spring and fall of 2019, respectively. The thickness of the cover in these areas was preserved by matching the existing grades with the new surfacing material. These improvements only required shallow excavation within these areas and did not disturb the demarcation layer or impacted soils beneath these areas.
- Visual inspections of other RMM at the Site identified several areas of soil erosion throughout the South Berm area as evidenced by surface rutting, areas of washed out soil, bare patches, and areas of down slope sediment accumulation. Although the survey of the South Berm did not identify any deficient areas in 2018, deteriorated soil cap conditions continue to be present on the South Berm and should be addressed to prevent further deterioration of the RMM.
- The 2019 groundwater monitoring and sampling program was conducted on a semi-annual basis in accordance with the Groundwater Monitoring Plan (GWMP). Results of the groundwater monitoring inferred groundwater flow patterns beneath the CPU Property similar to those observed since inception of the groundwater monitoring program in 2015. Shallow groundwater, beneath the southern half of the CPU property, generally flows to the east and northeast in a quasi-inward radial flow pattern towards a groundwater low in the vicinity of the former McElroy Building. Mounding near the northeast corner of the CPU property results in localized outward radial flow to the west and south and is likely due to leakage from the Rideau Canal migrating to the west within the historic fill materials placed within the former inlet of the Rideau Canal that extends beneath the CPU Property.

- All groundwater samples collected from the monitoring well network located at the CPU property in 2019 reported parameter concentrations below 2011 Table 3 SCS for residential / parkland / institutional property use and coarse textured soil, where established, and for ammonia, chloroform and iron, below the Property Specific Standards (PSS) derived from the Risk Assessment as provided in CPU 0371-8TYQMY.
- Methane concentrations measured at the landfill gas probes located at the CPU Property in 2019 as per the MMP were below the methane concentrations limits as outlined in O.Reg. 232/98 and the recommended methane alert levels provided in Procedure D-4-1: Assessing Methane Hazards from Landfill (MOE, 1987).
- No revisions were deemed necessary to the SMP or the HASP.

Based on the results of the GWMP, Methane Monitoring Plan (MMP) and IMP completed in 2019, no contingency measures were deemed necessary at the CPU Property and therefore no such measures or activities were implemented in 2019. Based on inspections conducted as per the IMP, no significant deterioration of the RMM that would result in an increase in potential risk to human health at the CPU property was observed and therefore no immediate site restoration activities were deemed necessary and therefore no such activities were undertaken at the CPU Property in 2019.

12.0 Closure

We trust that the information presented in this report meets your current requirements. Should you have any questions, or concerns, please do not hesitate to contact the undersigned.

Respectfully Submitted,

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Principal Hydrogeologist

13.0 References

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Tables

Table 1. Groundwater Monitoring Well Construction Details

Monitor Well I.D.	MTM Coordinates		Date of Construction (mm/dd/yy)	Well Constructed By	Borehole and Groundwater Monitoring Interval Construction Data								
	Easting	Northing			Ground Surface Elevation (m)	Borehole Depth (m)	Borehole Bottom Elevation (m)	Top of Casing Elevation (m)	Casing Stick-up (m)	Depth to Bottom of Well Screen (m)	Well Screen Interval (masl)	Well Screen Length (m)	Geologic Media Intersected by Well Screen
CPU Property													
MW15-1	368902.89	5029395.41	10/23/2015	AFW	65.492	6.10	59.39	65.409	-0.08	6.10	62.44 - 59.39	3.05	Loam/Sand
MW15-2	368835.26	5029365.16	10/23/2015	AFW	65.228	6.71	58.52	65.085	-0.14	6.71	61.57 - 58.52	3.05	Loamy Sand/Sand
MW15-3	368835.69	5029306.22	10/23/2015	AFW	65.067	6.71	58.36	64.899	-0.17	6.71	61.41 - 58.36	3.05	Fill/Sand
MW15-4	368865.77	5029240.86	10/23/2015	AFW	65.319	6.10	59.22	65.256	-0.06	6.10	62.27 - 59.22	3.05	Fill No Recovery
MW15-5	368950.93	5029210.49	10/22/2015	AFW	64.924	6.10	58.82	64.895	-0.03	6.10	61.87 - 58.82	3.05	Sand
MW15-6	368843.81	5029183.52	10/21/2015	AFW	64.680	5.18	59.50	64.615	-0.07	5.18	62.55 - 59.50	3.05	Fill/Sand
MW15-7	368911.90	5029169.41	10/21/2015	AFW	64.513	6.10	58.41	64.431	-0.08	5.48	62.08 - 59.03	3.05	Fill/Sand
MW15-8	368937.69	5029125.60	10/22/2015	AFW	64.898	6.10	58.80	64.815	-0.08	6.10	61.85 - 58.80	3.05	Fill/Sand
MW15-9	368798.39	5029125.38	10/21/2015	AFW	65.253	6.10	59.15	65.148	-0.11	6.10	62.20 - 59.15	3.05	Fill/Sand/Loamy Sand
MW15-10	368878.44	5029083.95	10/22/2015	AFW	65.043	6.10	58.94	64.979	-0.06	6.10	61.99 - 58.94	3.05	Fill/Sand
MW15-11	368858.74	5028968.82	10/22/2015	AFW	64.571	6.10	58.47	64.447	-0.12	6.10	61.52 - 58.47	3.05	Fill/Sand
MW15-12	368792.98	5028926.01	10/22/2015	AFW	65.596	6.71	58.89	65.498	-0.10	6.71	61.94 - 58.89	3.05	Fill/Sand/Loamy Sand
NCC Property													
MW09-1	368942.54	5029353.62	10/29/2009	Stantec	65.718	4.89	60.83	65.658	-0.06	4.89	63.88 - 60.83	3.05	Silty Sand
MW09-2	368953.24	5029331.60	10/29/2009	Stantec	65.667	4.89	60.78	65.601	-0.07	4.89	63.83 - 60.78	3.05	Silty Sand
MW09-3	368947.29	5029323.87	10/29/2009	Stantec	65.426	4.89	60.54	65.368	-0.06	4.89	63.59 - 60.54	3.05	Silty Sand
MW09-5	368959.68	5029265.39	10/29/2009	Stantec	65.108	6.10	59.01	65.061	-0.05	6.10	62.06 - 59.01	3.05	Sand
MW09-6	368962.89	5029235.74	10/29/2009	Stantec	65.232	6.10	59.13	65.202	-0.03	6.10	62.18 - 59.13	3.05	Silty Sand/Sand

Notes:
Survey Data Provided by City of Ottawa Surveys and Mapping Unit.
All Elevation Referenced to Geodetic.
masl = Metres Above Sea Level.

Table 2. Groundwater Measurement and Elevation Data

Monitoring Well I.D.	Ground Surface Elevation (masl)	Top of Casing Elevation (masl)	Bottom of Well Screen Elevation (mbtoc)	May 27, 2019			October 21, 2019		
				Depth to Water (mbtoc)	Depth to Water (mbgs)	Static Elevation (masl)	Depth to Water (mbtoc)	Depth to Water (mbgs)	Static Elevation (masl)
CPU Property									
MW15-1	65.492	65.409	59.392	2.580	2.663	62.829	2.790	2.873	62.619
MW15-2	65.228	65.085	58.518	5.178	5.321	59.907	4.854	4.997	60.231
MW15-3	65.067	64.899	58.357	4.908	5.076	59.991	4.615	4.783	60.284
MW15-4	65.319	65.256	59.219	3.210	3.273	62.046	4.166	4.229	61.090
MW15-5	64.924	64.895	58.824	4.808	4.837	60.087	4.681	4.710	60.214
MW15-6	64.680	64.615	59.500	4.370	4.435	60.245	4.170	4.235	60.445
MW15-7	64.513	64.431	59.033	4.265	4.347	60.166	4.152	4.234	60.279
MW15-8	64.898	64.815	58.798	Could not be located			4.575	4.658	60.240
MW15-9	65.253	65.148	59.153	4.854	4.959	60.294	4.654	4.759	60.494
MW15-10	65.043	64.979	58.943	4.665	4.729	60.314	4.508	4.572	60.471
MW15-11	64.571	64.447	58.471	4.032	4.156	60.415	3.999	4.123	60.448
MW15-12	65.596	65.498	58.886	4.966	5.064	60.532	4.912	5.010	60.586
NCC Property									
MW09-1	65.718	65.658	60.828	2.745	2.805	62.913	2.969	3.029	62.689
MW09-2	65.667	65.601	60.777	2.819	2.885	62.782	2.965	3.031	62.636
MW09-3	65.426	65.368	60.536	2.766	2.824	62.602	2.940	2.998	62.428
MW09-5	65.108	65.061	59.008	5.083	5.130	59.978	4.934	4.981	60.127
MW09-6	65.232	65.202	59.132	5.175	5.205	60.027	5.045	5.075	60.157

Notes:

masl = Metres Above Sea Level.

mbtoc = Metres Below Top of Casing.

mbgs = Metres Below Ground Surface.

N/A = Not Accessible.

Table 3. Groundwater Field Parameter Data and Observations

Monitoring Well ID	Sampling Date (mm/dd/yy)	Water Level Data			Field Parameters					Laboratory Analyses					General Observations
		Initial Depth to Water (mbtoc)	Final Depth to Water (mbtoc)	Total Drawdown (m)	pH (pH units)	Specific Conductance (uS/cm)	Dissolved Oxygen (mg/L)	Temperature (ºC)	Oxidation Reduction Potential (ORP) (mV)	PHC	PAH	Metals	GWC	Chloroform	
MW15-1	05/29/19	2.500	2.590	0.090	6.98	2943	0.58	9.80	138.9	✓	✓	✓	✓	✓	Cloudy, no sheen or odour.
	10/24/19	2.934	3.074	0.140	6.91	1681	1.12	14.67	-45.8	✓	✓	✓	✓	✓	Clear, no sheen or odour.
MW15-2	05/29/19	5.129	5.131	0.002	7.51	2345	5.45	9.80	144.5	✓	✓	✓	✓	✓	Clear, no sheen or odour.
	10/24/19	4.895	4.900	0.005	7.36	1471	5.85	14.40	53.5	✓	✓	✓	✓	✓	Clear, no sheen or odour.
MW15-3	05/29/19	4.855	4.860	0.005	7.58	3299	4.53	11.90	141.6	✓	✓	✓	✓	✓	Cloudy, no sheen or odour.
	10/24/19	4.650	4.651	0.001	7.23	2899	9.06	15.63	45.9	✓	✓	✓	✓	✓	Cloudy brown, no sheen or odour.
MW15-4	05/29/19	2.900	2.901	0.001	7.13	3058	0.87	8.80	195.2	✓	✓	✓	✓	✓	Clear with brown globules, no sheen or odour. Well was purged dry prior to sampling.
	10/24/19	4.175	4.225	0.050	6.92	1391	1.06	15.67	83.4	✓	✓	✓	✓	✓	Cloudy brown, no sheen or odour.
MW15-5	05/29/19	4.762	4.772	0.010	6.97	2481	1.10	11.00	201.4	✓	✓	✓	✓	✓	Clear, no sheen or odour.
	10/23/19	4.711	4.720	0.009	6.92	1853	1.82	13.24	270.9	✓	✓	✓	✓	✓	Cloudy brown, no sheen or odour.
MW15-6	05/29/19	4.316	4.325	0.009	7.32	4092	0.51	10.60	218.4	✓	✓	✓	✓	✓	Clear, no sheen or odour.
	10/24/19	4.220	4.223	0.003	6.79	4747	5.55	15.27	263.3	✓	✓	✓	✓	✓	Cloudy brown, no sheen or odour.
MW15-7	05/29/19	4.224	4.235	0.011	6.64	3376	3.98	9.00	216.6	✓	✓	✓	✓	✓	Cloudy, no sheen or odour.
	10/24/19	4.222	4.223	0.001	6.85	1810	5.94	13.57	234.4	✓	✓	✓	✓	✓	Clear, no sheen or odour.
MW15-8	05/29/19	-	-	-	-	-	-	-	-	-	-	-	-	-	Could not be located.
	10/23/19	4.615	4.620	0.005	6.88	1135	6.88	13.52	262.6	✓	✓	✓	✓	✓	Clear, no sheen or odour.
MW15-9	05/29/19	4.809	4.813	0.004	7.13	2131	5.28	12.30	211.6	✓	✓	✓	✓	✓	Cloudy, no sheen or odour.
	10/23/19	4.691	4.693	0.002	7.10	2897	11.22	15.02	305.2	✓	✓	✓	✓	✓	Cloudy brown, no sheen or odour.
MW15-10	05/28/19	4.625	4.675	0.050	6.89	2790	0.82	10.70	214.2	✓	✓	✓	✓	✓	Clear, no sheen or odour.
	10/23/19	4.560	4.582	0.022	7.21	603	9.05	13.35	260.7	✓	✓	✓	✓	✓	Cloudy brown, no sheen or odour.
MW15-11	05/28/19	3.999	4.001	0.002	7.45	1788	2.69	12.40	190.5	✓	✓	✓	✓	✓	Clear, no sheen or odour.
	10/23/19	4.049	4.051	0.002	7.15	966	4.35	14.61	261.3	✓	✓	✓	✓	✓	Cloudy brown, no sheen or odour.
MW15-12	05/28/19	4.942	4.945	0.003	7.45	4366	7.24	9.10	237.7	✓	✓	✓	✓	✓	Clear, no sheen or odour.
	10/23/19	4.971	4.972	0.001	7.32	552	4.56	13.05	263.1	✓	✓	✓	✓	✓	Cloudy brown, no sheen or odour.

Notes:
Water Level Data as Recorded During Low-Flow Sampling.
Field Parameters Measured using a YSI 556 Multi-Parameter Water Quality Monitoring Instrument.
mbtoc = Metres Below Top of Casing.
PHC = Petroleum Hydrocarbons.
PAH = Polynuclear Aromatic Hydrocarbons.
Metals = Sb, As, Ba, Be, B, Cd, Ca, Cr, Cr(vi), Co, Cu, Fe, Pb, Mg, Hg, Mo, Ni, Se, Ag, Na, Th, V, Zn.
GWC = General Water Chemistry (pH, alkalinity, ammonia, conductivity, chloride, nitrate, sulphate, biochemical oxygen demand [BOD], chemical oxygen demand [COD], dissolved organic carbon [DOC], total dissolved solids [TDS]).

Notes on Ground Water Analytical Summary Tables

All Units Reported in Micrograms per Litre (µg/L) or Milligrams per Litre (mg/L) as Indicated .

RDL = Laboratory Analytical Method Reporting Detection Limit.

RL = MOE 2011 Analytical Protocol Reporting Limit.

DUP = Quality Assurance/Quality Control Duplicate Sample.

RPD = Relative Percent Difference (Between Primary and Duplicate Samples).

* Denotes Recommended RPD Alert Criterion Exceeded, However, Parameter Concentration Less than 10 Times Laboratory RDL.

PHC = Petroleum Hydrocarbons.

< = Less Than Laboratory Analytical Method Detection Limit.

- = Not Analyzed or No Published Value.

55	Parameter Concentration May Exceed EPA Table 3 Site Condition Standard for Non-Potable Groundwater Use due to Elevated MDL Reported by the Laboratory.
183	Parameter Concentration Exceeds EPA Table 3 Site Condition Standard for Non-Potable Groundwater Use (Table 3).
2630	Parameter Concentration Exceeds Property Specific Standard as per Certificate of Property Use 0731-8TYQMY.

a = For a Site to Meet This Standard There Must be no Evidence of Free Product, Including but not Limited to, Visible Petroleum Hydrocarbon Film or Sheen Present on Groundwater, Surface Water or in any Groundwater or Surface Water Samples.

b = The Methyl Naphthalene Standards are Applicable to Both 1-Methyl Naphthalene and 2-Methyl Naphthalene, with the Provision that if Both are Detected the Sum of the Two Must not Exceed the Standard.

c = Value adopted from Table A of Guidance for Addressing Chloroform at a Record of Site Condition Property (MOECC, undated).

2011 EPA Standards = Soil, Ground Water and Sediment Standards for Use under Part XV.1 of the Environmental Protection Act, Ontario Ministry of the Environment (MOE), April 15, 2011.

Property Specific Standards as per Certificate of Property Use 0371-8TYQMY issued by the MECP on November 25, 2013.

Table 4a. Summary of Groundwater Analyses - Spring 2019

Parameters	RDL	RL	Full Depth Site Condition Standards - Non-Potable Groundwater (Table 3)	Property Specific Standards (as per Certificate of Property Use 0371-8TYQMY)	MW15-1 MW15-1 CPU Property 1922365-01 5/29/2019	MW15-2 MW15-2 CPU Property 1922365-02 5/29/2019	MW15-3 MW15-3 CPU Property 1922365-03 5/29/2019	MW15-4 MW15-4 CPU Property 1922365-04 5/29/2019	MW15-5 MW15-5 CPU Property 1922365-05 5/29/2019	MW15-6 MW15-6 CPU Property 1922365-06 5/29/2019	MW15-6 DUP-2 CPU Property 1922365-09 5/29/2019	MW15-6 Average	MW15-6 RPD (%)	MW15-7 MW15-7 CPU Property 1922365-07 5/29/2019	MW15-8 MW15-8 CPU Property 1922365-08	MW15-9 MW15-9 CPU Property 1922365-08 5/29/2019	MW15-10 MW15-10 CPU Property 1922264-08 5/28/2019
General Inorganic Parameters (mg/L)																	
pH (pH units)	0.1	-	-	-	7.5	7.8	7.8	7.6	7.6	7.8	7.8	7.8	0.0%	7.4		7.9	7.3
Alkalinity (CaCO3)	5	-	-	-	394	267	230	562	355	260	261	261	0.4%	349	247.0	247	400
Ammonia	0.01	-	-	4.524	1.08	0.03	0.07	3	0.31	0.06	0.06	0.06	0.0%	0.05		0.05	0.08
Conductivity (µS/cm)	5	-	-	-	2730	2230	3190	2890	2480	3550	3680	3615	3.6%	3200		2060	2570
Chloride	1	1	2300	-	676	329	820	488	510	1020	955	988	6.6%	795		354	394
Nitrate (N)	0.1	0.1	-	-	< 0.1	5.2	4.6	< 0.1	0.3	3.4	3.5	3.5	2.9%	4.7		3.5	1.5
Sulphate	1	-	-	-	104	461	260	405	225	204	190	197	7.1%	175		342	454
Biological Oxygen Demand (BOD)	2	-	-	-	< 2	< 2	< 2	< 2	< 2	< 2	4	4	-	< 2		4	ND (4)
Chemical Oxygen Demand (COD)	10	-	-	-	15	< 10	45	17	< 10	< 10	11	11	-	28		11	95
Dissolved Organic Carbon	0.5	-	-	-	2.3	0.6	< 0.5	4.6	2.4	< 0.5	0.8	0.8	-	7.5		0.9	30.3
Hardness	-	-	-	-	516	483	699	1040	788	503	501	502	0.4%	823		519	477
Total Dissolved Solids	10	-	-	-	1580	1470	2070	1960	1570	2180	2120	2150	2.8%	2080		1300	1670
Volatile Organic Compounds (µg/L)																	
Chloroform	0.5	1	240 [c]	22	< 0.5	4.3	2.2	< 0.5	< 0.5	< 0.5	1.6	< 1.05	-	< 0.5	1.6	1.6	< 0.5
Petroleum Hydrocarbons (µg/L)																	
PHC F1 (C6 - C10) [a]	25	25	750	-	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	-	< 25	< 25	< 25	< 25
PHC F2 (>C10 - C16) [a]	100	100	150	-	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	-	< 100	< 100	< 100	< 100
PHC F3 (>C16 - C34) [a]	100	500	500	-	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	-	< 100	< 100	< 100	< 100
PHC F4 (>C34) [a]	100	500	500	-	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	-	< 100	< 100	< 100	< 100
Polynuclear Aromatic Hydrocarbons (µg/L)																	
Acenaphthene	0.05	1	600	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05		< 0.05	< 0.05
Acenaphthylene	0.05	1	1.8	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05		< 0.05	< 0.05
Anthracene	0.05	0.1	2.4	-	< 0.01	< 0.01	0.02	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	-	< 0.01		< 0.01	< 0.01
Benzo(a)anthracene	0.01	0.2	4.7	-	< 0.01	< 0.01	0.07	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	-	< 0.01		< 0.01	< 0.01
Benzo(a)pyrene	0.01	0.01	0.81	-	< 0.01	< 0.01	0.08	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	-	< 0.01		< 0.01	< 0.01
Benzo(b)fluoranthene	0.01	0.1	0.75	-	< 0.05	< 0.05	0.11	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05		< 0.05	< 0.05
Benzo(g,h,i)perylene	0.05	0.2	0.2	-	< 0.05	< 0.05	0.08	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05		< 0.05	< 0.05
Benzo(k)fluoranthene	0.05	0.1	0.4	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05		< 0.05	< 0.05
Chrysene	0.05	0.1	1	-	< 0.05	< 0.05	0.08	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05		< 0.05	< 0.05
Dibenzo(a,h)anthracene	0.05	0.2	0.52	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05		< 0.05	< 0.05
Fluoranthene	0.01	0.4	130	-	0.04	< 0.01	0.13	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	-	< 0.01		< 0.01	< 0.01
Fluorene	0.05	0.5	400	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05		< 0.05	< 0.05
Indeno(1,2,3,c,d)pyrene	0.05	0.2	0.2	-	< 0.05	< 0.05	0.06	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05		< 0.05	< 0.05
Methylnaphthalene, 1-[b]	0.05	2	1800	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05		< 0.05	< 0.05
Methylnaphthalene, 2-[b]	0.05	2		-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05		< 0.05	< 0.05
Naphthalene	0.05	2	1400	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05		< 0.05	< 0.05
Phenanthrene	0.05	0.1	580	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05		< 0.05	< 0.05
Pyrene	0.01	0.2	68	-	0.04	< 0.01	0.13	< 0.01	0.02	< 0.01	< 0.01	< 0.01	-	< 0.01		< 0.01	< 0.01
Metals (µg/L)																	
Antimony	0.5	0.5	20000	-	< 0.5	< 0.5	< 0.5	0.6	< 0.5	< 0.5	< 0.5	< 0.5	-	< 0.5		< 0.5	< 0.5
Arsenic	1	1	1900	-	< 1	< 1	< 1	2	< 1	< 1	< 1	< 1	-	< 1		< 1	< 1
Barium	1	2	29000	-	619	116	150	87	181	63	64	63.5	1.6%	249		36	56
Beryllium	0.5	0.5	67	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	< 0.5		< 0.5	< 0.5
Boron	10	10	45000	-	45	29	39	79	69	38	42	40	-	47		58	33
Cadmium	0.1	0.5	2.7	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	-	< 0.1		< 0.1	< 0.1
Calcium	100	-	-	-	161000	154000	226000	326000	267000	159000	161000	160000	1.3%	268000		156000	153000
Chromium	1	10	810	-	< 1	< 1	3	< 1	< 1	< 1	3	3	-	< 1		< 1	1
Chromium (VI)	10	10	140	-	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	-	< 10		< 10	< 10
Cobalt	0.5	1	66	-	< 0.5	< 0.5	< 0.5	1.8	1.3	< 0.5	< 0.5	< 0.5	-	< 0.5		3.6	1.1
Copper	0.5	5	87	-	< 0.5	1.8	2.5	0.7	3.1	11.5	13.2	12.35	13.8%	4		9	11.4
Iron	100	-	-	24240	19400	< 100	< 100	14200	< 100	< 100	< 100	< 100	-	< 100		< 100	< 100
Lead	0.1	1	25	-	< 0.1	< 0.1	< 0.1	0.3	< 0.1	< 0.1	< 0.1	< 0.1	-	< 0.1		< 0.1	< 0.1
Magnesium	200	-	-	-	27500	23900	32600	55600	29600.0	26000	24300	25150	6.8%	37300		24300	23300
Mercury	0.1	0.1	0.29	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	-	< 0.1		< 0.1	< 0.1
Molybdenum	0.5	0.5	9200	-	< 0.5	4.2	1	2.1	0.6	2.1	2.2	2.15	-	11.6		7.2	< 0.5
Nickel	1	1	490	-	< 1	1	< 1	4	4	2	4	3	-	1		19	7
Selenium	1	5	63	-	< 1	1	2	< 1	< 1	2	1	1.5	-	< 1		< 1	< 1
Silver	0.1	0.3	1.5	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	-	< 0.1		< 0.1	< 0.1
Sodium	200	5000	2300000	-	395000	308000	414000	307000	267000	571000	603000	587000	5.5%	340000		279000	399000
Thallium	0.1	0.5	510	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	-	< 0.1		< 0.1	< 0.1
Uranium	0.1	2	420	-	< 0.1	2.7	1.7	1	0.7	1.9	2	1.95	5.1%	1.3		2	1.8
Vanadium	0.5	0.5	250	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.5	0.5	0.5	-	0.9		< 0.5	0.7
Zinc	5	5	1100	-	9	< 5	< 5	228	< 5	6	8	7	-	< 5		< 5	6

Table 4a. Summary of Groundwater Analyses - Spring 2019

Parameters	RDL	RL	Full Depth Site Condition Standards - Non-Potable Groundwater (Table 3)	Property Specific Standards (as per Certificate of Property Use 0371-8TYQMY)	MW15-11 MW15-11 CPU Property 1922264-07 5/28/2019	MW15-12 MW15-12 CPU Property 1922264-06 5/28/2019	MW15-12 DUP-1 CPU Property 1922264-09 5/28/2019	MW15-12 Average	MW15-12 RPD (%)	Trip Blank Trip Blank 1922264-10 5/27/2019	Trip Blank Trip Blank 1922365-10 5/27/2019						
General Inorganic Parameters (mg/L)																	
pH (pH units)	0.1	-	-	-	7.7	7.8	7.8	7.8	0.0%	-	-						
Alkalinity (CaCO3)	5	-	-	-	288	301	300	301	0.3%	-	-						
Ammonia	0.01	-	-	4.524	0.02	0.02	0.03	0.025	40.0%	-	-						
Conductivity (µS/cm)	5	-	-	-	1840	3960	3980	3970	0.5%	-	-						
Chloride	1	1	2300	-	375	1060	1070	1065	0.9%	-	-						
Nitrate (N)	0.1	0.1	-	-	1.1	0.8	0.8	0.8	0.0%	-	-						
Sulphate	1	-	-	-	144	320	320	320	0.0%	-	-						
Biological Oxygen Demand (BOD)	2	-	-	-	< 2	< 2	< 2	< 2	-	-	-						
Chemical Oxygen Demand (COD)	10	-	-	-	< 10	18	27	23	-	-	-						
Dissolved Organic Carbon	0.5	-	-	-	1	1.5	1.4	1.45	6.9%	-	-						
Hardness	-	-	-	-	466	569	553	561	2.9%	-	-						
Total Dissolved Solids	10	-	-	-	1070	2300	2340	2320	1.7%	-	-						
Volatile Organic Compounds (µg/L)																	
Chloroform	0.5	1	240 [c]	22	< 0.5	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5						
Petroleum Hydrocarbons (µg/L)																	
PHC F1 (C6 - C10) [a]	25	25	750	-	< 25	< 25	< 25	< 25	-	-	-						
PHC F2 (>C10 - C16) [a]	100	100	150	-	< 100	< 100	< 100	< 100	-	-	-						
PHC F3 (>C16 - C34) [a]	100	500	500	-	< 100	< 100	< 100	< 100	-	-	-						
PHC F4 (>C34) [a]	100	500	500	-	< 100	< 100	< 100	< 100	-	-	-						
Polynuclear Aromatic Hydrocarbons (µg/L)																	
Acenaphthene	0.05	1	600	-	< 0.05	< 0.05	< 0.05	< 0.05	-	-	-						
Acenaphthylene	0.05	1	1.8	-	< 0.05	< 0.05	< 0.05	< 0.05	-	-	-						
Anthracene	0.05	0.1	2.4	-	< 0.01	< 0.01	< 0.01	< 0.01	-	-	-						
Benzo(a)anthracene	0.01	0.2	4.7	-	< 0.01	< 0.01	< 0.01	< 0.01	-	-	-						
Benzo(a)pyrene	0.01	0.01	0.81	-	< 0.01	< 0.01	< 0.01	< 0.01	-	-	-						
Benzo(b)fluoranthene	0.01	0.1	0.75	-	< 0.05	< 0.05	< 0.05	< 0.05	-	-	-						
Benzo(g,h,i)perylene	0.05	0.2	0.2	-	< 0.05	< 0.05	< 0.05	< 0.05	-	-	-						
Benzo(k)fluoranthene	0.05	0.1	0.4	-	< 0.05	< 0.05	< 0.05	< 0.05	-	-	-						
Chrysene	0.05	0.1	1	-	< 0.05	< 0.05	< 0.05	< 0.05	-	-	-						
Dibenzo(a,h)anthracene	0.05	0.2	0.52	-	< 0.05	< 0.05	< 0.05	< 0.05	-	-	-						
Fluoranthene	0.01	0.4	130	-	< 0.01	< 0.01	< 0.01	< 0.01	-	-	-						
Fluorene	0.05	0.5	400	-	< 0.05	< 0.05	< 0.05	< 0.05	-	-	-						
Indeno(1,2,3,c,d)pyrene	0.05	0.2	0.2	-	< 0.05	< 0.05	< 0.05	< 0.05	-	-	-						
Methylnaphthalene, 1- [b]	0.05	2	1800	-	< 0.05	< 0.05	< 0.05	< 0.05	-	-	-						
Methylnaphthalene, 2- [b]	0.05	2		-	< 0.05	< 0.05	< 0.05	< 0.05	-	-	-						
Naphthalene	0.05	2	1400	-	< 0.05	< 0.05	< 0.05	< 0.05	-	-	-						
Phenanthrene	0.05	0.1	580	-	< 0.05	< 0.05	< 0.05	< 0.05	-	-	-						
Pyrene	0.01	0.2	68	-	< 0.01	< 0.01	< 0.01	< 0.01	-	-	-						
Metals (µg/L)																	
Antimony	0.5	0.5	20000	-	< 0.5	< 0.5	< 0.5	< 0.5	-	-	-						
Arsenic	1	1	1900	-	< 1	< 1	< 1	< 1	-	-	-						
Barium	1	2	29000	-	160	93	87	90	6.7%	-	-						
Beryllium	0.5	0.5	67	-	< 0.5	< 0.5	< 0.5	< 0.5	-	-	-						
Boron	10	10	45000	-	30	46	57	52	-	-	-						
Cadmium	0.1	0.5	2.7	-	< 0.1	< 0.1	< 0.1	< 0.1	-	-	-						
Calcium	100	-	-	-	141000	173000	171000	172000	1.2%	-	-						
Chromium	1	10	810	-	< 1	< 1	< 1	< 1	-	-	-						
Chromium (VI)	10	10	140	-	< 10	< 10	< 10	< 10	-	-	-						
Cobalt	0.5	1	66	-	< 0.5	< 0.5	< 0.5	< 0.5	-	-	-						
Copper	0.5	5	87	-	1	2.2	2.3	2.3	-	-	-						
Iron	100	-	-	24240	< 100	< 100	< 100	< 100	-	-	-						
Lead	0.1	1	25	-	< 0.1	0.2	0.3	0.3	-	-	-						
Magnesium	200	-	-	-	28000	33100	30500	31800	8.2%	-	-						
Mercury	0.1	0.1	0.29	-	< 0.1	< 0.1	< 0.1	< 0.1	-	-	-						
Molybdenum	0.5	0.5	9200	-	0.6	0.9	0.9	0.9	-	-	-						
Nickel	1	1	490	-	< 1	< 1	< 1	< 1	-	-	-						
Selenium	1	5	63	-	< 1	< 1	< 1	< 1	-	-	-						
Silver	0.1	0.3	1.5	-	< 0.1	< 0.1	< 0.1	< 0.1	-	-	-						
Sodium	200	5000	2300000	-	181000	614000	622000	618000	1.3%	-	-						
Thallium	0.1	0.5	510	-	< 0.1	< 0.1	< 0.1	< 0.1	-	-	-						
Uranium	0.1	2	420	-	1	1.9	1.8	1.9	5.4%	-	-						
Vanadium	0.5	0.5	250	-	< 0.5	< 0.5	< 0.5	< 0.5	-	-	-						
Zinc	5	5	1100	-	6	< 5	6	< 5.5	-	-	-						

Table 4b. Summary of Groundwater Analyses - Fall 2019

Sample Location / Sample ID / Property Location / Laboratory ID / Sample Date			Full Depth Site Condition Standards - Non-Potable Groundwater (Table 3)	Property Specific Standards (as per Certificate of Property Use 0371-8TYQMY)	MW15-1 MW15-1 CPU Property 1943543-01 10/24/2019	MW15-2 MW15-2 CPU Property 1943543-02 10/24/2019	MW15-3 MW15-3 CPU Property 1943543-03 10/24/2019	MW15-4 MW15-4 CPU Property 1943543-04 10/24/2019	MW15-5 MW15-5 CPU Property 1943444-01 10/23/2019	MW15-6 MW15-6 CPU Property 1943543-05 10/24/2019	MW15-7 MW15-7 CPU Property 1943543-06 10/24/2019	MW15-7 DUP-2 CPU Property 1943543-07 10/24/2019	MW15-7 Average	MW15-7 RPD (%)	MW15-8 MW15-8 CPU Property 1943444-02 10/23/2019	MW15-9 MW15-9 CPU Property 1943444-03 10/23/2019	MW15-9 DUP-1 CPU Property 1943444-07 10/23/2019
Parameters	**RDL**	**RL**															
General Inorganic Parameters (mg/L)																	
pH (pH units)	0.1	-	-	-	7.1	7.4	7.5	7.3	7.5	7.4	7.2	7.2	7.2	0.0%	7.7	7.8	7.8
Alkalinity (CaCO3)	5	-	-	-	411	275	307	593	325	338	345	345	345	0.0%	307	268	268
Ammonia	0.01	-	-	4.524	1.02	0.06	0.06	2.95	0.15	0.05	0.07	0.06	0.07	15.4%	0.04	0.03	0.04
Conductivity (µS/cm)	5	-	-	-	2120	1910	3620	1800	2570	5530	2310	2250	2280	2.63%	1660	3220	3230
Chloride	1	1	2300	-	450	348	829	123	479	1470	445	440	443	1.13%	246	587	589
Nitrate (N)	0.1	0.1	-	-	< 0.1	3.9	4.7	< 0.1	0.7	3	1.6	1.6	2	0.0%	1.6	3.7	3.7
Sulphate	1	-	-	-	14	169	276	249	269	309	138	138	138	0.0%	147	495	503
Biological Oxygen Demand (BOD)	2	-	-	-	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	-	< 2	< 2	< 2
Chemical Oxygen Demand (COD)	10	-	-	-	< 10	< 10	29	11	< 10	19	13	17	15	-	< 10	< 10	< 10
Dissolved Organic Carbon	0.5	-	-	-	3.1	1.9	2.3	7	2.7	4.1	6	5.5	5.8	8.70%	2.1	2.6	4.4
Hardness	-	-	-	-	416	511	780	578	611	476	477	77.6	277	144.0%	453	687	687
Total Dissolved Solids	10	-	-	-	1180	1090	2130	1140	1640	3110	1210	1250	1230	3.25%	948	1990	1980
Volatile Organic Compounds (µg/L)																	
Chloroform	0.5	1	240 [c]	22	< 0.5	1.8	1.7	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5	< 0.5
Petroleum Hydrocarbons (µg/L)																	
PHC F1 (C6 - C10) [a]	25	25	750	-	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	-	< 25	< 25	< 25
PHC F2 (>C10 - C16) [a]	100	100	150	-	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	-	< 100	< 100	< 100
PHC F3 (>C16 - C34) [a]	100	500	500	-	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	-	< 100	< 100	< 100
PHC F4 (>C34) [a]	100	500	500	-	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	-	< 100	< 100	< 100
Polynuclear Aromatic Hydrocarbons (µg/L)																	
Acenaphthene	0.05	1	600	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05
Acenaphthylene	0.05	1	1.8	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05
Anthracene	0.05	0.1	2.4	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	-	< 0.01	< 0.01	< 0.01
Benzo(a)anthracene	0.01	0.2	4.7	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	-	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	0.01	0.01	0.81	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	-	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	0.01	0.1	0.75	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05
Benzo(g,h,i)perylene	0.05	0.2	0.2	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05
Benzo(k)fluoranthene	0.05	0.1	0.4	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05
Chrysene	0.05	0.1	1	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05
Dibenzo(a,h)anthracene	0.05	0.2	0.52	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05
Fluoranthene	0.01	0.4	130	-	0.04	< 0.01	0.05	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	-	0.03	< 0.01	< 0.01
Fluorene	0.05	0.5	400	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05
Indeno(1,2,3,c,d)pyrene	0.05	0.2	0.2	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05
Methylnaphthalene, 1- [b]	0.05	2	1800	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05
Methylnaphthalene, 2- [b]	0.05	2		-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05
Naphthalene	0.05	2	1400	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05
Phenanthrene	0.05	0.1	580	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05
Pyrene	0.01	0.2	68	-	0.04	< 0.01	0.05	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	-	0.03	< 0.01	< 0.01
Metals (µg/L)																	
Antimony	0.5	0.5	20000	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.3	< 0.9	-	< 0.5	< 0.5	< 0.5
Arsenic	1	1	1900	-	< 1	< 1	4	< 1	< 1	< 1	< 1	6	< 3.5	-	< 1	< 1	< 1
Barium	1	2	29000	-	98	133	206	150	156	133	131	25	78	135.9%	97	89	86
Beryllium	0.5	0.5	67	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5	< 0.5
Boron	10	10	45000	-	48	45	91	50	69	56	56	28	42	-	44	71	73
Cadmium	0.1	0.5	2.7	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	-	< 0.1	< 0.1	< 0.1
Calcium	100	-	-	-	130000	151000	242000	177000	194000	153000	153000	22700	87850	148.3%	136000	212000	212000
Chromium	1	10	810	-	< 1	< 1	< 1	1	< 1	< 1	< 1	2	< 1.5	-	< 1	1	1
Chromium (VI)	10	10	140	-	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	-	< 10	< 10	< 10
Cobalt	0.5	1	66	-	< 0.5	< 0.5	1.1	2.7	0.9	0.6	0.6	0.6	0.6	-	< 0.5	3.0	3.0
Copper	0.5	5	87	-	2.2	3.4	0.8	7.9	3.3	4.1	3.6	2.9	3.25	21.5%	2.9	3.6	3.2
Iron	100	-	-	24240	< 100	< 100	13800	< 100	< 100	< 100	< 100	715	< 408	-	< 100	< 100	< 100
Lead	0.1	1	25	-	< 0.1	< 0.1	0.1	< 0.1	< 0.1	< 0.1	< 0.1	2.4	< 1.3	-	< 0.1	< 0.1	< 0.1
Magnesium	200	-	-	-	21900	32400	42900	33200	30900	23000	23000	5070	14035	127.8%	27800	37900	37900
Mercury	0.1	0.1	0.29	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	-	< 0.1	< 0.1	< 0.1
Molybdenum	0.5	0.5	9200	-	8.5	4.1	2	1.7	< 0.5	2.3	2.3	4.2	3.25	-	0.5	10.4	10.5
Nickel	1	1	490	-	< 1	< 1	3	14	3	4	4	2	3	-	3	13	13
Selenium	1	5	63	-	1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	-	< 1	< 1	< 1
Silver	0.1	0.3	1.5	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	-	< 0.1	< 0.1	< 0.1
Sodium	200	5000	2300000	-	203000	558000	103000	930000	311000	274000	274000	29100	151550	161.6%	161000	477000	478000
Thallium	0.1	0.5	510	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	-	< 0.1	< 0.1	< 0.1
Uranium	0.1	2	420	-	2.2	2.2	1	5.3	1	0.9	0.9	0.4	0.7	-	0.7	4	3.9
Vanadium	0.5	0.5	250	-	< 0.5	< 0.5	< 0.5	0.8	< 0.5	0.5	0.5	3.6	2.1	-	< 0.5	< 0.5	< 0.5
Zinc	5	5	1100	-	< 5	< 5	98	< 5	< 5	< 5	< 5	8	< 6.5	-	< 5	5	< 5

Table 4b. Summary of Groundwater Analyses - Fall 2019

Parameters	RDL	RL	Full Depth Site Condition Standards - Non-Potable Groundwater (Table 3)	Property Specific Standards (as per Certificate of Property Use 0371-8TYQMY)	MW15-9 Average	MW15-9 RPD (%)	MW15-10 MW15-10 CPU Property 1943444-04 10/23/2019	MW15-11 MW15-11 CPU Property 1943444-05 10/23/2019	MW15-12 MW15-12 CPU Property 1943444-06 10/23/2019	Trip Blank Trip Blank 1943444-08 10/19/2019	Trip Blank Trip Blank 1943543-08 10/21/2019						
General Inorganic Parameters (mg/L)																	
pH (pH units)	0.1	-	-	-	7.8	0.0%	7.6	7.8	8	-	-						
Alkalinity (CaCO3)	5	-	-	-	268	0.0%	256	291	244	-	-						
Ammonia	0.01	-	-	4.524	0.035	28.6%	0.09	0.1	0.04	-	-						
Conductivity (µS/cm)	5	-	-	-	3225	0.31%	1250	1530	757	-	-						
Chloride	1	1	2300	-	588	0.34%	112	260	80	-	-						
Nitrate (N)	0.1	0.1	-	-	3.7	0.0%	0.9	1.1	< 0.1	-	-						
Sulphate	1	-	-	-	499	1.60%	190	89	11	-	-						
Biological Oxygen Demand (BOD)	2	-	-	-	< 2	-	2.0	< 2	< 2	-	-						
Chemical Oxygen Demand (COD)	10	-	-	-	< 10	-	59	17	< 10	-	-						
Dissolved Organic Carbon	0.5	-	-	-	3.5	51.4%	19.2	18.2	14.3	-	-						
Hardness	-	-	-	-	687	0.0%	271	386	128	-	-						
Total Dissolved Solids	10	-	-	-	1985	0.50%	742	820	386	-	-						
Volatile Organic Compounds (µg/L)																	
Chloroform	0.5	1	240 [c]	22	< 0.5	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5						
Petroleum Hydrocarbons (µg/L)																	
PHC F1 (C6 - C10) [a]	25	25	750	-	< 25	-	< 25	< 25	< 25	< 25	< 25						
PHC F2 (>C10 - C16) [a]	100	100	150	-	< 100	-	< 100	< 100	< 100	-	-						
PHC F3 (>C16 - C34) [a]	100	500	500	-	< 100	-	< 100	< 100	< 100	-	-						
PHC F4 (>C34) [a]	100	500	500	-	< 100	-	< 100	< 100	< 100	-	-						
Polynuclear Aromatic Hydrocarbons (µg/L)																	
Acenaphthene	0.05	1	600	-	< 0.05	-	< 0.05	< 0.05	< 0.05	-	-						
Acenaphthylene	0.05	1	1.8	-	< 0.05	-	< 0.05	< 0.05	< 0.05	-	-						
Anthracene	0.05	0.1	2.4	-	< 0.01	-	< 0.01	< 0.01	< 0.01	-	-						
Benzo(a)anthracene	0.01	0.2	4.7	-	< 0.01	-	< 0.01	< 0.01	< 0.01	-	-						
Benzo(a)pyrene	0.01	0.01	0.81	-	< 0.01	-	< 0.01	< 0.01	< 0.01	-	-						
Benzo(b)fluoranthene	0.01	0.1	0.75	-	< 0.05	-	< 0.05	< 0.05	< 0.05	-	-						
Benzo(g,h,i)perylene	0.05	0.2	0.2	-	< 0.05	-	< 0.05	< 0.05	< 0.05	-	-						
Benzo(k)fluoranthene	0.05	0.1	0.4	-	< 0.05	-	< 0.05	< 0.05	< 0.05	-	-						
Chrysene	0.05	0.1	1	-	< 0.05	-	< 0.05	< 0.05	< 0.05	-	-						
Dibenzo(a,h)anthracene	0.05	0.2	0.52	-	< 0.05	-	< 0.05	< 0.05	< 0.05	-	-						
Fluoranthene	0.01	0.4	130	-	< 0.01	-	< 0.01	< 0.01	< 0.01	-	-						
Fluorene	0.05	0.5	400	-	< 0.05	-	< 0.05	< 0.05	< 0.05	-	-						
Indeno(1,2,3,c,d)pyrene	0.05	0.2	0.2	-	< 0.05	-	< 0.05	< 0.05	< 0.05	-	-						
Methylnaphthalene, 1- [b]	0.05	2	1800	-	< 0.05	-	< 0.05	< 0.05	< 0.05	-	-						
Methylnaphthalene, 2- [b]	0.05	2		-	< 0.05	-	< 0.05	< 0.05	< 0.05	-	-						
Naphthalene	0.05	2	1400	-	< 0.05	-	< 0.05	< 0.05	< 0.05	-	-						
Phenanthrene	0.05	0.1	580	-	< 0.05	-	< 0.05	< 0.05	< 0.05	-	-						
Pyrene	0.01	0.2	68	-	< 0.01	-	< 0.01	< 0.01	< 0.01	-	-						
Metals (µg/L)																	
Antimony	0.5	0.5	20000	-	< 0.5	-	< 0.5	< 0.5	< 0.5	-	-						
Arsenic	1	1	1900	-	< 1	-	< 1	< 1	< 1	-	-						
Barium	1	2	29000	-	88	3.43%	32	117	30	-	-						
Beryllium	0.5	0.5	67	-	< 0.5	-	< 0.5	< 0.5	< 0.5	-	-						
Boron	10	10	45000	-	72	2.78%	32	33	38	-	-						
Cadmium	0.1	0.5	2.7	-	< 0.1	-	< 0.1	< 0.1	< 0.1	-	-						
Calcium	100	-	-	-	212000	0.0%	84000	116000	40300	-	-						
Chromium	1	10	810	-	1	-	< 1	< 1	< 1	-	-						
Chromium (VI)	10	10	140	-	< 10	-	< 10	< 10	< 10	-	-						
Cobalt	0.5	1	66	-	3	0.0%	< 0.5	< 0.5	< 0.5	-	-						
Copper	0.5	5	87	-	3.4	11.8%	7.6	2.7	6.5	-	-						
Iron	100	-	-	24240	< 100	-	< 100	< 100	< 100	-	-						
Lead	0.1	1	25	-	< 0.1	-	< 0.1	< 0.1	0.1	-	-						
Magnesium	200	-	-	-	37900	0.0%	14900	23100	6660	-	-						
Mercury	0.1	0.1	0.29	-	< 0.1	-	< 0.1	< 0.1	< 0.1	-	-						
Molybdenum	0.5	0.5	9200	-	10.5	0.96%	0.9	0.8	1.9	-	-						
Nickel	1	1	490	-	13	0.0%	2	1.0	< 1	-	-						
Selenium	1	5	63	-	< 1	-	< 1	< 1	< 1	-	-						
Silver	0.1	0.3	1.5	-	< 0.1	-	< 0.1	< 0.1	< 0.1	-	-						
Sodium	200	5000	2300000	-	477500	0.21%	149000	169000	112000	-	-						
Thallium	0.1	0.5	510	-	< 0.1	-	< 0.1	< 0.1	< 0.1	-	-						
Uranium	0.1	2	420	-	4	2.53%	1	1	0.6	-	-						
Vanadium	0.5	0.5	250	-	< 0.5	-	0.9	0.5	0.8	-	-						
Zinc	5	5	1100	-	5	-	8	< 5	6	-	-						

Table 5. Landfill Gas Monitoring Data

Monitor ID	MTM Coordinates		Ground Surface Elevation (masl)	Screen Interval (mbgs)	Geologic Media Intersected by Screen	Monitoring Date	In-Situ Measurements							Comments (Status of Landfill Gas Probes)
	Easting	Northing					Methane (CH_4)			Carbon Dioxide (%)	Oxygen (%)	Balance Gases (%)	Relative Pressure (Inches of Water)	
							% v/v		% LEL					
							Initial and/or Peak	Long Term and/or Stable	Long Term and/or Stable	Long Term and/or Stable	Long Term and/or Stable	Long Term and/or Stable		
GP15-1	368878.435	5029083.949	65.043	1.52 - 3.05	Overburden	19-Feb-19	0.1	0.0	0.0	7.7	2.1	90.2	0.0	Good Condition
						27-May-19	0.0	0.0	0.0	7.4	7.1	85.5	0.0	Good Condition
						7-Aug-19	0.0	0.0	0.0	7.0	12.6	80.2	0.0	Good Condition
						28-Nov-19	0.0	0.0	0.0	5.2	11.1	83.6	0.0	Good Condition
GP15-2	368835.264	5029365.156	65.228	1.52 - 3.05	Overburden	19-Feb-19	-	-	-	-	-	-	-	Could Not Locate
						27-May-19	0.0	0.0	0.0	3.0	12.3	84.7	0.6	Good Condition
						7-Aug-19	0.0	0.0	0.0	4.3	10.4	85.3	0.0	Good Condition
						28-Nov-19	0.0	0.0	0.0	3.7	12.8	83.5	0.2	Good Condition
GP15-3	368835.685	5029306.220	65.067	1.52 - 3.05	Overburden	19-Feb-19	-	-	-	-	-	-	-	Could Not Locate
						27-May-19	0.0	0.0	0.0	0.9	19.1	80.0	0.5	Good Condition
						7-Aug-19	0.0	0.0	0.0	2.6	15.4	81.9	0.0	Good Condition
						28-Nov-19	0.0	0.0	0.0	0.5	20.9	78.5	0.5	Good Condition
GP15-4	368893.417	5029339.143	-	1.52 - 3.05	Overburden	19-Feb-19	0.0	0.0	0.0	7.5	1.2	91.3	0.0	Good Condition
						27-May-19	0.0	0.0	0.0	7.0	4.4	88.6	0.1	Good Condition
						7-Aug-19	0.0	0.0	0.0	13.1	6.1	80.6	0.0	Good Condition
						28-Nov-19	0.1	0.0	0.0	10.7	2.2	87.0	0.0	Good Condition
GP15-5	368837.499	5029252.218	-	0.91 - 2.44	Overburden	19-Feb-19	-	-	-	-	-	-	-	Could Not Locate
						27-May-19	0.0	0.0	0.0	2.3	16.9	80.8	0.0	Good Condition
						7-Aug-19	0.0	0.0	0.0	5.2	10.2	84.6	0.0	Good Condition
						28-Nov-19	0.0	0.0	0.0	3.1	16.8	80.1	0.1	Good Condition
GP15-6	368875.492	5029271.998	-	0.61 - 2.13	Overburden	19-Feb-19	0.0	0.0	0.0	4.1	0.4	95.5	0.0	Good Condition
						27-May-19	0.2	0.2	0.0	4.9	0.0	94.8	0.1	Good Condition
						7-Aug-19	0.0	0.0	0.0	7.4	0.7	91.9	0.0	Good Condition
						28-Nov-19	0.4	0.3	0.0	4.7	0.0	95.0	0.0	Good Condition
GP15-7	368931.653	5029294.223	-	0.91 - 2.44	Overburden	19-Feb-19	-	-	-	-	-	-	-	Could Not Locate
						27-May-19	0.0	0.0	0.0	5.5	15.6	78.9	0.0	Good Condition
						7-Aug-19	0.0	0.0	0.0	6.2	12.9	80.8	0.0	Good Condition
						28-Nov-19	0.0	0.0	0.0	2.9	18.6	78.4	0.1	Good Condition
GP15-8	368865.766	5029240.857	65.319	1.52 - 3.05	Overburden	19-Feb-19	-	-	-	-	-	-	-	Could Not Locate
						27-May-19	0.0	0.0	0.0	4.7	5.6	89.7	0.1	Good Condition
						7-Aug-19	0.0	0.0	0.0	8.9	5.7	85.4	0.0	Good Condition
						28-Nov-19	0.0	0.0	0.0	2.6	15.8	81.6	0.0	Good Condition
GP15-9	368950.930	5029210.490	64.924	1.52 - 3.05	Overburden	19-Feb-19	0.1	0.1	0.0	3.9	16.3	79.8	0.0	Good Condition
						27-May-19	0.0	0.0	0.0	4.7	13.3	82.0	0.0	Good Condition
						7-Aug-19	0.0	0.0	0.0	6.1	15.8	78.1	0.0	Good Condition
						28-Nov-19	0.0	0.0	0.0	4.8	16.6	78.7	0.0	Good Condition
GP15-10	368843.807	5029183.520	64.680	0.91 - 2.13	Overburden	19-Feb-19	-	-	-	-	-	-	-	Could Not Locate
						27-May-19	0.0	0.0	0.0	4.3	5.0	90.7	0.2	Good Condition
						7-Aug-19	0.0	0.0	0.0	5.5	13.8	80.7	0.0	Good Condition
						28-Nov-19	0.0	0.0	0.0	3.8	19.1	77.1	0.2	Good Condition

Notes:

masl = Metres above sea level.

mbgs - Metres below ground surface.

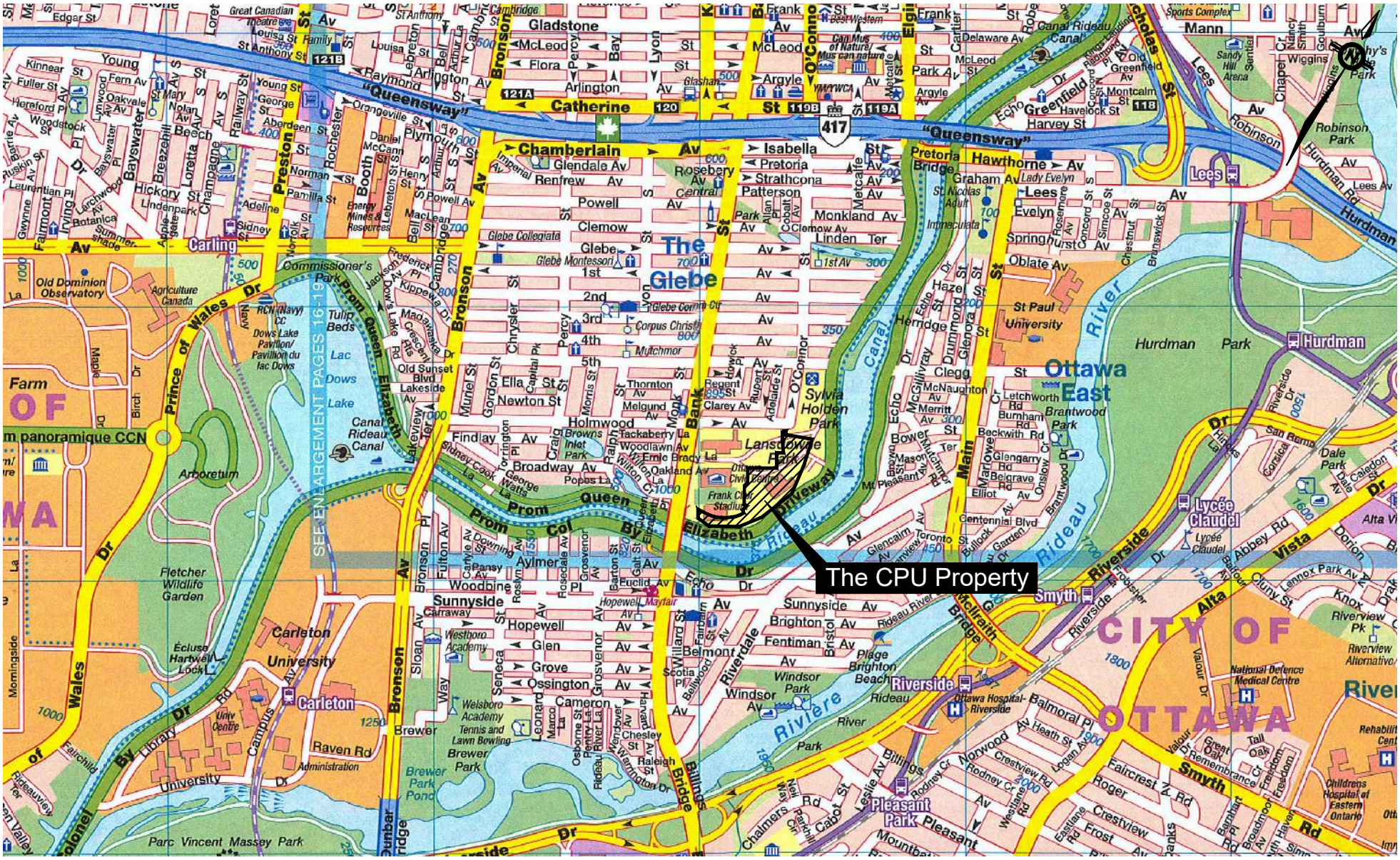
Monitoring performed using a Landtec GEM 2000 Landfill Gas Analyzer.

>>> = Methane over Detectable Range of the Instrument.

2.5	Percent Methane by Volume Exceeds MOE Regulation 232/98 for Landfill Property Boundary Subsurface.
1	Percent Methane by Volume Exceeds MOE Regulation 232/98 for Landfill On-Site Building or Foundation.
0.05	Percent Methane by Volume Exceeds MOE Regulation 232/98 for Landfill Off-Site Building or Foundation.

Figures

\\OTT-FS1\PROJECTS\2010\TZ101001.06 - CPU IMPLEMENTATION\05_CAD\CPU - ANNUAL REPORT\LANSDOWNE PARK - KEY PLAN.DWG



SOURCE: STREET ATLAS OF OTTAWA AND ENVIRONS, MAPART, 2010

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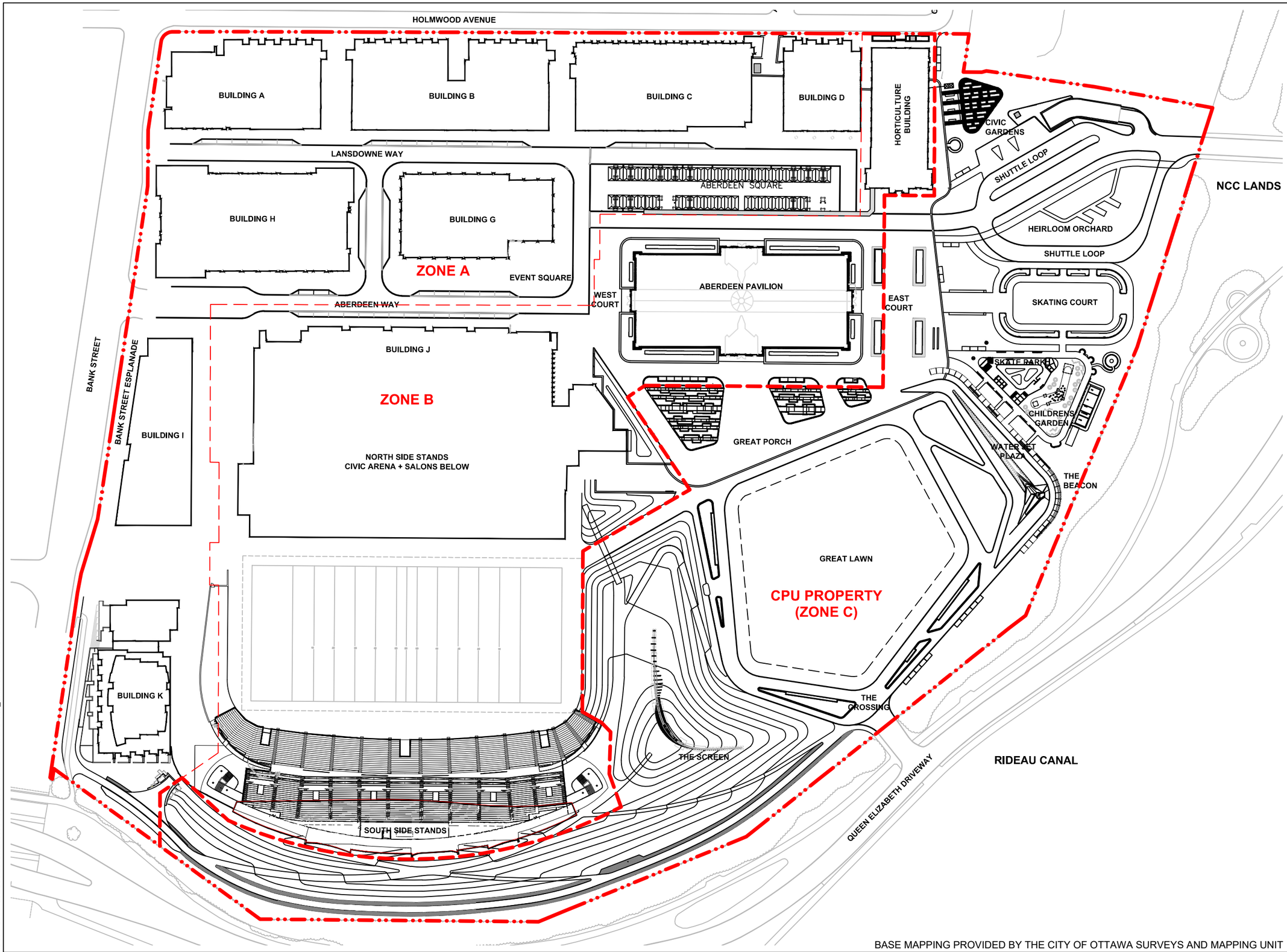
DATE: MARCH 2020		PROJECT NO: TZ10100106	FIGURE NO: 1
DRAWN BY: JFT	CHECKED BY: KDH	SCALE: 1 : 20,000	



LEGEND

- LANSDOWNE PARK PROPERTY BOUNDARY
- URBAN PARK (ZONE C) BOUNDARY
- ZONES A-B BOUNDARY

15 0 15 30 45
METRES

wood.

TITLE:

GENERALIZED SITE PLAN

PROJECT:

2019 ANNUAL REPORT

LANSDOWNE PARK - CPU PROPERTY
450 QUEEN ELIZABETH DRIVEWAY
OTTAWA, ONTARIO

CLIENT:

Ottawa

DESIGNED BY:	KDH
DRAWN BY:	JFT
CHECKED BY:	KDH
DATE:	MARCH 2020
SCALE:	1 : 1,600
PROJECT NO:	TZ10100106
FIGURE NO:	2

BASE MAPPING PROVIDED BY THE CITY OF OTTAWA SURVEYS AND MAPPING UNIT

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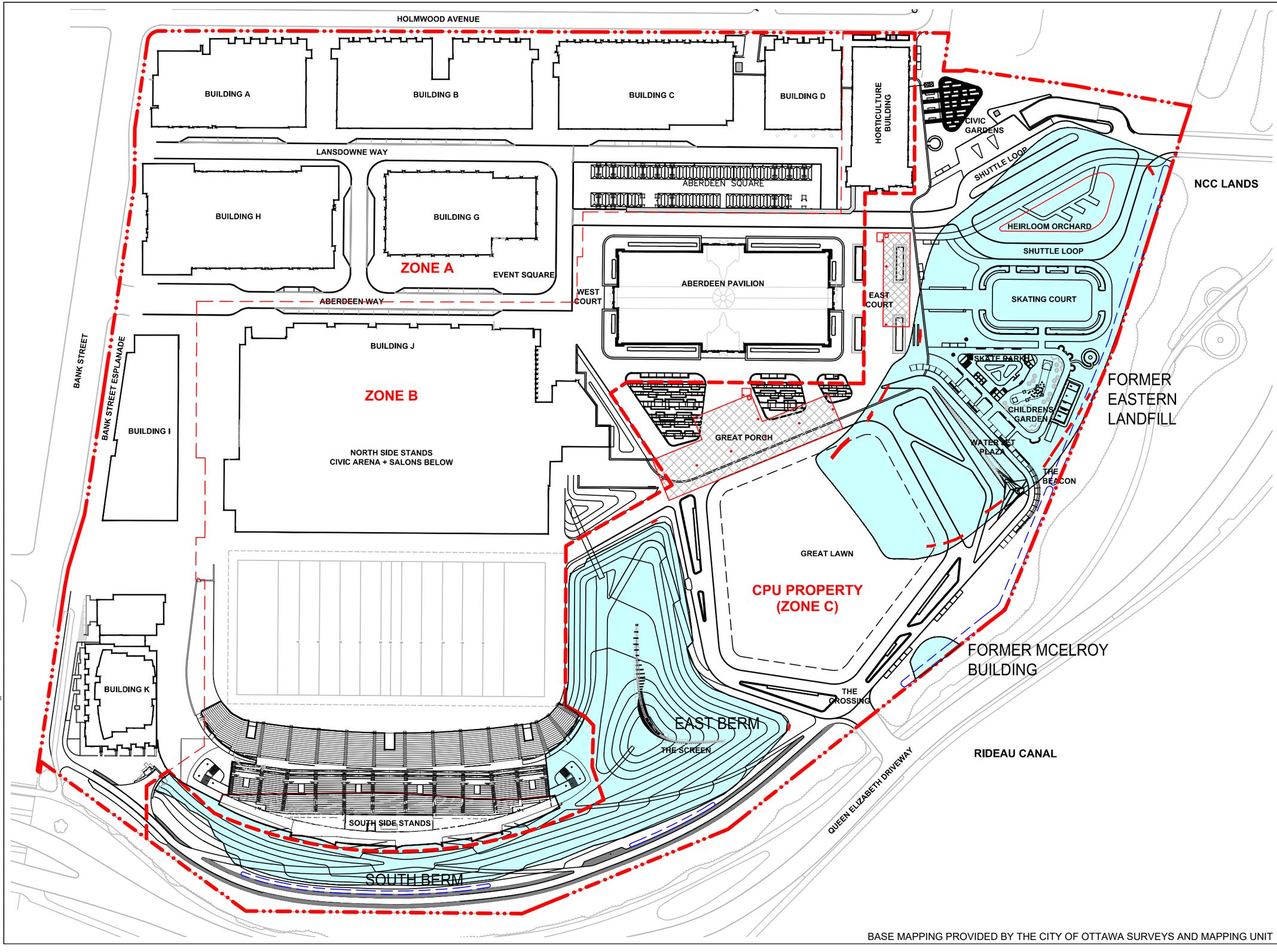

LEGEND

- LANSDOWNE PARK PROPERTY BOUNDARY
- URBAN PARK (ZONE C) BOUNDARY
- EXTENT OF NON-WOVEN GEOTEXTILE AND SOFT SOIL OR HARD CAP
- LOCATION OF CLAY SEAL IN SUBSURFACE UTILITY
- PERIMETER DRAINAGE SWALE
- UNDERGROUND STORMWATER TANK

15 0 15 30 45
METRES

BASE MAPPING PROVIDED BY THE CITY OF OTTAWA SURVEYS AND MAPPING UNIT

TITLE:

RISK MANAGEMENT MEASURES

PROJECT:

2019 ANNUAL REPORT

LANSDOWNE PARK - CPU PROPERTY
450 QUEEN ELIZABETH DRIVEWAY
OTTAWA, ONTARIO

CLIENT:

DESIGNED BY:	KDH
DRAWN BY:	JFT
CHECKED BY:	KDH
DATE:	MARCH 2020
SCALE:	1 : 1,600
PROJECT NO:	TZ10100106
FIGURE NO:	3

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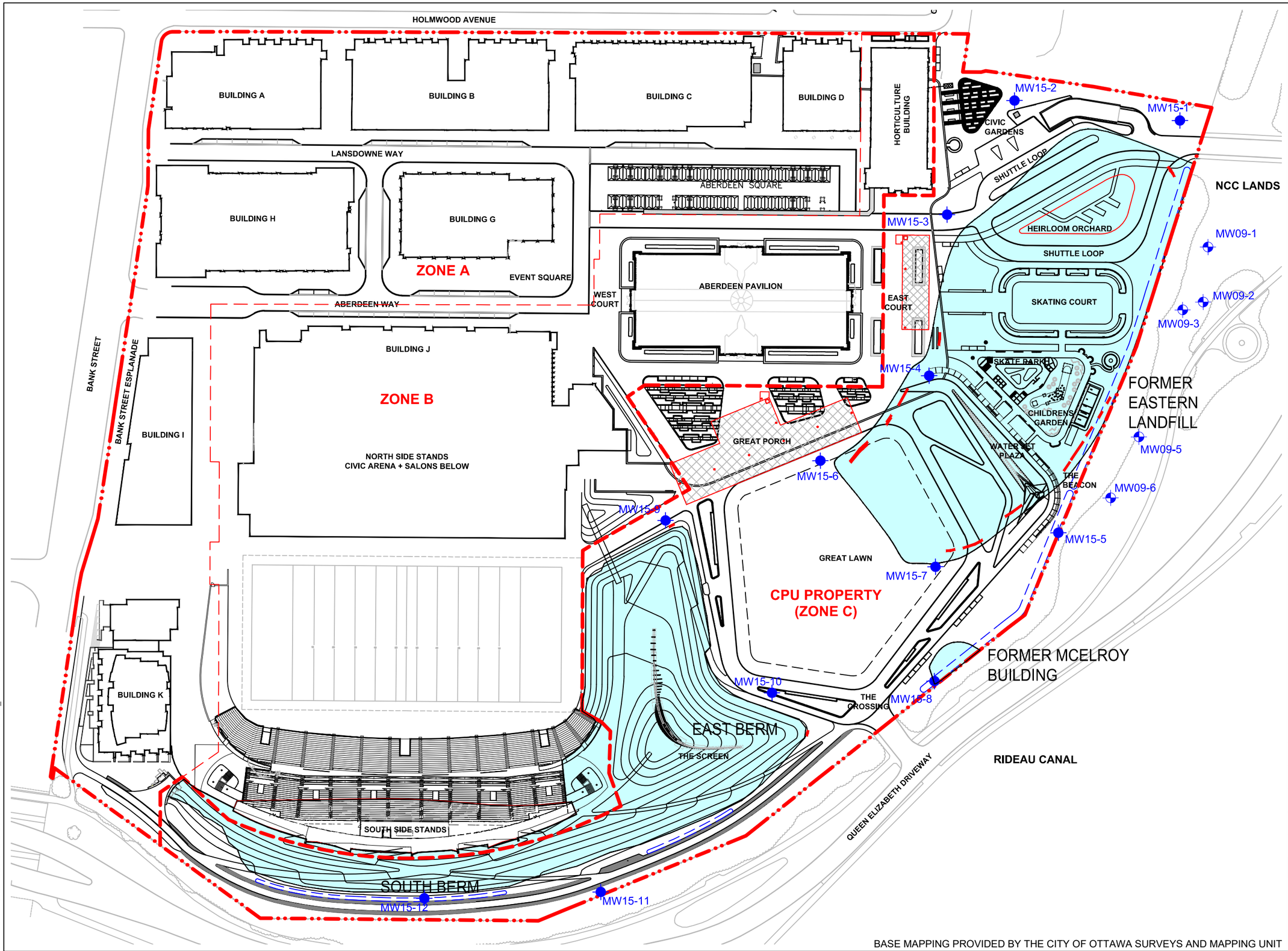

LEGEND

- LANSDOWNE PARK PROPERTY BOUNDARY
- URBAN PARK (ZONE C) BOUNDARY
- EXTENT OF NON-WOVEN GEOTEXTILE AND SOFT SOIL OR HARD CAP
- LOCATION OF CLAY SEAL IN SUBSURFACE UTILITY
- PERIMETER DRAINAGE SWALE
- UNDERGROUND STORMWATER TANK
- MW9-6 NCC PROPERTY GROUND WATER MONITORING WELL
- MW15-5 ON-SITE GROUND WATER MONITORING WELL

15 0 15 30 45
METRES

wood.

TITLE:
GROUNDWATER MONITORING WELL LOCATION PLAN

PROJECT:
2019 ANNUAL REPORT
LANSDOWNE PARK - CPU PROPERTY
450 QUEEN ELIZABETH DRIVEWAY
OTTAWA, ONTARIO

CLIENT:
Ottawa

DESIGNED BY:	KDH
DRAWN BY:	JFT
CHECKED BY:	KDH
DATE:	MARCH 2020
SCALE:	1 : 1,600
PROJECT NO:	TZ10100106
FIGURE NO:	4

BASE MAPPING PROVIDED BY THE CITY OF OTTAWA SURVEYS AND MAPPING UNIT

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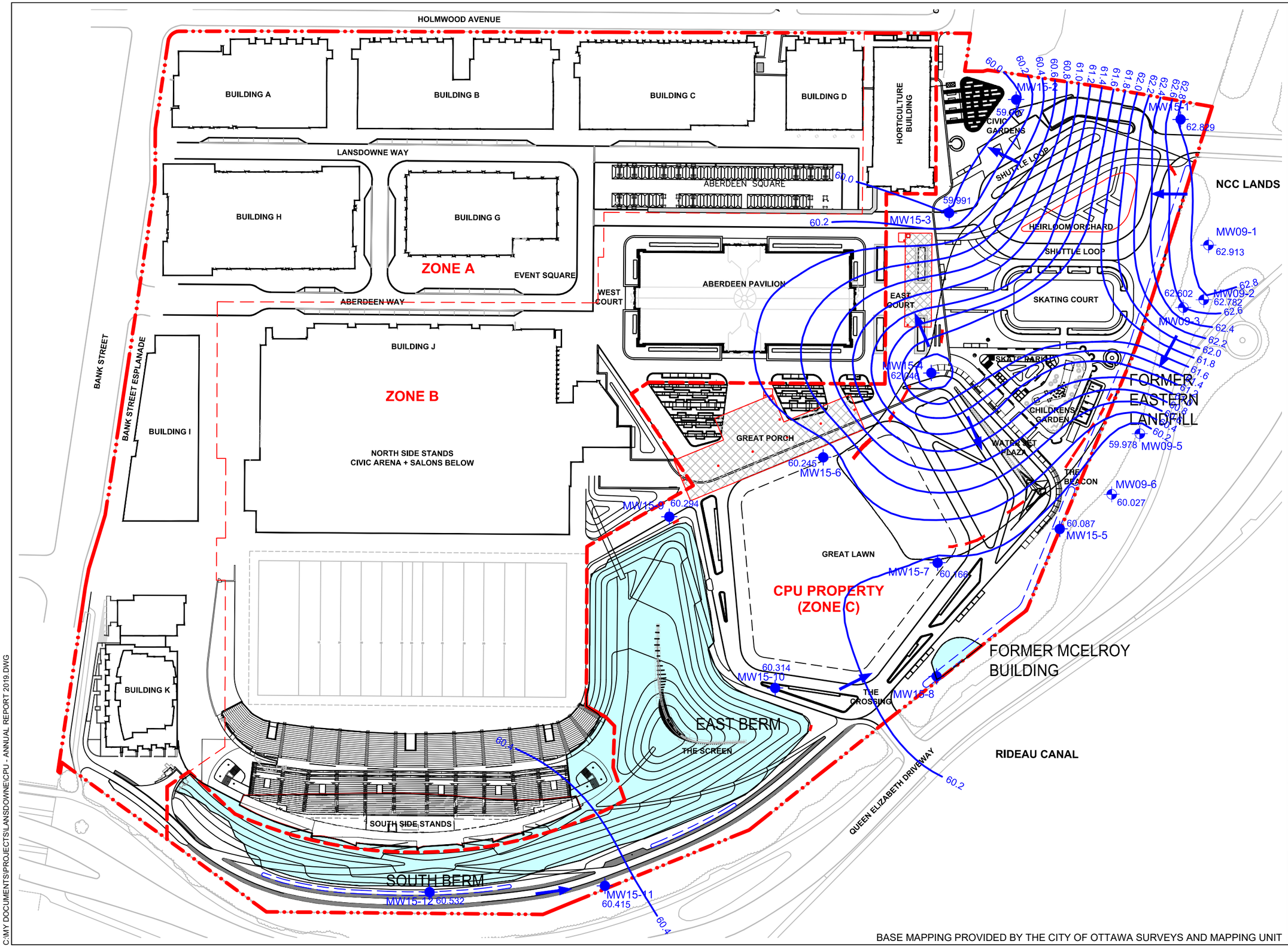

LEGEND

- LANSDOWNE PARK PROPERTY BOUNDARY
- URBAN PARK (ZONE C) BOUNDARY
- EXTENT OF NON-WOVEN GEOTEXTILE AND SOFT SOIL OR HARD CAP
- LOCATION OF CLAY SEAL IN SUBSURFACE UTILITY
- PERIMETER DRAINAGE SWALE
- UNDERGROUND STORMWATER TANK
- MW9-6 NCC PROPERTY GROUND WATER MONITORING WELL
- MW15-5 ON-SITE GROUND WATER MONITORING WELL
- GROUND WATER ELEVATION CONTOUR
- INFERRED DIRECTION OF GROUND WATER FLOW

15 0 15 30 45
METRES

wood.

TITLE:

GROUNDWATER ELEVATION CONTOUR PLAN - MAY 27, 2019

PROJECT:

2019 ANNUAL REPORT

LANSDOWNE PARK - CPU PROPERTY
450 QUEEN ELIZABETH DRIVEWAY
OTTAWA, ONTARIO

CLIENT:

Ottawa

DESIGNED BY:	KDH
DRAWN BY:	JFT
CHECKED BY:	KDH
DATE:	MARCH 2020
SCALE:	1 : 1,600
PROJECT NO:	TZ10100106
FIGURE NO:	5a

BASE MAPPING PROVIDED BY THE CITY OF OTTAWA SURVEYS AND MAPPING UNIT

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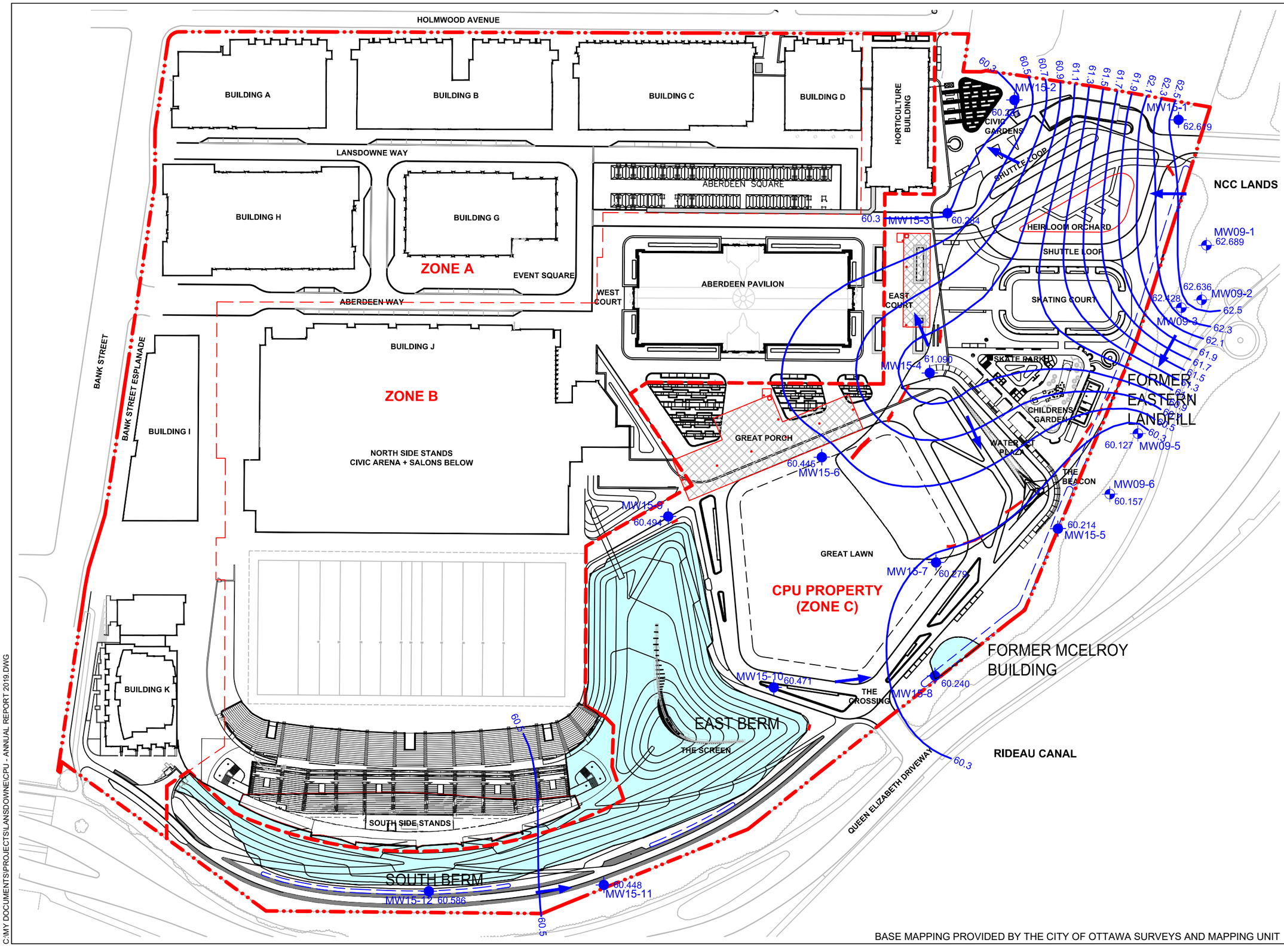

BASE MAPPING PROVIDED BY THE CITY OF OTTAWA SURVEYS AND MAPPING UNIT

wood.

TITLE:

GROUNDWATER ELEVATION CONTOUR PLAN - OCTOBER 21, 2019

PROJECT:

2019 ANNUAL REPORT

LANSDOWNE PARK - CPU PROPERTY
450 QUEEN ELIZABETH DRIVEWAY
OTTAWA, ONTARIO

CLIENT:

Ottawa

DESIGNED BY:	KDH
DRAWN BY:	JFT
CHECKED BY:	KDH
DATE:	MARCH 2020
SCALE:	1 : 1,600
PROJECT NO:	TZ10100106
FIGURE NO:	5b

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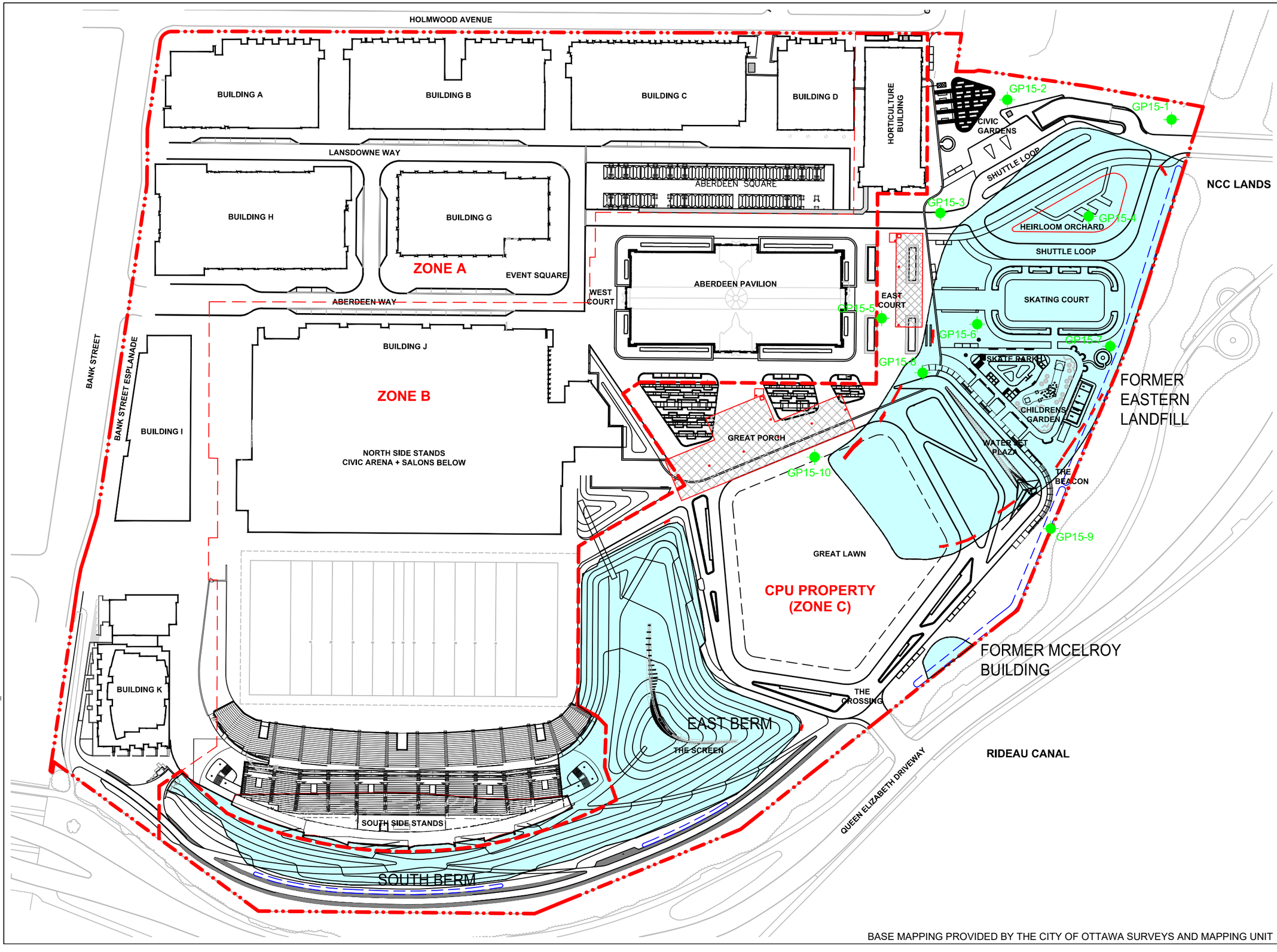


LEGEND

- LANSDOWNE PARK PROPERTY BOUNDARY
- URBAN PARK (ZONE C) BOUNDARY
- EXTENT OF NON-WOVEN GEOTEXTILE AND SOFT SOIL OR HARD CAP
- LOCATION OF CLAY SEAL IN SUBSURFACE UTILITY
- PERIMETER DRAINAGE SWALE
- UNDERGROUND STORMWATER TANK
- GP15-1 LANDFILL GAS PROBE

15 0 15 30 45
METRES

wood.

TITLE:

LANDFILL GAS PROBE LOCATION PLAN

PROJECT:

2019 ANNUAL REPORT

LANSDOWNE PARK - CPU PROPERTY
450 QUEEN ELIZABETH DRIVEWAY
OTTAWA, ONTARIO

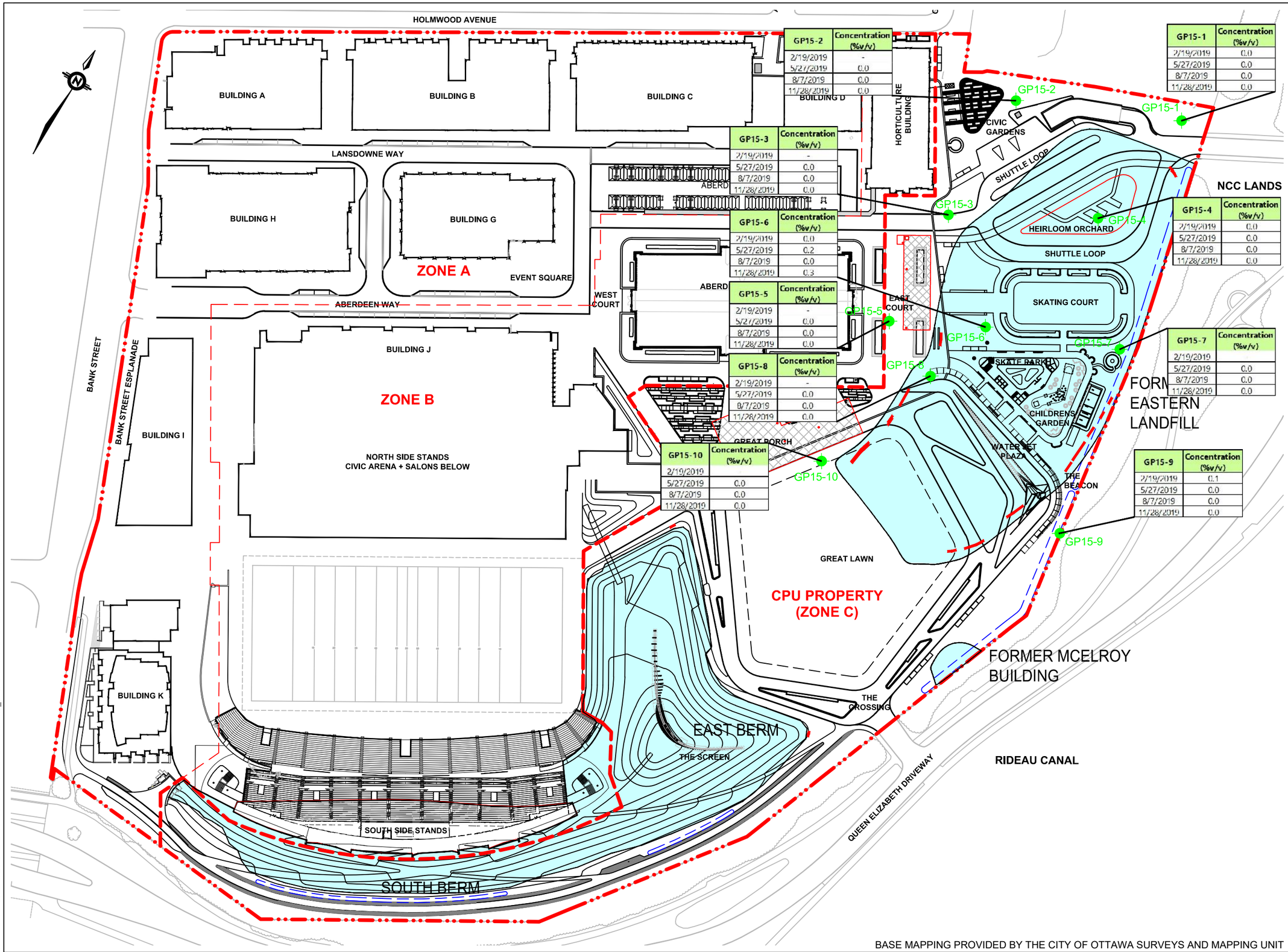
CLIENT:

Ottawa

DESIGNED BY:	KDH
DRAWN BY:	JFT
CHECKED BY:	KDH
DATE:	MARCH 2020
SCALE:	1 : 1,600
PROJECT NO:	TZ10100106
FIGURE NO:	6

BASE MAPPING PROVIDED BY THE CITY OF OTTAWA SURVEYS AND MAPPING UNIT

\\OTT-FS1\PROJECTS\2010\TZ10100106 - CPU IMPLEMENTATION\05_CAD\CPU - ANNUAL REPORT\2019\CPU - ANNUAL REPORT 2019.DWG



GP15-1	Concentration (%v/v)
2/19/2019	0.0
5/27/2019	0.0
8/7/2019	0.0
11/28/2019	0.0

GP15-2	Concentration (%v/v)
2/19/2019	-
5/27/2019	0.0
8/7/2019	0.0
11/28/2019	0.0

GP15-3	Concentration (%v/v)
2/19/2019	-
5/27/2019	0.0
8/7/2019	0.0
11/28/2019	0.0

GP15-4	Concentration (%v/v)
2/19/2019	0.0
5/27/2019	0.0
8/7/2019	0.0
11/28/2019	0.0

GP15-5	Concentration (%v/v)
2/19/2019	-
5/27/2019	0.0
8/7/2019	0.0
11/28/2019	0.0

GP15-6	Concentration (%v/v)
2/19/2019	0.0
5/27/2019	0.2
8/7/2019	0.0
11/28/2019	0.3

GP15-7	Concentration (%v/v)
2/19/2019	
5/27/2019	0.0
8/7/2019	0.0
11/28/2019	0.0

GP15-8	Concentration (%v/v)
2/19/2019	-
5/27/2019	0.0
8/7/2019	0.0
11/28/2019	0.0

GP15-9	Concentration (%v/v)
2/19/2019	0.1
5/27/2019	0.0
8/7/2019	0.0
11/28/2019	0.0

GP15-10	Concentration (%v/v)
2/19/2019	
5/27/2019	0.0
8/7/2019	0.0
11/28/2019	0.0

LEGEND

- LANSDOWNE PARK PROPERTY BOUNDARY
- URBAN PARK (ZONE C) BOUNDARY
- EXTENT OF NON-WOVEN GEOTEXTILE AND SOFT SOIL OR HARD CAP
- LOCATION OF CLAY SEAL IN SUBSURFACE UTILITY
- PERIMETER DRAINAGE SWALE
- UNDERGROUND STORMWATER TANK
- GP15-1 LANDFILL GAS PROBE

NOTES ON METHANE CONCENTRATIONS:

BOLD: METHANE CONCENTRATION EXCEEDS ONTARIO REGULATION 232/98 FOR OFF-SITE BUILDING OR FOUNDATION.

BOLD/YELLOW SHADING: METHANE CONCENTRATION EXCEEDS ONTARIO REGULATION 232/98 FOR ON-SITE BUILDING OR FOUNDATION.

BOLD/YELLOW SHADING/UNDERLINED: METHANE CONCENTRATION EXCEEDS MOECC REGULATION 232/98 FOR LANDFILL PROPERTY BOUNDARY SUBSURFACE.

15 0 15 30 45
METRES

wood.

TITLE:

SUBSURFACE METHANE CONCENTRATIONS AT LANDFILL GAS PROBES

PROJECT:

2019 ANNUAL REPORT

LANSDOWNE PARK - CPU PROPERTY
450 QUEEN ELIZABETH DRIVEWAY
OTTAWA, ONTARIO

CLIENT:

Ottawa

DESIGNED BY:	KDH
DRAWN BY:	JFT
CHECKED BY:	KDH
DATE:	MARCH 2020
SCALE:	1 : 1,600
PROJECT NO:	TZ10100106
FIGURE NO:	7

BASE MAPPING PROVIDED BY THE CITY OF OTTAWA SURVEYS AND MAPPING UNIT

\\OTT-FS1\PROJECTS\2010\TZ\101001.06 - CPU IMPLEMENTATION\05_CAD\CPU - ANNUAL REPORT\2019\CPU - ANNUAL REPORT 2019.DWG

Appendix A

Certificate of Property Use
(Available Upon Request)

Appendix B

Risk Management Measures Inspection Logs

Appendix C

Stratigraphic and Instrumentation Logs

Appendix D

Laboratory Certificates of Analysis

Appendix E

Historical Groundwater Quality Data

Notes on Ground Water Analytical Summary Tables

All Units Reported in Micrograms per Litre (µg/L) or Milligrams per Litre (mg/L) as Indicated .

RDL = Laboratory Analytical Method Reporting Detection Limit.

RL = MOE 2011 Analytical Protocol Reporting Limit.

DUP = Quality Assurance/Quality Control Duplicate Sample.

RPD = Relative Percent Difference (Between Primary and Duplicate Samples).

* Denotes Recommended RPD Alert Criterion Exceeded, However, Parameter Concentration Less than 10 Times Laboratory RDL.

PHC = Petroleum Hydrocarbons.

< = Less Than Laboratory Analytical Method Detection Limit.

- = Not Analyzed or No Published Value.

55	Parameter Concentration May Exceed EPA Table 3 Site Condition Standard for Non-Potable Groundwater Use due to Elevated MDL Reported by the Laboratory.
183	Parameter Concentration Exceeds EPA Table 3 Site Condition Standard for Non-Potable Groundwater Use (Table 3).
2630	Parameter Concentration Exceeds Property Specific Standard as per Certificate of Property Use 0731-8TYQMY.

a = For a Site to Meet This Standard There Must be no Evidence of Free Product, Including but not Limited to, Visible Petroleum Hydrocarbon Film or Sheen Present on Groundwater, Surface Water or in any Groundwater or Surface Water Samples.

b = The Methyl Naphthalene Standards are Applicable to Both 1-Methyl Naphthalene and 2-Methyl Naphthalene, with the Provision that if Both are Detected the Sum of the Two Must not Exceed the Standard.

c = Value adopted from Table A of Guidance for Addressing Chloroform at a Record of Site Condition Property (MOECC, undated).

2011 EPA Standards = Soil, Ground Water and Sediment Standards for Use under Part XV.1 of the Environmental Protection Act, Ontario Ministry of the Environment (MOE), April 15, 2011.

Monitoring Well MW15-1

Historical Groundwater Quality Data

Parameters	RDL	RL	2011 EPA Standards		Analytical Results									
	Sample Location Sample ID Property Location Laboratory ID Sample Date		Full Depth Generic Site Condition Standards Non-Potable Groundwater (Table 3)	Property Specific Standards (as per Certificate of Property Use 0371-8TYQMY)	MW15-1 MW15-1 CPU Property 1545012-06 30/10/2015	MW15-1 MW15-1 CPU Property 1623214-01 5/31/2016	MW15-1 MW15-1 CPU Property 1645002-01 10/28/2016	MW15-1 MW15-1 CPU Property 1718037-01 4/28/2017	MW15-1 MW15-1 CPU Property 1743286-01 10/24/2017	MW15-1 MW15-1 CPU Property 1822570-01 5/31/2018	MW15-1 MW15-1 CPU Property 1846110-01 11/12/2018	MW15-1 MW15-1 CPU Property 1922365-01 5/29/2019	MW15-1 MW15-1 CPU Property 1943543-01 10/24/19	
General Inorganic Parameters (mg/L)														
pH (pH units)	0.1	-	-	-	7.5	7.3	7.2	7	7.3	7.2	7.1	7.5	7.1	
Alkalinity (CaCO3)	5	-	-	-	357	378	410	400	440	430	497	394	411	
Ammonia	0.01	-	-	4.524	1.81	1.72	1.38	1.11	1.23	1.32	1.17	1.08	1.02	
Conductivity (µS/cm)	5	-	-	-	2280	2800	2340	2210	2400	3360	2890	2730	2120	
Chloride	1	1	2300	-	530	648	482	492	562	814	703	676	450	
Nitrate (N)	0.1	0.1	-	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	
Sulphate	1	-	-	-	13	126	38	70	44	96	31	104	14	
Biological Oxygen Demand (BOD)	2	-	-	-	< 2	< 2	< 2	4	< 2	3	< 2	< 2	< 2	
Chemical Oxygen Demand (COD)	10	-	-	-	13	27	21	14	< 10	12	16	15	< 10	
Dissolved Organic Carbon	0.5	-	-	-	1.3	2.7	4	3.1	2.1	1.7	2.2	2.3	3.1	
Hardness	-	-	-	-	-	559	463	456	415	614	480	516	416	
Total Dissolved Solids	10	-	-	-	1120	1590	1210	1270	1300	1980	1540	1580	1180	
Volatile Organic Compounds (µg/L)														
Chloroform	0.5	1	240 [c]	22	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	
Petroleum Hydrocarbons (µg/L)														
PHC F1 (C6 - C10) [a]	25	25	750	-	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	
PHC F2 (>C10 - C16) [a]	100	100	150	-	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
PHC F3 (>C16 - C34) [a]	100	500	500	-	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
PHC F4 (>C34) [a]	100	500	500	-	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
Polynuclear Aromatic Hydrocarbons (µg/L)														
Acenaphthene	0.05	1	600	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Acenaphthylene	0.05	1	1.8	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Anthracene	0.05	0.1	2.4	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
Benzo(a)anthracene	0.01	0.2	4.7	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
Benzo(a)pyrene	0.01	0.01	0.81	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
Benzo(b)fluoranthene	0.01	0.1	0.75	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Benzo(g,h,i)perylene	0.05	0.2	0.2	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Benzo(k)fluoranthene	0.05	0.1	0.4	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Chrysene	0.05	0.1	1	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Dibenzo(a,h)anthracene	0.05	0.2	0.52	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Fluoranthene	0.01	0.4	130	-	< 0.01	< 0.01	< 0.01	< 0.01	0.08	< 0.01	< 0.01	0.04	0.04	
Fluorene	0.05	0.5	400	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Indeno(1,2,3,c,d)pyrene	0.05	0.2	0.2	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Methylnaphthalene, 1- [b]	0.05	2	1800	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Methylnaphthalene, 2- [b]	0.05	2		-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Naphthalene	0.05	2	1400	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Phenanthrene	0.05	0.1	580	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Pyrene	0.01	0.2	68	-	< 0.01	< 0.01	< 0.01	< 0.01	0.07	< 0.01	< 0.01	0.04	0.04	
Metals (µg/L)														
Antimony	0.5	0.5	20000	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	
Arsenic	1	1	1900	-	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	
Barium	1	2	29000	-	662	675	637	651	544	756	663	619	98	
Beryllium	0.5	0.5	67	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	
Boron	10	10	45000	-	69	40	66	36	70	66	69	45	48	
Cadmium	0.1	0.5	2.7	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	
Calcium	100	-	-	-	142000	174000	147000	147000	135000	193000	152000	161000	130000	
Chromium	1	10	810	-	< 1	5	11	< 1	< 1	< 1	< 1	< 1	< 1	
Chromium (VI)	10	10	140	-	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	
Cobalt	0.5	1	66	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	
Copper	0.5	5	87	-	< 0.5	5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	2.2	
Iron	100	-	-	24240	13000	12400	7960	13100	11500	19500	12200	19400	< 100	
Lead	0.1	1	25	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.1	< 0.1	< 0.1	< 0.1	
Magnesium	200	-	-	-	20500	30000	23100	21600	19000	32000	24300	27500	21900	
Mercury	0.1	0.1	0.29	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	
Molybdenum	0.5	0.5	9200	-	< 0.5	< 0.5	1.4	< 0.5	< 0.5	0.6	3.2	< 0.5	8.5	
Nickel	1	1	490	-	< 1	4	< 1	< 1	< 1	< 1	< 1	< 1	< 1	
Selenium	1	5	63	-	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	1.0	
Silver	0.1	0.3	1.5	-	< 0.1	< 0.1	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	
Sodium	200	5000	2300000	-	276000	33900	293000	290000	300000	459000	385000	395000	203000	
Thallium	0.1	0.5	510	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	
Uranium	0.1	2	420	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.2	0.1	< 0.1	2.2	
Vanadium	0.5	0.5	250	-	< 0.5	4.7	3.9	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	
Zinc	5	5	1100	-	9	6	< 5	< 5	< 5	6	< 5	9	< 5	

Monitoring Well MW15-2

Historical Groundwater Quality Data

Parameters	RDL	RL	2011 EPA Standards		Analytical Results									
			Full Depth Generic Site Condition Standards	Property Specific Standards (as per Certificate of Property Use 0371-8TYQMY)										
	Sample Location				MW15-2	MW15-2	MW15-2	MW15-2	MW15-2	MW15-2	MW15-2	MW15-2	MW15-2	MW15-2
	Sample ID				MW15-2	MW15-2	MW15-2	MW15-2	MW15-2	MW15-2	MW15-2	MW15-2	MW15-2	MW15-2
	Property Location				CPU Property	CPU Property	CPU Property	CPU Property	CPU Property	CPU Property	CPU Property	CPU Property	CPU Property	CPU Property
	Laboratory ID				1545012-07	1623214-02	1645002-02	1718037-02	1743286-02	1822570-02	1846110-02	1922365-02	1943543-02	
	Sample Date		Non-Potable Groundwater (Table 3)		30/10/2015	5/31/2016	10/28/2016	4/28/2017	10/24/2017	5/31/2018	11/12/2018	5/29/2019	10/24/19	
General Inorganic Parameters (mg/L)														
pH (pH units)	0.1	-	-	-	7.6	7.6	7.4	7.3	7.7	7.5	7.6	7.8	7.4	
Alkalinity (CaCO3)	5	-	-	-	252	221	277	278	292	299	329	267	275	
Ammonia	0.01	-	-	4.524	0.1	0.15	0.06	0.03	0.02	0.06	0.03	0.03	0.06	
Conductivity (µS/cm)	5	-	-	-	2380	2280	2050	1310	2070	2630	2150	2230	1910	
Chloride	1	1	2300	-	483	278	370	130	445	467	414	329	348	
Nitrate (N)	0.1	0.1	-	-	3.8	3.4	3.3	2.2	4.4	4.6	3.9	5	3.9	
Sulphate	1	-	-	-	229	600	179	250	167	406	186	461	169	
Biological Oxygen Demand (BOD)	2	-	-	-	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	
Chemical Oxygen Demand (COD)	10	-	-	-	11	36	< 10	< 10	< 10	< 10	12	< 10	< 10	
Dissolved Organic Carbon	0.5	-	-	-	1.7	1.6	2.5	2.1	1	< 0.5	0.9	0.6	1.9	
Hardness	-	-	-	-	-	836	453	561	449	830	398	483	511	
Total Dissolved Solids	10	-	-	-	1250	1590	1110	868	1210	1860	1210	1470	1090	
Volatile Organic Compounds (µg/L)														
Chloroform	0.5	1	240 [c]	22	2.6	2.1	1.6	< 0.5	1.4	1.6	2.4	4.3	1.8	
Petroleum Hydrocarbons (µg/L)														
PHC F1 (C6 - C10) [a]	25	25	750	-	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	
PHC F2 (>C10 - C16) [a]	100	100	150	-	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
PHC F3 (>C16 - C34) [a]	100	500	500	-	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
PHC F4 (>C34) [a]	100	500	500	-	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
Polynuclear Aromatic Hydrocarbons (µg/L)														
Acenaphthene	0.05	1	600	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Acenaphthylene	0.05	1	1.8	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Anthracene	0.05	0.1	2.4	-	0.02	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
Benzo(a)anthracene	0.01	0.2	4.7	-	0.07	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
Benzo(a)pyrene	0.01	0.01	0.81	-	0.04	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
Benzo(b)fluoranthene	0.01	0.1	0.75	-	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Benzo(g,h,i)perylene	0.05	0.2	0.2	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Benzo(k)fluoranthene	0.05	0.1	0.4	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Chrysene	0.05	0.1	1	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Dibenzo(a,h)anthracene	0.05	0.2	0.52	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Fluoranthene	0.01	0.4	130	-	0.09	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
Fluorene	0.05	0.5	400	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Indeno(1,2,3,c,d)pyrene	0.05	0.2	0.2	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Methylnaphthalene, 1- [b]	0.05	2	1800	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Methylnaphthalene, 2- [b]	0.05	2		-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Naphthalene	0.05	2	1400	-	0.09	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Phenanthrene	0.05	0.1	580	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Pyrene	0.01	0.2	68	-	0.09	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
Metals (µg/L)														
Antimony	0.5	0.5	20000	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	
Arsenic	1	1	1900	-	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	
Barium	1	2	29000	-	191	109	91	177	121	186	85	116	133	
Beryllium	0.5	0.5	67	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	
Boron	10	10	45000	-	59	48	53	34	50	56	45	29	45	
Cadmium	0.1	0.5	2.7	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	
Calcium	100	-	-	-	171000	245000	146000	189000	147000	264000	129000	154000	151000	
Chromium	1	10	810	-	< 1	3	8	1	< 1	< 1	< 1	< 1	< 1	
Chromium (VI)	10	10	140	-	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	
Cobalt	0.5	1	66	-	1.4	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	
Copper	0.5	5	87	-	3	3.7	6.5	0.5	2.2	1.8	1.8	1.8	3.4	
Iron	100	-	-	24240	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
Lead	0.1	1	25	-	< 0.1	< 0.1	0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	
Magnesium	200	-	-	-	22800	54400	21500	21400	19700	41600	18700	23900	32400	
Mercury	0.1	0.1	0.29	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	
Molybdenum	0.5	0.5	9200	-	7.5	2.7	7.7	3.2	8.5	3.7	11.9	4.2	4.1	
Nickel	1	1	490	-	3	6	1	< 1	< 1	1	1	1	< 1	
Selenium	1	5	63	-	1	2	2	< 1	2	< 1	1	1	< 1	
Silver	0.1	0.3	1.5	-	< 0.1	0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	
Sodium	200	5000	2300000	-	278000	17000	227000	66600	230000	203000	289000	308000	558000	
Thallium	0.1	0.5	510	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	
Uranium	0.1	2	420	-	2.6	2.3	1.9	2.2	1.8	3	2.5	2.7	2.2	
Vanadium	0.5	0.5	250	-	< 0.5	1.7	2.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	
Zinc	5	5	1100	-	20	7	< 5	< 5	< 5	< 5	< 5	< 5	< 5	

Monitoring Well MW15-3

Historical Groundwater Quality Data

Parameters	RDL	RL	2011 EPA Standards		Analytical Results									
			Full Depth Generic Site Condition Standards	Property Specific Standards (as per Certificate of Property Use 0371-8TYQMY)	MW15-3 MW15-3 CPU Property 1544375-01 29/10/2015	MW15-3 MW15-3 CPU Property 1623214-03 5/31/2016	MW15-3 MW15-3 CPU Property 1645002-03 10/28/2016	MW15-3 MW15-3 CPU Property 1647139-01 11/15/2016	MW15-3 MW15-3 CPU Property 1718037-03 4/28/2017	MW15-3 MW15-3 CPU Property 1743465-01 10/26/2017	MW15-3 MW15-3 CPU Property 1822570-03 5/31/2018	MW15-3 MW15-3 CPU Property 1846110-03 11/12/2018	MW15-3 MW15-3 CPU Property 1922365-03 5/29/2019	MW15-3 MW15-3 CPU Property 1943543-03 10/24/19
Sample Location / Sample ID / Property Location / Laboratory ID / Sample Date			Non-Potable Groundwater (Table 3)											
General Inorganic Parameters (mg/L)														
pH (pH units)	0.1	-	-	-	7.7	7.6	7.6	-	7.5	7.8	7.6	7.6	7.8	7.5
Alkalinity (CaCO3)	5	-	-	-	241	255	249	-	261	251	274	306	230	307
Ammonia	0.01	-	-	4.524	0.03	0.29	0.02	-	0.1	0.04	0.04	0.04	0.07	0.06
Conductivity (µS/cm)	5	-	-	-	3590	3080	3910	-	3200	3820	2940	3010	3190	3620
Chloride	1	1	2300	-	863	687	927	-	782	1030	666	712	820	829
Nitrate (N)	0.1	0.1	-	-	5.5	5.5	6.2	-	5.8	5.8	4.3	2.9	5	4.7
Sulphate	1	-	-	-	349	258	321	-	244	278	206	188	260	276
Biological Oxygen Demand (BOD)	2	-	-	-	< 2	< 2	< 2	-	< 2	< 2	< 2	< 2	< 2	< 2
Chemical Oxygen Demand (COD)	10	-	-	-	35	24	26	-	14	< 10	36	14	45	29.0
Dissolved Organic Carbon	0.5	-	-	-	0.8	1.4	1.6	-	1.6	1.6	< 0.5	< 0.5	< 0.5	2.3
Hardness	-	-	-	-	-	649	906	-	726	753	547	428	699	780
Total Dissolved Solids	10	-	-	-	2230	1880	2280	-	2010	2370	1750	1570	2070	2130
Volatile Organic Compounds (µg/L)														
Chloroform	0.5	1	240 [c]	22	< 0.5	1.0	0.9	-	0.8	1.0	< 0.5	1.2	2.2	1.7
Petroleum Hydrocarbons (µg/L)														
PHC F1 (C6 - C10) [a]	25	25	750	-	< 25	< 25	< 25	-	< 25	< 25	< 25	< 25	< 25	< 25
PHC F2 (>C10 - C16) [a]	100	100	150	-	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100
PHC F3 (>C16 - C34) [a]	100	500	500	-	< 100	< 100	**1310**	< 100	< 100	< 100	< 100	< 100	< 100	< 100
PHC F4 (>C34) [a]	100	500	500	-	< 100	< 100	240	< 100	< 100	< 100	< 100	< 100	< 100	< 100
Polynuclear Aromatic Hydrocarbons (µg/L)														
Acenaphthene	0.05	1	600	-	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	0.05	1	1.8	-	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Anthracene	0.05	0.1	2.4	-	0.04	0.04	< 0.01	-	< 0.01	< 0.01	< 0.01	< 0.01	0.02	< 0.01
Benzo(a)anthracene	0.01	0.2	4.7	-	0.12	0.06	< 0.01	-	< 0.01	< 0.01	< 0.01	< 0.01	0.07	< 0.01
Benzo(a)pyrene	0.01	0.01	0.81	-	0.14	0.08	< 0.01	-	< 0.01	< 0.01	< 0.01	< 0.01	0.08	< 0.01
Benzo(b)fluoranthene	0.01	0.1	0.75	-	0.14	0.07	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	0.11	< 0.05
Benzo(g,h,i)perylene	0.05	0.2	0.2	-	0.15	0.06	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	0.08	< 0.05
Benzo(k)fluoranthene	0.05	0.1	0.4	-	0.08	0.09	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Chrysene	0.05	0.1	1	-	0.12	0.08	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	0.08	< 0.05
Dibenzo(a,h)anthracene	0.05	0.2	0.52	-	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluoranthene	0.01	0.4	130	-	0.21	0.15	< 0.01	-	< 0.01	< 0.01	< 0.01	< 0.01	0.13	0.05
Fluorene	0.05	0.5	400	-	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Indeno(1,2,3,c,d)pyrene	0.05	0.2	0.2	-	0.11	0.05	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	0.06	< 0.05
Methylnaphthalene, 1- [b]	0.05	2	1800	-	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Methylnaphthalene, 2- [b]	0.05	2		-	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Naphthalene	0.05	2	1400	-	0.07	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	0.05	0.1	580	-	0.09	0.08	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Pyrene	0.01	0.2	68	-	0.2	0.14	< 0.01	-	< 0.01	< 0.01	< 0.01	< 0.01	0.13	0.05
Metals (µg/L)														
Antimony	0.5	0.5	20000	-	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Arsenic	1	1	1900	-	< 1	< 1	< 1	-	< 1	< 1	< 1	< 1	< 1	4.0
Barium	1	2	29000	-	207	110	190	-	171	211	100	81	150	206
Beryllium	0.5	0.5	67	-	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Boron	10	10	45000	-	44	28	42	-	31	36	44	35	39	91
Cadmium	0.1	0.5	2.7	-	< 0.1	< 0.1	< 0.1	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Calcium	100	-	-	-	276000	208000	295000	-	238000	244000	172000	132000	226000	242000
Chromium	1	10	810	-	< 1	6	7	-	< 1	< 1	< 1	< 1	3	< 1
Chromium (VI)	10	10	140	-	< 10	< 10	< 10	-	< 10	< 10	< 10	< 10	< 10	< 10
Cobalt	0.5	1	66	-	0.9	< 0.5	< 0.5	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.1
Copper	0.5	5	87	-	1.2	6	2.9	-	0.8	1.5	1.4	1.6	2.5	0.8
Iron	100	-	-	24240	< 100	< 100	< 100	-	< 100	< 100	< 100	< 100	< 100	13800.0
Lead	0.1	1	25	-	< 0.1	< 0.1	< 0.1	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.1
Magnesium	200	-	-	-	41500	31600	40900	-	31700	35100	28300	23700	32600	42900
Mercury	0.1	0.1	0.29	-	< 0.1	< 0.1	< 0.1	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Molybdenum	0.5	0.5	9200	-	10.9	0.7	3	-	0.6	0.8	1.4	1.6	1	2.0
Nickel	1	1	490	-	3	6	2	-	< 1	< 1	< 1	< 1	< 1	3.0
Selenium	1	5	63	-	2	2	1	-	2	1	< 1	< 1	2	< 1
Silver	0.1	0.3	1.5	-	1.5	0.2	< 0.1	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Sodium	200	5000	2300000	-	418000	38000	514000	-	407000	484000	371000	421000	414000	103000
Thallium	0.1	0.5	510	-	< 0.1	< 0.1	< 0.1	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Uranium	0.1	2	420	-	2.4	1.5	1.7	-	1.5	1.4	1.4	1.4	1.7	1.0
Vanadium	0.5	0.5	250	-	< 0.5	1.9	1.8	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Zinc	5	5	1100	-	17	< 5	< 5	-	7	< 5	< 5	< 5	< 5	98.0

Monitoring Well MW15-4

Historical Groundwater Quality Data

Parameters	RDL	RL	2011 EPA Standards		Analytical Results									
	Sample Location Sample ID Property Location Laboratory ID Sample Date		Full Depth Generic Site Condition Standards Non-Potable Groundwater (Table 3)	Property Specific Standards (as per Certificate of Property Use 0371-8TYQMY)	MW15-4 MW15-4 CPU Property 1544375-02 29/10/2015	MW15-4 MW15-4 CPU Property 1623214-04 5/31/2016	MW15-4 MW15-4 CPU Property 1645002-04 10/28/2016	MW15-4 MW15-4 CPU Property 1718037-04 4/28/2017	MW15-4 MW15-4 CPU Property 1822570-04 5/31/2018	MW15-4 MW15-4 CPU Property 1846213-01 11/13/2018	MW15-4 MW15-4 CPU Property 1922365-04 5/29/2019	MW15-4 MW15-4 CPU Property 1943543-04 10/24/2019		
General Inorganic Parameters (mg/L)														
pH (pH units)	0.1	-	-	-	7.5	7.5	7.5	7.2	7.6	7.4	7.6	7.3		
Alkalinity (CaCO3)	5	-	-	-	578	487	623	556	524	672	562	593		
Ammonia	0.01	-	-	4.524	3.41	2.84	2.95	3.2	3.63	2.8	3	2.95		
Conductivity (µS/cm)	5	-	-	-	1920	1550	1840	2200	2670	1700	2890	1800		
Chloride	1	1	2300	-	146	103	117	201	300	119	488	123		
Nitrate (N)	0.1	0.1	-	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1		
Sulphate	1	-	-	-	306	230	268	502	564	207	405	249		
Biological Oxygen Demand (BOD)	2	-	-	-	< 2	< 2	< 2	< 2	< 2	3	< 2	< 2		
Chemical Oxygen Demand (COD)	10	-	-	-	20	32	31	32	27	27	17	11		
Dissolved Organic Carbon	0.5	-	-	-	3.6	5.6	9.7	8.3	7.1	5.6	4.6	7.0		
Hardness	-	-	-	-	-	590	788	983	953	871	1040	578		
Total Dissolved Solids	10	-	-	-	1150	956	1080	1540	1820	1130	1960	1140		
Volatile Organic Compounds (µg/L)														
Chloroform	0.5	1	240 [c]	22	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5		
Petroleum Hydrocarbons (µg/L)														
PHC F1 (C6 - C10) [a]	25	25	750	-	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25		
PHC F2 (>C10 - C16) [a]	100	100	150	-	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100		
PHC F3 (>C16 - C34) [a]	100	500	500	-	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100		
PHC F4 (>C34) [a]	100	500	500	-	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100		
Polynuclear Aromatic Hydrocarbons (µg/L)														
Acenaphthene	0.05	1	600	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		
Acenaphthylene	0.05	1	1.8	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		
Anthracene	0.05	0.1	2.4	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01		
Benzo(a)anthracene	0.01	0.2	4.7	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01		
Benzo(a)pyrene	0.01	0.01	0.81	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01		
Benzo(b)fluoranthene	0.01	0.1	0.75	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		
Benzo(g,h,i)perylene	0.05	0.2	0.2	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		
Benzo(k)fluoranthene	0.05	0.1	0.4	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		
Chrysene	0.05	0.1	1	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		
Dibenzo(a,h)anthracene	0.05	0.2	0.52	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		
Fluoranthene	0.01	0.4	130	-	0.04	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01		
Fluorene	0.05	0.5	400	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		
Indeno(1,2,3,c,d)pyrene	0.05	0.2	0.2	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		
Methylnaphthalene, 1- [b]	0.05	2	1800	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		
Methylnaphthalene, 2- [b]	0.05	2		-	0.07	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		
Naphthalene	0.05	2	1400	-	0.2	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		
Phenanthrene	0.05	0.1	580	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		
Pyrene	0.01	0.2	68	-	0.05	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01		
Metals (µg/L)														
Antimony	0.5	0.5	20000	-	0.6	< 0.5	< 0.5	2.2	< 0.5	< 0.5	0.6	< 0.5		
Arsenic	1	1	1900	-	10	3	5	2	2	< 1	2	< 1		
Barium	1	2	29000	-	146	59	189	49	82	125	87	150		
Beryllium	0.5	0.5	67	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5		
Boron	10	10	45000	-	101	64	91	77	94	86	79	50		
Cadmium	0.1	0.5	2.7	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.2	< 0.1	< 0.1		
Calcium	100	-	-	-	217000	186000	254000	318000	298000	283000	326000	177000		
Chromium	1	10	810	-	< 1	2	7	< 1	< 1	< 1	< 1	1		
Chromium (VI)	10	10	140	-	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
Cobalt	0.5	1	66	-	1.6	0.8	0.6	2.4	1.2	0.5	1.8	2.7		
Copper	0.5	5	87	-	< 0.5	1.6	< 0.5	0.6	0.8	7.8	0.7	7.9		
Iron	100	-	-	24240	16800	7720	10700	10500	21000	112	14200	< 100		
Lead	0.1	1	25	-	1.2	0.3	< 0.1	0.3	0.2	0.2	0.3	< 0.1		
Magnesium	200	-	-	-	36600	30500	37400	46100	50800	39800	55600	33200		
Mercury	0.1	0.1	0.29	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1		
Molybdenum	0.5	0.5	9200	-	6.2	1.7	3.3	1.5	1.8	1.7	2.1	1.7		
Nickel	1	1	490	-	5	7	2	6	4	2	4	14		
Selenium	1	5	63	-	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1		
Silver	0.1	0.3	1.5	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1		
Sodium	200	5000	2300000	-	146000	9980	135000	156000	242000	108000	307000	930000		
Thallium	0.1	0.5	510	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1		
Uranium	0.1	2	420	-	1.8	1	1	1.2	0.8	0.7	1	5.3		
Vanadium	0.5	0.5	250	-	< 0.5	6	4.8	< 0.5	< 0.5	< 0.5	< 0.5	0.8		
Zinc	5	5	1100	-	74	77	12	398	303	68	228	< 5		

Monitoring Well MW15-5

Historical Groundwater Quality Data

Parameters	RDL	RL	2011 EPA Standards		Analytical Results									
			Full Depth Generic Site Condition Standards	Property Specific Standards (as per Certificate of Property Use 0371-8TYQMY)										
	Sample Location				MW15-5	MW15-5	MW15-5	MW15-5	MW15-5	MW15-5	MW15-5	MW15-5	MW15-5	
	Sample ID				MW15-5	MW15-5	MW15-5	MW15-5	MW15-5	MW15-5	MW15-5	MW15-5	MW15-5	
	Property Location				CPU Property	CPU Property	CPU Property	CPU Property	CPU Property	CPU Property	CPU Property	CPU Property	CPU Property	
	Laboratory ID				1545012-08	1623214-05	1645002-05	1718037-05	1743465-02	1822387-01	1846110-04	1922365-05	1943444-01	
	Sample Date		Non-Potable Groundwater (Table 3)		30/10/2015	5/31/2016	10/28/2016	4/28/2017	10/26/2017	5/30/2018	11/12/2018	5/29/2019	10/23/19	
General Inorganic Parameters (mg/L)														
pH (pH units)	0.1	-	-	-	7.8	7.4	7.4	7.2	7.6	7.4	7.3	7.6	7.5	
Alkalinity (CaCO3)	5	-	-	-	236	442	516	475	400	438	454	355	325	
Ammonia	0.01	-	-	4.524	0.08	0.41	0.46	0.58	0.17	0.39	0.32	0.31	0.15	
Conductivity (µS/cm)	5	-	-	-	1090	2420	2070	1850	2480	1950	2280	2480	2570	
Chloride	1	1	2300	-	88	351	195	142	416	178	286	510	479	
Nitrate (N)	0.1	0.1	-	-	1.2	0.1	0.6	0.6	0.5	0.2	0.6	0	0.7	
Sulphate	1	-	-	-	181	329	343	402	380	395	424	225	269	
Biological Oxygen Demand (BOD)	2	-	-	-	< 2	< 2	3	< 2	< 2	< 2	< 2	< 2	< 2	
Chemical Oxygen Demand (COD)	10	-	-	-	11	39	N/A	23	23	11	13	< 10	< 10	
Dissolved Organic Carbon	0.5	-	-	-	3.5	5.1	N/A	5.5	6.7	3.4	2	2.4	2.7	
Hardness	-	-	-	-	-	660	533	583	566	640	734	788	611	
Total Dissolved Solids	10	-	-	-	530	1510	1210	1260	1190	1210	1440	1570	1640	
Volatile Organic Compounds (µg/L)														
Chloroform	0.5	1	240 [c]	22	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	
Petroleum Hydrocarbons (µg/L)														
PHC F1 (C6 - C10) [a]	25	25	750	-	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	
PHC F2 (>C10 - C16) [a]	100	100	150	-	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
PHC F3 (>C16 - C34) [a]	100	500	500	-	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
PHC F4 (>C34) [a]	100	500	500	-	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
Polynuclear Aromatic Hydrocarbons (µg/L)														
Acenaphthene	0.05	1	600	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Acenaphthylene	0.05	1	1.8	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Anthracene	0.05	0.1	2.4	-	< 0.01	0.05	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
Benzo(a)anthracene	0.01	0.2	4.7	-	< 0.01	0.07	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
Benzo(a)pyrene	0.01	0.01	0.81	-	< 0.01	0.08	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
Benzo(b)fluoranthene	0.01	0.1	0.75	-	< 0.05	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Benzo(g,h,i)perylene	0.05	0.2	0.2	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Benzo(k)fluoranthene	0.05	0.1	0.4	-	< 0.05	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Chrysene	0.05	0.1	1	-	< 0.05	0.08	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Dibenzo(a,h)anthracene	0.05	0.2	0.52	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Fluoranthene	0.01	0.4	130	-	< 0.01	0.19	< 0.01	< 0.01	0.09	0.04	< 0.01	< 0.01	< 0.01	
Fluorene	0.05	0.5	400	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Indeno(1,2,3,c,d)pyrene	0.05	0.2	0.2	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Methylnaphthalene, 1-[b]	0.05	2	1800	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Methylnaphthalene, 2-[b]	0.05	2		-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Naphthalene	0.05	2	1400	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Phenanthrene	0.05	0.1	580	-	< 0.05	0.12	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Pyrene	0.01	0.2	68	-	< 0.01	0.15	< 0.01	< 0.01	0.08	0.04	< 0.01	0.02	< 0.01	
Metals (µg/L)														
Antimony	0.5	0.5	20000	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	
Arsenic	1	1	1900	-	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	
Barium	1	2	29000	-	96	90	130	159	120	154	157	181	156	
Beryllium	0.5	0.5	67	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	
Boron	10	10	45000	-	46	64	90	66	63	91	88	69	69	
Cadmium	0.1	0.5	2.7	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	
Calcium	100	-	-	-	85700	214000	177000	203000	187000	210000	240000	267000	194000	
Chromium	1	10	810	-	< 1	4	8	< 1	< 1	< 1	< 1	< 1	< 1	
Chromium (VI)	10	10	140	-	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	
Cobalt	0.5	1	66	-	1.5	1.4	1.3	< 0.5	0.9	1.7	1.5	1.3	0.9	
Copper	0.5	5	87	-	1.3	6.7	4.1	2.8	4.7	1.7	3.1	3.1	3.3	
Iron	100	-	-	24240	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
Lead	0.1	1	25	-	0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	
Magnesium	200	-	-	-	11300	30800	22200	18500	24000	27800	32500	29600	30900	
Mercury	0.1	0.1	0.29	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	
Molybdenum	0.5	0.5	9200	-	5.2	1	< 0.5	1.5	21.3	0.6	0.5	0.6	< 0.5	
Nickel	1	1	490	-	2	9	4	2	3	4	4	4	3.0	
Selenium	1	5	63	-	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	
Silver	0.1	0.3	1.5	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	
Sodium	200	5000	2300000	-	118000	54200	272000	215000	303000	205000	210000	267000	311000	
Thallium	0.1	0.5	510	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	
Uranium	0.1	2	420	-	0.6	1	1	1	0.9	0.8	1	0.7	1.0	
Vanadium	0.5	0.5	250	-	< 0.5	5.8	4.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	
Zinc	5	5	1100	-	< 5	9	7	< 5	< 5	< 5	< 5	< 5	< 5	

Monitoring Well MW15-6

Historical Groundwater Quality Data

Parameters	RDL	RL	2011 EPA Standards		Analytical Results									
			Full Depth Generic Site Condition Standards	Property Specific Standards (as per Certificate of Property Use 0371-8TYQMY)	MW15-6 CPU Property	MW15-6 CPU Property	MW15-6 CPU Property	MW15-6 CPU Property	MW15-6 CPU Property	MW15-6 CPU Property	MW15-6 CPU Property	MW15-6 CPU Property	MW15-6 CPU Property	
Sample Location					MW15-6	MW15-6	MW15-6	MW15-6	MW15-6	MW15-6	MW15-6	MW15-6	MW15-6	
Sample ID					CPU Property	CPU Property	CPU Property	CPU Property	CPU Property	CPU Property	CPU Property	CPU Property	CPU Property	
Property Location					1544375-03	1623214-06	1645002-06	1736257-01	1743465-03	1822570-05	1846213-02	1922365-06	1943543-05	
Laboratory ID					29/10/2015	5/31/2016	10/28/2016	9/6/2017	10/26/2017	5/31/2018	11/13/2018	5/29/2019	10/24/19	
Sample Date			Non-Potable Groundwater (Table 3)											
General Inorganic Parameters (mg/L)														
pH (pH units)	0.1	-	-	-	7.5	7.4	7.5	7.2	7.6	7.6	7.8	7.8	7.4	
Alkalinity (CaCO3)	5	-	-	-	241	264	299	314	334	298	357	260	338	
Ammonia	0.01	-	-	4.524	0.16	0.16	0.02	0.03	0.04	0.05	0.13	0.06	0.05	
Conductivity (µS/cm)	5	-	-	-	5120	5210	5810	5480	6370	5150	2640	3550	5530	
Chloride	1	1	2300	-	1410	1400	1740	1630	1870	1400	582	1020	1470	
Nitrate (N)	0.1	0.1	-	-	4.1	6.2	4.1	3.1	3.8	2.9	1.5	3	3.0	
Sulphate	1	-	-	-	380	499	450	446	442	252	162	204	309	
Biological Oxygen Demand (BOD)	2	-	-	-	< 2	< 2	< 2	< 2	< 2	5	< 2	< 2	< 2	
Chemical Oxygen Demand (COD)	10	-	-	-	29	40	31	45	< 10	22	35	< 10	19.0	
Dissolved Organic Carbon	0.5	-	-	-	0.8	2.3	2.7	2.1	4.2	1.2	1.2	< 0.5	4.1	
Hardness	-	-	-	-	-	1160	913	1090	867	849	193	503	476	
Total Dissolved Solids	10	-	-	-	3400	3400	3250	3750	3770	3230	1370	2180	3110	
Volatile Organic Compounds (µg/L)														
Chloroform	0.5	1	240 [c]	22	< 0.5	1.3	1.3	< 0.5	0.7	0.6	0.9	< 0.5	< 0.5	
Petroleum Hydrocarbons (µg/L)														
PHC F1 (C6 - C10) [a]	25	25	750	-	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	
PHC F2 (>C10 - C16) [a]	100	100	150	-	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
PHC F3 (>C16 - C34) [a]	100	500	500	-	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
PHC F4 (>C34) [a]	100	500	500	-	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
Polynuclear Aromatic Hydrocarbons (µg/L)														
Acenaphthene	0.05	1	600	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Acenaphthylene	0.05	1	1.8	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Anthracene	0.05	0.1	2.4	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
Benzo(a)anthracene	0.01	0.2	4.7	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
Benzo(a)pyrene	0.01	0.01	0.81	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
Benzo(b)fluoranthene	0.01	0.1	0.75	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Benzo(g,h,i)perylene	0.05	0.2	0.2	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Benzo(k)fluoranthene	0.05	0.1	0.4	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Chrysene	0.05	0.1	1	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Dibenzo(a,h)anthracene	0.05	0.2	0.52	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Fluoranthene	0.01	0.4	130	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
Fluorene	0.05	0.5	400	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Indeno(1,2,3,c,d)pyrene	0.05	0.2	0.2	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Methylnaphthalene, 1- [b]	0.05	2	1800	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Methylnaphthalene, 2- [b]	0.05	2		-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Naphthalene	0.05	2	1400	-	0.19	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Phenanthrene	0.05	0.1	580	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Pyrene	0.01	0.2	68	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
Metals (µg/L)														
Antimony	0.5	0.5	20000	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	
Arsenic	1	1	1900	-	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	
Barium	1	2	29000	-	232	135	180	195	219	131	34	63	133	
Beryllium	0.5	0.5	67	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	
Boron	10	10	45000	-	56	36	62	76	60	54	29	38	56	
Cadmium	0.1	0.5	2.7	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	
Calcium	100	-	-	-	345000	380000	305000	356000	296000	275000	65300	159000	153000	
Chromium	1	10	810	-	< 1	8	9	1	< 1	< 1	1	< 1	< 1	
Chromium (VI)	10	10	140	-	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	
Cobalt	0.5	1	66	-	0.8	0.7	1.7	2.4	3.0	< 0.5	0.9	< 0.5	0.6	
Copper	0.5	5	87	-	1.7	11.9	5	3.1	3.8	2.1	9.3	11.5	4.1	
Iron	100	-	-	24240	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
Lead	0.1	1	25	-	0.1	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	
Magnesium	200	-	-	-	45900	52000	36900	48700	31100	39200	7130	26000	23000	
Mercury	0.1	0.1	0.29	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	
Molybdenum	0.5	0.5	9200	-	1.6	< 0.5	< 0.5	0.9	1.1	1.1	2.5	2.1	2.3	
Nickel	1	1	490	-	3	11	8	19	20	2	4	2	4.0	
Selenium	1	5	63	-	< 1	< 1	< 1	< 1	< 1	2	< 1	2	< 1	
Silver	0.1	0.3	1.5	-	0.4	0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	
Sodium	200	5000	2300000	-	656000	64100	893000	769000	1040000	683000	451000	571000	274000	
Thallium	0.1	0.5	510	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	
Uranium	0.1	2	420	-	2.2	2.9	3.1	4.8	4.4	3.4	2.4	1.9	0.9	
Vanadium	0.5	0.5	250	-	< 0.5	1.8	2	< 0.5	< 0.5	< 0.5	< 0.5	0.5	0.5	
Zinc	5	5	1100	-	6	5	< 5	10	< 5	6	6	6	< 5	

Monitoring Well MW15-7

Historical Groundwater Quality Data

Parameters	RDL	RL	2011 EPA Standards		Analytical Results									
	Sample Location Sample ID Property Location Laboratory ID Sample Date		Full Depth Generic Site Condition Standards Non-Potable Groundwater (Table 3)	Property Specific Standards (as per Certificate of Property Use 0371-8TYQMY)	MW15-7 MW15-7 CPU Property 1544375-04 29/10/2015	MW15-7 MW15-7 CPU Property 1623214-07 5/31/2016	MW15-7 MW15-7 CPU Property 1645002-07 10/28/2016	MW15-7 MW15-7 CPU Property 1718037-06 4/28/2017	MW15-7 MW15-7 CPU Property 1743465-04 10/26/2017	MW15-7 MW15-7 CPU Property 1822570-06 5/31/2018	MW15-7 MW15-7 CPU Property 1846110-05 11/12/2018	MW15-7 MW15-7 CPU Property 1922365-07 5/29/2019	MW15-7 MW15-7 CPU Property 1943543-06 10/24/19	
General Inorganic Parameters (mg/L)														
pH (pH units)	0.1	-	-	-	7.6	7.4	7.5	7.2	7.6	7.4	7.4	7.4	7.2	
Alkalinity (CaCO3)	5	-	-	-	362	355	373	387	389	400	422	349	345	
Ammonia	0.01	-	-	4.524	0.18	0.34	0.04	0.08	0.04	0.07	0.04	0.05	0.07	
Conductivity (µS/cm)	5	-	-	-	1960	2130	2030	2400	1710	2790	2110	3200	2310	
Chloride	1	1	2300	-	182	235	291	473	236	581	394	795	445	
Nitrate (N)	0.1	0.1	-	-	15.4	8.3	1.9	2.8	1.4	2.9	1	5	1.6	
Sulphate	1	-	-	-	381	410	256	220	177	153	157	175	138	
Biological Oxygen Demand (BOD)	2	-	-	-	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	
Chemical Oxygen Demand (COD)	10	-	-	-	27	18	< 10	25	37	13	21	28	13.0	
Dissolved Organic Carbon	0.5	-	-	-	2.4	4.7	3	6	4.1	5.2	0.9	7.5	6.0	
Hardness	-	-	-	-	-	799	736	839	520	649	555	823	477	
Total Dissolved Solids	10	-	-	-	1200	1410	1170	1600	954	1650	1160	2080	1210	
Volatile Organic Compounds (µg/L)														
Chloroform	0.5	1	240 [c]	22	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	
Petroleum Hydrocarbons (µg/L)														
PHC F1 (C6 - C10) [a]	25	25	750	-	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	
PHC F2 (>C10 - C16) [a]	100	100	150	-	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
PHC F3 (>C16 - C34) [a]	100	500	500	-	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
PHC F4 (>C34) [a]	100	500	500	-	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
Polynuclear Aromatic Hydrocarbons (µg/L)														
Acenaphthene	0.05	1	600	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Acenaphthylene	0.05	1	1.8	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Anthracene	0.05	0.1	2.4	-	0.02	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
Benzo(a)anthracene	0.01	0.2	4.7	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
Benzo(a)pyrene	0.01	0.01	0.81	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
Benzo(b)fluoranthene	0.01	0.1	0.75	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Benzo(g,h,i)perylene	0.05	0.2	0.2	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Benzo(k)fluoranthene	0.05	0.1	0.4	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Chrysene	0.05	0.1	1	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Dibenzo(a,h)anthracene	0.05	0.2	0.52	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Fluoranthene	0.01	0.4	130	-	0.05	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
Fluorene	0.05	0.5	400	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Indeno(1,2,3,c,d)pyrene	0.05	0.2	0.2	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Methylnaphthalene, 1- [b]	0.05	2	1800	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Methylnaphthalene, 2- [b]	0.05	2		-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Naphthalene	0.05	2	1400	-	0.23	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Phenanthrene	0.05	0.1	580	-	0.06	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Pyrene	0.01	0.2	68	-	0.04	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
Metals (µg/L)														
Antimony	0.5	0.5	20000	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	
Arsenic	1	1	1900	-	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	
Barium	1	2	29000	-	139	93	114	121	102	164	119	249	131	
Beryllium	0.5	0.5	67	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	
Boron	10	10	45000	-	64	48	58	52	54	66	52	47	56	
Cadmium	0.1	0.5	2.7	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	
Calcium	100	-	-	-	218000	270000	245000	289000	176000	218000	178000	268000	153000	
Chromium	1	10	810	-	< 1	4	10	< 1	< 1	< 1	< 1	< 1	< 1	
Chromium (VI)	10	10	140	-	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	
Cobalt	0.5	1	66	-	3.5	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.6	
Copper	0.5	5	87	-	2.6	4.2	49.4	1.8	2.5	2.9	2.3	4	3.6	
Iron	100	-	-	24240	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
Lead	0.1	1	25	-	< 0.1	< 0.1	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	
Magnesium	200	-	-	-	25600	30500	30100	28600	19500	25600	26500	37300	23000	
Mercury	0.1	0.1	0.29	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	
Molybdenum	0.5	0.5	9200	-	4.7	0.9	< 0.5	0.9	0.8	3.4	< 0.5	11.6	2.3	
Nickel	1	1	490	-	6	8	3	1	2	1	2	1	4.0	
Selenium	1	5	63	-	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	
Silver	0.1	0.3	1.5	-	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	
Sodium	200	5000	2300000	-	151000	13600	166000	198000	131000	326000	198000	340000	274000	
Thallium	0.1	0.5	510	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	
Uranium	0.1	2	420	-	1.1	1.2	0.6	0.9	0.6	0.9	0.9	1.3	0.9	
Vanadium	0.5	0.5	250	-	< 0.5	4.1	3	< 0.5	< 0.5	< 0.5	< 0.5	0.9	0.5	
Zinc	5	5	1100	-	6	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	

Monitoring Well MW15-8

Historical Groundwater Quality Data

Parameters	RDL	RL	2011 EPA Standards		Analytical Results									
			Full Depth Generic Site Condition Standards	Property Specific Standards (as per Certificate of Property Use 0371-8TYQMY)	MW15-8	MW15-8	MW15-8	MW15-8	MW15-8	MW15-8	MW15-8			
Sample Location					MW15-8	MW15-8	MW15-8	MW15-8	MW15-8	MW15-8	MW15-8			
Sample ID					CPU Property	CPU Property	CPU Property	CPU Property	CPU Property	CPU Property	CPU Property			
Property Location					1545012-09	1623214-08	1645002-08	1718037-07	1743566-01	1846213-03	1943444-02			
Laboratory ID					30/10/2015	5/31/2016	10/28/2016	4/28/2017	10/27/2017	11/13/2018	10/23/2019			
Sample Date			Non-Potable Groundwater (Table 3)											
General Inorganic Parameters (mg/L)														
pH (pH units)	0.1	-	-	-	7.8	7.7	7.8	7.5	7.6	7.7	7.7			
Alkalinity (CaCO3)	5	-	-	-	280	360	218	390	307	344	307			
Ammonia	0.01	-	-	4.524	0.23	0.32	0.01	0.2	0.1	0.02	0.04			
Conductivity (µS/cm)	5	-	-	-	1020	1420	1000	1450	1460	1160	1660			
Chloride	1	1	2300	-	84	158	108	136	203	156	246			
Nitrate (N)	0.1	0.1	-	-	0.6	0.9	0.9	1.4	1.6	0.6	1.6			
Sulphate	1	-	-	-	126	170	140	220	211	80	147			
Biological Oxygen Demand (BOD)	2	-	-	-	< 2	< 2	3	< 2	< 2	< 2	< 2			
Chemical Oxygen Demand (COD)	10	-	-	-	10	< 10	21	16	23	12	< 10			
Dissolved Organic Carbon	0.5	-	-	-	3	2.2	5.1	2.7	3.1	0.6	2.1			
Hardness	-	-	-	-	-	413	309	555	349	317	453			
Total Dissolved Solids	10	-	-	-	552	830	522	902	876	632	948			
Volatile Organic Compounds (µg/L)														
Chloroform	0.5	1	240 [c]	22	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5			
Petroleum Hydrocarbons (µg/L)														
PHC F1 (C6 - C10) [a]	25	25	750	-	< 25	< 25	< 25	< 25	< 25	< 25	< 25			
PHC F2 (>C10 - C16) [a]	100	100	150	-	< 100	< 100	< 100	< 100	< 100	< 100	< 100			
PHC F3 (>C16 - C34) [a]	100	500	500	-	< 100	< 100	< 100	< 100	< 100	< 100	< 100			
PHC F4 (>C34) [a]	100	500	500	-	< 100	< 100	< 100	< 100	< 100	< 100	< 100			
Polynuclear Aromatic Hydrocarbons (µg/L)														
Acenaphthene	0.05	1	600	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05			
Acenaphthylene	0.05	1	1.8	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05			
Anthracene	0.05	0.1	2.4	-	0.02	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01			
Benzo(a)anthracene	0.01	0.2	4.7	-	0.12	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01			
Benzo(a)pyrene	0.01	0.01	0.81	-	0.1	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01			
Benzo(b)fluoranthene	0.01	0.1	0.75	-	0.16	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05			
Benzo(g,h,i)perylene	0.05	0.2	0.2	-	0.06	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05			
Benzo(k)fluoranthene	0.05	0.1	0.4	-	0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05			
Chrysene	0.05	0.1	1	-	0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05			
Dibenzo(a,h)anthracene	0.05	0.2	0.52	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05			
Fluoranthene	0.01	0.4	130	-	0.22	0.08	0.12	< 0.01	< 0.01	< 0.01	0.03			
Fluorene	0.05	0.5	400	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05			
Indeno(1,2,3,c,d)pyrene	0.05	0.2	0.2	-	0.07	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05			
Methylnaphthalene, 1- [b]	0.05	2	1800	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05			
Methylnaphthalene, 2- [b]	0.05	2		-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05			
Naphthalene	0.05	2	1400	-	0.19	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05			
Phenanthrene	0.05	0.1	580	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05			
Pyrene	0.01	0.2	68	-	0.19	0.07	0.11	< 0.01	< 0.01	< 0.01	0.03			
Metals (µg/L)														
Antimony	0.5	0.5	20000	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5			
Arsenic	1	1	1900	-	< 1	< 1	< 1	< 1	< 1	< 1	< 1			
Barium	1	2	29000	-	58	89	63	105	78	56	97			
Beryllium	0.5	0.5	67	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5			
Boron	10	10	45000	-	30	38	29	42	50	38	44			
Cadmium	0.1	0.5	2.7	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1			
Calcium	100	-	-	-	73800	128000	98200	183000	110000	98200	136000			
Chromium	1	10	810	-	< 1	2	6	< 1	< 1	< 1	< 1			
Chromium (VI)	10	10	140	-	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
Cobalt	0.5	1	66	-	1.6	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5			
Copper	0.5	5	87	-	1.8	4.2	3.8	1.2	2.1	1.8	2.9			
Iron	100	-	-	24240	< 100	< 100	< 100	< 100	< 100	< 100	< 100			
Lead	0.1	1	25	-	0.2	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1			
Magnesium	200	-	-	-	12700	22600	15400	23900	18100	17600	27800			
Mercury	0.1	0.1	0.29	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1			
Molybdenum	0.5	0.5	9200	-	7.2	0.7	2.3	< 0.5	0.8	0.7	0.5			
Nickel	1	1	490	-	1	5	< 1	1	1	< 1	3			
Selenium	1	5	63	-	< 1	< 1	< 1	< 1	< 1	< 1	< 1			
Silver	0.1	0.3	1.5	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1			
Sodium	200	5000	2300000	-	121000	12800	102000	104000	134000	117000	161000			
Thallium	0.1	0.5	510	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1			
Uranium	0.1	2	420	-	0.6	0.9	0.3	0.9	0.6	0.4	0.7			
Vanadium	0.5	0.5	250	-	< 0.5	2.7	1.6	< 0.5	< 0.5	< 0.5	< 0.5			
Zinc	5	5	1100	-	18	13	< 5	8	8	< 5	< 5			

Monitoring Well MW15-9

Historical Groundwater Quality Data

Parameters	RDL	RL	2011 EPA Standards		Analytical Results									
	Sample Location Sample ID Property Location Laboratory ID Sample Date		Full Depth Generic Site Condition Standards Non-Potable Groundwater (Table 3)	Property Specific Standards (as per Certificate of Property Use 0371-8TYQMY)	MW15-9 MW15-9 CPU Property 1544375-05 29/10/2015	MW15-9 MW15-9 CPU Property 1623214-09 5/31/2016	MW15-9 MW15-9 CPU Property 1644414-01 10/27/2016	MW15-9 MW15-9 CPU Property 1718037-08 4/28/2017	MW15-9 MW15-9 CPU Property 1743566-02 10/26/2017	MW15-9 MW15-9 CPU Property 1822570-07 5/31/2018	MW15-9 MW15-9 CPU Property 1846213-04 11/13/2018	MW15-9 MW15-9 CPU Property 1922365-08 5/29/2019	MW15-9 MW15-9 CPU Property 1943444-03 10/23/19	
General Inorganic Parameters (mg/L)														
pH (pH units)	0.1	-	-	-	7.8	7.8	7.6	7.4	7.9	7.8	7.8	7.9	7.8	
Alkalinity (CaCO3)	5	-	-	-	223	246	252	285	302	270	372	247	268	
Ammonia	0.01	-	-	4.524	0.06	0.1	0.03	0.32	0.03	0.06	0.03	0.05	0.03	
Conductivity (µS/cm)	5	-	-	-	2190	2440	2540	7590	2420	2880	2060	2060	3220	
Chloride	1	1	2300	-	324	291	416	2150	358	592	300	354	587	
Nitrate (N)	0.1	0.1	-	-	3	4.9	2.9	3.9	2.9	3.9	2.2	4	3.7	
Sulphate	1	-	-	-	474	575	503	896	502	323	313	342	495	
Biological Oxygen Demand (BOD)	2	-	-	-	< 2	< 2	< 2	< 20	< 2	< 2	< 2	4	< 2	
Chemical Oxygen Demand (COD)	10	-	-	-	< 10	14	< 10	115	< 10	18	21	11	< 10	
Dissolved Organic Carbon	0.5	-	-	-	1.2	1.5	2.4	3.6	3.9	0.8	1.5	0.9	2.6	
Hardness	-	-	-	-	-	745	660.21	2000	-	600	341	519	687	
Total Dissolved Solids	10	-	-	-	1370	1620	1670	5370	1520	1760	1190	1300	1990	
Volatile Organic Compounds (µg/L)														
Chloroform	0.5	1	240 [c]	22	< 0.5	1.4	< 0.5	< 0.5	0.8	0.6	0.6	1.6	< 0.5	
Petroleum Hydrocarbons (µg/L)														
PHC F1 (C6 - C10) [a]	25	25	750	-	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	
PHC F2 (>C10 - C16) [a]	100	100	150	-	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
PHC F3 (>C16 - C34) [a]	100	500	500	-	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
PHC F4 (>C34) [a]	100	500	500	-	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
Polynuclear Aromatic Hydrocarbons (µg/L)														
Acenaphthene	0.05	1	600	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Acenaphthylene	0.05	1	1.8	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Anthracene	0.05	0.1	2.4	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
Benzo(a)anthracene	0.01	0.2	4.7	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
Benzo(a)pyrene	0.01	0.01	0.81	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
Benzo(b)fluoranthene	0.01	0.1	0.75	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Benzo(g,h,i)perylene	0.05	0.2	0.2	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Benzo(k)fluoranthene	0.05	0.1	0.4	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Chrysene	0.05	0.1	1	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Dibenzo(a,h)anthracene	0.05	0.2	0.52	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Fluoranthene	0.01	0.4	130	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
Fluorene	0.05	0.5	400	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Indeno(1,2,3,c,d)pyrene	0.05	0.2	0.2	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Methylnaphthalene, 1- [b]	0.05	2	1800	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Methylnaphthalene, 2- [b]	0.05	2		-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Naphthalene	0.05	2	1400	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Phenanthrene	0.05	0.1	580	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Pyrene	0.01	0.2	68	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
Metals (µg/L)														
Antimony	0.5	0.5	20000	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	
Arsenic	1	1	1900	-	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	
Barium	1	2	29000	-	67	50	76	90	39	79	45	36	89	
Beryllium	0.5	0.5	67	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	
Boron	10	10	45000	-	51	49	83	100	61	57	53	58	71	
Cadmium	0.1	0.5	2.7	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	
Calcium	100	-	-	-	180000	227000	218000	647000	-	184000	105000	156000	212000	
Chromium	1	10	810	-	< 1	4	7	1	< 1	< 1	2	< 1	1.0	
Chromium (VI)	10	10	140	-	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	
Cobalt	0.5	1	66	-	2.4	4.1	3	< 0.5	6.1	1.7	1.7	3.6	3.0	
Copper	0.5	5	87	-	1.9	4.7	7.2	1.2	4.9	1.7	3.4	9	3.6	
Iron	100	-	-	24240	< 100	< 100	< 100	< 100	-	< 100	< 100	< 100	< 100	
Lead	0.1	1	25	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	
Magnesium	200	-	-	-	26500	43400	28100	93800	-	34100	19200	24300	37900	
Mercury	0.1	0.1	0.29	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	
Molybdenum	0.5	0.5	9200	-	8.3	6.3	6	7.2	6.6	6.4	8.4	7.2	10.4	
Nickel	1	1	490	-	6	19	10	3	26	10	7	19	13.0	
Selenium	1	5	63	-	< 1	1	< 1	1	< 1	< 1	< 1	< 1	< 1	
Silver	0.1	0.3	1.5	-	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	
Sodium	200	5000	2300000	-	256000	25400	307000	968000	322000	372000	347000	279000	477000	
Thallium	0.1	0.5	510	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	
Uranium	0.1	2	420	-	2.1	2.6	2.7	4.9	3.6	2.1	2.7	2.0	4.0	
Vanadium	0.5	0.5	250	-	< 0.5	1.3	5.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	
Zinc	5	5	1100	-	7	16	< 5	< 5	6	< 5	< 5	< 5	5.0	

Monitoring Well MW15-10

Historical Groundwater Quality Data

Parameters	RDL	RL	2011 EPA Standards		Analytical Results									
	Sample Location Sample ID Property Location Laboratory ID Sample Date		Full Depth Generic Site Condition Standards Non-Potable Groundwater (Table 3)	Property Specific Standards (as per Certificate of Property Use 0371-8TYQMY)	MW15-10 MW15-10 CPU Property 1544375-06 29/10/2015	MW15-10 MW15-10 CPU Property 1623214-10 5/31/2016	MW15-10 MW15-10 CPU Property 1644414-02 10/27/2016	MW15-10 MW15-10 CPU Property 1725040-01 6/16/2017	MW15-10 MW15-10 CPU Property 1743566-03 10/27/2017	MW15-10 MW15-10 CPU Property 1822387-02 5/30/2018	MW15-10 MW15-10 CPU Property 1846213-05 11/13/2018	MW15-10 MW15-10 CPU Property 1922264-08 5/28/2019	MW15-10 MW15-10 CPU Property 1943444-04 10/23/19	
General Inorganic Parameters (mg/L)														
pH (pH units)	0.1	-	-	-	7.7	7.2	6.8	6.9	7	7.3	7.3	7.3	7.6	
Alkalinity (CaCO3)	5	-	-	-	153	212	277	310	345	406	389	400	256	
Ammonia	0.01	-	-	4.524	0.32	0.55	1.18	< 0.01	0.07	0.06	0.09	0.08	0.09	
Conductivity (µS/cm)	5	-	-	-	3860	7980	7740	6760	3970	3500	2950	2570	1250	
Chloride	1	1	2300	-	1060	**2410**	2250	1950	994	661	553	394	112	
Nitrate (N)	0.1	0.1	-	-	0.7	1.6	0.5	1.3	1.7	1.3	1	2	0.9	
Sulphate	1	-	-	-	154	390	513	667	436	443	387	454	190	
Biological Oxygen Demand (BOD)	2	-	-	-	< 2	< 2	< 20	< 12	< 2	< 2	< 2	ND (4)	2.0	
Chemical Oxygen Demand (COD)	10	-	-	-	61	113	113	119	63	77	50	95	59.0	
Dissolved Organic Carbon	0.5	-	-	-	6.1	7.3	15	19.1	18.7	27.8	12.8	30.3	19.2	
Hardness	-	-	-	-	-	1390	1255.79	1360	573	643	501	477	271	
Total Dissolved Solids	10	-	-	-	2440	5380	5170	4740	2370	2090	1750	1670	742	
Volatile Organic Compounds (µg/L)														
Chloroform	0.5	1	240 [c]	22	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	
Petroleum Hydrocarbons (µg/L)														
PHC F1 (C6 - C10) [a]	25	25	750	-	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	
PHC F2 (>C10 - C16) [a]	100	100	150	-	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
PHC F3 (>C16 - C34) [a]	100	500	500	-	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
PHC F4 (>C34) [a]	100	500	500	-	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
Polynuclear Aromatic Hydrocarbons (µg/L)														
Acenaphthene	0.05	1	600	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Acenaphthylene	0.05	1	1.8	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Anthracene	0.05	0.1	2.4	-	0.09	< 0.01	< 0.01	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
Benzo(a)anthracene	0.01	0.2	4.7	-	0.3	< 0.01	< 0.01	0.05	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
Benzo(a)pyrene	0.01	0.01	0.81	-	0.26	< 0.01	< 0.01	0.06	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
Benzo(b)fluoranthene	0.01	0.1	0.75	-	0.35	< 0.05	< 0.05	0.06	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Benzo(g,h,i)perylene	0.05	0.2	0.2	-	0.16	< 0.05	< 0.05	0.07	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Benzo(k)fluoranthene	0.05	0.1	0.4	-	0.13	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Chrysene	0.05	0.1	1	-	0.31	< 0.05	< 0.05	0.07	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Dibenzo(a,h)anthracene	0.05	0.2	0.52	-	0.06	< 0.05	< 0.05	0.07	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Fluoranthene	0.01	0.4	130	-	0.69	< 0.01	< 0.01	0.06	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
Fluorene	0.05	0.5	400	-	< 0.05	< 0.05	< 0.05	0.06	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Indeno(1,2,3,c,d)pyrene	0.05	0.2	0.2	-	0.14	< 0.05	< 0.05	0.07	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Methylnaphthalene, 1- [b]	0.05	2	1800	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Methylnaphthalene, 2- [b]	0.05	2		-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Naphthalene	0.05	2	1400	-	0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Phenanthrene	0.05	0.1	580	-	0.46	< 0.05	< 0.05	0.06	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Pyrene	0.01	0.2	68	-	0.56	< 0.01	< 0.01	0.06	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
Metals (µg/L)														
Antimony	0.5	0.5	20000	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	
Arsenic	1	1	1900	-	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	
Barium	1	2	29000	-	276	225	329	457	113	80	43	56	32	
Beryllium	0.5	0.5	67	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	
Boron	10	10	45000	-	31	19	51	47	41	57	41	33	32	
Cadmium	0.1	0.5	2.7	-	0.1	0.5	0.4	0.7	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	
Calcium	100	-	-	-	177000	452000	409000	451000	189000	212000	158000	153000	84000	
Chromium	1	10	810	-	< 1	6	14	1	< 1	< 1	< 1	1	< 1	
Chromium (VI)	10	10	140	-	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	
Cobalt	0.5	1	66	-	1.5	1.7	1.2	1.7	0.7	1.0	0.7	1.1	< 0.5	
Copper	0.5	5	87	-	4.8	16.3	10	6.5	4.9	7.1	7.1	11.4	7.6	
Iron	100	-	-	24240	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
Lead	0.1	1	25	-	0.1	0.1	< 0.1	0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	
Magnesium	200	-	-	-	26500	63900	56900	55900	24400	27800	25900	23300	14900	
Mercury	0.1	0.1	0.29	-	< 0.1	< 0.1	< 0.1	0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	
Molybdenum	0.5	0.5	9200	-	6.7	< 0.5	1.2	0.7	< 0.5	< 0.5	0.5	< 0.5	0.9	
Nickel	1	1	490	-	3	15	7	3	4	6	4	7	2.0	
Selenium	1	5	63	-	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	
Silver	0.1	0.3	1.5	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	
Sodium	200	5000	2300000	-	472000	105000	1080000	1140000	576000	546000	452000	399000	149000	
Thallium	0.1	0.5	510	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	
Uranium	0.1	2	420	-	4.2	1.4	2.8	2.6	1.9	1.5	1.6	1.8	1.0	
Vanadium	0.5	0.5	250	-	0.7	1	7.7	0.5	< 0.5	< 0.5	< 0.5	0.7	0.9	
Zinc	5	5	1100	-	8	8	19	6	< 5	< 5	< 5	6	8.0	

Monitoring Well MW15-11

Historical Groundwater Quality Data

Parameters	RDL	RL	2011 EPA Standards		Analytical Results									
			Full Depth Generic Site Condition Standards	Property Specific Standards (as per Certificate of Property Use 0371-8TYQMY)	MW15-11	MW15-11	MW15-11	MW15-11	MW15-11	MW15-11	MW15-11	MW15-11	MW15-11	
Sample Location					MW15-11	MW15-11	MW15-11	MW15-11	MW15-11	MW15-11	MW15-11	MW15-11	MW15-11	
Sample ID					CPU Property	CPU Property	CPU Property	CPU Property	CPU Property	CPU Property	CPU Property	CPU Property	CPU Property	
Property Location					1544375-07	1623214-11	1644414-03	1718037-09	1743566-04	1822387-03	1846213-06	1922264-07	1943444-05	
Laboratory ID					29/10/2015	5/31/2016	10/27/2016	4/28/2017	10/27/2017	5/30/2018	11/13/2018	5/28/2019	10/23/19	
Sample Date			Non-Potable Groundwater (Table 3)											
General Inorganic Parameters (mg/L)														
pH (pH units)	0.1	-	-	-	7.9	7.9	7.6	7.5	7.7	7.8	7.7	7.7	7.8	
Alkalinity (CaCO3)	5	-	-	-	296	257	300	277	325	307	320	288	291	
Ammonia	0.01	-	-	4.524	0.02	0.1	< 0.01	0.03	0.06	0.03	0.09	0.02	0.10	
Conductivity (µS/cm)	5	-	-	-	1330	1270	1430	2660	1590	1280	1300	1840	1530	
Chloride	1	1	2300	-	201	158	197	603	271	168	193	375	260	
Nitrate (N)	0.1	0.1	-	-	1	1.1	1.3	1.3	1.5	0.7	1	1	1.1	
Sulphate	1	-	-	-	77	139	132	242	133	113	89	144	89	
Biological Oxygen Demand (BOD)	2	-	-	-	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	
Chemical Oxygen Demand (COD)	10	-	-	-	< 10	11	< 10	21	12	< 10	< 10	< 10	17.0	
Dissolved Organic Carbon	0.5	-	-	-	1.8	1.5	2.2	2.6	3.4	1.5	< 0.5	1.0	18.2	
Hardness	-	-	-	-	-	326	376.51	685	345	319	355	466	386	
Total Dissolved Solids	10	-	-	-	740	688	758	1610	874	660	682	1070	820	
Volatile Organic Compounds (µg/L)														
Chloroform	0.5	1	240 [c]	22	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	
Petroleum Hydrocarbons (µg/L)														
PHC F1 (C6 - C10) [a]	25	25	750	-	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	
PHC F2 (>C10 - C16) [a]	100	100	150	-	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
PHC F3 (>C16 - C34) [a]	100	500	500	-	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
PHC F4 (>C34) [a]	100	500	500	-	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
Polynuclear Aromatic Hydrocarbons (µg/L)														
Acenaphthene	0.05	1	600	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Acenaphthylene	0.05	1	1.8	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Anthracene	0.05	0.1	2.4	-	< 0.05	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
Benzo(a)anthracene	0.01	0.2	4.7	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
Benzo(a)pyrene	0.01	0.01	0.81	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
Benzo(b)fluoranthene	0.01	0.1	0.75	-	< 0.01	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Benzo(g,h,i)perylene	0.05	0.2	0.2	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Benzo(k)fluoranthene	0.05	0.1	0.4	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Chrysene	0.05	0.1	1	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Dibenzo(a,h)anthracene	0.05	0.2	0.52	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Fluoranthene	0.01	0.4	130	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
Fluorene	0.05	0.5	400	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Indeno(1,2,3,c,d)pyrene	0.05	0.2	0.2	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Methylnaphthalene, 1- [b]	0.05	2	1800	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Methylnaphthalene, 2- [b]	0.05	2		-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Naphthalene	0.05	2	1400	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Phenanthrene	0.05	0.1	580	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Pyrene	0.01	0.2	68	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
Metals (µg/L)														
Antimony	0.5	0.5	20000	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	
Arsenic	1	1	1900	-	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	
Barium	1	2	29000	-	118	89	107	205	94	98	87	160	117	
Beryllium	0.5	0.5	67	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	
Boron	10	10	45000	-	27	19	37	33	33	44	27	30	33	
Cadmium	0.1	0.5	2.7	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	
Calcium	100	-	-	-	115000	97600	116000	218000	106000	96900	106000	141000	116000	
Chromium	1	10	810	-	< 1	4	7	< 1	< 1	< 1	< 1	< 1	< 1	
Chromium (VI)	10	10	140	-	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	
Cobalt	0.5	1	66	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	
Copper	0.5	5	87	-	0.7	2.2	62.2	< 0.5	0.7	< 0.5	1.5	1	2.7	
Iron	100	-	-	24240	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
Lead	0.1	1	25	-	< 0.1	< 0.1	0.2	< 0.1	< 0.1	< 0.1	0.1	< 0.1	< 0.1	
Magnesium	200	-	-	-	18800	20000	21100	34000	19700	18800	21800	28000	23100	
Mercury	0.1	0.1	0.29	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	
Molybdenum	0.5	0.5	9200	-	1.2	0.7	0.9	0.5	0.7	0.7	0.9	0.6	0.8	
Nickel	1	1	490	-	< 1	3	2	< 1	< 1	< 1	< 1	< 1	1.0	
Selenium	1	5	63	-	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	
Silver	0.1	0.3	1.5	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	
Sodium	200	5000	2300000	-	134000	10900	137000	297000	145000	156000	136000	181000	169000	
Thallium	0.1	0.5	510	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	
Uranium	0.1	2	420	-	0.8	0.7	0.8	1	1.1	0.7	0.8	1.0	1.0	
Vanadium	0.5	0.5	250	-	< 0.5	1.4	5.6	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.5	
Zinc	5	5	1100	-	< 5	< 5	< 5	< 5	< 5	< 5	< 5	6	< 5	

Monitoring Well MW15-12

Historical Groundwater Quality Data

Parameters	RDL	RL	2011 EPA Standards		Analytical Results									
	Sample Location Sample ID Property Location Laboratory ID Sample Date		Full Depth Generic Site Condition Standards Non-Potable Groundwater (Table 3)	Property Specific Standards (as per Certificate of Property Use 0371-8TYQMY)	MW15-12 MW15-12 CPU Property 1544375-08 29/10/2015	MW15-12 MW15-12 CPU Property 1644414-04 10/27/2016	MW15-12 MW15-12 CPU Property 1718037-10 4/28/2017	MW15-12 MW15-12 CPU Property 1743566-05 10/27/2017	MW15-12 MW15-12 CPU Property 1822387-04 5/30/2018	MW15-12 MW15-12 CPU Property 1846213-07 11/13/2018	MW15-12 MW15-12 CPU Property 1922264-06 5/28/2019	MW15-12 MW15-12 CPU Property 1943444-06 10/23/2019		
General Inorganic Parameters (mg/L)														
pH (pH units)	0.1	-	-	-	7.9	7.7	7.4	7.8	7.8	7.8	7.8	8		
Alkalinity (CaCO3)	5	-	-	-	246	278	256	315	306	302	301	244		
Ammonia	0.01	-	-	4.524	**10.6**	0.03	0.05	0.06	0.06	0.03	0.02	0.04		
Conductivity (µS/cm)	5	-	-	-	1120	1050	6850	1660	2530	956	3960	757		
Chloride	1	1	2300	-	105	112	1960	308	519	133	1060	80		
Nitrate (N)	0.1	0.1	-	-	0.3	0.2	2.0	0.4	0.4	0.2	0.8	< 0.1		
Sulphate	1	-	-	-	184	104	938	153	165	34	320	11		
Biological Oxygen Demand (BOD)	2	-	-	-	4	< 2	< 20	< 2	< 2	< 2	< 2	< 2		
Chemical Oxygen Demand (COD)	10	-	-	-	47	< 10	81	< 10	10	15	18	< 10		
Dissolved Organic Carbon	0.5	-	-	-	8.4	2.6	3.1	3.2	1.5	< 0.5	1.5	14.3		
Hardness	-	-	-	-	-	248	1470	310	470	255	569	128		
Total Dissolved Solids	10	-	-	-	672	574	4640	944	1410	524	2300	386		
Volatile Organic Compounds (µg/L)														
Chloroform	0.5	1	240 [c]	22	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5		
Petroleum Hydrocarbons (µg/L)														
PHC F1 (C6 - C10) [a]	25	25	750	-	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25		
PHC F2 (>C10 - C16) [a]	100	100	150	-	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100		
PHC F3 (>C16 - C34) [a]	100	500	500	-	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100		
PHC F4 (>C34) [a]	100	500	500	-	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100		
Polynuclear Aromatic Hydrocarbons (µg/L)														
Acenaphthene	0.05	1	600	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		
Acenaphthylene	0.05	1	1.8	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		
Anthracene	0.05	0.1	2.4	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01		
Benzo(a)anthracene	0.01	0.2	4.7	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01		
Benzo(a)pyrene	0.01	0.01	0.81	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01		
Benzo(b)fluoranthene	0.01	0.1	0.75	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		
Benzo(g,h,i)perylene	0.05	0.2	0.2	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		
Benzo(k)fluoranthene	0.05	0.1	0.4	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		
Chrysene	0.05	0.1	1	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		
Dibenzo(a,h)anthracene	0.05	0.2	0.52	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		
Fluoranthene	0.01	0.4	130	-	0.02	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01		
Fluorene	0.05	0.5	400	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		
Indeno(1,2,3,c,d)pyrene	0.05	0.2	0.2	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		
Methylnaphthalene, 1- [b]	0.05	2	1800	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		
Methylnaphthalene, 2- [b]	0.05	2		-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		
Naphthalene	0.05	2	1400	-	0.16	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		
Phenanthrene	0.05	0.1	580	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		
Pyrene	0.01	0.2	68	-	0.02	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01		
Metals (µg/L)														
Antimony	0.5	0.5	20000	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5		
Arsenic	1	1	1900	-	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1		
Barium	1	2	29000	-	89	60	145	80	78	45	93	30		
Beryllium	0.5	0.5	67	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5		
Boron	10	10	45000	-	36	41	87	36	48	33	46	38		
Cadmium	0.1	0.5	2.7	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1		
Calcium	100	-	-	-	114000	78600	471000	99100	144000	80200	173000	40300		
Chromium	1	10	810	-	1	5	2	< 1	< 1	< 1	< 1	< 1		
Chromium (VI)	10	10	140	-	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
Cobalt	0.5	1	66	-	1.4	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5		
Copper	0.5	5	87	-	4.3	2.2	0.8	1.3	< 0.5	2.0	2.2	6.5		
Iron	100	-	-	24240	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100		
Lead	0.1	1	25	-	0.3	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.2	0.1		
Magnesium	200	-	-	-	17000	12500	72100	15100	26700	13300	33100	6660		
Mercury	0.1	0.1	0.29	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1		
Molybdenum	0.5	0.5	9200	-	13.4	0.9	< 0.5	0.9	0.9	1	0.9	1.9		
Nickel	1	1	490	-	1	1	< 1	< 1	< 1	< 1	< 1	< 1		
Selenium	1	5	63	-	< 1	< 1	1	< 1	< 1	< 1	< 1	< 1		
Silver	0.1	0.3	1.5	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1		
Sodium	200	5000	2300000	-	116000	115000	969000	178000	355000	103000	614000	112000		
Thallium	0.1	0.5	510	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1		
Uranium	0.1	2	420	-	1.7	0.4	2.6	0.8	1	0.5	1.9	0.6		
Vanadium	0.5	0.5	250	-	1.3	5.5	< 0.5	< 0.5	< 0.5	0.6	< 0.5	0.8		
Zinc	5	5	1100	-	18	7	< 5	< 5	< 5	< 5	< 5	6		

Appendix F

Historical Landfill Gas Monitoring Data

Notes on Landfill Gas Monitoring Results

Relative pressure readings for October 28, 2015 monitoring taken on November 17, 2015.

masl = Metres above sea level.

mbgs = Metres below ground surface.

LEL = Lower Exposive Limit

Monitoring performed using a Landtec GEM 2000 or 5000 Landfill Gas Analyzer.

>>> = Methane over Detectable Range of the Instrument.

2.5	Percent Methane by Volume Exceeds MOE Regulation 232/98 for Landfill Property Boundary Subsurface.
1	Percent Methane by Volume Exceeds MOE Regulation 232/98 for Landfill On-Site Building or Foundation.
0.05	Percent Methane by Volume Exceeds MOE Regulation 232/98 for Landfill Off-Site Building or Foundation.

Historical Landfill Gas Monitoring Data

Monitor ID	MTM Coordinates		Ground Surface Elevation (masl)	Screen Interval (mbgs)	Geologic Media Intersected by Screen	Monitoring Date	In-Situ Measurements							Comments (Status of Landfill Gas Probes)
	Easting	Northing					Methane (CH_4)			Carbon Dioxide (%)	Oxygen (%)	Balance Gases (%)	Relative Pressure (Inches of Water)	
							% v/v		% LEL					
							Initial and/or Peak	Long Term and/or Stable	Long Term and/or Stable	Long Term and/or Stable	Long Term and/or Stable	Long Term and/or Stable		
GP15-1	368878.435	5029083.949	65.043	1.52 - 3.05	Overburden	28-Oct-15	0.1	0.1	2.0	4.8	12.0	83.1	0.0	Good Condition
						23-Feb-16	0.0	0.0	0.0	6.2	4.3	89.5	0.0	Good Condition
						10-May-16	0.1	0.0	1.0	6.9	0.8	92.2	0.0	Good Condition
						12-Aug-16	0.0	0.0	0.0	4.1	15.8	79.9	0.0	Good Condition
						4-Nov-16	0.0	0.0	0.0	8.5	4.2	86.9	0.0	Good Condition
						14-Feb-17	0.1	0.1	1.0	3.3	10.1	86.4	0.0	Good Condition
						25-Apr-17	0.0	0.0	0.0	6.4	2.8	90.7	0.0	Good Condition
						21-Jul-17	0.0	0.0	0.0	7.7	12.6	79.7	0.0	Good Condition
						23-Oct-17	0.1	0.1	0.0	1.6	19.8	78.5	0.0	Good Condition
						21-Feb-18	0.0	0.0	0.0	6.0	6.0	87.9	0.0	Good Condition
						29-May-18	0.0	0.0	0.0	5.7	12.7	81.6	0.0	Good Condition
						3-Aug-18	0.0	0.0	0.0	4.7	12.2	82.1	0.0	Good Condition
						8-Nov-18	0.0	0.0	0.0	4.0	16.5	79.6	0.0	Good Condition
						19-Feb-19	0.1	0.0	0.0	7.7	2.1	90.2	0.0	Good Condition
						27-May-19	0.0	0.0	0.0	7.4	7.1	85.5	0.0	Good Condition
						7-Aug-19	0.0	0.0	0.0	7.0	12.6	80.2	0.0	Good Condition
						28-Nov-19	0.0	0.0	0.0	5.2	11.1	83.6	0.0	Good Condition
GP15-2	368835.264	5029365.156	65.228	1.52 - 3.05	Overburden	28-Oct-15	0.0	0.0	0.0	3.1	2.9	94.0	-1.0	Good Condition
						23-Feb-16	0.0	0.0	0.0	1.5	16.2	82.1	0.2	Good Condition
						10-May-16	0.0	0.0	0.0	1.4	14.2	84.3	1.0	Good Condition
						12-Aug-16	0.0	0.0	0.0	3.0	6.2	90.8	0.2	Good Condition
						4-Nov-16	0.1	0.1	1.0	3.9	3.7	92.4	0.2	Good Condition
						14-Feb-17	0.0	0.0	0.0	0.5	18.1	81.4	-0.5	Good Condition
						25-Apr-17	0.0	0.0	0.0	1.0	13.6	85.4	0.0	Good Condition
						21-Jul-17	0.0	0.0	0.0	3.6	7.2	88.8	0.0	Good Condition
						23-Oct-17	0.1	0.1	1.0	1.5	16.1	82.2	0.0	Good Condition
						21-Feb-18	-	-	-	-	-	-	-	Local Flooding
						29-May-18	0.0	0.0	0.0	2.5	13.4	84.0	0.0	Good Condition
						3-Aug-18	0.0	0.0	0.0	3.3	8.6	88.0	0.0	Good Condition
						8-Nov-18	0.0	0.0	0.0	4.7	7.2	88.1	0.0	Good Condition
						19-Feb-19	-	-	-	-	-	-	-	Could Not Locate
						27-May-19	0.0	0.0	0.0	3.0	12.3	84.7	0.6	Good Condition
						7-Aug-19	0.0	0.0	0.0	4.3	10.4	85.3	0.0	Good Condition
						28-Nov-19	0.0	0.0	0.0	3.7	12.8	83.5	0.2	Good Condition

Historical Landfill Gas Monitoring Data

Monitor ID	MTM Coordinates		Ground Surface Elevation (masl)	Screen Interval (mbgs)	Geologic Media Intersected by Screen	Monitoring Date	In-Situ Measurements							Comments (Status of Landfill Gas Probes)
	Easting	Northing					Methane (CH_4)			Carbon Dioxide (%)	Oxygen (%)	Balance Gases (%)	Relative Pressure (Inches of Water)	
							% v/v		% LEL					
							Initial and/or Peak	Long Term and/or Stable	Long Term and/or Stable	Long Term and/or Stable	Long Term and/or Stable	Long Term and/or Stable		
GP15-3	368835.685	5029306.220	65.067	1.52 - 3.05	Overburden	28-Oct-15	0.0	0.0	0.0	0.4	20.9	78.8	0.0	Good Condition
						23-Feb-16	0.0	0.0	0.0	0.1	21.7	78.3	0.0	Good Condition
						10-May-16	0.0	0.0	0.0	0.6	19.1	80.2	0.0	Good Condition
						12-Aug-16	0.0	0.0	0.0	3.0	13.7	83.1	0.0	Good Condition
						4-Nov-16	0.1	0.1	1.0	0.5	20.4	78.9	0.0	Good Condition
						14-Feb-17	0.1	0.1	1.0	0.0	21.5	78.4	0.0	Good Condition
						25-Apr-17	0.0	0.0	0.0	0.3	20.5	79.2	0.0	Good Condition
						21-Jul-17	0.0	0.0	0.0	2.4	15.6	82.0	0.0	Good Condition
						23-Oct-17	0.1	0.0	0.0	0.4	20.9	78.6	0.0	Good Condition
						21-Feb-18	0.0	0.0	0.0	20.0	0.3	79.5	0.0	Good Condition
						29-May-18	0.0	0.0	0.0	1.4	17.1	81.5	0.0	Good Condition
						3-Aug-18	0.0	0.0	0.0	1.6	15.1	73.9	0.0	Good Condition
						8-Nov-18	0.0	0.0	0.0	0.6	21.2	78.2	0.0	Good Condition
						19-Feb-19	-	-	-	-	-	-	-	Could Not Locate
						27-May-19	0.0	0.0	0.0	0.9	19.1	80.0	0.5	Good Condition
						7-Aug-19	0.0	0.0	0.0	2.6	15.4	81.9	0.0	Good Condition
						28-Nov-19	0.0	0.0	0.0	0.5	20.9	78.5	0.5	Good Condition
GP15-4	368893.417	5029339.143	-	1.52 - 3.05	Overburden	28-Oct-15	0.9	0.9	19.0	8.6	0.0	90.5	0.0	Good Condition
						23-Feb-16	0.7	0.7	13.0	6.9	0.2	92.2	0.0	Good Condition
						10-May-16	0.2	0.1	4.0	5.4	0.0	94.4	0.0	Good Condition
						12-Aug-16	0.0	0.0	0.0	14.0	1.6	84.6	0.0	Good Condition
						4-Nov-16	0.3	0.2	5.0	10.5	0.0	89.1	0.0	Good Condition
						14-Feb-17	0.4	0.4	7.0	2.9	10.5	86.1	-0.2	Good Condition
						25-Apr-17	0.5	0.5	11.0	6.0	0.0	93.5	0.0	Good Condition
						21-Jul-17	0.0	0.0	0.0	12.5	1.8	85.7	0.0	Good Condition
						23-Oct-17	0.1	0.1	1.0	5.0	15.2	79.8	0.0	Good Condition
						21-Feb-18	-	-	-	-	-	-	-	Could Not Locate
						29-May-18	0.0	0.0	0.0	6.0	9.7	84.1	0.0	Good Condition
						3-Aug-18	0.0	0.0	0.0	7.9	3.3	81.5	0.0	Good Condition
						8-Nov-18	0.0	0.0	0.0	12.7	<<	86.9	0.0	Good Condition
						19-Feb-19	0.0	0.0	0.0	7.5	1.2	91.3	0.0	Good Condition
						27-May-19	0.0	0.0	0.0	7.0	4.4	88.6	0.1	Good Condition
						7-Aug-19	0.0	0.0	0.0	13.1	6.1	80.6	0.0	Good Condition
						28-Nov-19	0.1	0.0	0.0	10.7	2.2	87.0	0.0	Good Condition

Historical Landfill Gas Monitoring Data

Monitor ID	MTM Coordinates		Ground Surface Elevation (masl)	Screen Interval (mbgs)	Geologic Media Intersected by Screen	Monitoring Date	In-Situ Measurements							Comments (Status of Landfill Gas Probes)
	Easting	Northing					Methane (CH_4)			Carbon Dioxide (%)	Oxygen (%)	Balance Gases (%)	Relative Pressure (Inches of Water)	
							% v/v		% LEL					
							Initial and/or Peak	Long Term and/or Stable	Long Term and/or Stable	Long Term and/or Stable	Long Term and/or Stable	Long Term and/or Stable		
GP15-5	368837.499	5029252.218	-	0.91 - 2.44	Overburden	28-Oct-15	0.0	0.0	0.0	3.4	14.3	82.3	0.0	Good Condition
						23-Feb-16	0.0	0.0	0.0	1.9	19.2	78.7	0.0	Good Condition
						10-May-16	0.0	0.0	0.0	2.3	16.3	81.4	0.0	Good Condition
						12-Aug-16	0.0	0.0	0.0	5.1	8.3	86.5	0.0	Good Condition
						4-Nov-16	0.1	0.1	2.0	4.9	12.1	83.0	0.0	Good Condition
						14-Feb-17	0.1	0.1	1.0	0.0	21.6	78.3	0.0	Good Condition
						25-Apr-17	0.0	0.0	0.0	2.5	16.6	80.9	0.0	Good Condition
						21-Jul-17	0.0	0.0	0.0	4.4	10.1	85.4	0.0	Good Condition
						23-Oct-17	0.1	0.0	0.0	1.8	18.1	80.0	0.0	Good Condition
						21-Feb-18	0.1	0.0	0.0	18.4	1.8	79.7	-0.4	Good Condition
						29-May-18	0.0	0.0	0.0	2.8	16.0	81.1	0.0	Good Condition
						3-Aug-18	0.0	0.0	0.0	3.8	9.4	78.8	0.0	Good Condition
						8-Nov-18	0.0	0.0	0.0	4.1	14.4	81.5	0.0	Good Condition
						19-Feb-19	-	-	-	-	-	-	-	Could Not Locate
						27-May-19	0.0	0.0	0.0	2.3	16.9	80.8	0.0	Good Condition
						7-Aug-19	0.0	0.0	0.0	5.2	10.2	84.6	0.0	Good Condition
						28-Nov-19	0.0	0.0	0.0	3.1	16.8	80.1	0.1	Good Condition
GP15-6	368875.492	5029271.998	-	0.61 - 2.13	Overburden	28-Oct-15	0.5	0.5	11.0	5.1	0.1	94.4	0.0	Good Condition
						23-Feb-16	0.0	0.0	0.0	0.8	17.5	81.5	0.0	Good Condition
						10-May-16	0.3	0.2	5.0	3.2	0.0	96.5	0.0	Good Condition
						12-Aug-16	0.6	0.4	7.0	6.4	0.1	93.0	0.2	Probe submerged in water, drained
						4-Nov-16	0.8	0.8	16.0	5.4	0.0	93.7	0.0	Good Condition
						14-Feb-17	0.1	0.1	1.0	0.0	21.6	78.3	0.0	Good Condition
						25-Apr-17	0.8	0.8	16.0	3.3	0.0	95.9	0.0	Good Condition
						21-Jul-17	0.3	0.3	6.0	5.7	0.0	94.0	0.0	Good Condition
						23-Oct-17	0.1	0.1	2.0	1.5	15.9	82.4	0.0	Good Condition
						21-Feb-18	-	-	-	-	-	-	-	Could Not Locate
						29-May-18	0.2	0.2	3.0	4.1	0.8	94.9	0.0	Good Condition
						3-Aug-18	0.0	0.0	0.0	3.9	1.8	89.8	0.0	Good Condition
						8-Nov-18	0.3	0.3	0.0	5.6	<<	94.3	-0.1	Good Condition
						19-Feb-19	0.0	0.0	0.0	4.1	0.4	95.5	0.0	Good Condition
						27-May-19	0.2	0.2	0.0	4.9	0.0	94.8	0.1	Good Condition
						7-Aug-19	0.0	0.0	0.0	7.4	0.7	91.9	0.0	Good Condition
						28-Nov-19	0.4	0.3	0.0	4.7	0.0	95.0	0.0	Good Condition

Historical Landfill Gas Monitoring Data

Monitor ID	MTM Coordinates		Ground Surface Elevation (masl)	Screen Interval (mbgs)	Geologic Media Intersected by Screen	Monitoring Date	In-Situ Measurements							Comments (Status of Landfill Gas Probes)
	Easting	Northing					Methane (CH_4)			Carbon Dioxide (%)	Oxygen (%)	Balance Gases (%)	Relative Pressure (Inches of Water)	
							% v/v		% LEL					
							Initial and/or Peak	Long Term and/or Stable	Long Term and/or Stable	Long Term and/or Stable	Long Term and/or Stable	Long Term and/or Stable		
GP15-7	368931.653	5029294.223	-	0.91 - 2.44	Overburden	28-Oct-15	0.0	0.0	1.0	6.4	3.5	90.1	0.0	Good Condition
						23-Feb-16	-	-	-	-	-	-	-	Could Not Locate
						10-May-16	0.0	0.0	0.0	1.0	16.6	82.6	0.0	Good Condition
						12-Aug-16	0.0	0.0	0.0	5.5	14.1	80.2	0.0	Good Condition
						4-Nov-16	0.0	0.0	0.0	5.1	0.4	94.2	0.1	Good Condition
						14-Feb-17	0.0	0.0	0.0	4.9	10.4	84.7	0.0	Good Condition
						25-Apr-17	0.0	0.0	0.0	2.2	7.1	90.7	0.0	Good Condition
						21-Jul-17	0.0	0.0	0.0	6.9	0.0	93.1	0.0	Good Condition
						23-Oct-17	0.1	0.1	2.0	3.5	14.1	82.2	0.0	Good Condition
						21-Feb-18	-	-	-	-	-	-	-	Local Flooding
						29-May-18	0.0	0.0	0.0	5.4	8.1	86.7	0.0	Good Condition
						3-Aug-18	0.0	0.0	0.0	4.8	12.4	72.6	0.0	Good Condition
						8-Nov-18	0.0	0.0	0.0	3.1	19.3	77.6	0.0	Good Condition
						19-Feb-19	-	-	-	-	-	-	-	Could Not Locate
						27-May-19	0.0	0.0	0.0	5.5	15.6	78.9	0.0	Good Condition
						7-Aug-19	0.0	0.0	0.0	6.2	12.9	80.8	0.0	Good Condition
						28-Nov-19	0.0	0.0	0.0	2.9	18.6	78.4	0.1	Good Condition
GP15-8	368865.766	5029240.857	65.319	1.52 - 3.05	Overburden	28-Oct-15	0.3	0.2	3.0	6.0	5.3	89.2	0.0	Good Condition
						23-Feb-16	0.0	0.0	0.0	3.0	12.3	84.4	0.0	Good Condition
						10-May-16	0.0	0.0	0.0	4.4	8.9	86.2	0.2	Good Condition
						12-Aug-16	0.0	0.0	0.0	10.3	2.3	87.2	0.0	Good Condition
						4-Nov-16	0.0	0.0	0.0	5.4	9.1	85.4	0.0	Good Condition
						14-Feb-17	-	-	-	-	-	-	-	Could Not Locate
						25-Apr-17	0.0	0.0	0.0	2.9	10.1	86.9	0.0	Good Condition
						21-Jul-17	0.0	0.0	0.0	8.8	5.7	85.5	0.0	Good Condition
						23-Oct-17	0.0	0.0	0.0	2.6	15.8	81.6	0.0	Good Condition
						21-Feb-18	-	-	-	-	-	-	-	Local Flooding
						29-May-18	0.0	0.0	0.0	5.2	9.7	84.8	0.0	Good Condition
						3-Aug-18	0.0	0.0	0.0	8.3	7.5	84.6	0.0	Good Condition
						8-Nov-18	0.0	0.0	0.0	3.2	17.6	79.2	-0.2	Good Condition
						19-Feb-19	-	-	-	-	-	-	-	Could Not Locate
						27-May-19	0.0	0.0	0.0	4.7	5.6	89.7	0.1	Good Condition
						7-Aug-19	0.0	0.0	0.0	8.9	5.7	85.4	0.0	Good Condition
						28-Nov-19	0.0	0.0	0.0	2.6	15.8	81.6	0.0	Good Condition

Historical Landfill Gas Monitoring Data

Monitor ID	MTM Coordinates		Ground Surface Elevation (masl)	Screen Interval (mbgs)	Geologic Media Intersected by Screen	Monitoring Date	In-Situ Measurements							Comments (Status of Landfill Gas Probes)
	Easting	Northing					Methane (CH_4)			Carbon Dioxide (%)	Oxygen (%)	Balance Gases (%)	Relative Pressure (Inches of Water)	
							% v/v		% LEL					
							Initial and/or Peak	Long Term and/or Stable	Long Term and/or Stable	Long Term and/or Stable	Long Term and/or Stable	Long Term and/or Stable		
GP15-9	368950.930	5029210.490	64.924	1.52 - 3.05	Overburden	28-Oct-15	0.0	0.0	0.0	6.3	15.3	78.5	0.0	Good Condition
						23-Feb-16	-	-	-	-	-	-	-	Could Not Locate
						10-May-16	0.0	0.0	0.0	3.2	15.4	81.0	0.0	Good Condition
						12-Aug-16	0.0	0.0	0.0	5.5	14.9	79.4	0.0	Good Condition
						4-Nov-16	0.0	0.0	0.0	4.5	17.0	78.3	0.0	Good Condition
						14-Feb-17	0.0	0.0	0.0	2.3	17.5	80.2	-0.1	Good Condition
						25-Apr-17	0.0	0.0	0.0	1.5	16.3	82.2	0.0	Good Condition
						21-Jul-17	0.0	0.0	0.0	8.0	10.4	81.6	0.0	Good Condition
						23-Oct-17	0.0	0.0	0.0	0.4	21.1	78.4	0.0	Good Condition
						21-Feb-18	-	-	-	-	-	-	-	Local Flooding
						29-May-18	0.0	0.0	0.0	3.8	14.1	82.0	0.0	Good Condition
						3-Aug-18	0.0	0.0	0.0	0.1	20.5	79.3	0.0	Good Condition
						8-Nov-18	0.0	0.0	0.0	4.0	18.7	77.3	0.0	Good Condition
						19-Feb-19	0.1	0.1	0.0	3.9	16.3	79.8	0.0	Good Condition
						27-May-19	0.0	0.0	0.0	4.7	13.3	82.0	0.0	Good Condition
						7-Aug-19	0.0	0.0	0.0	6.1	15.8	78.1	0.0	Good Condition
						28-Nov-19	0.0	0.0	0.0	4.8	16.6	78.7	0.0	Good Condition
GP15-10	368843.807	5029183.520	64.680	0.91 - 2.13	Overburden	28-Oct-15	0.0	0.0	0.0	5.2	7.6	87.3	0.0	Good Condition
						23-Feb-16	0.0	0.0	0.0	4.0	13.1	83.0	0.0	Good Condition
						10-May-16	0.0	0.0	0.0	2.7	7.5	89.8	0.0	Good Condition
						12-Aug-16	0.0	0.0	0.0	8.2	7.1	84.7	1.0	Probe submerged in water, drained
						4-Nov-16	0.0	0.0	2.0	6.4	9.6	84.0	0.0	Good Condition
						14-Feb-17	-	-	-	-	-	-	-	Could Not Locate
						25-Apr-17	0.0	0.0	0.0	2.4	5.5	92.1	0.0	Good Condition
						21-Jul-17	0.0	0.0	0.0	7.3	3.1	89.7	0.0	Good Condition
						23-Oct-17	0.0	0.0	0.0	0.0	21.6	78.3	0.0	Good Condition
						21-Feb-18	-	-	-	-	-	-	-	Could Not Locate
						29-May-18	0.0	0.0	0.0	3.8	9.7	86.4	0.0	Good Condition
						3-Aug-18	0.0	0.0	0.0	7.9	4.4	87.7	0.0	Good Condition
						8-Nov-18	0.0	0.0	0.0	2.0	17.5	80.5	0.0	Hose barb was damaged and will need to be replaced. The height of the probe will need to be adjusted.
						19-Feb-19	-	-	-	-	-	-	-	Could Not Locate
						27-May-19	0.0	0.0	0.0	4.3	5.0	90.7	0.2	Good Condition
						7-Aug-19	0.0	0.0	0.0	5.5	13.8	80.7	0.0	Good Condition
						28-Nov-19	0.0	0.0	0.0	3.8	19.1	77.1	0.2	Good Condition

Appendix G

Limitations

Limitations

1. The work performed in the preparation of this report and the conclusions presented are subject to the following:
    (a) The Standard Terms and Conditions which form a part of our Professional Services Contract;
    (b) The Scope of Services;
    (c) Time and Budgetary limitations as described in our Contract; and,
    (d) The Limitations stated herein.
2. No other warranties or representations, either expressed or implied, are made as to the professional services provided under the terms of our Contract, or the conclusions presented.
3. The conclusions presented in this report were based, in part, on visual observations of the site and attendant structures. Our conclusions cannot and are not extended to include those portions of the site or structures which were not reasonably available, in Wood's opinion, for direct observation.
4. The environmental conditions at the site were assessed, within the limitations set out above, having due regard for applicable environmental regulations as of the date of the inspection. A review of compliance by past owners or occupants of the site with any applicable local, provincial or federal by-laws, orders-in-council, legislative enactments and regulations was not performed.
5. The site history research included obtaining information from third parties and employees or agents of the owner. No attempt has been made to verify the accuracy of any information provided, unless specifically noted in our report.
6. Where testing was performed, it was carried out in accordance with the terms of our contract providing for testing. Other substances, or different quantities of substances testing for, may be present on site and may be revealed by different of other testing not provided for in our contract.
7. Because of the limitations referred to above, different environmental conditions from those stated in our report may exist. Should such different conditions be encountered, Wood must be notified in order that it may determine if modifications to the conclusions in the report are necessary.
8. The utilization of Wood's services during the implementation of any remedial measures will allow Wood to observe compliance with the conclusions and recommendations contained in the report. Wood's involvement will also allow for changes to be made as necessary to suit field conditions as they are encountered.
9. This report is for the sole use of the party to whom it is addressed unless expressly stated otherwise in the report or contract. Any use which any third party makes of the report, in whole or in part, or any reliance thereon, or decisions made based on any information of conclusions in the report, is the sole responsibility of such third party. Wood accepts no responsibility whatsoever for damages or loss of any nature or kind suffered by any such third party as a result of actions taken or not taken or decisions made in reliance on the report or anything set out therein.
10. This report is not to be given over to any third party for any purpose whatsoever without the written permission of Wood.
11. Provided that the report is still reliable, and less than 12 months old, Wood will issue a third-party reliance letter to parties client identifies in writing, upon payment of the then current fee for such letters. All third parties relying on Wood's report, by such reliance agree to be bound by our proposal and Wood's standard reliance letter. Wood's standard reliance letter indicates that in no event shall Wood be liable for any damages, howsoever arising, relating to third-party reliance on Wood's report. No reliance by any party is permitted without such agreement.

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