Phase II Environmental Site Assessment and Remedial Excavation, 220 Arkell Road, Guelph, Ontario

Prepared for:
Rockpoint Holdings Inc.
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Guelph, ON N1C 0A1

Prepared by:
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Project No. 161423338

January 13, 2020

EXECUTIVE SUMMARY

Stantec Consulting Ltd. (Stantec) was retained by Rockpoint Holdings Inc. (Rockpoint) to conduct a Phase II Environmental Site Assessment (ESA) and subsequent remedial excavation program at the property located at 220 Arkell Road, Guelph, Ontario, hereinafter referred to as the "Site". The Site is currently occupied by a single-family dwelling and associated outbuildings. Stantec understands that the Site will be redeveloped in the future as a multi-unit housing development.

The objectives of the Phase II ESA and the remedial excavation program were to assess the presence or absence of contamination associated with the fill quality in the area of a former pond at the Site and to remediate the impacted fill areas. Stantec previously conducted a Phase I ESA and a limited environmental test pitting program (November 2016) which identified fill within the former pond area of the Site to contain waste, debris and concentrations of zinc in one of the soil samples exceeding the Ontario Regulation 153/04 (O.Reg. 153/04) Table 2 site condition standards (SCS). As documented in this report, additional test pitting and chemical analysis was completed to further characterize the fill material prior to the completion of the remedial excavation.

Based on the results of the Phase II ESA, zinc and polycyclic aromatic hydrocarbons (PAHs) soil impacts were identified at the Site in the test pits advanced in and around the former pond. Subsequent remedial excavation activities took place between November 16, 2018 and November 12, 2019. The zinc and/or PAHs laboratory analytical results for soil samples recovered from the final bases and walls of the excavation met the 2011 O.Reg. 153/04 Table 2 SCS. The volume of soil that was removed from the Site in 2018 and 2019 was approximately 2000 cubic metres (m^3). Percon Excavating Inc. indicated that the soil was transported to MECP-licensed facilities, however the final volumes, disposal sites and disposal tickets for the soil were not available at the time of issuing this report. The excavation was reported by Percon to have been backfilled using approximately 2000 m^3 of fill material imported from a MECP-licensed quarry facility. Stantec therefore concludes that impacted soils identified during previous investigations and the Phase II ESA were removed from the Site for off-site disposal.

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1.0 INTRODUCTION

1.1 INTRODUCTION AND OBJECTIVES

Stantec Consulting Ltd. (Stantec) was retained by Rockpoint Holdings Inc. (Rockpoint) to conduct a Phase II Environmental Site Assessment (ESA) and subsequent remedial excavation program at the property located at 220 Arkell Road, Guelph, Ontario, hereinafter referred to as the "Site". The Site is currently occupied by a single-family dwelling and associated outbuildings. Stantec understands that the Site will be redeveloped in the future as a multi-unit housing development. A key plan, illustrating the Site location, and a site plan showing the Site layout, are provided as **Figure No. 1** and **Figure No. 2**, **Appendix A**.

The objectives of the Phase II ESA and the remedial excavation program were to assess the presence or absence of contamination associated with the fill quality in the area of a former pond at the Site and to remediate the impacted fill areas. Stantec previously conducted a Phase I ESA and a limited environmental test pitting program (November 2016) which identified fill within the former pond area of the Site to contain waste, debris and concentrations of zinc in one of the soil samples exceeding the Ontario Regulation 153/04 (O.Reg. 153/04) Table 2 site condition standards (SCS). As documented in this report, additional test pitting and chemical analysis was completed to further characterize the fill material prior to the completion of the remedial excavation.

Contaminants of potential concern (COPCs) associated with the potential environmental concerns at the Site are volatile organic compounds (VOCs), petroleum hydrocarbons fractions 1 to 4 (PHC F1 to F4), polycyclic aromatic hydrocarbons (PAHs), metals and inorganic parameters (including free cyanide, electrical conductivity, and sodium adsorption ratio (SAR)).

Stantec notes that no change in land use will be occurring at the Site (residential use will remain during redevelopment); therefore, a Record of Site Condition (RSC) is not required for the Site.

1.2 REPORT ORGANIZATION

This report is organized into ten sections and additional appendices. **Section 1.0** presents the introduction. **Section 2.0** presents general site setting information. **Section 3.0** summarizes the previous environmental investigations at the Site, **Appendix H** includes the memo documenting the 2016 Environmental Test Pitting at the Site, and **Section 4.0** summarizes the site description information. **Section 5.0** presents the scope of work, and detailed methods are included in **Appendix B**. **Section 6.0** summarizes the applicable regulatory framework, and the rationale for the selection of the applicable site condition standard is summarized in **Appendix C**. **Section 7.0** presents the results, **Section 8.0** presents the conclusions. Limitations, signatures and references are included in **Section 9.0, Section 10,** and **Section 11,** respectively. Figures are included in **Appendix A**, test pit logs are included in **Appendix D**, analytical summary tables are included in **Appendix E**, laboratory certificates of analysis are included in **Appendix F**, and the evaluation of quality assurance/quality control is presented in **Appendix G**.

2.0 GENERAL ENVIRONMENTAL SITE SETTING

2.1 TOPOGRAPHY AND HYDROGEOLOGY

Based on observed topography and information accessed from the Ministry of Natural Resources and Forestry (MNRF) online mapping, drainage (and anticipated shallow groundwater flow direction) appears to be to the north/northeast towards Torrance Creek, located approximately 400 m northeast of the Site.

According to Stantec's 2019 Hydrogeological Assessment report (Stantec, 2019b) for the Site, groundwater flows horizontally through the subsurface overburden deposits to the south and southwest towards the wooded portion of the Site and the western adjacent woodland (Torrance Creek Swamp). Hence, in the central and southern portion of the Site drainage appears to be to the south/southwest.

It should be noted that the direction of the shallow groundwater flow in limited areas can also be influenced by the presence of underground utility corridors and is not necessarily a reflection of regional or local groundwater flow or a replica of the Site or area topography.

2.2 GEOLOGY

The Site is located within the Drumlinized Till Plain (Chapman & Putnam, 2007). Based on an available surficial geology map (Ontario Geological Survey Map 2556), the native surficial soils of the Site consist of Glaciofluvial deposits including river, delta and sandy deposits.

In April 2017, Stantec conducted a geotechnical investigation (Stantec, 2019a) and advanced four geotechnical boreholes to a maximum depth of approximately 8.2 m below ground surface (m BGS) at the Site. The subsurface conditions encountered in the geotechnical boreholes generally consisted of topsoil and a veneer of sand, or fill, overlying glacial till. The glacial till generally comprised silty sand and gravel till. Groundwater was perched in fill or sand deposits above the glacial till or contained in saturated seams within the glacial till. Bedrock was not encountered in the boreholes advanced at the Site for this investigation. The fill was identified in a borehole advanced in the location of the former pond.

3.0 PREVIOUS ENVIRONMENTAL INVESTIGATIONS

Stantec prepared a Phase I ESA for the Site as documented in the final report *Phase I Environmental Site Assessment, 220 Arkell Road, Guelph, Ontario* dated May 28, 2019 (Stantec, 2019c). The initial Phase I ESA site visit was completed in September 2016. The former pond was identified by Stantec as an Area of Potential Environmental Concern (APEC), based on fill of unknown quality having been used historically to infill the pond

Subsequent to the initial stages of the Phase I ESA, a limited test pitting program was completed at the Site, as documented in the Stantec memo titled *Environmental Test Pitting - 220 Arkell Road, Guelph, Ontario, December 2016* (Stantec, 2016). The memo is included in **Appendix H**, and is summarized as follows:

- Soil samples were collected at five (5) test pits within the former pond area in November 2016. Fill material was encountered from ground surface to depths ranging from 1.0 m BGS to 3.0 m BGS.
- One sample from each test pit was analyzed for metals and inorganics, PAHs, VOCs and PHC F1 to F4. The laboratory analytical data was compared with the 2011 O.Reg. 153/04 Table 2 SCS for residential/parkland/institutional use with coarse-textured soils.
- Soil analytical data indicated that the concentration of zinc exceeded the Table 2 SCS at one test pit (TP3), at a depth of approximately 2.1 m BGS. The concentration of zinc in the sample submitted form the same test pit at a lower depth, approximately 3.0 m BGS, met the Table 2 SCS. All other parameters, including zinc, were below Table 2 SCS in the samples submitted from other test pits. The locations of these historical test pits are shown on **Figure 3, Appendix A**.
- Stantec concluded that the fill material used in the former pond area was not considered to be inert and was therefore not exempt from regulation and guidelines that pertain to excess fill management.

4.0 SITE DESCRIPTION

4.1 SITE LOCATION AND SETTING

A key plan and a site plan are provided as **Figure No. 1 and Figure No. 2**, **Appendix A**. The Site is located at 220 Arkell Road, Guelph, Ontario and occupies an area of approximately 72,000 m^2 (7 hectare). Land uses surrounding the Site include a former golf course to the north (currently being redeveloped as housing); residential properties to the south; an agricultural property to the east; and a forested property to the west.

4.2 SITE LAYOUT

The Site is currently occupied by a single-family dwelling and associated outbuildings located in the central portion of the Site, and surrounded by undeveloped areas. The former pond, reported to have been filled sometime between 1980s and 1990s, was located approximately centrally near the southeastern property boundary.

5.0 SITE INVESTIGATION METHODS

5.1 SOIL INVESTIGATION

The objective of the Phase II ESA was to further assess the presence or absence of contamination associated with the unknown fill used historically to infill the pond formerly located at the Site.

The Phase II ESA was completed in general accordance with the Canadian Standards Association (CSA) document *Phase II Environmental Site Assessment Z769 00 (R2018)* (CSA, 2000). Groundwater was not assessed as part of the Phase II ESA.

The objectives of the remedial excavation activities were to document the environmental condition of the soils remaining at the final excavation bases and walls with respect to metals and/or PAHs.

A summary of the completed scope of work is presented below. Detailed methods are presented in **Appendix B**.

5.1.1 Pre-Field Activities

Pre-field activities included:

- Prepared a health and safety plan (HASP)
- Retained subcontractors for laboratory analytical services. Private underground utility location and test pitting was conducted by a subcontractor retained by the former owner of the Site and observed by Stantec.
- Established data quality objectives (DQOs)

5.1.2 Field Activities

Field activities included:

- The former owner of the Site retained an excavation contractor (Percon Excavating Inc.) to conduct the test pitting and excavation work using CX160C and CX250D excavators.
- Percon Excavating Inc. requested utility clearances for public utilities (Ontario One Call) and retained a private utility locator (Down Under Pipe and Cable Locating Ltd.).
- Stantec observed the completion of twelve test pits (TP18-1 to TP18-12) to a maximum depth of 3.0 m BGS. The soil samples from selected test pits (TP18-5 to TP18-12) were field screened for combustible vapour concentrations (CVC) and total organic vapours (TOV) as described in Appendix B. Field screening for CVC/TOV was not completed at test pits TP18-1 to TP1-4 because the test pits were completed to assess metals impacts (i.e., zinc) only. Because evidence of the presence of volatile COPCs (i.e., VOCs or PHCs) was not observed in soil samples and verified through laboratory analysis, field screening for CVC/TOV was subsequently not completed during the remedial excavation.
- Stantec collected soil samples from the test pits and submitted selected samples to Bureau Veritas Canada (2019) Inc. (BV), formerly Maxxam Analytics International Corporation (Maxxam), for analysis of VOCs, PHC F1 to F4, PAHs, and/or metals and inorganic parameters (including free cyanide, electrical conductivity, and SAR).

- Following the test pitting, remedial excavation activities were completed, and the excavation expanded as dictated by analytical results. Stantec observed the subsequent remedial excavation activities that took place on the following dates:
  - November 16, 2018
  - December 13, 2018
  - April 24, 2019
  - May 31, 2019
  - July 30, 2019 (interim test pits completed to define subsequent excavation extents)
  - November 12, 2019
- Stantec collected confirmatory soil samples from the bases and walls of the excavation and submitted the samples to BV for analysis of metals and/or PAHs.

5.1.3 Data Interpretation and Reporting

Data interpretation and reporting activities included:

- Interpreted the observations and findings of the field work and the analytical results
- Evaluated quality assurance/quality control (QA/QC)
- Prepared this report to document the investigation findings

6.0 APPLICABLE LEGISLATION

The Phase II ESA was completed in general accordance with the CSA document *Phase II Environmental Site Assessment Z769-00 (R2018) (CSA, 2000)* and the remedial excavation activities were completed utilizing elements of O. Reg 153/04.

The roles and powers of the MECP when dealing with contaminated sites are outlined primarily in the *Environmental Protection Act* (R.S.O. 1990). The MECP has a mandate to deal with situations where there is an adverse effect, or the likelihood of an adverse effect, associated with the presence or discharge of a contaminant. O.Reg. 153/04 provides guidance and information to property owners and consultants to use when assessing the environmental condition of a property, when determining whether restoration is required and in determining the kind of restoration needed to allow continued use or reuse of a property. *The Soil, Ground Water, and Sediment Standards for Use Under Part XV.I of the Environmental Protection Act* (MOE, 2011) provide generic numerical SCS for soil, groundwater, and sediment quality as a function of land use, soil texture (medium and fine or coarse), groundwater usage (potable or non-potable), and remediation approach (full depth or stratified).

The Phase II ESA and the subsequent remedial excavation were not completed with the intent of filing a RSC; therefore, some requirements of O.Reg. 153/04, such as the prescribed report format, were not strictly adhered to.

6.1 GENERIC SOIL AND GROUNDWATER QUALITY STANDARDS

This section summarizes the selection process Stantec used to identify the appropriate SCS for the Site. The selection was based on a review of site-specific characteristics consistent with the requirements of O.Reg. 153/04 and considered the following characteristics specific to the Site:

- Groundwater use
- Current/intended property use
- Depth to bedrock
- Proximity to water bodies
- Soil characteristics (e.g., grain size)
- Environmental sensitivity, including:
  - Soil pH
  - Proximity to areas of natural significance

These characteristics were used to determine which table of generic SCS would apply to the Site.

Based on the Site's characteristics, the generic SCS considered applicable for the Site were the Table 2 Full Depth Generic SCS for a potable groundwater condition for residential property use with coarse textured soils (henceforth the Table 2 SCS). A detailed summary of the selection process for the Site is included in **Appendix C**.

7.0 RESULTS

7.1 SUBSURFACE CONDITIONS

The stratigraphy in the assessed area of the Site generally consisted of grass and topsoil underlain by fill material consisting of sands and silts to an approximate depth of 3.5 m BGS. Groundwater was not encountered in the completed test pits. Detailed descriptions of stratigraphy observed are provided on the test pit logs in **Appendix D**.

The soil samples from selected test pits (test pits TP18-5 to TP18-12) were field screened for CVC and TOV as described in **Appendix B**. Field screening for CVC/TOV was not completed at test pits TP18-1 to TP18-4 because the test pits were completed to assess metals impacts (i.e., zinc) only. Because evidence of the presence of volatile COPCs (i.e., VOCs or PHCs) was not observed in soil samples and verified through laboratory analysis, field screening for CVC/TOV was subsequently not completed during the remedial excavation.

There are no regulatory criteria for CVC/TOV. CVC/TOV concentrations are a field screening tool to provide a qualitative indication of the presence of volatile COPCs (i.e., VOCs and PHC F1). The CVC and TOV concentrations measured in the headspace of the soil samples recovered from the select test pits are provided on the test pit logs in **Appendix D**.

The CVC measured in the soil samples collected from the test pits ranged from less than the detection limits of the instrument (5 parts per million by volume [ppm_v]; multiple locations and depths) to 45 ppm_v (TP18-5, 0.8 m to 1.5 m BGS).

The TOV measured in the soil samples collected from the test pits ranged from less than the detection limits of the instrument (0.02 ppm_v; multiple locations and depths) to 1 ppm_v; (multiple locations and depths). No evidence of VOC or PHC impacts, such as olfactory evidence, was noted in the soil recovered from the test pits.

7.2 SOIL ANALYTICAL RESULTS – PHASE II ESA

The VOCs, PAHs, PHC F1 to F4, and/or metals and inorganics laboratory analytical results for soil samples recovered from 2018 test pits, along with the 2011 O.Reg. 153/04 Table 2 SCS, are presented in **Table 1, Appendix E,** and **Figure 3, Appendix A** depicts which samples met or exceeded the comparative standards. **Figure 3** also depicts historical test pits from 2016 and **Appendix H** includes the Stantec memo (Stantec, 2016) produced to report the 2016 results. The measured concentrations of analyzed parameters met the 2011 O.Reg. 153/04 Table 2 SCS in the soil samples from the test pits, with the exceptions of concentrations of zinc at test pits TP18-3, TP18-6, TP18-11, and TP18-12, and various PAHs parameters at TP18-9. Historical results at test pit TP3 also exceeded the 2011 O.Reg. 153/04 Table 2 SCS for zinc.

Note that soil represented by the above noted test pits was subsequently removed from the Site during the remedial excavation.

Surface soil samples and subsurface soil samples were submitted for analysis of pH. Results indicated that pH in the surface and subsurface samples were within the acceptable ranges.

The laboratory certificates of analysis are presented in **Appendix F**.

7.3 SOIL ANALYTICAL RESULTS – REMEDIAL EXCAVATION

The metals and/or PAHs laboratory analytical results for soil samples recovered from the final bases and walls of the excavation, along with the 2011 O.Reg. 153/04 Table 2 SCS, are presented in **Table 2, Appendix E,** and **Figures 4 and 5, Appendix A** depict which samples met the comparative standards. The measured concentrations of metals and/or PAHs met the 2011 O.Reg. 153/04 Table 2 SCS in each of the soil samples collected from the final bases and walls of the excavation. Note: interim test pits were completed in July 2019 to define the extents of the excavation. Results from test pits TP19-01, TP19-04, TP19-05, and TP19-10 were representative of wall conditions at these locations because the excavation was later expanded to their positions. No test pit logs have been prepared for these locations, and analytical results are included with the remainder of excavation sample results in **Table 2, Appendix E** and locations depicted on **Figure 5, Appendix A**.

The laboratory certificates of analysis are presented in **Appendix F**. The analytical results of the excavation and/or test pit soil samples collected at interim stages of the remedial excavation that did not meet the Table 2 SCS, prompting additional soil removal, have not been included in the tables but are provided in the laboratory certificates of analysis in **Appendix F**.

7.4 SOIL DISPOSAL AND EXCAVATION BACKFILLING

The volume of soil that was removed from the Site in 2018 and 2019 was approximately 2000 cubic metres (m^3). Percon indicated that the soil was transported to MECP-licensed facilities, however the final volumes, disposal sites and disposal tickets for the soil were not available at the time of issuing this report.

The excavation was reported by Percon to have been backfilled using approximately 2000 m^3 of fill material imported from a MECP-licensed quarry facility. The final volumes and weight tickets for the imported fill material were not available at the time of issuing this report.

7.5 QUALITY ASSURANCE/ QUALITY CONTROL (QA/QC)

The overall DQO for the investigation was to collect data that were precise, accurate, reproducible, complete, and suitable for the purposes of the Phase II ESA and remedial excavation. A detailed summary of the QA/QC evaluation is presented in **Appendix G** and copies of the laboratory certificates of analysis are provided in **Appendix F**.

Based on the QA/QC evaluation described in **Appendix G**, Stantec concluded that the DQO for this investigation was satisfied and that the data were considered acceptable for use in this report.

8.0 CONCLUSIONS

Rockpoint retained Stantec to conduct a Phase II ESA and subsequent remedial excavation at the property located at 220 Arkell Road, Guelph, Ontario. The Phase II ESA was completed to assess the presence or absence of contamination associated with fill materials used to backfill a former pond at the Site. The remedial excavation was completed to remove impacted fill materials from the Site.

Based on the results of the Phase II ESA, zinc and PAHs soil impacts were identified at the Site in the test pits advanced in and around the former pond. Subsequent remedial excavation activities took place between November 16, 2018 and November 12, 2019. The zinc and/or PAHs laboratory analytical results for soil samples recovered from the final bases and walls of the excavation met the 2011 O.Reg. 153/04 Table 2 SCS. The volume of soil that was removed from the Site in 2018 and 2019 was approximately 2000 m^3. Percon indicated that the soil was transported to MECP-licensed facilities, however the final volumes, disposal sites and disposal tickets for the soil were not available at the time of issuing this report. The excavation was reported by Percon to have been backfilled using approximately 2000 m^3 of fill material imported from a MECP-licensed quarry facility. Stantec therefore concludes that impacted soils identified during previous investigations and the Phase II ESA were removed from the Site for off-site disposal.

9.0 LIMITATIONS

This report documents work that was performed in accordance with generally accepted professional standards at the time and location in which the services were provided. No other representations, warranties or guarantees are made concerning the accuracy or completeness of the data or conclusions contained within this report, including no assurance that this work has uncovered all potential liabilities associated with the identified property.

This report provides an evaluation of selected environmental conditions associated with the identified portion of the property that was assessed at the time the work was conducted and is based on information obtained by and/or provided to Stantec at that time. There are no assurances regarding the accuracy and completeness of this information. All information received from the client or third parties in the preparation of this report has been assumed by Stantec to be correct. Stantec assumes no responsibility for any deficiency or inaccuracy in information received from others.

The opinions in this report can only be relied upon as they relate to the condition of the portion of the identified property that was assessed at the time the work was conducted. Activities at the property subsequent to Stantec's assessment may have significantly altered the property's condition. Stantec cannot comment on other areas of the property that were not assessed.

Conclusions made within this report consist of Stantec's professional opinion as of the time of the writing of this report, and are based solely on the scope of work described in the report, the limited data available and the results of the work. They are not a certification of the property's environmental or geotechnical condition. This report should not be construed as legal advice.

This report has been prepared for the exclusive use of the client identified herein and any use by any third party is prohibited. Stantec assumes no responsibility for losses, damages, liabilities or claims, howsoever arising, from third party use of this report.

This report is limited by the following:

- Conditions observed on-site at the time of the 2018 and 2019 field work.
- Regulatory criteria in effect at the time the assessment was completed.
- Results pertain only to the locations as shown on **Figures 3, 4 and 5**, and parameters listed in **Tables 1 and 2**.

The locations of any utilities, buildings and structures, and property boundaries illustrated in or described within this report, if any, including pole lines, conduits, water mains, sewers and other surface or sub-surface utilities and structures are not guaranteed. Before starting work, the exact location of all such utilities and structures should be confirmed and Stantec assumes no liability for damage to them.

The conclusions are based on the site conditions encountered by Stantec at the time the work was performed at the specific testing and/or sampling locations, and conditions may vary among sampling locations. Factors such as areas of potential concern identified in previous studies, site conditions (e.g., utilities) and cost may have constrained the sampling locations used in this assessment. In addition, analysis has been carried out for only a limited number of chemical parameters, and it should not be inferred that other chemical species are not present. Due to the nature of the investigation and the limited data available, Stantec does not warrant against undiscovered environmental liabilities nor that the sampling results are indicative of the condition of the entire site. As the purpose of this report is to identify site conditions which may pose an environmental risk; the identification of non-environmental risks to structures or people on the site is beyond the scope of this assessment.

Should additional information become available which differs significantly from our understanding of conditions presented in this report, Stantec specifically disclaims any responsibility to update the conclusions in this report.

10.0 SIGNATURES

This document entitled *Phase II Environmental Site Assessment and Remedial Excavation, 220 Arkell Road, Guelph, Ontario*, was prepared by Stantec Consulting Ltd. ("Stantec") for the account of Rockpoint Holdings Inc. (the "Client"). This document was prepared by Aseel Kaiser, M.Sc., C.E.T., EP and reviewed by Michael Stendzis, B.Sc., P.Geo.

Prepared by _____

(signature)

Aseel Kaiser, M.Sc., C.E.T., EP

Jan 13/20

Reviewed by _____

(signature)

Michael Stendzis, B.Sc., P.Geo.

The environmental site assessment and preparation of this report were completed in general accordance with the objectives, requirements, or standards of the CSA Phase II Environmental Site Assessment Standard Z769-00 (R2018).

Distribution: PDF via email

11.0 REFERENCES

Canadian Standards Association (CSA), 2000. *CAN/CSA-Z769-00 (R2018) - Phase II Environmental Site Assessment.* CSA.

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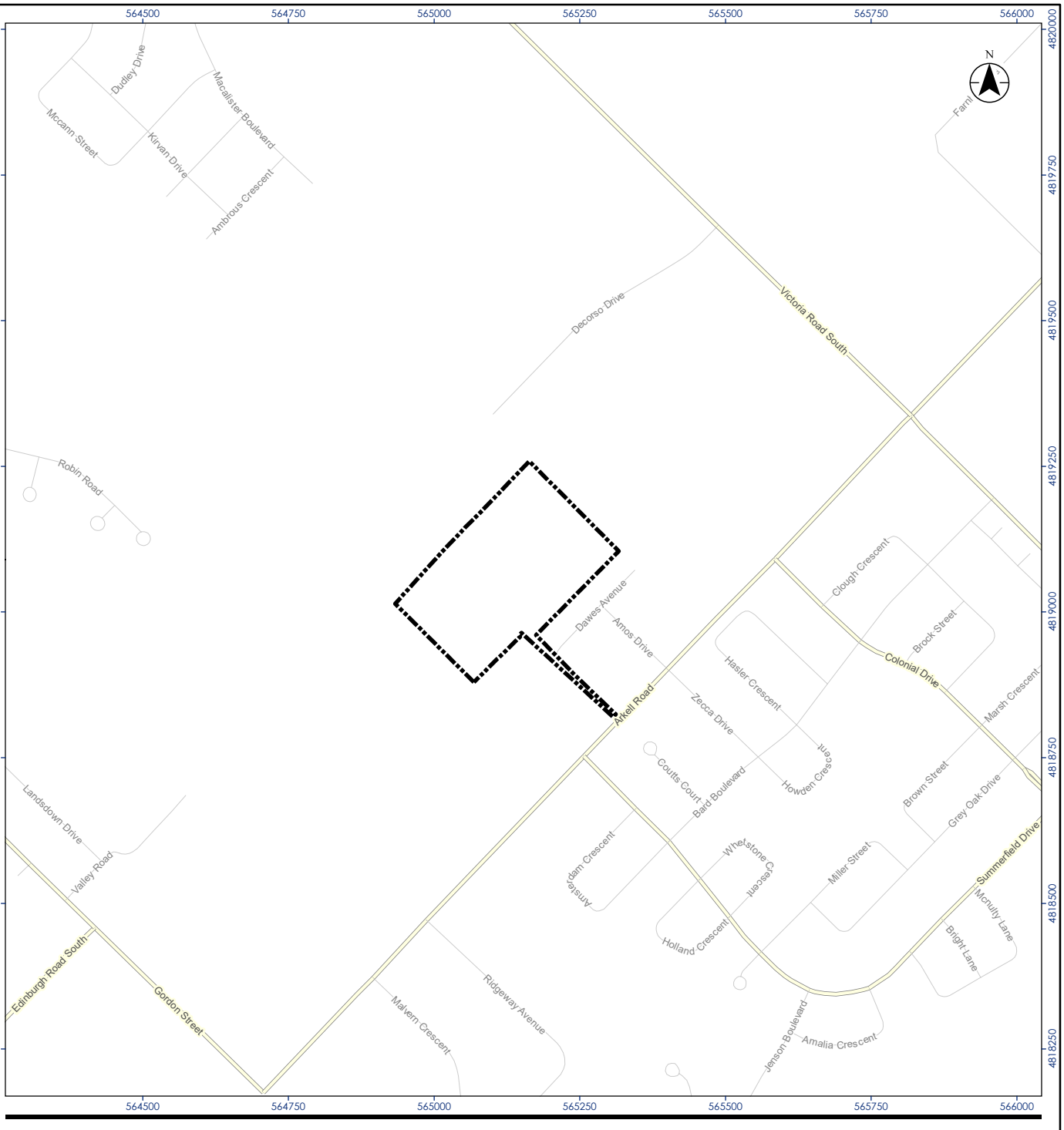
Stantec, May 2019a. Geotechnical Investigation, 220 Arkell Road, Guelph, ON

Stantec, May 2019b. Hydrogeological Assessment, 220 Arkell Road, Guelph, ON

Stantec, May 2019c. Phase I Environmental Site Assessment, 220 Arkell Road, Guelph, ON

APPENDIX A:
FIGURES



Legend

- Site Location
- Expressway / Highway
- Major Road
- Minor Road
- Watercourse
- Waterbody
- Wooded Area
- Approximate Property Boundary

0 100 200 metres

1:10,000 (at original document size of 8.5x11)

Notes

1. Coordinate System: NAD 1983 UTM Zone 17N
2. Base features produced under license with the Ontario Ministry of Natural Resources Queen's Printer for Ontario, 2016.
3. This figure is to be viewed in the context of the accompanying report and is subject to the limitations specified in that report.

Stantec

Project Location
Guelph, Ontario

161423338 REVA
Prepared by IP on 2019-12-18

Client/Project
ROCKPOINT HOLDINGS INC.
220 ARKELL ROAD
GUELPH, ONTARIO

Figure No.
1

Title
Site Location

Stantec

Legend

Approximate Site Boundary

0 40 80 metres

1:2,500 (At original document size of 11x17)

Notes

1. Coordinate System: NAD 1983 UTM Zone 17N
2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2019.
3. Orthoimagery © First Base Solutions, 2019. Imagery Date, 2018.
4. Site features are based on field observations and should be considered approximate.
5. This figure is to be viewed in the context of the accompanying report and is subject to the limitations specified in that report.

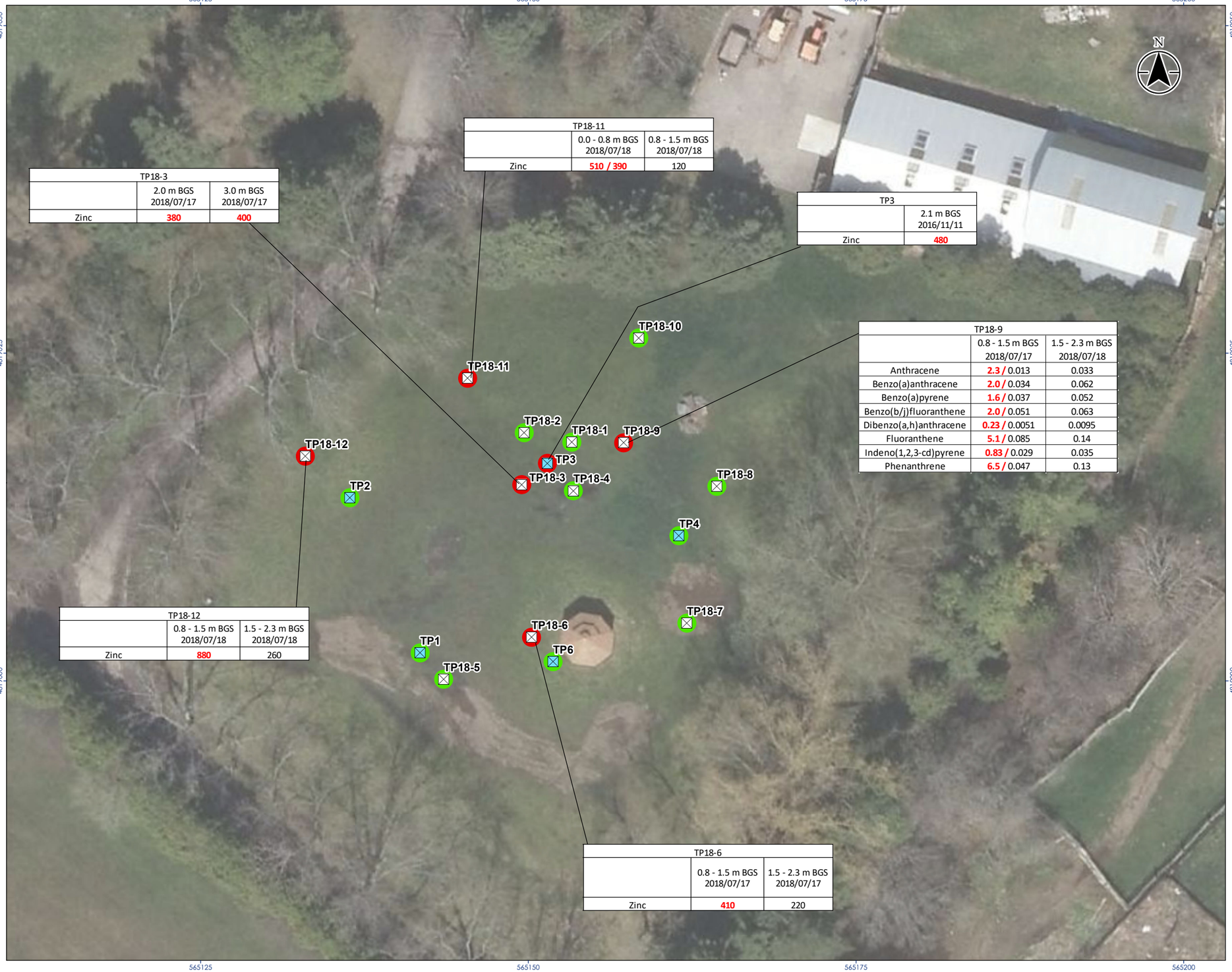
Project Location
Guelph, Ontario

161423338 REVA
Prepared by IP on 12/19/2019

Client/Project
ROCKPOINT HOLDINGS INC.
220 ARKELL ROAD
GUELPH, ONTARIO

Figure No.
2

Title
Site Plan



Stantec

Legend

- Test Pit (July, 2018)
- Test Pit (2016 Investigation)
- Soil Parameters Tested Met Regulatory Standards (MECP O.Reg 153/04 Table 2 SCS)
- One or More Soil Parameters Tested were Greater Than Regulatory Standards (MECP O.Reg 153/04 Table 2 SCS)

Sample ID | Depth (m BGS) / Date

TP18-11		
	0.0 - 0.8 m BGS 2018/07/18	0.8 - 1.5 m BGS 2018/07/18
Zinc	510 / 390	120

Parameter | Value / Field Duplicate (µg/g)

MECP O.Reg. 153/04 Table 2 SCS		
Parameter	Value	Units
Anthracene	0.67	µg/g
Benzo(a)anthracene	0.5	µg/g
Benzo(a)pyrene	0.3	µg/g
Benzo(b/j)fluoranthene	0.78	µg/g
Dibenzo(a,h)anthracene	0.1	µg/g
Fluoranthene	0.69	µg/g
Indeno(1,2,3-cd)pyrene	0.38	µg/g
Phenanthrene	6.2	µg/g
Zinc	340	µg/g

0 5 10 metres
1:300 (At original document size of 11x17)

Notes

1. Coordinate System: NAD 1983 UTM Zone 17N
2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2017.
3. Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
4. m BGS - metres Below Ground Surface
5. SCS - Site Condition Standards
6. MECP - Ministry of Environment, Conservation and Parks

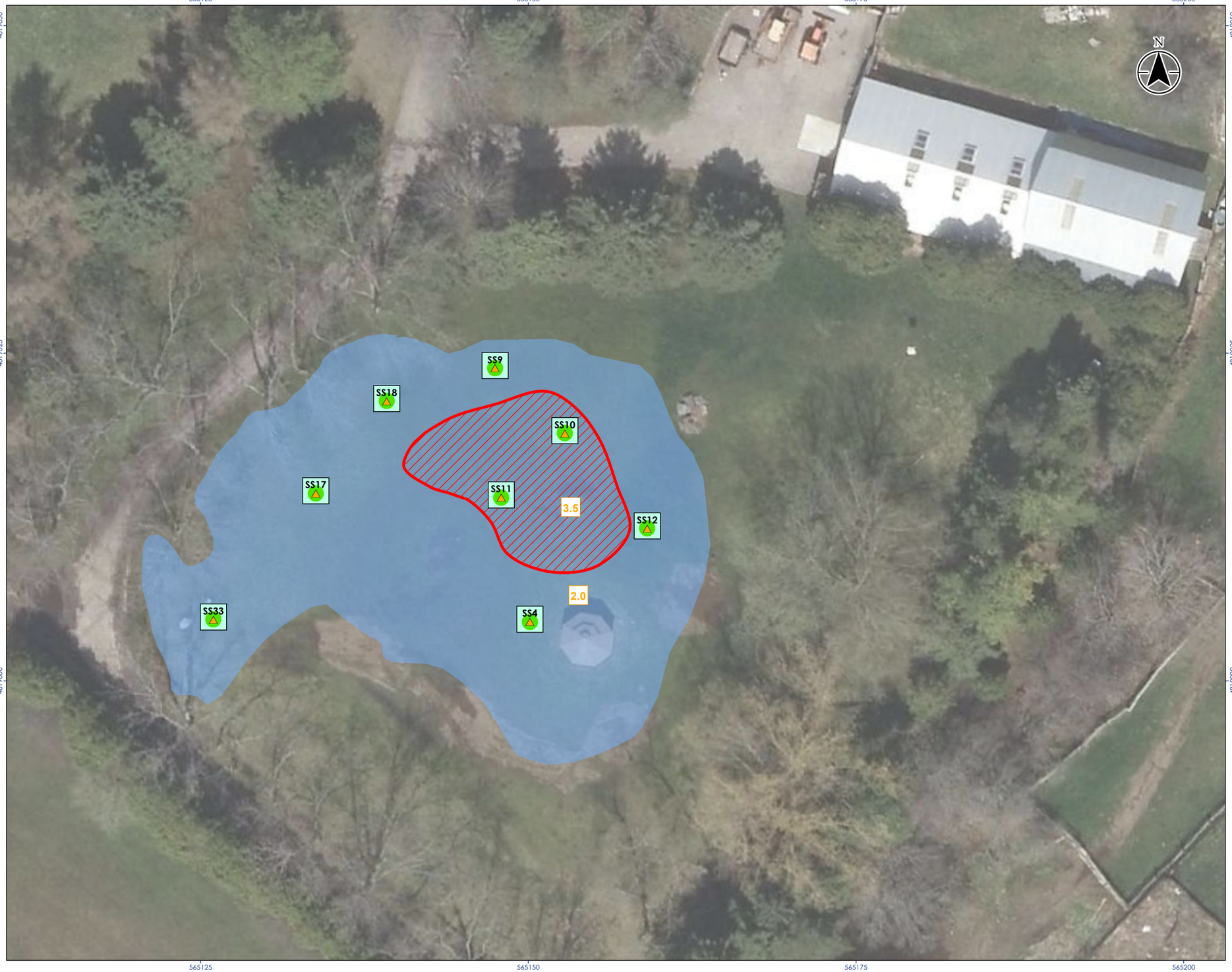
Project Location
Guelph, Ontario

161423338 REVA
Prepared by IP on 2019-12-18

Client/Project
ROCKPOINT HOLDINGS INC.
220 ARKELL ROAD
GUELPH, ONTARIO

Figure No.
3

Title
Summary of Soil Analytical Results - Phase II Environmental Site Assessment



Stantec

Legend

- Excavation Soil Sample
- 2.0 — Depth of Excavation (m BGS)
- Soil Sample Tested Met Regulatory Standards (O. Reg. 153/04 Table 2 SCS)
- Areal Extent of 2.0 m Deep Excavation
- Areal Extent of 3.5 m Deep Excavation

0 5 10 metres

1:300 (At original document size of 11x17)

Notes

1. Coordinate System: NAD 1983 UTM Zone 17N
2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2017.
3. Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
4. m BGS - metres Below Ground Surface
5. SCS - Site Condition Standards

Project Location
Guelph, Ontario

161423338 REVA
Prepared by IP on 2019-12-18

Client/Project
ROCKPOINT HOLDINGS INC.
220 ARKELL ROAD
GUELPH, ONTARIO

Figure No.
4

Title
Summary of Soil Analytical Results - Remedial Excavation Base

565125 565150 565175 565200

4819050 4819025 4819000

N

TP19-05 SS20 SS14 TP18-10

TP19-04 SS15 SS16

SS6 TP18-8

3.5

SS30

SS7 SS13

2.0

SS25 SS24 TP18-7

TP19-01

SS31 SS32 SS22 TP18-5 SS3

TP19-10

SS5

565125 565150 565175 565200

Stantec

Legend

- Test Pit (July, 2018)
- Test Pit (July, 2019)
- Excavation Soil Sample
- 2.0 Depth of Excavation (m BGS)
- Soil Sample Tested Met Regulatory Standards (O. Reg. 153/04 Table 2 SCS)
- Areal Extent of 2.0 m Deep Excavation
- Areal Extent of 3.5 m Deep Excavation

0 5 10 metres

1:300 (At original document size of 11x17)

Notes

1. Coordinate System: NAD 1983 UTM Zone 17N
2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2017.
3. Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
4. m BGS - metres Below Ground Surface
5. SCS - Site Condition Standards

Project Location
Guelph, Ontario

161423338 REVA
Prepared by IP on 2019-12-18

Client/Project
ROCKPOINT HOLDINGS INC.
220 ARKELL ROAD
GUELPH, ONTARIO

Figure No.
5

Title
Summary of Soil Analytical Results - Remedial Excavation Walls

\\cd1004-f01.wsdt.group\01614\active\161423338\planning\drawings\GIS\MXD\Remediation\2019 Report\161423338_001Report Fig05 SO Results RemedialExcavationWalls.mxd Revised: 2019-12-18 By: jpodrug

APPENDIX B:
METHODS

Appendix B METHODS

This Appendix summarizes the methods Stantec followed in completing the Phase II ESA and the subsequent remedial excavation activities.

Health and Safety

Stantec developed a Health and Safety Plan (HASP) for this project consistent with the requirements of the Ontario *Occupational Health and Safety Act* (OHSA) to address the fieldwork components, including sampling and handling of soil samples potentially containing the contaminants of potential concern (COPCs) previously identified. The specific objectives of the health and safety checklist were to:

- Identify potential health and safety concerns or exposure risks associated with activities to be conducted on the Site;
- Identify and describe the control methods designed to reduce on-site worker exposure to potential risks;
- Reduce the potential for on-site workers and the public to be exposed to unnecessary or unacceptable risk as part of the work program; and,
- Undertake the proposed field activities in a manner consistent with the applicable legislation and guidelines respecting worker health and safety, and regulations concerning contaminant and waste handling.

A copy of the health and safety checklist was kept on the Site by Stantec field personnel for the duration of the field activities.

Underground Utilities

Public and Private Underground Service Locates

Prior to the earth work activities at the Site, Percon Excavating Inc (Percon), a subcontractor retained by the former Site owner, contacted Ontario One Call to have publicly owned utilities located in the vicinity of the test pitting and excavation locations. In addition, Percon retained private utility locator, Down Under Pipe and Cable Locating Ltd. to locate public and private underground services including, but not limited to, buried former private Site services, telephone, natural gas, cable, water, and power.

Test Pitting and Remedial Excavation

Percon advanced test pits and excavated impacted soil at the Site using Case CX160C and CX250D excavators. The test pits were backfilled with the excavated material and the final excavations were backfilled with fill material imported from a MECP-licensed pit.

Test pits logs in **Appendix D** present the observed stratigraphy.

Sampling Methods

Soil Sampling

Soil samples were collected from the test pits at regular intervals. Soil samples were collected from the bases and walls of the excavation to provide spatial coverage of the completed excavation. Stantec's field technician visually assessed and logged the recovered soil samples in the field and recorded observations of colour, odour, texture, soil type, and moisture.

As part of the initial test pitting program, Stantec screened select soil samples for headspace soil vapour concentrations in the field using an RKI Eagle 2 gas detector. The Eagle 2 is equipped with a combustible gas detector to measure combustible vapour concentrations (CVC) and a photoionization detector (PID) to measure total organic vapors (TOV). The combustible gas detector was calibrated to hexane and operated in methane elimination mode for CVC measurements, and the PID was calibrated to isobutylene and equipped with a 10.6 eV lamp for TOV measurements. For CVC, the Eagle 2 can display measurement in parts per million by volume (ppm_v), percent by volume (% volume), and percent of the lower explosive limit (% LEL). TOV measurements are reported in units of ppm_v. The Eagle 2 is equipped with a Teflon® lined hose and a 0.4 m (10 in.) long hydrophobic probe. The probe includes a replaceable hydrophobic filter disk that reduces the potential for particulates and water to enter the instrument.

The Eagle 2 was calibrated in the field at the beginning of work each day. The calibration data were recorded when the Eagle 2 was calibrated.

Field screening methods measure the total concentration of a range of combustible and volatile contaminants such as PHC and VOC in soil vapour. Test pit logs in **Appendix D** include CVC/TOV measurements, where applicable.

Potential cross-contamination of samples was reduced by using cleaned sampling equipment. Stantec's field technicians wore a new pair of disposable nitrile gloves for each soil sample.

Where soil samples were assessed for CVC/TOV, the soil sample was split into two portions. One portion was placed into a sealable plastic bag for use in screening headspace soil vapour concentrations (where applicable). The second portion of each sample was placed into laboratory-supplied jars and temporarily stored in a cooler on ice prior to transport to Bureau Veritas Canada (2019) Inc. (BV). Where soil samples were not assessed for CVC/TOV, the soil sample was placed into laboratory-supplied jars and temporarily stored in a cooler on ice prior to transport to BV. Soil samples were recovered at each sampling interval/location from an excavator bucket. Where applicable, approximately 5-gram aliquots of soil were recovered and extruded directly into laboratory supplied vials containing methanol preservative (i.e., where analysis of the sample for volatile compounds was being completed).

Stantec selected soil samples for laboratory based on a variety of lines of evidence, including samples with elevated CVC/TOV concentrations, staining, odour, the expected behavior of COPC in the environment, or general coverage of the excavation.

Samples submitted for laboratory analysis were packed in coolers on ice and shipped to BV of Mississauga, Ontario under chain-of-custody documentation.

APPENDIX C: GENERIC SITE CONDITION STANDARD SELECTION

Appendix C GENERIC SITE CONDITION STANDARD (SCS) SELECTION

This appendix summarizes the selection process Stantec used to identify the appropriate SCS for the Site based on a review of site-specific characteristics consistent with the requirements of Ontario Regulation (O.Reg.) 153/04.

Groundwater Use

The Site obtains its drinking water from a municipal water system that relies on groundwater as a source. Therefore, site condition standards (SCS) for potable groundwater conditions were considered applicable at the Site.

Current/Intended Property Use

The property use at the Site is residential, and Stantec understands that the Site will be redeveloped for further residential use. Therefore, the applicable land use category was considered residential/parkland/institutional property use.

Depth to Bedrock

The subsurface investigation completed as part of this Phase II ESA did not encounter bedrock to the maximum investigation depth of 3.5 m below ground surface (m BGS). Therefore, the generic SCS established for properties with shallow bedrock were not considered applicable for use at the Site.

Proximity to Water Bodies

No water bodies were located within 30 m of the Site. Therefore, the generic SCS suitable for properties greater than 30 m from a water body are applicable for the Site.

Soil Characteristics

Stratigraphy observed in the test pits advanced as part of this Phase II ESA was predominantly silty sand, with some layers of silt or sand. This was consistent with the findings of the previous geotechnical assessment of the Site (Stantec, 2019a). Therefore, results were compared with coarse grained standards.

Environmentally Sensitive Areas

The O.Reg. 153/04 generic SCS cannot be used at properties that are within, include, or are proximate to (i.e., within 30 m of) Environmentally Sensitive Areas, such as areas of natural significance, or when soil pH is not within the allowable ranges for surface and/or subsurface soils. If either condition applies, the Table 1 (background) SCS are used to evaluate soil and groundwater quality.

Areas of Natural and Scientific Interest (ANSI)

According to information provided by Ontario Ministry of Natural Resources and Forestry online tool (hhttps://www.ontario.ca/page/make-natural-heritage-area-map.), no areas of natural and scientific interest (ANSIs) are present within 30m of the Site.

Soil pH

The generic SCS cannot be applied to a property if the soil pH has a value outside a range of 5 to 9 for surface soil (less than1.5 m BGS) or outside a range of 5 to 11 for subsurface soil (greater than 1.5 m BGS).

Surface soil samples and subsurface soil samples were submitted for analysis of pH. Results indicated that pH in the surface and subsurface samples were within the acceptable ranges.

Applicable Standards

Considering the site characteristics described in in this appendix, the analytical results were compared with the Table 2 Full Depth Generic SCS for a potable groundwater condition for residential/parkland/institutional property use for coarse textured soils (Table 2 SCS).

APPENDIX D:
TEST PIT LOGS

Test Pit: TP18-1

Project:	Phase II ESA	**Drilling method:**	CX160C Excavator
Client:	Rockpoint Holdings Inc.	**Date started/completed:**	17-Jul-2018
Location:	220 Arkell Road, Guelph, Ontario	**Ground surface elevation:**	n/a
Number:	161423338	**Top of casing elevation:**	n/a
Field investigator:	A. Kaiser	**Easting:**	n/a
Contractor:	Percon Excavating Inc.	**Northing:**	n/a

SUBSURFACE PROFILE				SAMPLE DETAILS			INSTALLATION DETAILS	
Depth (ft)	Depth (m)	Graphic Log	Stratigraphic Description	Depth (m BGS)	Sample Number	Sample Type	Lab Analyses	Diagram	Description
			Ground Surface						
			TOPSOIL	0.00					
			SILTY SAND brown, with gravel, black organics, moist, some debris	0.15	1	GB			
2	1				2	GB			
4									Backfill with excavated material
6	2		- wet		3	GB	Metals		
8					4	GB			
10	3		- trace gravel End of Test Pit	3.05					
12	4								
14									

Notes:
m AMSL - metres above mean sea level
m BGS - metres below ground surface
GB - grab sample
n/a - not available

Stantec

Drawn By/Checked By: T. Sokolowski / M. Stendzis

Test Pit: TP18-2

Project:	Phase II ESA	**Drilling method:**	CX160C Excavator
Client:	Rockpoint Holdings Inc.	**Date started/completed:**	17-Jul-2018
Location:	220 Arkell Road, Guelph, Ontario	**Ground surface elevation:**	n/a
Number:	161423338	**Top of casing elevation:**	n/a
Field investigator:	A. Kaiser	**Easting:**	n/a
Contractor:	Percon Excavating Inc.	**Northing:**	n/a

SUBSURFACE PROFILE				SAMPLE DETAILS			INSTALLATION DETAILS	
Depth (ft)	Depth (m)	Graphic Log	Stratigraphic Description	Depth (m BGS)	Sample Number	Sample Type	Lab Analyses	Diagram / Description
			Ground Surface					
			TOPSOIL	0.00				
			SILTY SAND brown, with gravel, black organics, moist, some debris	0.15	1	GB		
2	1				2	GB		
4								Backfill with excavated material
6	2		- wet		3	GB	Metals	
8					4	GB		
10	3		- trace gravel End of Test Pit	3.05				
12	4							
14								

Notes:
m AMSL - metres above mean sea level
m BGS - metres below ground surface
GB - grab sample
n/a - not available

Stantec

Drawn By/Checked By: T. Sokolowski / M. Stendzis

Test Pit: TP18-3

Project:	Phase II ESA	**Drilling method:**	CX160C Excavator
Client:	Rockpoint Holdings Inc.	**Date started/completed:**	17-Jul-2018
Location:	220 Arkell Road, Guelph, Ontario	**Ground surface elevation:**	n/a
Number:	161423338	**Top of casing elevation:**	n/a
Field investigator:	A. Kaiser	**Easting:**	n/a
Contractor:	Percon Excavating Inc.	**Northing:**	n/a

SUBSURFACE PROFILE				SAMPLE DETAILS			INSTALLATION DETAILS	
Depth (ft)	Depth (m)	Graphic Log	Stratigraphic Description	Depth (m BGS)	Sample Number	Sample Type	Lab Analyses	Diagram	Description
			Ground Surface						
			TOPSOIL	0.00					
			SILTY SAND brown, with gravel, black organics, moist	0.15	1	GB			
2			- debris						
	1				2	GB			
4									Backfill with excavated material
					3	GB	Metals		
6									
	2		- wet						
8					4	GB	Metals		
	3								
10			- trace gravel End of Test Pit	3.05					
12									
	4								
14									

Notes:
m AMSL - metres above mean sea level
m BGS - metres below ground surface
GB - grab sample
n/a - not available

Stantec

Drawn By/Checked By: T. Sokolowski / M. Stendzis

Test Pit: TP18-4

Project:	Phase II ESA	**Drilling method:**	CX160C Excavator
Client:	Rockpoint Holdings Inc.	**Date started/completed:**	17-Jul-2018
Location:	220 Arkell Road, Guelph, Ontario	**Ground surface elevation:**	n/a
Number:	161423338	**Top of casing elevation:**	n/a
Field investigator:	A. Kaiser	**Easting:**	n/a
Contractor:	Percon Excavating Inc.	**Northing:**	n/a

SUBSURFACE PROFILE				SAMPLE DETAILS			INSTALLATION DETAILS	
Depth (ft)	Depth (m)	Graphic Log	Stratigraphic Description	Depth (m BGS)	Sample Number	Sample Type	Lab Analyses	Diagram	Description
			Ground Surface						
			TOPSOIL	0.00					
			SILTY SAND brown, with gravel, black organics, moist, some debris	0.15	1	GB			
2	1				2	GB			
4									Backfill with excavated material
6	2		- wet		3	GB	Metals		
8					4	GB			
10	3		- trace gravel End of Test Pit	3.05					
12	4								
14									

Notes:
m AMSL - metres above mean sea level
m BGS - metres below ground surface
GB - grab sample
n/a - not available

Stantec

Drawn By/Checked By: T. Sokolowski / M. Stendzis

Test Pit: TP18-5

Project:	Phase II ESA	**Drilling method:**	CX160C Excavator
Client:	Rockpoint Holdings Inc.	**Date started/completed:**	17-Jul-2018
Location:	220 Arkell Road, Guelph, Ontario	**Ground surface elevation:**	n/a
Number:	161423338	**Top of casing elevation:**	n/a
Field investigator:	A. Kaiser	**Easting:**	n/a
Contractor:	Percon Excavating Inc.	**Northing:**	n/a

SUBSURFACE PROFILE				SAMPLE DETAILS				INSTALLATION DETAILS	
Depth (ft)	Depth (m)	Graphic Log	Stratigraphic Description	Depth (m BGS)	Sample Number	Sample Type	Lab Analyses	%LEL Comb▲ 20 40 60 80 / ppm OTOV / Comb ● 200 400 600 800	Diagram / Description
			Ground Surface						
			TOPSOIL	0.00					
			SILT (FILL) light brown, some sand and gravel, moist	0.15	1	GB		10 ● ○ <0.02	
2									
	1		- large boulders		2	GB	VOCs, Metals and Inorganics, PHC F1-F4, PAHs	45 ● ○ <0.02	Backfill with excavated material
4									
			SILTY SAND brown, trace organics, moist	1.68	3	GB		35 ● ○ <0.02	
6	2								
8			SILT light brown, some clay and sand, moist	2.44	4	GB			
10	3		End of Test Pit	3.05					
12									
	4								
14									

Notes:
m AMSL - metres above mean sea level
m BGS - metres below ground surface
GB - grab sample
ppm - parts per million by volume
n/a - not available

VOCs - volatile organic compounds
PHC F1- F4 - petroleum hyrocarbon fractions 1 to 4
PAHs - polycyclic aromatic hydrocarbons
% LEL - percentage of lower explosive limit
Comb - combustible vapours
TOV - total organic vapours

Stantec

Drawn By/Checked By: T. Sokolowski / M. Stendzis

Test Pit: TP18-6

Project:	Phase II ESA	**Drilling method:**	CX160C Excavator
Client:	Rockpoint Holdings Inc.	**Date started/completed:**	17-Jul-2018
Location:	220 Arkell Road, Guelph, Ontario	**Ground surface elevation:**	n/a
Number:	161423338	**Top of casing elevation:**	n/a
Field investigator:	A. Kaiser	**Easting:**	n/a
Contractor:	Percon Excavating Inc.	**Northing:**	n/a

SUBSURFACE PROFILE				SAMPLE DETAILS				INSTALLATION DETAILS	
Depth (ft)	Depth (m)	Graphic Log	Stratigraphic Description	Depth (m BGS)	Sample Number	Sample Type	Lab Analyses	%LEL Comb▲ 20 40 60 80 / ppm OTOV ● Comb 200 400 600 800	Diagram / Description
			Ground Surface						
			TOPSOIL	0.00					
			SILT brown, some sand and gravel, organics, moist	0.14	1	GB		25 ● 1 ○	
			SANDY SILT dark brown, some cobbles, organics, moist to wet	0.91	2	GB	VOCs, Metals and Inorganics, PHC F1-F4, PAHs	<5 ● <0.02 ○	Backfill with excavated material
					3	GB	Metals	35 ● <0.02 ○	
			SILT brown, some clay, moist to wet	2.44	4	GB			
			End of Test Pit	3.05					

Notes:
m AMSL - metres above mean sea level
m BGS - metres below ground surface
GB - grab sample
ppm - parts per million by volume
n/a - not available

VOCs - volatile organic compounds
PHC F1- F4 - petroleum hyrocarbon fractions 1 to 4
PAHs - polycyclic aromatic hydrocarbons
% LEL - percentage of lower explosive limit
Comb - combustible vapours
TOV - total organic vapours

Stantec

Drawn By/Checked By: T. Sokolowski / M. Stendzis

Test Pit: TP18-7

Project:	Phase II ESA	**Drilling method:**	CX160C Excavator
Client:	Rockpoint Holdings Inc.	**Date started/completed:**	17-Jul-2018
Location:	220 Arkell Road, Guelph, Ontario	**Ground surface elevation:**	n/a
Number:	161423338	**Top of casing elevation:**	n/a
Field investigator:	A. Kaiser	**Easting:**	n/a
Contractor:	Percon Excavating Inc.	**Northing:**	n/a

SUBSURFACE PROFILE				SAMPLE DETAILS				INSTALLATION DETAILS	
Depth (ft)	Depth (m)	Graphic Log	Stratigraphic Description	Depth (m BGS)	Sample Number	Sample Type	Lab Analyses	%LEL Comb▲ 20 40 60 80 / ppm OTOV / Comb ● 200 400 600 800	Diagram / Description
			Ground Surface						
			TOPSOIL	0.00					
			SILTY SAND brown, some gravel and cobbles, moist	0.23	1	GB		<5 ● <0.02 ○	
2									
	1		- large boulders		2	GB		<5 ● <0.02 ○	
4									
			- wet		3	GB	VOCs, Metals and Inorganics, PHC F1-F4, PAHs	<5 ● <0.02 ○	Backfill with excavated material
6									
	2								
8			- large cobbles and boulders, wet		4	GB		20 ● <0.02 ○	
	3								
10			End of Test Pit	3.05					
12									
	4								
14									

Notes:
m AMSL - metres above mean sea level
m BGS - metres below ground surface
GB - grab sample
ppm - parts per million by volume
n/a - not available

VOCs - volatile organic compounds
PHC F1- F4 - petroleum hyrocarbon fractions 1 to 4
PAHs - polycyclic aromatic hydrocarbons
% LEL - percentage of lower explosive limit
Comb - combustible vapours
TOV - total organic vapours

Stantec

Drawn By/Checked By: T. Sokolowski / M. Stendzis

Test Pit: TP18-8

Project:	Phase II ESA	**Drilling method:**	CX160C Excavator
Client:	Rockpoint Holdings Inc.	**Date started/completed:**	17-Jul-2018
Location:	220 Arkell Road, Guelph, Ontario	**Ground surface elevation:**	n/a
Number:	161423338	**Top of casing elevation:**	n/a
Field investigator:	A. Kaiser	**Easting:**	n/a
Contractor:	Percon Excavating Inc.	**Northing:**	n/a

SUBSURFACE PROFILE				SAMPLE DETAILS				INSTALLATION DETAILS	
Depth (ft)	Depth (m)	Graphic Log	Stratigraphic Description	Depth (m BGS)	Sample Number	Sample Type	Lab Analyses	%LEL (Comb▲ 20 40 60 80) ppm (OTOV ● Comb 200 400 600 800)	Diagram / Description
			Ground Surface						
			TOPSOIL	0.00					
			SILTY SAND (FILL) brown, some gravel, rock and brick debris, moist	0.20	1	GB	VOCs, Metals and Inorganics, PHC F1-F4, PAHs	<5 ● 1 ○	Backfill with excavated material
2									
	1		SILT brown, some gravel, moist	0.91	2	GB		<5 ● <0.02 ○	
4									
			End of Test Pit	1.52					
6									
	2								
8									
10	3								
12									
	4								
14									

Notes:
m AMSL - metres above mean sea level
m BGS - metres below ground surface
GB - grab sample
ppm - parts per million by volume
n/a - not available

VOCs - volatile organic compounds
PHC F1- F4 - petroleum hyrocarbon fractions 1 to 4
PAHs - polycyclic aromatic hydrocarbons
% LEL - percentage of lower explosive limit
Comb - combustible vapours
TOV - total organic vapours

Stantec

Drawn By/Checked By: T. Sokolowski / M. Stendzis

Test Pit: TP18-9

Project:	Phase II ESA	**Drilling method:**	CX160C Excavator
Client:	Rockpoint Holdings Inc.	**Date started/completed:**	17-Jul-2018
Location:	220 Arkell Road, Guelph, Ontario	**Ground surface elevation:**	n/a
Number:	161423338	**Top of casing elevation:**	n/a
Field investigator:	A. Kaiser	**Easting:**	n/a
Contractor:	Percon Excavating Inc.	**Northing:**	n/a

SUBSURFACE PROFILE				SAMPLE DETAILS				INSTALLATION DETAILS	
Depth (ft)	Depth (m)	Graphic Log	Stratigraphic Description	Depth (m BGS)	Sample Number	Sample Type	Lab Analyses	%LEL (Comb▲ 20 40 60 80) ppm (OTOV / Comb● 200 400 600 800)	Diagram / Description
			Ground Surface						
			TOPSOIL	0.00					
			SILTY SAND brown, with gravel, moist	0.18	1	GB		10 <0.02	
4	1		- some cobbles and organic material		2	GB	VOCs, Metals and Inorganics, PHC F1-F4, PAHs	<5 <0.02	Backfill with excavated material
6	2				3	GB	PAHs	<5 <0.02	
8			SILT light brown, some clay and gravel, moist to wet	2.44	4	GB		<5 <0.02	
			End of Test Pit	2.59					
10	3								
12	4								
14									

Notes:
m AMSL - metres above mean sea level
m BGS - metres below ground surface
GB - grab sample
ppm - parts per million by volume
n/a - not available

VOCs - volatile organic compounds
PHC F1- F4 - petroleum hyrocarbon fractions 1 to 4
PAHs - polycyclic aromatic hydrocarbons
% LEL - percentage of lower explosive limit
Comb - combustible vapours
TOV - total organic vapours

Stantec

Drawn By/Checked By: T. Sokolowski / M. Stendzis

Test Pit: TP18-10

Project:	Phase II ESA	**Drilling method:**	CX160C Excavator
Client:	Rockpoint Holdings Inc.	**Date started/completed:**	17-Jul-2018
Location:	220 Arkell Road, Guelph, Ontario	**Ground surface elevation:**	n/a
Number:	161423338	**Top of casing elevation:**	n/a
Field investigator:	A. Kaiser	**Easting:**	n/a
Contractor:	Percon Excavating Inc.	**Northing:**	n/a

SUBSURFACE PROFILE				SAMPLE DETAILS				INSTALLATION DETAILS	
Depth (ft)	Depth (m)	Graphic Log	Stratigraphic Description	Depth (m BGS)	Sample Number	Sample Type	Lab Analyses	%LEL Comb▲ 20 40 60 80 / ppm OTOV ● Comb 200 400 600 800	Diagram / Description
			Ground Surface						
			TOPSOIL	0.00					
			SAND brown, some gravel, moist	0.15	1	GB		<5 ● <0.02 ○	
2									
	1		- trace gravel, black organic matter		2	GB	VOCs, Metals and Inorganics, PHC F1-F4, PAHs	<5 ● <0.02 ○	Backfill with excavated material
4									
6			- no organic matter		3	GB		<5 ● <0.02 ○	
	2								
8			- brown coarse grained sand, with gravel, wet		4	GB		<5 ● <0.02 ○	
10	3		End of Test Pit	3.05					
12									
	4								
14									

Notes:
m AMSL - metres above mean sea level
m BGS - metres below ground surface
GB - grab sample
ppm - parts per million by volume
n/a - not available

VOCs - volatile organic compounds
PHC F1- F4 - petroleum hyrocarbon fractions 1 to 4
PAHs - polycyclic aromatic hydrocarbons
% LEL - percentage of lower explosive limit
Comb - combustible vapours
TOV - total organic vapours

Stantec

Drawn By/Checked By: T. Sokolowski / M. Stendzis

Test Pit: TP18-11

Project:	Phase II ESA	**Drilling method:**	CX160C Excavator
Client:	Rockpoint Holdings Inc.	**Date started/completed:**	18-Jul-2018
Location:	220 Arkell Road, Guelph, Ontario	**Ground surface elevation:**	n/a
Number:	161423338	**Top of casing elevation:**	n/a
Field investigator:	A. Kaiser	**Easting:**	n/a
Contractor:	Percon Excavating Inc.	**Northing:**	n/a

SUBSURFACE PROFILE				SAMPLE DETAILS				INSTALLATION DETAILS	
Depth (ft)	Depth (m)	Graphic Log	Stratigraphic Description	Depth (m BGS)	Sample Number	Sample Type	Lab Analyses	%LEL Comb▲ 20 40 60 80 / ppm OTOV ● Comb 200 400 600 800	Diagram / Description
			Ground Surface						
			TOPSOIL	0.00					
			SILTY SAND brown, some gravel, moist	0.18	1	GB	VOCs, Metals and Inorganics, PHC F1-F4, PAHs	<5 ● 1 ○	
2			- black staining						
	1		SAND light brown, trace gravel, moist	0.91	2	GB	Metals	<5 ● 1 ○	Backfill with excavated material
4									
			SANDY SILT light brown, trace gravel, moist to wet	1.68	3	GB		<5 ● 1 ○	
6	2								
			End of Test Pit	2.29					
8									
	3								
10									
12									
	4								
14									

Notes:
m AMSL - metres above mean sea level
m BGS - metres below ground surface
GB - grab sample
ppm - parts per million by volume
n/a - not available

VOCs - volatile organic compounds
PHC F1- F4 - petroleum hyrocarbon fractions 1 to 4
PAHs - polycyclic aromatic hydrocarbons
% LEL - percentage of lower explosive limit
Comb - combustible vapours
TOV - total organic vapours

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Drawn By/Checked By: T. Sokolowski / M. Stendzis

Test Pit: TP18-12

Project:	Phase II ESA	**Drilling method:**	CX160C Excavator
Client:	Rockpoint Holdings Inc.	**Date started/completed:**	18-Jul-2018
Location:	220 Arkell Road, Guelph, Ontario	**Ground surface elevation:**	n/a
Number:	161423338	**Top of casing elevation:**	n/a
Field investigator:	A. Kaiser	**Easting:**	n/a
Contractor:	Percon Excavating Inc.	**Northing:**	n/a

SUBSURFACE PROFILE				SAMPLE DETAILS				INSTALLATION DETAILS	
Depth (ft)	Depth (m)	Graphic Log	Stratigraphic Description	Depth (m BGS)	Sample Number	Sample Type	Lab Analyses	%LEL (Comb▲ 20 40 60 80) ppm (TOV ○ Comb ● 200 400 600 800)	Diagram / Description
			Ground Surface						
			TOPSOIL	0.00					
			SILTY SAND light brown, some gravel, moist	0.30	1	GB		<5 ● <0.02 ○	
2									
	1		SAND brown, fine grained sand, trace silt, some gravel, moist	0.91	2	GB	VOCs, Metals and Inorganics, PHC F1-F4, PAHs	<5 ● <0.02 ○	Backfill with excavated material
4									
6			SANDY SILT light brown, some gravel, moist to wet	1.83	3	GB	Metals	<5 ● <0.02 ○	
	2		End of Test Pit	2.29					
8									
	3								
10									
12									
	4								
14									

Notes:
m AMSL - metres above mean sea level
m BGS - metres below ground surface
GB - grab sample
ppm - parts per million by volume
n/a - not available

VOCs - volatile organic compounds
PHC F1- F4 - petroleum hyrocarbon fractions 1 to 4
PAHs - polycyclic aromatic hydrocarbons
% LEL - percentage of lower explosive limit
Comb - combustible vapours
TOV - total organic vapours

Stantec

Drawn By/Checked By: T. Sokolowski / M. Stendzis

APPENDIX E:
TABLES

Table 1
Summary of Soil Analytical Results - Phase II Environmental Site Assessment
220 Arkell Road, Guelph, Ontario
Rockpoint Holdings Inc.

Sample Location			TP18-1	TP18-2	TP18-3		TP18-4	TP18-5	TP18-6		TP18-7	TP18-8	TP18-9				TP18-10	TP18-11				TP18-12	
Sample Date			17-Jul-18	17-Jul-18	17-Jul-18	17-Jul-18	17-Jul-18	17-Jul-18	17-Jul-18	17-Jul-18	17-Jul-18	17-Jul-18	17-Jul-18	17-Jul-18		18-Jul-18	18-Jul-18	18-Jul-18	18-Jul-18		18-Jul-18	18-Jul-18	18-Jul-18
Sample ID			TP18-1-1-EW	TP18-2-1-NW	TP18-3-1-WW	TP18-3-2-WW	TP18-4-1-SW	TP18-5-2	TP18-6-2	TP18-6-3	TP18-7-3	TP18-8-1	TP18-9-2	QC1		TP18-9-3	TP18-10-2	TP18-11-1	QC2		TP18-11-2	TP18-12-2	TP18-12-3
Sample Depth			2.0 m	2.0 m	2.0 m	3.0 m	2.0 m	0.8 - 1.5 m	0.8 - 1.5 m	1.5 - 2.3 m	1.5 - 2.3 m	0.0 - 0.8 m	0.8 - 1.5 m	0.8 - 1.5 m		1.5 - 2.3 m	0.8 - 1.5 m	0.0 - 0.8 m	0.0 - 0.8 m		0.8 - 1.5 m	0.8 - 1.5 m	1.5 - 2.3 m
Sampling Company			STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC		STANTEC	STANTEC	STANTEC	STANTEC		STANTEC	STANTEC	STANTEC
Laboratory			MAXX	MAXX	MAXX	MAXX	MAXX	MAXX	MAXX	MAXX	MAXX	MAXX	MAXX	MAXX		MAXX	MAXX	MAXX	MAXX		MAXX	MAXX	MAXX
Laboratory Work Order			B8I3680	B8I3680	B8I3680	B8I3680	B8I3680	B8I3680	B8I3680	B8I3680	B8I3680	B8I3680	B8I3680	B8I3680		B8I3680	B8I3680	B8I3680	B8I3680		B8I3680	B8I3680	B8I3680
Laboratory Sample ID			HGW330	HGW332	HGW334	HGW335	HGW336	HGW355	HGW358	HGW359	HGW362	HGW364	HGW374	HGW375 Field Duplicate	RPD (%)	HGW376	HGW379	HGW397	HGW400 Field Duplicate	RPD (%)	HGW398	HGW402	HGW403
Sample Type	Units	Ontario SCS																					
General Chemistry																							
Available (CaCl2) pH	S.U.	5-9/5-11$_{s12}$[A]	-	-	-	-	-	7.63	6.91	-	7.49	7.60	7.35	7.51	nc	-	7.72	7.66	7.66	nc	-	7.88	-
Cyanide (Free)	µg/g	0.051[A]	-	-	-	-	-	0.01	0.01	-	0.02	<0.01	0.02	0.02	nc	-	<0.01	<0.01	<0.01	nc	-	<0.01	-
Electrical Conductivity, Lab	mS/cm	0.7[A]	-	-	-	-	-	0.24	0.22	-	0.20	0.17	0.29	0.30	3%	-	0.067	0.16	0.14	**13%**	-	0.053	-
Moisture Content	%	n/v	-	-	-	-	-	11	28	-	14	9.0	13	13	0%	13	15	12	13	8%	-	8.4	-
Sodium Adsorption Ratio (SAR)	none	5[A]	-	-	-	-	-	1.0	0.21	-	0.23	0.28	1.5	1.5	nc	-	0.41	0.25	0.26	nc	-	0.44	-
Petroleum Hydrocarbons																							
PHC F1 (C6-C10 range)	µg/g	$_{s7}$[A]	-	-	-	-	-	<10	<10	-	<10	<10	<10	<10	nc	-	<10	<10	<10	nc	-	<10	-
PHC F1 (C6-C10 range) minus BTEX	µg/g	55$_{s7}$[A]	-	-	-	-	-	<10	<10	-	<10	<10	<10	<10	nc	-	<10	<10	<10	nc	-	<10	-
PHC F2 (>C10-C16 range)	µg/g	98$_{s15}$[A]	-	-	-	-	-	<10	<10	-	<10	<10	11	<10	nc	-	<10	<10	<10	nc	-	<10	-
PHC F3 (>C16-C34 range)	µg/g	300$_{s8}$[A]	-	-	-	-	-	<50	<50	-	<50	<50	110	<50	nc	-	<50	<50	<50	nc	-	<50	-
PHC F4 (>C34-C50 range)	µg/g	2,800$_{s10}$[A]	-	-	-	-	-	<50	<50	-	<50	<50	<50	<50	nc	-	<50	<50	<50	nc	-	<50	-
Chromatogram to baseline at C50	none	n/v	-	-	-	-	-	YES	YES	-	YES	YES	YES	YES	nc	-	YES	YES	YES	nc	-	YES	-
Metals																							
Antimony	µg/g	7.5[A]	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	nc	-	<0.20	<0.20	<0.20	nc	<0.20	<0.20	<0.20
Arsenic	µg/g	18[A]	2.4	3.1	3.5	3.1	1.5	2.6	3.8	2.1	2.9	3.4	2.6	2.8	nc	-	1.2	5.1	3.4	nc	1.2	2.4	1.5
Barium	µg/g	390[A]	39	22	25	22	30	36	52	30	44	38	36	36	0%	-	7.2	36	30	18%	4.4	18	23
Beryllium	µg/g	4[A]	0.30	0.20	0.22	<0.20	0.22	0.31	0.64	0.23	0.36	0.32	0.33	0.32	nc	-	<0.20	0.41	0.33	nc	<0.20	<0.20	<0.20
Boron	µg/g	120$_{s16}$[A]	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	nc	-	<5.0	<5.0	<5.0	nc	<5.0	<5.0	<5.0
Boron (Available)	µg/g	1.5$_{s16}$[A]	-	-	-	-	-	0.42	1.2	-	0.61	0.36	0.49	0.51	4%	-	0.076	0.30	0.23	nc	-	<0.050	-
Cadmium	µg/g	1.2[A]	0.60	0.43	0.48	0.46	0.24	0.29	1.1	0.65	0.36	0.36	0.33	0.33	nc	-	0.35	1.0	0.82	20%	0.29	0.64	0.49
Chromium	µg/g	160[A]	11	8.6	9.9	9.6	8.7	11	20	8.6	12	13	12	12	0%	-	3.9	14	11	24%	2.6	8.2	7.0
Chromium (Hexavalent)	µg/g	8[A]	-	-	-	-	-	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	nc	-	<0.2	<0.2	<0.2	nc	-	<0.2	-
Cobalt	µg/g	22[A]	4.2	3.9	4.9	5.2	3.3	4.3	5.2	3.3	4.2	4.6	4.5	4.5	0%	-	1.4	4.9	4.3	13%	0.88	4.3	2.8
Copper	µg/g	140[A]	11	22	27	29	9.2	12	23	9.4	11	14	13	13	0%	-	2.2	14	11	24%	3.8	11	8.9
Lead	µg/g	120[A]	30	31	39	37	14	22	48	31	27	26	21	21	0%	-	24	41	33	22%	24	46	21
Mercury	µg/g	0.27[A]	-	-	-	-	-	<0.050	0.077	-	<0.050	<0.050	<0.050	<0.050	nc	-	<0.050	0.089	<0.050	nc	-	<0.050	-
Molybdenum	µg/g	6.9[A]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.52	0.62	<0.50	nc	-	<0.50	0.57	<0.50	nc	<0.50	<0.50	<0.50
Nickel	µg/g	100[A]	8.9	7.8	9.6	9.8	7.0	8.6	11	7.3	8.3	9.2	9.6	9.5	1%	-	2.5	11	9.7	13%	2.1	8.8	6.2
Selenium	µg/g	2.4[A]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.74	<0.50	<0.50	<0.50	<0.50	<0.50	nc	-	<0.50	<0.50	<0.50	nc	<0.50	<0.50	<0.50
Silver	µg/g	20[A]	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	nc	-	<0.20	<0.20	<0.20	nc	<0.20	<0.20	<0.20
Thallium	µg/g	1[A]	0.084	0.12	0.13	0.18	0.063	0.079	0.12	0.074	0.061	0.077	0.073	0.079	nc	-	<0.050	0.12	0.077	nc	<0.050	0.085	0.059
Uranium	µg/g	23[A]	0.48	0.38	0.45	0.42	0.41	0.47	0.58	0.43	0.45	0.45	0.48	0.42	13%	-	0.37	0.51	0.46	10%	0.33	0.54	0.45
Vanadium	µg/g	86[A]	19	20	22	22	16	22	29	15	23	22	22	22	nc	-	9.1	25	20	nc	6.0	24	13
Zinc	µg/g	340[A]	220	290	**380[A]**	**400[A]**	86	89	**410[A]**	220	120	130	83	88	6%	-	150	**510[A]**	**390[A]**	27%	120	**880[A]**	260
Polycyclic Aromatic Hydrocarbons																							
Acenaphthene	µg/g	7.9[A]	-	-	-	-	-	0.0055	<0.0050	-	<0.0050	0.055	1.0	<0.0050	nc	0.020	<0.0050	<0.0050	<0.0050	nc	-	<0.0050	-
Acenaphthylene	µg/g	0.15[A]	-	-	-	-	-	<0.0050	<0.0050	-	<0.0050	<0.0050	0.025	0.0054	nc	<0.0050	<0.0050	<0.0050	<0.0050	nc	-	<0.0050	-
Anthracene	µg/g	0.67[A]	-	-	-	-	-	0.011	<0.0050	-	<0.0050	0.088	**2.3[A]**	0.013	nc	0.033	<0.0050	<0.0050	<0.0050	nc	-	<0.0050	-
Benzo(a)anthracene	µg/g	0.5[A]	-	-	-	-	-	0.024	<0.0050	-	0.014	0.19	**2.0[A]**	0.034	**193%**	0.062	<0.0050	<0.0050	<0.0050	nc	-	<0.0050	-
Benzo(a)pyrene	µg/g	0.3[A]	-	-	-	-	-	0.024	<0.0050	-	0.020	0.16	**1.6[A]**	0.037	**191%**	0.052	<0.0050	<0.0050	<0.0050	nc	-	<0.0050	-
Benzo(b/j)fluoranthene	µg/g	0.78$_{s2}$[A]	-	-	-	-	-	0.036	<0.0050	-	0.029	0.22	**2.0[A]**	0.051	**190%**	0.063	<0.0050	<0.0050	<0.0050	nc	-	<0.0050	-
Benzo(g,h,i)perylene	µg/g	6.6[A]	-	-	-	-	-	0.016	<0.0050	-	0.017	0.079	0.70	0.024	nc	0.030	<0.0050	<0.0050	<0.0050	nc	-	<0.0050	-
Benzo(k)fluoranthene	µg/g	0.78[A]	-	-	-	-	-	0.012	<0.0050	-	0.011	0.086	0.78	0.018	nc	0.023	<0.0050	<0.0050	<0.0050	nc	-	<0.0050	-
Chrysene	µg/g	7[A]	-	-	-	-	-	0.023	<0.0050	-	0.016	0.18	1.6	0.031	**192%**	0.045	<0.0050	<0.0050	<0.0050	nc	-	<0.0050	-
Dibenzo(a,h)anthracene	µg/g	0.1[A]	-	-	-	-	-	<0.0050	<0.0050	-	<0.0050	0.022	**0.23[A]**	0.0051	nc	0.0095	<0.0050	<0.0050	<0.0050	nc	-	<0.0050	-
Fluoranthene	µg/g	0.69[A]	-	-	-	-	-	0.066	<0.0050	-	0.036	0.49	**5.1[A]**	0.085	**193%**	0.14	<0.0050	<0.0050	<0.0050	nc	-	<0.0050	-
Fluorene	µg/g	62[A]	-	-	-	-	-	0.0057	<0.0050	-	<0.0050	0.055	1.4	0.0058	nc	0.025	<0.0050	<0.0050	<0.0050	nc	-	<0.0050	-
Indeno(1,2,3-cd)pyrene	µg/g	0.38[A]	-	-	-	-	-	0.017	<0.0050	-	0.017	0.088	**0.83[A]**	0.029	**186%**	0.035	<0.0050	<0.0050	<0.0050	nc	-	<0.0050	-
Methylnaphthalene (Total)	µg/g	0.99$_{s3}$[A]	-	-	-	-	-	<0.0071	<0.0071	-	<0.0071	<0.0071	0.60	<0.0071	nc	<0.0071	<0.0071	<0.0071	<0.0071	nc	-	<0.0071	-
Methylnaphthalene, 1-	µg/g	$_{s3}$[A]	-	-	-	-	-	<0.0050	<0.0050	-	<0.0050	<0.0050	0.29	<0.0050	nc	0.0050	<0.0050	<0.0050	<0.0050	nc	-	<0.0050	-
Methylnaphthalene, 2-	µg/g	$_{s3}$[A]	-	-	-	-	-	<0.0050	<0.0050	-	<0.0050	<0.0050	0.31	<0.0050	nc	<0.0050	<0.0050	<0.0050	<0.0050	nc	-	<0.0050	-
Naphthalene	µg/g	0.6[A]	-	-	-	-	-	<0.0050	<0.0050	-	<0.0050	<0.0050	0.57	<0.0050	nc	0.014	<0.0050	<0.0050	<0.0050	nc	-	<0.0050	-
Phenanthrene	µg/g	6.2[A]	-	-	-	-	-	0.047	<0.0050	-	0.016	0.46	**6.5[A]**	0.047	**197%**	0.13	<0.0050	<0.0050	<0.0050	nc	-	<0.0050	-
Pyrene	µg/g	78[A]	-	-	-	-	-	0.052	<0.0050	-	0.030	0.37	3.4	0.071	**192%**	0.099	<0.0050	<0.0050	<0.0050	nc	-	<0.0050	-

See notes on last page

Table 1
Summary of Soil Analytical Results - Phase II Environmental Site Assessment
220 Arkell Road, Guelph, Ontario
Rockpoint Holdings Inc.

Sample Location			TP18-1	TP18-2	TP18-3		TP18-4	TP18-5	TP18-6		TP18-7	TP18-8	TP18-9			TP18-10	TP18-11			TP18-12	
Sample Date			17-Jul-18	17-Jul-18	17-Jul-18	17-Jul-18	17-Jul-18	17-Jul-18	17-Jul-18	17-Jul-18	17-Jul-18	17-Jul-18	17-Jul-18	17-Jul-18		18-Jul-18	18-Jul-18	18-Jul-18		18-Jul-18	18-Jul-18
Sample ID			TP18-1-1-EW	TP18-2-1-NW	TP18-3-1-WW	TP18-3-2-WW	TP18-4-1-SW	TP18-5-2	TP18-6-2	TP18-6-3	TP18-7-3	TP18-8-1	TP18-9-2	QC1		TP18-9-3	TP18-10-2	TP18-11-1	QC2		TP18-11-2	TP18-12-2	TP18-12-3
Sample Depth			2.0 m	2.0 m	2.0 m	3.0 m	2.0 m	0.8 - 1.5 m	0.8 - 1.5 m	1.5 - 2.3 m	1.5 - 2.3 m	0.0 - 0.8 m	0.8 - 1.5 m	0.8 - 1.5 m		1.5 - 2.3 m	0.8 - 1.5 m	0.0 - 0.8 m	0.0 - 0.8 m		0.8 - 1.5 m	0.8 - 1.5 m	1.5 - 2.3 m
Sampling Company			STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC		STANTEC	STANTEC	STANTEC	STANTEC		STANTEC	STANTEC	STANTEC
Laboratory			MAXX	MAXX	MAXX	MAXX	MAXX	MAXX	MAXX	MAXX	MAXX	MAXX	MAXX	MAXX		MAXX	MAXX	MAXX	MAXX		MAXX	MAXX	MAXX
Laboratory Work Order			B8I3680	B8I3680	B8I3680	B8I3680	B8I3680	B8I3680	B8I3680	B8I3680	B8I3680	B8I3680	B8I3680	B8I3680		B8I3680	B8I3680	B8I3680	B8I3680		B8I3680	B8I3680	B8I3680
Laboratory Sample ID			HGW330	HGW332	HGW334	HGW335	HGW336	HGW355	HGW358	HGW359	HGW362	HGW364	HGW374	HGW375		HGW376	HGW379	HGW397	HGW400		HGW398	HGW402	HGW403
Sample Type	Units	Ontario SCS												Field Duplicate	RPD (%)				Field Duplicate	RPD (%)			
Volatile Ogranic Compounds																							
Acetone	µg/g	16[A]	-	-	-	-	-	<0.50	<0.50	-	<0.50	<0.50	<0.50	<0.50	nc	-	<0.50	<0.50	<0.50	nc	-	<0.50	-
Benzene	µg/g	0.21[A]	-	-	-	-	-	<0.020	<0.020	-	<0.020	<0.020	<0.020	<0.020	nc	-	<0.020	<0.020	<0.020	nc	-	<0.020	-
Bromodichloromethane	µg/g	1.5[A]	-	-	-	-	-	<0.050	<0.050	-	<0.050	<0.050	<0.050	<0.050	nc	-	<0.050	<0.050	<0.050	nc	-	<0.050	-
Bromoform (Tribromomethane)	µg/g	0.27[A]	-	-	-	-	-	<0.050	<0.050	-	<0.050	<0.050	<0.050	<0.050	nc	-	<0.050	<0.050	<0.050	nc	-	<0.050	-
Bromomethane (Methyl bromide)	µg/g	0.05[A]	-	-	-	-	-	<0.050	<0.050	-	<0.050	<0.050	<0.050	<0.050	nc	-	<0.050	<0.050	<0.050	nc	-	<0.050	-
Carbon Tetrachloride (Tetrachloromethane)	µg/g	0.05[A]	-	-	-	-	-	<0.050	<0.050	-	<0.050	<0.050	<0.050	<0.050	nc	-	<0.050	<0.050	<0.050	nc	-	<0.050	-
Chlorobenzene (Monochlorobenzene)	µg/g	2.4[A]	-	-	-	-	-	<0.050	<0.050	-	<0.050	<0.050	<0.050	<0.050	nc	-	<0.050	<0.050	<0.050	nc	-	<0.050	-
Chloroform (Trichloromethane)	µg/g	0.05[A]	-	-	-	-	-	<0.050	<0.050	-	<0.050	<0.050	<0.050	<0.050	nc	-	<0.050	<0.050	<0.050	nc	-	<0.050	-
Dibromochloromethane	µg/g	2.3[A]	-	-	-	-	-	<0.050	<0.050	-	<0.050	<0.050	<0.050	<0.050	nc	-	<0.050	<0.050	<0.050	nc	-	<0.050	-
Dichlorobenzene, 1,2-	µg/g	1.2[A]	-	-	-	-	-	<0.050	<0.050	-	<0.050	<0.050	<0.050	<0.050	nc	-	<0.050	<0.050	<0.050	nc	-	<0.050	-
Dichlorobenzene, 1,3-	µg/g	4.8[A]	-	-	-	-	-	<0.050	<0.050	-	<0.050	<0.050	<0.050	<0.050	nc	-	<0.050	<0.050	<0.050	nc	-	<0.050	-
Dichlorobenzene, 1,4-	µg/g	0.083[A]	-	-	-	-	-	<0.050	<0.050	-	<0.050	<0.050	<0.050	<0.050	nc	-	<0.050	<0.050	<0.050	nc	-	<0.050	-
Dichlorodifluoromethane (Freon 12)	µg/g	16[A]	-	-	-	-	-	<0.050	<0.050	-	<0.050	<0.050	<0.050	<0.050	nc	-	<0.050	<0.050	<0.050	nc	-	<0.050	-
Dichloroethane, 1,1-	µg/g	0.47[A]	-	-	-	-	-	<0.050	<0.050	-	<0.050	<0.050	<0.050	<0.050	nc	-	<0.050	<0.050	<0.050	nc	-	<0.050	-
Dichloroethane, 1,2-	µg/g	0.05[A]	-	-	-	-	-	<0.050	<0.050	-	<0.050	<0.050	<0.050	<0.050	nc	-	<0.050	<0.050	<0.050	nc	-	<0.050	-
Dichloroethene, 1,1-	µg/g	0.05[A]	-	-	-	-	-	<0.050	<0.050	-	<0.050	<0.050	<0.050	<0.050	nc	-	<0.050	<0.050	<0.050	nc	-	<0.050	-
Dichloroethene, cis-1,2-	µg/g	1.9[A]	-	-	-	-	-	<0.050	<0.050	-	<0.050	<0.050	<0.050	<0.050	nc	-	<0.050	<0.050	<0.050	nc	-	<0.050	-
Dichloroethene, trans-1,2-	µg/g	0.084[A]	-	-	-	-	-	<0.050	<0.050	-	<0.050	<0.050	<0.050	<0.050	nc	-	<0.050	<0.050	<0.050	nc	-	<0.050	-
Dichloropropane, 1,2-	µg/g	0.05[A]	-	-	-	-	-	<0.050	<0.050	-	<0.050	<0.050	<0.050	<0.050	nc	-	<0.050	<0.050	<0.050	nc	-	<0.050	-
Dichloropropene, 1,3- (sum of isomers cis + trans)	µg/g	0.05[A, s11]	-	-	-	-	-	<0.050	<0.050	-	<0.050	<0.050	<0.050	<0.050	nc	-	<0.050	<0.050	<0.050	nc	-	<0.050	-
Dichloropropene, cis-1,3-	µg/g	[A, s11]	-	-	-	-	-	<0.030	<0.030	-	<0.030	<0.030	<0.030	<0.030	nc	-	<0.030	<0.030	<0.030	nc	-	<0.030	-
Dichloropropene, trans-1,3-	µg/g	[A, s11]	-	-	-	-	-	<0.040	<0.040	-	<0.040	<0.040	<0.040	<0.040	nc	-	<0.040	<0.040	<0.040	nc	-	<0.040	-
Ethylbenzene	µg/g	1.1[A]	-	-	-	-	-	<0.020	<0.020	-	<0.020	<0.020	<0.020	<0.020	nc	-	<0.020	<0.020	<0.020	nc	-	<0.020	-
Ethylene Dibromide (Dibromoethane, 1,2-)	µg/g	0.05[A]	-	-	-	-	-	<0.050	<0.050	-	<0.050	<0.050	<0.050	<0.050	nc	-	<0.050	<0.050	<0.050	nc	-	<0.050	-
Hexane (n-Hexane)	µg/g	2.8[A]	-	-	-	-	-	<0.050	<0.050	-	<0.050	<0.050	<0.050	<0.050	nc	-	<0.050	<0.050	<0.050	nc	-	<0.050	-
Methyl Ethyl Ketone (MEK) (2-Butanone)	µg/g	16[A]	-	-	-	-	-	<0.50	<0.50	-	<0.50	<0.50	<0.50	<0.50	nc	-	<0.50	<0.50	<0.50	nc	-	<0.50	-
Methyl Isobutyl Ketone (MIBK)	µg/g	1.7[A]	-	-	-	-	-	<0.50	<0.50	-	<0.50	<0.50	<0.50	<0.50	nc	-	<0.50	<0.50	<0.50	nc	-	<0.50	-
Methyl tert-butyl ether (MTBE)	µg/g	0.75[A]	-	-	-	-	-	<0.050	<0.050	-	<0.050	<0.050	<0.050	<0.050	nc	-	<0.050	<0.050	<0.050	nc	-	<0.050	-
Methylene Chloride (Dichloromethane)	µg/g	0.1[A]	-	-	-	-	-	<0.050	<0.050	-	<0.050	<0.050	<0.050	<0.050	nc	-	<0.050	<0.050	<0.050	nc	-	<0.050	-
Styrene	µg/g	0.7[A]	-	-	-	-	-	<0.050	<0.050	-	<0.050	<0.050	<0.050	<0.050	nc	-	<0.050	<0.050	<0.050	nc	-	<0.050	-
Tetrachloroethane, 1,1,1,2-	µg/g	0.058[A]	-	-	-	-	-	<0.050	<0.050	-	<0.050	<0.050	<0.050	<0.050	nc	-	<0.050	<0.050	<0.050	nc	-	<0.050	-
Tetrachloroethane, 1,1,2,2-	µg/g	0.05[A]	-	-	-	-	-	<0.050	<0.050	-	<0.050	<0.050	<0.050	<0.050	nc	-	<0.050	<0.050	<0.050	nc	-	<0.050	-
Tetrachloroethene (PCE)	µg/g	0.28[A]	-	-	-	-	-	<0.050	<0.050	-	<0.050	<0.050	<0.050	<0.050	nc	-	<0.050	<0.050	<0.050	nc	-	<0.050	-
Toluene	µg/g	2.3[A]	-	-	-	-	-	<0.020	<0.020	-	<0.020	<0.020	<0.020	<0.020	nc	-	<0.020	<0.020	<0.020	nc	-	<0.020	-
Trichloroethane, 1,1,1-	µg/g	0.38[A]	-	-	-	-	-	<0.050	<0.050	-	<0.050	<0.050	<0.050	<0.050	nc	-	<0.050	<0.050	<0.050	nc	-	<0.050	-
Trichloroethane, 1,1,2-	µg/g	0.05[A]	-	-	-	-	-	<0.050	<0.050	-	<0.050	<0.050	<0.050	<0.050	nc	-	<0.050	<0.050	<0.050	nc	-	<0.050	-
Trichloroethene (TCE)	µg/g	0.061[A]	-	-	-	-	-	<0.050	<0.050	-	<0.050	<0.050	<0.050	<0.050	nc	-	<0.050	<0.050	<0.050	nc	-	<0.050	-
Trichlorofluoromethane (Freon 11)	µg/g	4[A]	-	-	-	-	-	<0.050	<0.050	-	<0.050	<0.050	<0.050	<0.050	nc	-	<0.050	<0.050	<0.050	nc	-	<0.050	-
Vinyl Chloride	µg/g	0.02[A]	-	-	-	-	-	<0.020	<0.020	-	<0.020	<0.020	<0.020	<0.020	nc	-	<0.020	<0.020	<0.020	nc	-	<0.020	-
Xylene, m & p-	µg/g	[A, s1]	-	-	-	-	-	<0.020	<0.020	-	<0.020	<0.020	<0.020	0.049	nc	-	<0.020	<0.020	<0.020	nc	-	<0.020	-
Xylene, o-	µg/g	[A, s1]	-	-	-	-	-	<0.020	<0.020	-	<0.020	<0.020	<0.020	<0.020	nc	-	<0.020	<0.020	<0.020	nc	-	<0.020	-
Xylenes, Total	µg/g	3.1[A, s1]	-	-	-	-	-	<0.020	<0.020	-	<0.020	<0.020	<0.020	0.049	nc	-	<0.020	<0.020	<0.020	nc	-	<0.020	-

Notes:

Ontario SCS	Soil, Ground Water and Sediment Standards for Use under Part XV.I of the Environmental Protection Act (MOE, 2011) Site Condition Standards (SCS)
[A]	Table 2 - Residential / Parkland / Institutional Property Use - Coarse Textured Soils
6.5[A]	Concentration exceeds the indicated standard.
15.2	Measured concentration did not exceed the indicated standard.
<0.50	Laboratory reporting limit was greater than the applicable standard.
<0.03	Analyte was not detected at a concentration greater than the laboratory reporting limit.
n/v	No standard/guideline value.
-	Parameter not analyzed / not available.
[s1]	Standard is applicable to total xylenes, and m & p-xylenes and o-xylenes should be summed for comparison.
[s2]	Standard is for benzo(b)fluoranthene; however, the analytical laboratory can not distinguish between benzo(b)fluoranthene and benzo(j)fluoranthene, and therefore, the result is a combination of the two isomers, against which the standard has been compared.
[s3]	Standard is applicable to both 1-methylnaphthalene and 2-methylnaphthalene, with the provision that if both are detected the sum of the two must not exceed the standard.
[s7]	Standard is applicable to PHC in the F1 range minus BTEX.
[s8]	Standard is applicable to PHC in the F3 range, minus PAHs (other than naphthalene). If PAHs were not analyzed, the standard is applied to F3.
[s10]	If baseline is not reached during F4 analysis, then gravimetric analysis is to be performed, and the standard is applied to the higher of the two results.
[s11]	Standard is applicable to 1,3-Dichloropropene, and the individual isomers (cis + trans) should be added for comparison.
[s12]	The criteria for pH in surface soils (0 to 1.5 m) is 5 - 9, whereas the criteria for pH in sub-surface soils (> 1.5 m depth) is 5 - 11.
[s15]	Standard is applicable to PHC in the F2 range minus naphthalene. If naphthalene was not analyzed, the standard is applied to F2.
[s16]	For surface soil, the boron standard is for hot water soluble extract. For subsurface soil, the standard is for total boron (mixed strong acid digest), as ecological criteria are not considered.
RPD	Relative Percent Difference.
61%	RPD exceeds data quality objective of: 10% for electrical conductivity, 35% for hexavalent chromium or cyanide, 30% for PHCs, remaining metals or inorganics, 40% for PAHs or 50% for VOCs (source: Maxxam Environmental QA/QC Interpretation Guide Reference COR-FCD-0097 released July 18, 2016.)
nc	RPD is not calculated if one or more values is non detect or if one or more values is less than five times the reportable detection limit.

Table 2
Summary of Soil Analytical Results - Remedial Excavation
220 Arkell Road, Guelph, Ontario
Rockpoint Holdings Inc.

Sample Location			SS3	SS4	SS5	SS6	SS7	SS9	SS10	SS11	SS12			SS13	SS14	SS15	SS16	SS17	SS18			SS20	SS22	SS24	SS25	SS30	SS31
Sample Date			16-Nov-18	16-Nov-18	16-Nov-18	16-Nov-18	16-Nov-18	16-Nov-18	16-Nov-18	16-Nov-18	16-Nov-18	16-Nov-18		16-Nov-18	16-Nov-18	16-Nov-18	16-Nov-18	13-Dec-18	13-Dec-18	13-Dec-18		13-Dec-18	24-Apr-19	31-May-19	31-May-19	12-Nov-19	12-Nov-19
Sample ID			SS3	SS4	SS5	SS6	SS7	SS9	SS10	SS11	SS12	S-DUP 2		SS13	SS14	SS15	SS16	SS17	SS18	S-DUP3		SS20	SS22	SS24	SS25	SS30	SS31
Sample Depth																											
Sampling Company			STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC		STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC		STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC
Laboratory			MAXX	MAXX	MAXX	MAXX	MAXX	MAXX	MAXX	MAXX	MAXX	MAXX		MAXX	MAXX	MAXX	MAXX	MAXX	MAXX	MAXX		MAXX	MAXX	MAXX	MAXX	BV	BV
Laboratory Work Order			B8U8938	B8U8938	B8U8938	B8U8938	B8U8938	B8U8938	B8U8938	B8U8938	B8U8938	B8U8938		B8U8938	B8U8938	B8U8938	B8U8938	B8X6073	B8X6073	B8X6073		B8X6073	B9A9257	B9E7326	B9E7326	B9V8161	B9V8161
Laboratory Sample ID			III900	III901	III902	III903	III904	III906	III907	III908	III909	III915		III910	III911	III912	III913	IOH342	IOH343	IOH346		IOH345	JNT390	JWH789	JWH790	LGZ704	LGZ705
Sample Type	Units	Ontario SCS										Field Duplicate	RPD (%)							Field Duplicate	RPD (%)						
General Chemistry																											
Moisture Content	%	n/v	21	11	8.8	8.7	10	17	7.6	9.1	12	11	9%	12	13	8.3	14	-	-	-	-	-	-	-	-	-	-
Metals																											
Antimony	µg/g	7.5[A]	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	nc	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	nc	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Arsenic	µg/g	18[A]	3.5	2.0	1.5	1.5	1.1	1.0	1.2	<1.0	1.4	1.3	nc	2.5	2.0	1.5	3.1	2.0	1.9	1.5	nc	1.1	1.6	1.5	1.8	2.4	2.6
Barium	µg/g	390[A]	41	11	32	24	17	4.3	22	22	20	18	11%	33	17	23	38	24	25	22	13%	5.5	20	18	22	19	28
Beryllium	µg/g	4[A]	0.38	<0.20	0.22	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	nc	0.31	<0.20	<0.20	0.33	<0.20	<0.20	<0.20	nc	<0.20	<0.20	<0.20	<0.20	<0.20	0.26
Boron	µg/g	120_{s16}[A]	<5.0	<5.0	5.1	5.6	<5.0	<5.0	5.5	5.2	<5.0	<5.0	nc	5.4	5.2	5.2	<5.0	5.5	5.7	5.6	nc	<5.0	5.4	5.5	6.4	5.1	7.2
Boron (Available)	µg/g	1.5_{s16}[A]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cadmium	µg/g	1.2[A]	0.61	0.29	0.27	0.33	0.57	0.23	0.27	0.28	0.26	0.38	nc	0.29	0.62	0.28	0.23	0.39	0.30	0.37	nc	0.45	0.66	0.62	0.71	0.41	0.66
Chromium	µg/g	160[A]	12	6.3	8.8	7.0	5.8	3.4	6.9	6.5	8.7	7.9	10%	12	8.0	6.2	12	6.8	7.2	7.1	1%	4.6	6.1	5.7	6.2	8.4	10
Chromium (Hexavalent)	µg/g	8[A]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cobalt	µg/g	22[A]	4.5	2.7	3.3	2.7	2.1	1.0	2.6	2.3	3.3	2.9	13%	4.1	2.4	2.3	4.3	2.9	2.7	2.6	4%	1.4	2.3	2.1	2.3	4.2	4.3
Copper	µg/g	140[A]	11	9.2	8.9	6.9	7.5	3.7	6.3	6.4	9.6	9.2	4%	12	7.6	6.4	13	7.5	7.6	6.9	10%	3.9	7.5	7.9	8.4	12	11
Lead	µg/g	120[A]	38	18	13	20	26	23	29	20	16	15	6%	24	57	22	25	20	20	20	0%	36	33	29	31	22	38
Mercury	µg/g	0.27[A]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Molybdenum	µg/g	6.9[A]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	nc	<0.50	<0.50	<0.50	0.52	<0.50	<0.50	<0.50	nc	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Nickel	µg/g	100[A]	9.0	5.6	6.8	5.2	4.1	1.9	5.3	4.9	7.4	6.8	8%	8.4	5.5	5.2	9.4	5.5	6.1	5.5	10%	2.4	4.9	4.5	5.2	7.6	8.9
Selenium	µg/g	2.4[A]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	nc	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	nc	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Silver	µg/g	20[A]	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	nc	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	nc	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Thallium	µg/g	1[A]	0.086	0.076	0.067	0.065	<0.050	<0.050	<0.050	<0.050	0.097	0.072	nc	0.070	0.076	0.059	0.069	0.058	0.059	<0.050	nc	<0.050	0.054	<0.050	0.052	0.10	0.094
Uranium	µg/g	23[A]	0.41	0.38	0.42	0.46	0.38	0.40	0.44	0.49	0.41	0.36	13%	0.47	0.53	0.42	0.41	0.43	0.45	0.43	5%	0.45	0.46	0.42	0.49	0.38	0.43
Vanadium	µg/g	86[A]	23	15	16	13	11	9.2	13	12	20	18	nc	23	16	12	23	14	14	14	nc	12	13	12	14	21	21
Zinc	µg/g	340[A]	270	240	87	200	230	110	130	120	300	310	3%	100	300	150	94	210	160	160	0%	280	280	270	280	260	290
Polycyclic Aromatic Hydrocarbons																											
Acenaphthene	µg/g	7.9[A]	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	nc	0.013	<0.0050	<0.0050	0.0062	-	-	-	-	-	-	-	-	-	-
Acenaphthylene	µg/g	0.15[A]	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	nc	<0.0050	<0.0050	<0.0050	<0.0050	-	-	-	-	-	-	-	-	-	-
Anthracene	µg/g	0.67[A]	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	nc	0.023	<0.0050	<0.0050	0.029	-	-	-	-	-	-	-	-	-	-
Benzo(a)anthracene	µg/g	0.5[A]	0.0084	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	nc	0.056	<0.0050	<0.0050	0.033	-	-	-	-	-	-	-	-	-	-
Benzo(a)pyrene	µg/g	0.3[A]	0.0097	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	nc	0.052	<0.0050	<0.0050	0.031	-	-	-	-	-	-	-	-	-	-
Benzo(b/j)fluoranthene	µg/g	0.78_{s2}[A]	0.015	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	nc	0.075	<0.0050	<0.0050	0.046	-	-	-	-	-	-	-	-	-	-
Benzo(g,h,i)perylene	µg/g	6.6[A]	0.0080	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	nc	0.031	<0.0050	<0.0050	0.022	-	-	-	-	-	-	-	-	-	-
Benzo(k)fluoranthene	µg/g	0.78[A]	0.0056	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	nc	0.026	<0.0050	<0.0050	0.017	-	-	-	-	-	-	-	-	-	-
Chrysene	µg/g	7[A]	0.0090	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	nc	0.049	<0.0050	<0.0050	0.028	-	-	-	-	-	-	-	-	-	-
Dibenzo(a,h)anthracene	µg/g	0.1[A]	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	nc	0.0082	<0.0050	<0.0050	0.0057	-	-	-	-	-	-	-	-	-	-
Fluoranthene	µg/g	0.69[A]	0.023	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	nc	0.13	<0.0050	<0.0050	0.083	-	-	-	-	-	-	-	-	-	-
Fluorene	µg/g	62[A]	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	nc	0.013	<0.0050	<0.0050	0.012	-	-	-	-	-	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	µg/g	0.38[A]	0.0080	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	nc	0.034	<0.0050	<0.0050	0.023	-	-	-	-	-	-	-	-	-	-
Methylnaphthalene (Total)	µg/g	0.99_{s3}[A]	<0.0071	<0.0071	<0.0071	<0.0071	<0.0071	<0.0071	<0.0071	<0.0071	<0.0071	<0.0071	nc	<0.0071	<0.0071	<0.0071	<0.0071	-	-	-	-	-	-	-	-	-	-
Methylnaphthalene, 1-	µg/g	$_{s3}$[A]	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	nc	<0.0050	<0.0050	<0.0050	<0.0050	-	-	-	-	-	-	-	-	-	-
Methylnaphthalene, 2-	µg/g	$_{s3}$[A]	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	nc	<0.0050	<0.0050	<0.0050	<0.0050	-	-	-	-	-	-	-	-	-	-
Naphthalene	µg/g	0.6[A]	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	nc	<0.0050	<0.0050	<0.0050	<0.0050	-	-	-	-	-	-	-	-	-	-
Phenanthrene	µg/g	6.2[A]	0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	nc	0.099	<0.0050	<0.0050	0.081	-	-	-	-	-	-	-	-	-	-
Pyrene	µg/g	78[A]	0.018	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	nc	0.10	<0.0050	<0.0050	0.063	-	-	-	-	-	-	-	-	-	-

See notes on last page

Table 2
Summary of Soil Analytical Results - Remedial Excavation
220 Arkell Road, Guelph, Ontario
Rockpoint Holdings Inc.

Sample Location			SS32	SS33	TP19-01			TP19-04	TP19-05	TP19-10
Sample Date			12-Nov-19	12-Nov-19	30-Jul-19	30-Jul-19		30-Jul-19	30-Jul-19	30-Jul-19
Sample ID			SS32	SS33	TP19-01	QC-01		TP19-04	TP19-05	TP19-10
Sample Depth										
Sampling Company			STANTEC	STANTEC	STANTEC	STANTEC		STANTEC	STANTEC	STANTEC
Laboratory			BV	BV	BV	BV		BV	BV	BV
Laboratory Work Order			B9V8161	B9V8161	B9L3424	B9L3424		B9L3424	B9L3424	B9L3424
Laboratory Sample ID			LGZ706	LGZ707	KKQ740	KKQ741	RPD	KKQ744	KKQ746	KKQ742
Sample Type	Units	Ontario SCS				Field Duplicate	(%)			
General Chemistry										
Moisture Content	%	n/v	-	-	10	10	0%	11	14	8.5
Metals										
Antimony	µg/g	7.5[A]	<0.20	<0.20	<0.20	<0.20	nc	<0.20	<0.20	<0.20
Arsenic	µg/g	18[A]	2.2	1.8	2.0	2.1	nc	1.7	1.5	2.7
Barium	µg/g	390[A]	16	8.3	15	17	13%	21	10	21
Beryllium	µg/g	4[A]	<0.20	<0.20	<0.20	<0.20	nc	<0.20	<0.20	<0.20
Boron	µg/g	120[s16,A]	<5.0	<5.0	<5.0	5.2	nc	5.8	<5.0	<5.0
Boron (Available)	µg/g	1.5[s16,A]	-	-	<0.050	<0.050	nc	0.062	<0.050	<0.050
Cadmium	µg/g	1.2[A]	0.18	0.27	0.38	0.39	nc	0.79	0.30	0.36
Chromium	µg/g	160[A]	6.6	7.3	8.9	8.1	9%	6.5	5.9	8.5
Chromium (Hexavalent)	µg/g	8[A]	-	-	<0.2	<0.2	nc	<0.2	<0.2	<0.2
Cobalt	µg/g	22[A]	2.7	1.8	2.7	3.0	11%	2.2	1.6	3.9
Copper	µg/g	140[A]	9.8	5.9	7.3	7.9	8%	7.9	4.7	14
Lead	µg/g	120[A]	9.7	16	38	36	5%	27	35	21
Mercury	µg/g	0.27[A]	-	-	<0.050	<0.050	nc	<0.050	<0.050	<0.050
Molybdenum	µg/g	6.9[A]	<0.50	<0.50	<0.50	<0.50	nc	<0.50	<0.50	<0.50
Nickel	µg/g	100[A]	5.5	3.6	5.5	5.9	7%	5.2	3.7	7.8
Selenium	µg/g	2.4[A]	<0.50	<0.50	<0.50	<0.50	nc	<0.50	<0.50	<0.50
Silver	µg/g	20[A]	<0.20	<0.20	<0.20	<0.20	nc	<0.20	<0.20	<0.20
Thallium	µg/g	1[A]	0.077	<0.050	0.068	0.069	nc	0.053	<0.050	0.088
Uranium	µg/g	23[A]	0.34	0.37	0.48	0.46	4%	0.48	0.44	0.42
Vanadium	µg/g	86[A]	20	23	24	23	nc	14	16	21
Zinc	µg/g	340[A]	83	130	280	290	4%	320	180	220
Polycyclic Aromatic Hydrocarbons										
Acenaphthene	µg/g	7.9[A]	-	-	-	-	-	-	-	-
Acenaphthylene	µg/g	0.15[A]	-	-	-	-	-	-	-	-
Anthracene	µg/g	0.67[A]	-	-	-	-	-	-	-	-
Benzo(a)anthracene	µg/g	0.5[A]	-	-	-	-	-	-	-	-
Benzo(a)pyrene	µg/g	0.3[A]	-	-	-	-	-	-	-	-
Benzo(b/j)fluoranthene	µg/g	0.78[s2,A]	-	-	-	-	-	-	-	-
Benzo(g,h,i)perylene	µg/g	6.6[A]	-	-	-	-	-	-	-	-
Benzo(k)fluoranthene	µg/g	0.78[A]	-	-	-	-	-	-	-	-
Chrysene	µg/g	7[A]	-	-	-	-	-	-	-	-
Dibenzo(a,h)anthracene	µg/g	0.1[A]	-	-	-	-	-	-	-	-
Fluoranthene	µg/g	0.69[A]	-	-	-	-	-	-	-	-
Fluorene	µg/g	62[A]	-	-	-	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	µg/g	0.38[A]	-	-	-	-	-	-	-	-
Methylnaphthalene (Total)	µg/g	0.99[s3,A]	-	-	-	-	-	-	-	-
Methylnaphthalene, 1-	µg/g	[s3,A]	-	-	-	-	-	-	-	-
Methylnaphthalene, 2-	µg/g	[s3,A]	-	-	-	-	-	-	-	-
Naphthalene	µg/g	0.6[A]	-	-	-	-	-	-	-	-
Phenanthrene	µg/g	6.2[A]	-	-	-	-	-	-	-	-
Pyrene	µg/g	78[A]	-	-	-	-	-	-	-	-

Notes:

Ontario SCS	Soil, Ground Water and Sediment Standards for Use under Part XV.I of the Environmental Protection Act (MOE, 2011) Site Condition Standards (SCS)
A	Table 2 - Residential / Parkland / Institutional Property Use - Coarse Textured Soils
6.5[A]	Concentration exceeds the indicated standard.
15.2	Measured concentration did not exceed the indicated standard.
<0.50	Laboratory reporting limit was greater than the applicable standard.
<0.03	Analyte was not detected at a concentration greater than the laboratory reporting limit.
n/v	No standard/guideline value.
-	Parameter not analyzed / not available.
s2	Standard is for benzo(b)fluoranthene; however, the analytical laboratory can not distinguish between benzo(b)fluoranthene and benzo(j)fluoranthene, and therefore, the result is a combination of the two isomers, against which the standard has been compared.
s3	Standard is applicable to both 1-methylnaphthalene and 2-methylnaphthalene, with the provision that if both are detected the sum of the two must not exceed the standard.
s16	For surface soil, the boron standard is for hot water soluble extract. For subsurface soil, the standard is for total boron (mixed strong acid digest), as ecological criteria are not considered.
RPD	Relative Percent Difference.
nc	RPD is not calculated if one or more values is non detect or if one or more values is less than five times the reportable detection limit.
61%	RPD exceeds data quality objective of: 35% for hexavalent chromium, 30% for remaining metals or inorganics, 40% for PAHs (source: Maxxam Environmental QA/QC Interpretation Guide Reference COR-FCD-0097 released July 18, 2016.)

APPENDIX F:
LABORATORY CERTIFICATES OF ANALYSIS

Maxxam
A Bureau Veritas Group Company

Your Project #: 161413338

Attention: Mike Stendzis

Stantec Consulting Ltd
835 Paramount Drive, Suite 200
Stoney Creek, ON
CANADA L8J 0B4

Your C.O.C. #: 672815-06-01, 672815-08-01, 672815-09-01, 672815-10-01

Report Date: 2018/08/20
Report #: R5364318
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

MAXXAM JOB #: B8I3680
Received: 2018/07/20, 15:12

Sample Matrix: Soil
Samples Received: 19

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Methylnaphthalene Sum	10	N/A	2018/07/30	CAM SOP-00301	EPA 8270D m
Methylnaphthalene Sum	1	N/A	2018/08/18	CAM SOP-00301	EPA 8270D m
Hot Water Extractable Boron	10	2018/07/23	2018/07/24	CAM SOP-00408	R153 Ana. Prot. 2011
1,3-Dichloropropene Sum	2	N/A	2018/07/25		EPA 8260C m
1,3-Dichloropropene Sum	8	N/A	2018/07/26		EPA 8260C m
Free (WAD) Cyanide	10	2018/07/24	2018/07/25	CAM SOP-00457	OMOE E3015 m
Conductivity	10	2018/07/24	2018/07/24	CAM SOP-00414	OMOE E3530 v1 m
Hexavalent Chromium in Soil by IC (1)	10	2018/07/25	2018/07/25	CAM SOP-00436	EPA 3060/7199 m
Petroleum Hydrocarbons F2-F4 in Soil (2)	1	2018/07/25	2018/07/25	CAM SOP-00316	CCME CWS m
Petroleum Hydrocarbons F2-F4 in Soil (2)	9	2018/07/25	2018/07/26	CAM SOP-00316	CCME CWS m
Strong Acid Leachable Metals by ICPMS	14	2018/07/23	2018/07/25	CAM SOP-00447	EPA 6020B m
Strong Acid Leachable Metals by ICPMS	4	2018/08/11	2018/08/13	CAM SOP-00447	EPA 6020B m
Moisture	10	N/A	2018/07/24	CAM SOP-00445	Carter 2nd ed 51.2 m
Moisture	1	N/A	2018/08/11	CAM SOP-00445	Carter 2nd ed 51.2 m
PAH Compounds in Soil by GC/MS (SIM)	10	2018/07/25	2018/07/26	CAM SOP-00318	EPA 8270D m
PAH Compounds in Soil by GC/MS (SIM)	1	2018/08/14	2018/08/15	CAM SOP-00318	EPA 8270D m
pH CaCl2 EXTRACT	10	2018/07/25	2018/07/25	CAM SOP-00413	EPA 9045 D m
Sodium Adsorption Ratio (SAR)	10	N/A	2018/07/25	CAM SOP-00102	EPA 6010C
Volatile Organic Compounds and F1 PHCs	6	N/A	2018/07/25	CAM SOP-00230	EPA 8260C m
Volatile Organic Compounds and F1 PHCs	4	N/A	2018/07/26	CAM SOP-00230	EPA 8260C m

Remarks:

Maxxam Analytics' laboratories are accredited to ISO/IEC 17025:2005 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Maxxam are based upon recognized Provincial, Federal or US method compendia such as CCME, MDDELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Maxxam's profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Maxxam in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless

Your Project #: 161413338

Attention: Mike Stendzis

Stantec Consulting Ltd
835 Paramount Drive, Suite 200
Stoney Creek, ON
CANADA L8J 0B4

Your C.O.C. #: 672815-06-01, 672815-08-01, 672815-09-01, 672815-10-01

Report Date: 2018/08/20
Report #: R5364318
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

MAXXAM JOB #: B8I3680
Received: 2018/07/20, 15:12

indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Maxxam Analytics' liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Maxxam has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Maxxam, unless otherwise agreed in writing. Maxxam is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Maxxam, results relate to the supplied samples tested.

Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) Soils are reported on a dry weight basis unless otherwise specified.
(2) All CCME PHC results met required criteria unless otherwise stated in the report. The CWS PHC methods employed by Maxxam conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following “Alberta Environment’s Interpretation of the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil Validation of Performance-Based Alternative Methods September 2003”. Documentation is available upon request. Modifications from Reference Method for the Canada-wide Standard for Petroleum Hydrocarbons in Soil-Tier 1 Method: F2/F3/F4 data reported using validated cold solvent extraction instead of Soxhlet extraction.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Augustyna Dobosz, Project Manager
Email: ADobosz@maxxam.ca
Phone# (905)817-5700 Ext:5798

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Maxxam Job #: B8I3680
Report Date: 2018/08/20

Stantec Consulting Ltd
Client Project #: 161413338
Sampler Initials: AK

O.REG 153 ICPMS METALS (SOIL)

Maxxam ID		HGW330	HGW332	HGW334		HGW335		
Sampling Date		2018/07/17 10:15	2018/07/17 10:00	2018/07/17 10:20		2018/07/17 10:35		
COC Number		672815-06-01	672815-06-01	672815-06-01		672815-06-01		
	UNITS	TP18-1-1-EW	TP18-2-1-NW	TP18-3-1-WW	QC Batch	TP18-3-2-WW	RDL	QC Batch
Metals								
Acid Extractable Antimony (Sb)	ug/g	<0.20	<0.20	<0.20	5643014	<0.20	0.20	5675316
Acid Extractable Arsenic (As)	ug/g	2.4	3.1	3.5	5643014	3.1	1.0	5675316
Acid Extractable Barium (Ba)	ug/g	39	22	25	5643014	22	0.50	5675316
Acid Extractable Beryllium (Be)	ug/g	0.30	0.20	0.22	5643014	<0.20	0.20	5675316
Acid Extractable Boron (B)	ug/g	<5.0	<5.0	<5.0	5643014	<5.0	5.0	5675316
Acid Extractable Cadmium (Cd)	ug/g	0.60	0.43	0.48	5643014	0.46	0.10	5675316
Acid Extractable Chromium (Cr)	ug/g	11	8.6	9.9	5643014	9.6	1.0	5675316
Acid Extractable Cobalt (Co)	ug/g	4.2	3.9	4.9	5643014	5.2	0.10	5675316
Acid Extractable Copper (Cu)	ug/g	11	22	27	5643014	29	0.50	5675316
Acid Extractable Lead (Pb)	ug/g	30	31	39	5643014	37	1.0	5675316
Acid Extractable Molybdenum (Mo)	ug/g	<0.50	<0.50	<0.50	5643014	<0.50	0.50	5675316
Acid Extractable Nickel (Ni)	ug/g	8.9	7.8	9.6	5643014	9.8	0.50	5675316
Acid Extractable Selenium (Se)	ug/g	<0.50	<0.50	<0.50	5643014	<0.50	0.50	5675316
Acid Extractable Silver (Ag)	ug/g	<0.20	<0.20	<0.20	5643014	<0.20	0.20	5675316
Acid Extractable Thallium (Tl)	ug/g	0.084	0.12	0.13	5643014	0.18	0.050	5675316
Acid Extractable Uranium (U)	ug/g	0.48	0.38	0.45	5643014	0.42	0.050	5675316
Acid Extractable Vanadium (V)	ug/g	19	20	22	5643014	22	5.0	5675316
Acid Extractable Zinc (Zn)	ug/g	220	290	380	5643014	400	5.0	5675316

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B8I3680
Report Date: 2018/08/20

Stantec Consulting Ltd
Client Project #: 161413338
Sampler Initials: AK

O.REG 153 ICPMS METALS (SOIL)

Maxxam ID		HGW336		HGW359	HGW398	HGW403		
Sampling Date		2018/07/17 10:05		2018/07/17 14:25	2018/07/18 09:55	2018/07/18 11:10		
COC Number		672815-06-01		672815-08-01	672815-10-01	672815-10-01		
	UNITS	TP18-4-1-SW	QC Batch	TP18-6-3	TP18-11-2	TP18-12-3	RDL	QC Batch
Metals								
Acid Extractable Antimony (Sb)	ug/g	<0.20	5643014	<0.20	<0.20	<0.20	0.20	5675316
Acid Extractable Arsenic (As)	ug/g	1.5	5643014	2.1	1.2	1.5	1.0	5675316
Acid Extractable Barium (Ba)	ug/g	30	5643014	30	4.4	23	0.50	5675316
Acid Extractable Beryllium (Be)	ug/g	0.22	5643014	0.23	<0.20	<0.20	0.20	5675316
Acid Extractable Boron (B)	ug/g	<5.0	5643014	<5.0	<5.0	<5.0	5.0	5675316
Acid Extractable Cadmium (Cd)	ug/g	0.24	5643014	0.65	0.29	0.49	0.10	5675316
Acid Extractable Chromium (Cr)	ug/g	8.7	5643014	8.6	2.6	7.0	1.0	5675316
Acid Extractable Cobalt (Co)	ug/g	3.3	5643014	3.3	0.88	2.8	0.10	5675316
Acid Extractable Copper (Cu)	ug/g	9.2	5643014	9.4	3.8	8.9	0.50	5675316
Acid Extractable Lead (Pb)	ug/g	14	5643014	31	24	21	1.0	5675316
Acid Extractable Molybdenum (Mo)	ug/g	<0.50	5643014	<0.50	<0.50	<0.50	0.50	5675316
Acid Extractable Nickel (Ni)	ug/g	7.0	5643014	7.3	2.1	6.2	0.50	5675316
Acid Extractable Selenium (Se)	ug/g	<0.50	5643014	<0.50	<0.50	<0.50	0.50	5675316
Acid Extractable Silver (Ag)	ug/g	<0.20	5643014	<0.20	<0.20	<0.20	0.20	5675316
Acid Extractable Thallium (Tl)	ug/g	0.063	5643014	0.074	<0.050	0.059	0.050	5675316
Acid Extractable Uranium (U)	ug/g	0.41	5643014	0.43	0.33	0.45	0.050	5675316
Acid Extractable Vanadium (V)	ug/g	16	5643014	15	6.0	13	5.0	5675316
Acid Extractable Zinc (Zn)	ug/g	86	5643014	220	120	260	5.0	5675316

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B8I3680
Report Date: 2018/08/20

Stantec Consulting Ltd
Client Project #: 161413338
Sampler Initials: AK

O.REG 153 METALS & INORGANICS PKG (SOIL)

Maxxam ID		HGW355	HGW358	HGW362	HGW364		
Sampling Date		2018/07/17 13:05	2018/07/17 14:15	2018/07/17 15:30	2018/07/17 16:20		
COC Number		672815-08-01	672815-08-01	672815-08-01	672815-08-01		
	UNITS	TP18-5-2	TP18-6-2	TP18-7-3	TP18-8-1	RDL	QC Batch
Calculated Parameters							
Sodium Adsorption Ratio	N/A	1.0	0.21	0.23	0.28		5641390
Inorganics							
Conductivity	mS/cm	0.24	0.22	0.20	0.17	0.002	5644585
Available (CaCl2) pH	pH	7.63	6.91	7.49	7.60		5644870
WAD Cyanide (Free)	ug/g	0.01	0.01	0.02	<0.01	0.01	5644606
Chromium (VI)	ug/g	<0.2	<0.2	<0.2	<0.2	0.2	5646213
Metals							
Hot Water Ext. Boron (B)	ug/g	0.42	1.2	0.61	0.36	0.050	5643097
Acid Extractable Antimony (Sb)	ug/g	<0.20	<0.20	<0.20	<0.20	0.20	5643167
Acid Extractable Arsenic (As)	ug/g	2.6	3.8	2.9	3.4	1.0	5643167
Acid Extractable Barium (Ba)	ug/g	36	52	44	38	0.50	5643167
Acid Extractable Beryllium (Be)	ug/g	0.31	0.64	0.36	0.32	0.20	5643167
Acid Extractable Boron (B)	ug/g	<5.0	<5.0	<5.0	<5.0	5.0	5643167
Acid Extractable Cadmium (Cd)	ug/g	0.29	1.1	0.36	0.36	0.10	5643167
Acid Extractable Chromium (Cr)	ug/g	11	20	12	13	1.0	5643167
Acid Extractable Cobalt (Co)	ug/g	4.3	5.2	4.2	4.6	0.10	5643167
Acid Extractable Copper (Cu)	ug/g	12	23	11	14	0.50	5643167
Acid Extractable Lead (Pb)	ug/g	22	48	27	26	1.0	5643167
Acid Extractable Molybdenum (Mo)	ug/g	<0.50	<0.50	<0.50	0.52	0.50	5643167
Acid Extractable Nickel (Ni)	ug/g	8.6	11	8.3	9.2	0.50	5643167
Acid Extractable Selenium (Se)	ug/g	<0.50	0.74	<0.50	<0.50	0.50	5643167
Acid Extractable Silver (Ag)	ug/g	<0.20	<0.20	<0.20	<0.20	0.20	5643167
Acid Extractable Thallium (Tl)	ug/g	0.079	0.12	0.061	0.077	0.050	5643167
Acid Extractable Uranium (U)	ug/g	0.47	0.58	0.45	0.45	0.050	5643167
Acid Extractable Vanadium (V)	ug/g	22	29	23	22	5.0	5643167
Acid Extractable Zinc (Zn)	ug/g	89	410	120	130	5.0	5643167
Acid Extractable Mercury (Hg)	ug/g	<0.050	0.077	<0.050	<0.050	0.050	5643167

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B8I3680
Report Date: 2018/08/20

Stantec Consulting Ltd
Client Project #: 161413338
Sampler Initials: AK

O.REG 153 METALS & INORGANICS PKG (SOIL)

Maxxam ID		HGW364			HGW374		HGW375	HGW379		
Sampling Date		2018/07/17 16:20			2018/07/17 17:55		2018/07/17 17:55	2018/07/18 09:10		
COC Number		672815-08-01			672815-09-01		672815-09-01	672815-09-01		
	UNITS	TP18-8-1 Lab-Dup	RDL	QC Batch	TP18-9-2	QC Batch	QC1	TP18-10-2	RDL	QC Batch
Calculated Parameters										
Sodium Adsorption Ratio	N/A				1.5	5641390	1.5	0.41		5641390
Inorganics										
Conductivity	mS/cm				0.29	5644585	0.30	0.067	0.002	5644585
Available (CaCl2) pH	pH				7.35	5644870	7.51	7.72		5644870
WAD Cyanide (Free)	ug/g				0.02	5644606	0.02	<0.01	0.01	5644606
Chromium (VI)	ug/g				<0.2	5646213	<0.2	<0.2	0.2	5646213
Metals										
Hot Water Ext. Boron (B)	ug/g				0.49	5643256	0.51	0.076	0.050	5643097
Acid Extractable Antimony (Sb)	ug/g	<0.20	0.20	5643167	<0.20	5643167	<0.20	<0.20	0.20	5643167
Acid Extractable Arsenic (As)	ug/g	3.0	1.0	5643167	2.6	5643167	2.8	1.2	1.0	5643167
Acid Extractable Barium (Ba)	ug/g	37	0.50	5643167	36	5643167	36	7.2	0.50	5643167
Acid Extractable Beryllium (Be)	ug/g	0.30	0.20	5643167	0.33	5643167	0.32	<0.20	0.20	5643167
Acid Extractable Boron (B)	ug/g	<5.0	5.0	5643167	<5.0	5643167	<5.0	<5.0	5.0	5643167
Acid Extractable Cadmium (Cd)	ug/g	0.28	0.10	5643167	0.33	5643167	0.33	0.35	0.10	5643167
Acid Extractable Chromium (Cr)	ug/g	11	1.0	5643167	12	5643167	12	3.9	1.0	5643167
Acid Extractable Cobalt (Co)	ug/g	4.2	0.10	5643167	4.5	5643167	4.5	1.4	0.10	5643167
Acid Extractable Copper (Cu)	ug/g	13	0.50	5643167	13	5643167	13	2.2	0.50	5643167
Acid Extractable Lead (Pb)	ug/g	24	1.0	5643167	21	5643167	21	24	1.0	5643167
Acid Extractable Molybdenum (Mo)	ug/g	<0.50	0.50	5643167	0.62	5643167	<0.50	<0.50	0.50	5643167
Acid Extractable Nickel (Ni)	ug/g	8.9	0.50	5643167	9.6	5643167	9.5	2.5	0.50	5643167
Acid Extractable Selenium (Se)	ug/g	<0.50	0.50	5643167	<0.50	5643167	<0.50	<0.50	0.50	5643167
Acid Extractable Silver (Ag)	ug/g	<0.20	0.20	5643167	<0.20	5643167	<0.20	<0.20	0.20	5643167
Acid Extractable Thallium (Tl)	ug/g	0.080	0.050	5643167	0.073	5643167	0.079	<0.050	0.050	5643167
Acid Extractable Uranium (U)	ug/g	0.44	0.050	5643167	0.48	5643167	0.42	0.37	0.050	5643167
Acid Extractable Vanadium (V)	ug/g	22	5.0	5643167	22	5643167	22	9.1	5.0	5643167
Acid Extractable Zinc (Zn)	ug/g	120	5.0	5643167	83	5643167	88	150	5.0	5643167
Acid Extractable Mercury (Hg)	ug/g	<0.050	0.050	5643167	<0.050	5643167	<0.050	<0.050	0.050	5643167

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

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Maxxam Job #: B8I3680
Report Date: 2018/08/20

Stantec Consulting Ltd
Client Project #: 161413338
Sampler Initials: AK

O.REG 153 METALS & INORGANICS PKG (SOIL)

Maxxam ID		HGW397		HGW400		HGW402		
Sampling Date		2018/07/18 09:50		2018/07/18 09:50		2018/07/18 10:45		
COC Number		672815-10-01		672815-10-01		672815-10-01		
	UNITS	TP18-11-1	QC Batch	QC2	QC Batch	TP18-12-2	RDL	QC Batch
Calculated Parameters								
Sodium Adsorption Ratio	N/A	0.25	5641390	0.26	5641390	0.44		5641390
Inorganics								
Conductivity	mS/cm	0.16	5644585	0.14	5644585	0.053	0.002	5644585
Available (CaCl2) pH	pH	7.66	5644870	7.66	5644870	7.88		5644870
WAD Cyanide (Free)	ug/g	<0.01	5644606	<0.01	5644606	<0.01	0.01	5644606
Chromium (VI)	ug/g	<0.2	5646213	<0.2	5646213	<0.2	0.2	5646213
Metals								
Hot Water Ext. Boron (B)	ug/g	0.30	5643256	0.23	5643097	<0.050	0.050	5643256
Acid Extractable Antimony (Sb)	ug/g	<0.20	5643167	<0.20	5643167	<0.20	0.20	5643167
Acid Extractable Arsenic (As)	ug/g	5.1	5643167	3.4	5643167	2.4	1.0	5643167
Acid Extractable Barium (Ba)	ug/g	36	5643167	30	5643167	18	0.50	5643167
Acid Extractable Beryllium (Be)	ug/g	0.41	5643167	0.33	5643167	<0.20	0.20	5643167
Acid Extractable Boron (B)	ug/g	<5.0	5643167	<5.0	5643167	<5.0	5.0	5643167
Acid Extractable Cadmium (Cd)	ug/g	1.0	5643167	0.82	5643167	0.64	0.10	5643167
Acid Extractable Chromium (Cr)	ug/g	14	5643167	11	5643167	8.2	1.0	5643167
Acid Extractable Cobalt (Co)	ug/g	4.9	5643167	4.3	5643167	4.3	0.10	5643167
Acid Extractable Copper (Cu)	ug/g	14	5643167	11	5643167	11	0.50	5643167
Acid Extractable Lead (Pb)	ug/g	41	5643167	33	5643167	46	1.0	5643167
Acid Extractable Molybdenum (Mo)	ug/g	0.57	5643167	<0.50	5643167	<0.50	0.50	5643167
Acid Extractable Nickel (Ni)	ug/g	11	5643167	9.7	5643167	8.8	0.50	5643167
Acid Extractable Selenium (Se)	ug/g	<0.50	5643167	<0.50	5643167	<0.50	0.50	5643167
Acid Extractable Silver (Ag)	ug/g	<0.20	5643167	<0.20	5643167	<0.20	0.20	5643167
Acid Extractable Thallium (Tl)	ug/g	0.12	5643167	0.077	5643167	0.085	0.050	5643167
Acid Extractable Uranium (U)	ug/g	0.51	5643167	0.46	5643167	0.54	0.050	5643167
Acid Extractable Vanadium (V)	ug/g	25	5643167	20	5643167	24	5.0	5643167
Acid Extractable Zinc (Zn)	ug/g	510	5643167	390	5643167	880	5.0	5643167
Acid Extractable Mercury (Hg)	ug/g	0.089	5643167	<0.050	5643167	<0.050	0.050	5643167

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B8I3680
Report Date: 2018/08/20

Stantec Consulting Ltd
Client Project #: 161413338
Sampler Initials: AK

O.REG 153 METALS & INORGANICS PKG (SOIL)

Maxxam ID		HGW402		
Sampling Date		2018/07/18 10:45		
COC Number		672815-10-01		
	UNITS	**TP18-12-2 Lab-Dup**	**RDL**	**QC Batch**
Inorganics				
Conductivity	mS/cm	0.058	0.002	5644585

RDL = Reportable Detection Limit
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Lab-Dup = Laboratory Initiated Duplicate

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Maxxam Job #: B8I3680
Report Date: 2018/08/20

Stantec Consulting Ltd
Client Project #: 161413338
Sampler Initials: AK

O.REG 153 PAHS (SOIL)

Maxxam ID		HGW355	HGW358	HGW362	HGW364	HGW374	HGW375		
Sampling Date		2018/07/17 13:05	2018/07/17 14:15	2018/07/17 15:30	2018/07/17 16:20	2018/07/17 17:55	2018/07/17 17:55		
COC Number		672815-08-01	672815-08-01	672815-08-01	672815-08-01	672815-09-01	672815-09-01		
	UNITS	TP18-5-2	TP18-6-2	TP18-7-3	TP18-8-1	TP18-9-2	QC1	RDL	QC Batch
Calculated Parameters									
Methylnaphthalene, 2-(1-)	ug/g	<0.0071	<0.0071	<0.0071	<0.0071	0.60	<0.0071	0.0071	5641387
Polyaromatic Hydrocarbons									
Acenaphthene	ug/g	0.0055	<0.0050	<0.0050	0.055	1.0	<0.0050	0.0050	5647329
Acenaphthylene	ug/g	<0.0050	<0.0050	<0.0050	<0.0050	0.025	0.0054	0.0050	5647329
Anthracene	ug/g	0.011	<0.0050	<0.0050	0.088	2.3	0.013	0.0050	5647329
Benzo(a)anthracene	ug/g	0.024	<0.0050	0.014	0.19	2.0	0.034	0.0050	5647329
Benzo(a)pyrene	ug/g	0.024	<0.0050	0.020	0.16	1.6	0.037	0.0050	5647329
Benzo(b/j)fluoranthene	ug/g	0.036	<0.0050	0.029	0.22	2.0	0.051	0.0050	5647329
Benzo(g,h,i)perylene	ug/g	0.016	<0.0050	0.017	0.079	0.70	0.024	0.0050	5647329
Benzo(k)fluoranthene	ug/g	0.012	<0.0050	0.011	0.086	0.78	0.018	0.0050	5647329
Chrysene	ug/g	0.023	<0.0050	0.016	0.18	1.6	0.031	0.0050	5647329
Dibenz(a,h)anthracene	ug/g	<0.0050	<0.0050	<0.0050	0.022	0.23	0.0051	0.0050	5647329
Fluoranthene	ug/g	0.066	<0.0050	0.036	0.49	5.1	0.085	0.0050	5647329
Fluorene	ug/g	0.0057	<0.0050	<0.0050	0.055	1.4	0.0058	0.0050	5647329
Indeno(1,2,3-cd)pyrene	ug/g	0.017	<0.0050	0.017	0.088	0.83	0.029	0.0050	5647329
1-Methylnaphthalene	ug/g	<0.0050	<0.0050	<0.0050	<0.0050	0.29	<0.0050	0.0050	5647329
2-Methylnaphthalene	ug/g	<0.0050	<0.0050	<0.0050	<0.0050	0.31	<0.0050	0.0050	5647329
Naphthalene	ug/g	<0.0050	<0.0050	<0.0050	<0.0050	0.57	<0.0050	0.0050	5647329
Phenanthrene	ug/g	0.047	<0.0050	0.016	0.46	6.5	0.047	0.0050	5647329
Pyrene	ug/g	0.052	<0.0050	0.030	0.37	3.4	0.071	0.0050	5647329
Surrogate Recovery (%)									
D10-Anthracene	%	86	86	87	84	90	86		5647329
D14-Terphenyl (FS)	%	81	81	81	81	87	82		5647329
D8-Acenaphthylene	%	77	77	78	78	81	79		5647329

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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O.REG 153 PAHS (SOIL)

Maxxam ID		HGW376			HGW379			HGW379		
Sampling Date		2018/07/18 08:15			2018/07/18 09:10			2018/07/18 09:10		
COC Number		672815-09-01			672815-09-01			672815-09-01		
	UNITS	TP18-9-3	RDL	QC Batch	TP18-10-2	RDL	QC Batch	TP18-10-2 Lab-Dup	RDL	QC Batch
Inorganics										
Moisture	%	13	1.0	5675488						
Calculated Parameters										
Methylnaphthalene, 2-(1-)	ug/g	<0.0071	0.0071	5674585	<0.0071	0.0071	5641387			
Polyaromatic Hydrocarbons										
Acenaphthene	ug/g	0.020	0.0050	5679549	<0.0050	0.0050	5647329	<0.0050	0.0050	5647329
Acenaphthylene	ug/g	<0.0050	0.0050	5679549	<0.0050	0.0050	5647329	<0.0050	0.0050	5647329
Anthracene	ug/g	0.033	0.0050	5679549	<0.0050	0.0050	5647329	<0.0050	0.0050	5647329
Benzo(a)anthracene	ug/g	0.062	0.0050	5679549	<0.0050	0.0050	5647329	<0.0050	0.0050	5647329
Benzo(a)pyrene	ug/g	0.052	0.0050	5679549	<0.0050	0.0050	5647329	<0.0050	0.0050	5647329
Benzo(b/j)fluoranthene	ug/g	0.063	0.0050	5679549	<0.0050	0.0050	5647329	<0.0050	0.0050	5647329
Benzo(g,h,i)perylene	ug/g	0.030	0.0050	5679549	<0.0050	0.0050	5647329	<0.0050	0.0050	5647329
Benzo(k)fluoranthene	ug/g	0.023	0.0050	5679549	<0.0050	0.0050	5647329	<0.0050	0.0050	5647329
Chrysene	ug/g	0.045	0.0050	5679549	<0.0050	0.0050	5647329	<0.0050	0.0050	5647329
Dibenz(a,h)anthracene	ug/g	0.0095	0.0050	5679549	<0.0050	0.0050	5647329	<0.0050	0.0050	5647329
Fluoranthene	ug/g	0.14	0.0050	5679549	<0.0050	0.0050	5647329	<0.0050	0.0050	5647329
Fluorene	ug/g	0.025	0.0050	5679549	<0.0050	0.0050	5647329	<0.0050	0.0050	5647329
Indeno(1,2,3-cd)pyrene	ug/g	0.035	0.0050	5679549	<0.0050	0.0050	5647329	<0.0050	0.0050	5647329
1-Methylnaphthalene	ug/g	0.0050	0.0050	5679549	<0.0050	0.0050	5647329	<0.0050	0.0050	5647329
2-Methylnaphthalene	ug/g	<0.0050	0.0050	5679549	<0.0050	0.0050	5647329	<0.0050	0.0050	5647329
Naphthalene	ug/g	0.014	0.0050	5679549	<0.0050	0.0050	5647329	<0.0050	0.0050	5647329
Phenanthrene	ug/g	0.13	0.0050	5679549	<0.0050	0.0050	5647329	<0.0050	0.0050	5647329
Pyrene	ug/g	0.099	0.0050	5679549	<0.0050	0.0050	5647329	<0.0050	0.0050	5647329
Surrogate Recovery (%)										
D10-Anthracene	%	83		5679549	85		5647329	87		5647329
D14-Terphenyl (FS)	%	76		5679549	80		5647329	81		5647329
D8-Acenaphthylene	%	86		5679549	74		5647329	75		5647329

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

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O.REG 153 PAHS (SOIL)

Maxxam ID		HGW397	HGW400	HGW402		
Sampling Date		2018/07/18 09:50	2018/07/18 09:50	2018/07/18 10:45		
COC Number		672815-10-01	672815-10-01	672815-10-01		
	UNITS	TP18-11-1	QC2	TP18-12-2	RDL	QC Batch
Calculated Parameters						
Methylnaphthalene, 2-(1-)	ug/g	<0.0071	<0.0071	<0.0071	0.0071	5641387
Polyaromatic Hydrocarbons						
Acenaphthene	ug/g	<0.0050	<0.0050	<0.0050	0.0050	5647329
Acenaphthylene	ug/g	<0.0050	<0.0050	<0.0050	0.0050	5647329
Anthracene	ug/g	<0.0050	<0.0050	<0.0050	0.0050	5647329
Benzo(a)anthracene	ug/g	<0.0050	<0.0050	<0.0050	0.0050	5647329
Benzo(a)pyrene	ug/g	<0.0050	<0.0050	<0.0050	0.0050	5647329
Benzo(b/j)fluoranthene	ug/g	<0.0050	<0.0050	<0.0050	0.0050	5647329
Benzo(g,h,i)perylene	ug/g	<0.0050	<0.0050	<0.0050	0.0050	5647329
Benzo(k)fluoranthene	ug/g	<0.0050	<0.0050	<0.0050	0.0050	5647329
Chrysene	ug/g	<0.0050	<0.0050	<0.0050	0.0050	5647329
Dibenz(a,h)anthracene	ug/g	<0.0050	<0.0050	<0.0050	0.0050	5647329
Fluoranthene	ug/g	<0.0050	<0.0050	<0.0050	0.0050	5647329
Fluorene	ug/g	<0.0050	<0.0050	<0.0050	0.0050	5647329
Indeno(1,2,3-cd)pyrene	ug/g	<0.0050	<0.0050	<0.0050	0.0050	5647329
1-Methylnaphthalene	ug/g	<0.0050	<0.0050	<0.0050	0.0050	5647329
2-Methylnaphthalene	ug/g	<0.0050	<0.0050	<0.0050	0.0050	5647329
Naphthalene	ug/g	<0.0050	<0.0050	<0.0050	0.0050	5647329
Phenanthrene	ug/g	<0.0050	<0.0050	<0.0050	0.0050	5647329
Pyrene	ug/g	<0.0050	<0.0050	<0.0050	0.0050	5647329
Surrogate Recovery (%)						
D10-Anthracene	%	87	89	85		5647329
D14-Terphenyl (FS)	%	82	84	80		5647329
D8-Acenaphthylene	%	77	79	74		5647329

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

O.REG 153 VOCS BY HS & F1-F4 (SOIL)

Maxxam ID		HGW355	HGW358		HGW362	HGW364		
Sampling Date		2018/07/17 13:05	2018/07/17 14:15		2018/07/17 15:30	2018/07/17 16:20		
COC Number		672815-08-01	672815-08-01		672815-08-01	672815-08-01		
	UNITS	TP18-5-2	TP18-6-2	QC Batch	TP18-7-3	TP18-8-1	RDL	QC Batch
Inorganics								
Moisture	%	11	28	5644443	14	9.0	1.0	5644443
Calculated Parameters								
1,3-Dichloropropene (cis+trans)	ug/g	<0.050	<0.050	5641388	<0.050	<0.050	0.050	5641388
Volatile Organics								
Acetone (2-Propanone)	ug/g	<0.50	<0.50	5644042	<0.50	<0.50	0.50	5645989
Benzene	ug/g	<0.020	<0.020	5644042	<0.020	<0.020	0.020	5645989
Bromodichloromethane	ug/g	<0.050	<0.050	5644042	<0.050	<0.050	0.050	5645989
Bromoform	ug/g	<0.050	<0.050	5644042	<0.050	<0.050	0.050	5645989
Bromomethane	ug/g	<0.050	<0.050	5644042	<0.050	<0.050	0.050	5645989
Carbon Tetrachloride	ug/g	<0.050	<0.050	5644042	<0.050	<0.050	0.050	5645989
Chlorobenzene	ug/g	<0.050	<0.050	5644042	<0.050	<0.050	0.050	5645989
Chloroform	ug/g	<0.050	<0.050	5644042	<0.050	<0.050	0.050	5645989
Dibromochloromethane	ug/g	<0.050	<0.050	5644042	<0.050	<0.050	0.050	5645989
1,2-Dichlorobenzene	ug/g	<0.050	<0.050	5644042	<0.050	<0.050	0.050	5645989
1,3-Dichlorobenzene	ug/g	<0.050	<0.050	5644042	<0.050	<0.050	0.050	5645989
1,4-Dichlorobenzene	ug/g	<0.050	<0.050	5644042	<0.050	<0.050	0.050	5645989
Dichlorodifluoromethane (FREON 12)	ug/g	<0.050	<0.050	5644042	<0.050	<0.050	0.050	5645989
1,1-Dichloroethane	ug/g	<0.050	<0.050	5644042	<0.050	<0.050	0.050	5645989
1,2-Dichloroethane	ug/g	<0.050	<0.050	5644042	<0.050	<0.050	0.050	5645989
1,1-Dichloroethylene	ug/g	<0.050	<0.050	5644042	<0.050	<0.050	0.050	5645989
cis-1,2-Dichloroethylene	ug/g	<0.050	<0.050	5644042	<0.050	<0.050	0.050	5645989
trans-1,2-Dichloroethylene	ug/g	<0.050	<0.050	5644042	<0.050	<0.050	0.050	5645989
1,2-Dichloropropane	ug/g	<0.050	<0.050	5644042	<0.050	<0.050	0.050	5645989
cis-1,3-Dichloropropene	ug/g	<0.030	<0.030	5644042	<0.030	<0.030	0.030	5645989
trans-1,3-Dichloropropene	ug/g	<0.040	<0.040	5644042	<0.040	<0.040	0.040	5645989
Ethylbenzene	ug/g	<0.020	<0.020	5644042	<0.020	<0.020	0.020	5645989
Ethylene Dibromide	ug/g	<0.050	<0.050	5644042	<0.050	<0.050	0.050	5645989
Hexane	ug/g	<0.050	<0.050	5644042	<0.050	<0.050	0.050	5645989
Methylene Chloride(Dichloromethane)	ug/g	<0.050	<0.050	5644042	<0.050	<0.050	0.050	5645989
Methyl Ethyl Ketone (2-Butanone)	ug/g	<0.50	<0.50	5644042	<0.50	<0.50	0.50	5645989
Methyl Isobutyl Ketone	ug/g	<0.50	<0.50	5644042	<0.50	<0.50	0.50	5645989

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B8I3680
Report Date: 2018/08/20

Stantec Consulting Ltd
Client Project #: 161413338
Sampler Initials: AK

O.REG 153 VOCS BY HS & F1-F4 (SOIL)

Maxxam ID		HGW355	HGW358		HGW362	HGW364		
Sampling Date		2018/07/17 13:05	2018/07/17 14:15		2018/07/17 15:30	2018/07/17 16:20		
COC Number		672815-08-01	672815-08-01		672815-08-01	672815-08-01		
	UNITS	TP18-5-2	TP18-6-2	QC Batch	TP18-7-3	TP18-8-1	RDL	QC Batch
Methyl t-butyl ether (MTBE)	ug/g	<0.050	<0.050	5644042	<0.050	<0.050	0.050	5645989
Styrene	ug/g	<0.050	<0.050	5644042	<0.050	<0.050	0.050	5645989
1,1,1,2-Tetrachloroethane	ug/g	<0.050	<0.050	5644042	<0.050	<0.050	0.050	5645989
1,1,2,2-Tetrachloroethane	ug/g	<0.050	<0.050	5644042	<0.050	<0.050	0.050	5645989
Tetrachloroethylene	ug/g	<0.050	<0.050	5644042	<0.050	<0.050	0.050	5645989
Toluene	ug/g	<0.020	<0.020	5644042	<0.020	<0.020	0.020	5645989
1,1,1-Trichloroethane	ug/g	<0.050	<0.050	5644042	<0.050	<0.050	0.050	5645989
1,1,2-Trichloroethane	ug/g	<0.050	<0.050	5644042	<0.050	<0.050	0.050	5645989
Trichloroethylene	ug/g	<0.050	<0.050	5644042	<0.050	<0.050	0.050	5645989
Trichlorofluoromethane (FREON 11)	ug/g	<0.050	<0.050	5644042	<0.050	<0.050	0.050	5645989
Vinyl Chloride	ug/g	<0.020	<0.020	5644042	<0.020	<0.020	0.020	5645989
p+m-Xylene	ug/g	<0.020	<0.020	5644042	<0.020	<0.020	0.020	5645989
o-Xylene	ug/g	<0.020	<0.020	5644042	<0.020	<0.020	0.020	5645989
Total Xylenes	ug/g	<0.020	<0.020	5644042	<0.020	<0.020	0.020	5645989
F1 (C6-C10)	ug/g	<10	<10	5644042	<10	<10	10	5645989
F1 (C6-C10) - BTEX	ug/g	<10	<10	5644042	<10	<10	10	5645989
F2-F4 Hydrocarbons								
F2 (C10-C16 Hydrocarbons)	ug/g	<10	<10	5647341	<10	<10	10	5647341
F3 (C16-C34 Hydrocarbons)	ug/g	<50	<50	5647341	<50	<50	50	5647341
F4 (C34-C50 Hydrocarbons)	ug/g	<50	<50	5647341	<50	<50	50	5647341
Reached Baseline at C50	ug/g	Yes	Yes	5647341	Yes	Yes		5647341
Surrogate Recovery (%)								
o-Terphenyl	%	86	90	5647341	86	87		5647341
4-Bromofluorobenzene	%	89	84	5644042	89	89		5645989
D10-o-Xylene	%	102	123	5644042	114	112		5645989
D4-1,2-Dichloroethane	%	120	110	5644042	107	106		5645989
D8-Toluene	%	95	98	5644042	97	95		5645989

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

O.REG 153 VOCS BY HS & F1-F4 (SOIL)

Maxxam ID		HGW374		HGW375	HGW379		
Sampling Date		2018/07/17 17:55		2018/07/17 17:55	2018/07/18 09:10		
COC Number		672815-09-01		672815-09-01	672815-09-01		
	UNITS	TP18-9-2	QC Batch	QC1	TP18-10-2	RDL	QC Batch
Inorganics							
Moisture	%	13	5644627	13	15	1.0	5644443
Calculated Parameters							
1,3-Dichloropropene (cis+trans)	ug/g	<0.050	5641388	<0.050	<0.050	0.050	5641388
Volatile Organics							
Acetone (2-Propanone)	ug/g	<0.50	5645989	<0.50	<0.50	0.50	5645989
Benzene	ug/g	<0.020	5645989	<0.020	<0.020	0.020	5645989
Bromodichloromethane	ug/g	<0.050	5645989	<0.050	<0.050	0.050	5645989
Bromoform	ug/g	<0.050	5645989	<0.050	<0.050	0.050	5645989
Bromomethane	ug/g	<0.050	5645989	<0.050	<0.050	0.050	5645989
Carbon Tetrachloride	ug/g	<0.050	5645989	<0.050	<0.050	0.050	5645989
Chlorobenzene	ug/g	<0.050	5645989	<0.050	<0.050	0.050	5645989
Chloroform	ug/g	<0.050	5645989	<0.050	<0.050	0.050	5645989
Dibromochloromethane	ug/g	<0.050	5645989	<0.050	<0.050	0.050	5645989
1,2-Dichlorobenzene	ug/g	<0.050	5645989	<0.050	<0.050	0.050	5645989
1,3-Dichlorobenzene	ug/g	<0.050	5645989	<0.050	<0.050	0.050	5645989
1,4-Dichlorobenzene	ug/g	<0.050	5645989	<0.050	<0.050	0.050	5645989
Dichlorodifluoromethane (FREON 12)	ug/g	<0.050	5645989	<0.050	<0.050	0.050	5645989
1,1-Dichloroethane	ug/g	<0.050	5645989	<0.050	<0.050	0.050	5645989
1,2-Dichloroethane	ug/g	<0.050	5645989	<0.050	<0.050	0.050	5645989
1,1-Dichloroethylene	ug/g	<0.050	5645989	<0.050	<0.050	0.050	5645989
cis-1,2-Dichloroethylene	ug/g	<0.050	5645989	<0.050	<0.050	0.050	5645989
trans-1,2-Dichloroethylene	ug/g	<0.050	5645989	<0.050	<0.050	0.050	5645989
1,2-Dichloropropane	ug/g	<0.050	5645989	<0.050	<0.050	0.050	5645989
cis-1,3-Dichloropropene	ug/g	<0.030	5645989	<0.030	<0.030	0.030	5645989
trans-1,3-Dichloropropene	ug/g	<0.040	5645989	<0.040	<0.040	0.040	5645989
Ethylbenzene	ug/g	<0.020	5645989	<0.020	<0.020	0.020	5645989
Ethylene Dibromide	ug/g	<0.050	5645989	<0.050	<0.050	0.050	5645989
Hexane	ug/g	<0.050	5645989	<0.050	<0.050	0.050	5645989
Methylene Chloride(Dichloromethane)	ug/g	<0.050	5645989	<0.050	<0.050	0.050	5645989
Methyl Ethyl Ketone (2-Butanone)	ug/g	<0.50	5645989	<0.50	<0.50	0.50	5645989
Methyl Isobutyl Ketone	ug/g	<0.50	5645989	<0.50	<0.50	0.50	5645989

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

O.REG 153 VOCS BY HS & F1-F4 (SOIL)

Maxxam ID		HGW374		HGW375	HGW379		
Sampling Date		2018/07/17 17:55		2018/07/17 17:55	2018/07/18 09:10		
COC Number		672815-09-01		672815-09-01	672815-09-01		
	UNITS	TP18-9-2	QC Batch	QC1	TP18-10-2	RDL	QC Batch
Methyl t-butyl ether (MTBE)	ug/g	<0.050	5645989	<0.050	<0.050	0.050	5645989
Styrene	ug/g	<0.050	5645989	<0.050	<0.050	0.050	5645989
1,1,1,2-Tetrachloroethane	ug/g	<0.050	5645989	<0.050	<0.050	0.050	5645989
1,1,2,2-Tetrachloroethane	ug/g	<0.050	5645989	<0.050	<0.050	0.050	5645989
Tetrachloroethylene	ug/g	<0.050	5645989	<0.050	<0.050	0.050	5645989
Toluene	ug/g	<0.020	5645989	<0.020	<0.020	0.020	5645989
1,1,1-Trichloroethane	ug/g	<0.050	5645989	<0.050	<0.050	0.050	5645989
1,1,2-Trichloroethane	ug/g	<0.050	5645989	<0.050	<0.050	0.050	5645989
Trichloroethylene	ug/g	<0.050	5645989	<0.050	<0.050	0.050	5645989
Trichlorofluoromethane (FREON 11)	ug/g	<0.050	5645989	<0.050	<0.050	0.050	5645989
Vinyl Chloride	ug/g	<0.020	5645989	<0.020	<0.020	0.020	5645989
p+m-Xylene	ug/g	<0.020	5645989	0.049	<0.020	0.020	5645989
o-Xylene	ug/g	<0.020	5645989	<0.020	<0.020	0.020	5645989
Total Xylenes	ug/g	<0.020	5645989	0.049	<0.020	0.020	5645989
F1 (C6-C10)	ug/g	<10	5645989	<10	<10	10	5645989
F1 (C6-C10) - BTEX	ug/g	<10	5645989	<10	<10	10	5645989
F2-F4 Hydrocarbons							
F2 (C10-C16 Hydrocarbons)	ug/g	11	5647341	<10	<10	10	5647341
F3 (C16-C34 Hydrocarbons)	ug/g	110	5647341	<50	<50	50	5647341
F4 (C34-C50 Hydrocarbons)	ug/g	<50	5647341	<50	<50	50	5647341
Reached Baseline at C50	ug/g	Yes	5647341	Yes	Yes		5647341
Surrogate Recovery (%)							
o-Terphenyl	%	87	5647341	86	88		5647341
4-Bromofluorobenzene	%	89	5645989	87	87		5645989
D10-o-Xylene	%	115	5645989	116	119		5645989
D4-1,2-Dichloroethane	%	106	5645989	107	108		5645989
D8-Toluene	%	97	5645989	96	97		5645989

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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O.REG 153 VOCS BY HS & F1-F4 (SOIL)

Maxxam ID		HGW379			HGW397	HGW400		
Sampling Date		2018/07/18 09:10			2018/07/18 09:50	2018/07/18 09:50		
COC Number		672815-09-01			672815-10-01	672815-10-01		
	UNITS	TP18-10-2 Lab-Dup	RDL	QC Batch	TP18-11-1	QC2	RDL	QC Batch
Inorganics								
Moisture	%				12	13	1.0	5644443
Calculated Parameters								
1,3-Dichloropropene (cis+trans)	ug/g				<0.050	<0.050	0.050	5641388
Volatile Organics								
Acetone (2-Propanone)	ug/g	<0.50	0.50	5645989	<0.50	<0.50	0.50	5645989
Benzene	ug/g	<0.020	0.020	5645989	<0.020	<0.020	0.020	5645989
Bromodichloromethane	ug/g	<0.050	0.050	5645989	<0.050	<0.050	0.050	5645989
Bromoform	ug/g	<0.050	0.050	5645989	<0.050	<0.050	0.050	5645989
Bromomethane	ug/g	<0.050	0.050	5645989	<0.050	<0.050	0.050	5645989
Carbon Tetrachloride	ug/g	<0.050	0.050	5645989	<0.050	<0.050	0.050	5645989
Chlorobenzene	ug/g	<0.050	0.050	5645989	<0.050	<0.050	0.050	5645989
Chloroform	ug/g	<0.050	0.050	5645989	<0.050	<0.050	0.050	5645989
Dibromochloromethane	ug/g	<0.050	0.050	5645989	<0.050	<0.050	0.050	5645989
1,2-Dichlorobenzene	ug/g	<0.050	0.050	5645989	<0.050	<0.050	0.050	5645989
1,3-Dichlorobenzene	ug/g	<0.050	0.050	5645989	<0.050	<0.050	0.050	5645989
1,4-Dichlorobenzene	ug/g	<0.050	0.050	5645989	<0.050	<0.050	0.050	5645989
Dichlorodifluoromethane (FREON 12)	ug/g	<0.050	0.050	5645989	<0.050	<0.050	0.050	5645989
1,1-Dichloroethane	ug/g	<0.050	0.050	5645989	<0.050	<0.050	0.050	5645989
1,2-Dichloroethane	ug/g	<0.050	0.050	5645989	<0.050	<0.050	0.050	5645989
1,1-Dichloroethylene	ug/g	<0.050	0.050	5645989	<0.050	<0.050	0.050	5645989
cis-1,2-Dichloroethylene	ug/g	<0.050	0.050	5645989	<0.050	<0.050	0.050	5645989
trans-1,2-Dichloroethylene	ug/g	<0.050	0.050	5645989	<0.050	<0.050	0.050	5645989
1,2-Dichloropropane	ug/g	<0.050	0.050	5645989	<0.050	<0.050	0.050	5645989
cis-1,3-Dichloropropene	ug/g	<0.030	0.030	5645989	<0.030	<0.030	0.030	5645989
trans-1,3-Dichloropropene	ug/g	<0.040	0.040	5645989	<0.040	<0.040	0.040	5645989
Ethylbenzene	ug/g	<0.020	0.020	5645989	<0.020	<0.020	0.020	5645989
Ethylene Dibromide	ug/g	<0.050	0.050	5645989	<0.050	<0.050	0.050	5645989
Hexane	ug/g	<0.050	0.050	5645989	<0.050	<0.050	0.050	5645989
Methylene Chloride(Dichloromethane)	ug/g	<0.050	0.050	5645989	<0.050	<0.050	0.050	5645989
Methyl Ethyl Ketone (2-Butanone)	ug/g	<0.50	0.50	5645989	<0.50	<0.50	0.50	5645989
Methyl Isobutyl Ketone	ug/g	<0.50	0.50	5645989	<0.50	<0.50	0.50	5645989

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

O.REG 153 VOCS BY HS & F1-F4 (SOIL)

Maxxam ID		HGW379			HGW397	HGW400		
Sampling Date		2018/07/18 09:10			2018/07/18 09:50	2018/07/18 09:50		
COC Number		672815-09-01			672815-10-01	672815-10-01		
	UNITS	TP18-10-2 Lab-Dup	RDL	QC Batch	TP18-11-1	QC2	RDL	QC Batch
Methyl t-butyl ether (MTBE)	ug/g	<0.050	0.050	5645989	<0.050	<0.050	0.050	5645989
Styrene	ug/g	<0.050	0.050	5645989	<0.050	<0.050	0.050	5645989
1,1,1,2-Tetrachloroethane	ug/g	<0.050	0.050	5645989	<0.050	<0.050	0.050	5645989
1,1,2,2-Tetrachloroethane	ug/g	<0.050	0.050	5645989	<0.050	<0.050	0.050	5645989
Tetrachloroethylene	ug/g	<0.050	0.050	5645989	<0.050	<0.050	0.050	5645989
Toluene	ug/g	<0.020	0.020	5645989	<0.020	<0.020	0.020	5645989
1,1,1-Trichloroethane	ug/g	<0.050	0.050	5645989	<0.050	<0.050	0.050	5645989
1,1,2-Trichloroethane	ug/g	<0.050	0.050	5645989	<0.050	<0.050	0.050	5645989
Trichloroethylene	ug/g	<0.050	0.050	5645989	<0.050	<0.050	0.050	5645989
Trichlorofluoromethane (FREON 11)	ug/g	<0.050	0.050	5645989	<0.050	<0.050	0.050	5645989
Vinyl Chloride	ug/g	<0.020	0.020	5645989	<0.020	<0.020	0.020	5645989
p+m-Xylene	ug/g	<0.020	0.020	5645989	<0.020	<0.020	0.020	5645989
o-Xylene	ug/g	<0.020	0.020	5645989	<0.020	<0.020	0.020	5645989
Total Xylenes	ug/g	<0.020	0.020	5645989	<0.020	<0.020	0.020	5645989
F1 (C6-C10)	ug/g	<10	10	5645989	<10	<10	10	5645989
F1 (C6-C10) - BTEX	ug/g	<10	10	5645989	<10	<10	10	5645989
F2-F4 Hydrocarbons								
F2 (C10-C16 Hydrocarbons)	ug/g	<10	10	5647341	<10	<10	10	5647341
F3 (C16-C34 Hydrocarbons)	ug/g	<50	50	5647341	<50	<50	50	5647341
F4 (C34-C50 Hydrocarbons)	ug/g	<50	50	5647341	<50	<50	50	5647341
Reached Baseline at C50	ug/g	Yes		5647341	Yes	Yes		5647341
Surrogate Recovery (%)								
o-Terphenyl	%	86		5647341	77	77		5647341
4-Bromofluorobenzene	%	90		5645989	87	87		5645989
D10-o-Xylene	%	101		5645989	108	110		5645989
D4-1,2-Dichloroethane	%	107		5645989	112	110		5645989
D8-Toluene	%	96		5645989	96	96		5645989

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

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O.REG 153 VOCS BY HS & F1-F4 (SOIL)

Maxxam ID		HGW402		
Sampling Date		2018/07/18 10:45		
COC Number		672815-10-01		
	UNITS	TP18-12-2	RDL	QC Batch
Inorganics				
Moisture	%	8.4	1.0	5644627
Calculated Parameters				
1,3-Dichloropropene (cis+trans)	ug/g	<0.050	0.050	5641388
Volatile Organics				
Acetone (2-Propanone)	ug/g	<0.50	0.50	5645989
Benzene	ug/g	<0.020	0.020	5645989
Bromodichloromethane	ug/g	<0.050	0.050	5645989
Bromoform	ug/g	<0.050	0.050	5645989
Bromomethane	ug/g	<0.050	0.050	5645989
Carbon Tetrachloride	ug/g	<0.050	0.050	5645989
Chlorobenzene	ug/g	<0.050	0.050	5645989
Chloroform	ug/g	<0.050	0.050	5645989
Dibromochloromethane	ug/g	<0.050	0.050	5645989
1,2-Dichlorobenzene	ug/g	<0.050	0.050	5645989
1,3-Dichlorobenzene	ug/g	<0.050	0.050	5645989
1,4-Dichlorobenzene	ug/g	<0.050	0.050	5645989
Dichlorodifluoromethane (FREON 12)	ug/g	<0.050	0.050	5645989
1,1-Dichloroethane	ug/g	<0.050	0.050	5645989
1,2-Dichloroethane	ug/g	<0.050	0.050	5645989
1,1-Dichloroethylene	ug/g	<0.050	0.050	5645989
cis-1,2-Dichloroethylene	ug/g	<0.050	0.050	5645989
trans-1,2-Dichloroethylene	ug/g	<0.050	0.050	5645989
1,2-Dichloropropane	ug/g	<0.050	0.050	5645989
cis-1,3-Dichloropropene	ug/g	<0.030	0.030	5645989
trans-1,3-Dichloropropene	ug/g	<0.040	0.040	5645989
Ethylbenzene	ug/g	<0.020	0.020	5645989
Ethylene Dibromide	ug/g	<0.050	0.050	5645989
Hexane	ug/g	<0.050	0.050	5645989
Methylene Chloride(Dichloromethane)	ug/g	<0.050	0.050	5645989
Methyl Ethyl Ketone (2-Butanone)	ug/g	<0.50	0.50	5645989
Methyl Isobutyl Ketone	ug/g	<0.50	0.50	5645989

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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O.REG 153 VOCS BY HS & F1-F4 (SOIL)

Maxxam ID		HGW402		
Sampling Date		2018/07/18 10:45		
COC Number		672815-10-01		
	UNITS	TP18-12-2	RDL	QC Batch
Methyl t-butyl ether (MTBE)	ug/g	<0.050	0.050	5645989
Styrene	ug/g	<0.050	0.050	5645989
1,1,1,2-Tetrachloroethane	ug/g	<0.050	0.050	5645989
1,1,2,2-Tetrachloroethane	ug/g	<0.050	0.050	5645989
Tetrachloroethylene	ug/g	<0.050	0.050	5645989
Toluene	ug/g	<0.020	0.020	5645989
1,1,1-Trichloroethane	ug/g	<0.050	0.050	5645989
1,1,2-Trichloroethane	ug/g	<0.050	0.050	5645989
Trichloroethylene	ug/g	<0.050	0.050	5645989
Trichlorofluoromethane (FREON 11)	ug/g	<0.050	0.050	5645989
Vinyl Chloride	ug/g	<0.020	0.020	5645989
p+m-Xylene	ug/g	<0.020	0.020	5645989
o-Xylene	ug/g	<0.020	0.020	5645989
Total Xylenes	ug/g	<0.020	0.020	5645989
F1 (C6-C10)	ug/g	<10	10	5645989
F1 (C6-C10) - BTEX	ug/g	<10	10	5645989
F2-F4 Hydrocarbons				
F2 (C10-C16 Hydrocarbons)	ug/g	<10	10	5647341
F3 (C16-C34 Hydrocarbons)	ug/g	<50	50	5647341
F4 (C34-C50 Hydrocarbons)	ug/g	<50	50	5647341
Reached Baseline at C50	ug/g	Yes		5647341
Surrogate Recovery (%)				
o-Terphenyl	%	75		5647341
4-Bromofluorobenzene	%	86		5645989
D10-o-Xylene	%	111		5645989
D4-1,2-Dichloroethane	%	111		5645989
D8-Toluene	%	96		5645989

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B8I3680
Report Date: 2018/08/20

Stantec Consulting Ltd
Client Project #: 161413338
Sampler Initials: AK

TEST SUMMARY

Maxxam ID: HGW330 **Collected:** 2018/07/17
Sample ID: TP18-1-1-EW **Shipped:**
Matrix: Soil **Received:** 2018/07/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	5643014	2018/07/23	2018/07/25	Daniel Teclu

Maxxam ID: HGW332 **Collected:** 2018/07/17
Sample ID: TP18-2-1-NW **Shipped:**
Matrix: Soil **Received:** 2018/07/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	5643014	2018/07/23	2018/07/25	Daniel Teclu

Maxxam ID: HGW334 **Collected:** 2018/07/17
Sample ID: TP18-3-1-WW **Shipped:**
Matrix: Soil **Received:** 2018/07/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	5643014	2018/07/23	2018/07/25	Daniel Teclu

Maxxam ID: HGW335 **Collected:** 2018/07/17
Sample ID: TP18-3-2-WW **Shipped:**
Matrix: Soil **Received:** 2018/07/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	5675316	2018/08/11	2018/08/13	Daniel Teclu

Maxxam ID: HGW336 **Collected:** 2018/07/17
Sample ID: TP18-4-1-SW **Shipped:**
Matrix: Soil **Received:** 2018/07/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	5643014	2018/07/23	2018/07/25	Daniel Teclu

Maxxam ID: HGW355 **Collected:** 2018/07/17
Sample ID: TP18-5-2 **Shipped:**
Matrix: Soil **Received:** 2018/07/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	5641387	N/A	2018/07/30	Automated Statchk
Hot Water Extractable Boron	ICP	5643097	2018/07/23	2018/07/24	Suban Kanapathippllai
1,3-Dichloropropene Sum	CALC	5641388	N/A	2018/07/25	Automated Statchk
Free (WAD) Cyanide	TECH	5644606	2018/07/24	2018/07/25	Louise Harding
Conductivity	AT	5644585	2018/07/24	2018/07/24	Tahir Anwar
Hexavalent Chromium in Soil by IC	IC/SPEC	5646213	2018/07/25	2018/07/25	Rupinder Sihota
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	5647341	2018/07/25	2018/07/26	Barbara Wowk
Strong Acid Leachable Metals by ICPMS	ICP/MS	5643167	2018/07/23	2018/07/25	Daniel Teclu
Moisture	BAL	5644443	N/A	2018/07/24	Min Yang
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	5647329	2018/07/25	2018/07/26	Mitesh Raj
pH CaCl2 EXTRACT	AT	5644870	2018/07/25	2018/07/25	Gnana Thomas

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Maxxam Job #: B8I3680
Report Date: 2018/08/20

Stantec Consulting Ltd
Client Project #: 161413338
Sampler Initials: AK

TEST SUMMARY

Maxxam ID: HGW355
Sample ID: TP18-5-2
Matrix: Soil

Collected: 2018/07/17
Shipped:
Received: 2018/07/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Sodium Adsorption Ratio (SAR)	CALC/MET	5641390	N/A	2018/07/25	Automated Statchk
Volatile Organic Compounds and F1 PHCs	GC/MSFD	5644042	N/A	2018/07/25	Manpreet Sarao

Maxxam ID: HGW358
Sample ID: TP18-6-2
Matrix: Soil

Collected: 2018/07/17
Shipped:
Received: 2018/07/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	5641387	N/A	2018/07/30	Automated Statchk
Hot Water Extractable Boron	ICP	5643097	2018/07/23	2018/07/24	Suban Kanapathippllai
1,3-Dichloropropene Sum	CALC	5641388	N/A	2018/07/25	Automated Statchk
Free (WAD) Cyanide	TECH	5644606	2018/07/24	2018/07/25	Louise Harding
Conductivity	AT	5644585	2018/07/24	2018/07/24	Tahir Anwar
Hexavalent Chromium in Soil by IC	IC/SPEC	5646213	2018/07/25	2018/07/25	Rupinder Sihota
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	5647341	2018/07/25	2018/07/26	Barbara Wowk
Strong Acid Leachable Metals by ICPMS	ICP/MS	5643167	2018/07/23	2018/07/25	Daniel Teclu
Moisture	BAL	5644443	N/A	2018/07/24	Min Yang
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	5647329	2018/07/25	2018/07/26	Mitesh Raj
pH CaCl2 EXTRACT	AT	5644870	2018/07/25	2018/07/25	Gnana Thomas
Sodium Adsorption Ratio (SAR)	CALC/MET	5641390	N/A	2018/07/25	Automated Statchk
Volatile Organic Compounds and F1 PHCs	GC/MSFD	5644042	N/A	2018/07/25	Manpreet Sarao

Maxxam ID: HGW359
Sample ID: TP18-6-3
Matrix: Soil

Collected: 2018/07/17
Shipped:
Received: 2018/07/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	5675316	2018/08/11	2018/08/13	Daniel Teclu

Maxxam ID: HGW362
Sample ID: TP18-7-3
Matrix: Soil

Collected: 2018/07/17
Shipped:
Received: 2018/07/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	5641387	N/A	2018/07/30	Automated Statchk
Hot Water Extractable Boron	ICP	5643097	2018/07/23	2018/07/24	Suban Kanapathippllai
1,3-Dichloropropene Sum	CALC	5641388	N/A	2018/07/26	Automated Statchk
Free (WAD) Cyanide	TECH	5644606	2018/07/24	2018/07/25	Louise Harding
Conductivity	AT	5644585	2018/07/24	2018/07/24	Tahir Anwar
Hexavalent Chromium in Soil by IC	IC/SPEC	5646213	2018/07/25	2018/07/25	Rupinder Sihota
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	5647341	2018/07/25	2018/07/26	Barbara Wowk
Strong Acid Leachable Metals by ICPMS	ICP/MS	5643167	2018/07/23	2018/07/25	Daniel Teclu
Moisture	BAL	5644443	N/A	2018/07/24	Min Yang
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	5647329	2018/07/25	2018/07/26	Mitesh Raj
pH CaCl2 EXTRACT	AT	5644870	2018/07/25	2018/07/25	Gnana Thomas
Sodium Adsorption Ratio (SAR)	CALC/MET	5641390	N/A	2018/07/25	Automated Statchk

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Maxxam Job #: B8I3680
Report Date: 2018/08/20

Stantec Consulting Ltd
Client Project #: 161413338
Sampler Initials: AK

TEST SUMMARY

Maxxam ID: HGW362
Sample ID: TP18-7-3
Matrix: Soil

Collected: 2018/07/17
Shipped:
Received: 2018/07/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Volatile Organic Compounds and F1 PHCs	GC/MSFD	5645989	N/A	2018/07/25	Yang (Philip) Yu

Maxxam ID: HGW364
Sample ID: TP18-8-1
Matrix: Soil

Collected: 2018/07/17
Shipped:
Received: 2018/07/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	5641387	N/A	2018/07/30	Automated Statchk
Hot Water Extractable Boron	ICP	5643097	2018/07/23	2018/07/24	Suban Kanapathippllai
1,3-Dichloropropene Sum	CALC	5641388	N/A	2018/07/26	Automated Statchk
Free (WAD) Cyanide	TECH	5644606	2018/07/24	2018/07/25	Louise Harding
Conductivity	AT	5644585	2018/07/24	2018/07/24	Tahir Anwar
Hexavalent Chromium in Soil by IC	IC/SPEC	5646213	2018/07/25	2018/07/25	Rupinder Sihota
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	5647341	2018/07/25	2018/07/26	Barbara Wowk
Strong Acid Leachable Metals by ICPMS	ICP/MS	5643167	2018/07/23	2018/07/25	Daniel Teclu
Moisture	BAL	5644443	N/A	2018/07/24	Min Yang
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	5647329	2018/07/25	2018/07/26	Mitesh Raj
pH CaCl2 EXTRACT	AT	5644870	2018/07/25	2018/07/25	Gnana Thomas
Sodium Adsorption Ratio (SAR)	CALC/MET	5641390	N/A	2018/07/25	Automated Statchk
Volatile Organic Compounds and F1 PHCs	GC/MSFD	5645989	N/A	2018/07/25	Yang (Philip) Yu

Maxxam ID: HGW364 Dup
Sample ID: TP18-8-1
Matrix: Soil

Collected: 2018/07/17
Shipped:
Received: 2018/07/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	5643167	2018/07/23	2018/07/25	Daniel Teclu

Maxxam ID: HGW374
Sample ID: TP18-9-2
Matrix: Soil

Collected: 2018/07/17
Shipped:
Received: 2018/07/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	5641387	N/A	2018/07/30	Automated Statchk
Hot Water Extractable Boron	ICP	5643256	2018/07/23	2018/07/24	Suban Kanapathippllai
1,3-Dichloropropene Sum	CALC	5641388	N/A	2018/07/26	Automated Statchk
Free (WAD) Cyanide	TECH	5644606	2018/07/24	2018/07/25	Louise Harding
Conductivity	AT	5644585	2018/07/24	2018/07/24	Tahir Anwar
Hexavalent Chromium in Soil by IC	IC/SPEC	5646213	2018/07/25	2018/07/25	Rupinder Sihota
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	5647341	2018/07/25	2018/07/26	Barbara Wowk
Strong Acid Leachable Metals by ICPMS	ICP/MS	5643167	2018/07/23	2018/07/25	Daniel Teclu
Moisture	BAL	5644627	N/A	2018/07/24	Min Yang
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	5647329	2018/07/25	2018/07/26	Mitesh Raj
pH CaCl2 EXTRACT	AT	5644870	2018/07/25	2018/07/25	Gnana Thomas
Sodium Adsorption Ratio (SAR)	CALC/MET	5641390	N/A	2018/07/25	Automated Statchk
Volatile Organic Compounds and F1 PHCs	GC/MSFD	5645989	N/A	2018/07/25	Yang (Philip) Yu

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Maxxam Job #: B8I3680
Report Date: 2018/08/20

Stantec Consulting Ltd
Client Project #: 161413338
Sampler Initials: AK

TEST SUMMARY

Maxxam ID: HGW375
Sample ID: QC1
Matrix: Soil

Collected: 2018/07/17
Shipped:
Received: 2018/07/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	5641387	N/A	2018/07/30	Automated Statchk
Hot Water Extractable Boron	ICP	5643097	2018/07/23	2018/07/24	Suban Kanapathippllai
1,3-Dichloropropene Sum	CALC	5641388	N/A	2018/07/26	Automated Statchk
Free (WAD) Cyanide	TECH	5644606	2018/07/24	2018/07/25	Louise Harding
Conductivity	AT	5644585	2018/07/24	2018/07/24	Tahir Anwar
Hexavalent Chromium in Soil by IC	IC/SPEC	5646213	2018/07/25	2018/07/25	Rupinder Sihota
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	5647341	2018/07/25	2018/07/26	Barbara Wowk
Strong Acid Leachable Metals by ICPMS	ICP/MS	5643167	2018/07/23	2018/07/25	Daniel Teclu
Moisture	BAL	5644443	N/A	2018/07/24	Min Yang
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	5647329	2018/07/25	2018/07/26	Mitesh Raj
pH CaCl2 EXTRACT	AT	5644870	2018/07/25	2018/07/25	Gnana Thomas
Sodium Adsorption Ratio (SAR)	CALC/MET	5641390	N/A	2018/07/25	Automated Statchk
Volatile Organic Compounds and F1 PHCs	GC/MSFD	5645989	N/A	2018/07/25	Yang (Philip) Yu

Maxxam ID: HGW376
Sample ID: TP18-9-3
Matrix: Soil

Collected: 2018/07/18
Shipped:
Received: 2018/07/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	5674585	N/A	2018/08/18	Automated Statchk
Moisture	BAL	5675488	N/A	2018/08/11	Prgya Panchal
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	5679549	2018/08/14	2018/08/15	Jett Wu

Maxxam ID: HGW379
Sample ID: TP18-10-2
Matrix: Soil

Collected: 2018/07/18
Shipped:
Received: 2018/07/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	5641387	N/A	2018/07/30	Automated Statchk
Hot Water Extractable Boron	ICP	5643097	2018/07/23	2018/07/24	Suban Kanapathippllai
1,3-Dichloropropene Sum	CALC	5641388	N/A	2018/07/26	Automated Statchk
Free (WAD) Cyanide	TECH	5644606	2018/07/24	2018/07/25	Louise Harding
Conductivity	AT	5644585	2018/07/24	2018/07/24	Tahir Anwar
Hexavalent Chromium in Soil by IC	IC/SPEC	5646213	2018/07/25	2018/07/25	Rupinder Sihota
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	5647341	2018/07/25	2018/07/26	Barbara Wowk
Strong Acid Leachable Metals by ICPMS	ICP/MS	5643167	2018/07/23	2018/07/25	Daniel Teclu
Moisture	BAL	5644443	N/A	2018/07/24	Min Yang
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	5647329	2018/07/25	2018/07/26	Mitesh Raj
pH CaCl2 EXTRACT	AT	5644870	2018/07/25	2018/07/25	Gnana Thomas
Sodium Adsorption Ratio (SAR)	CALC/MET	5641390	N/A	2018/07/25	Automated Statchk
Volatile Organic Compounds and F1 PHCs	GC/MSFD	5645989	N/A	2018/07/26	Yang (Philip) Yu

Maxxam Job #: B8I3680
Report Date: 2018/08/20

Stantec Consulting Ltd
Client Project #: 161413338
Sampler Initials: AK

TEST SUMMARY

Maxxam ID: HGW379 Dup
Sample ID: TP18-10-2
Matrix: Soil

Collected: 2018/07/18
Shipped:
Received: 2018/07/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	5647341	2018/07/25	2018/07/26	Barbara Wowk
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	5647329	2018/07/25	2018/07/26	Mitesh Raj
Volatile Organic Compounds and F1 PHCs	GC/MSFD	5645989	N/A	2018/07/26	Yang (Philip) Yu

Maxxam ID: HGW397
Sample ID: TP18-11-1
Matrix: Soil

Collected: 2018/07/18
Shipped:
Received: 2018/07/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	5641387	N/A	2018/07/30	Automated Statchk
Hot Water Extractable Boron	ICP	5643256	2018/07/23	2018/07/24	Suban Kanapathippllai
1,3-Dichloropropene Sum	CALC	5641388	N/A	2018/07/26	Automated Statchk
Free (WAD) Cyanide	TECH	5644606	2018/07/24	2018/07/25	Louise Harding
Conductivity	AT	5644585	2018/07/24	2018/07/24	Tahir Anwar
Hexavalent Chromium in Soil by IC	IC/SPEC	5646213	2018/07/25	2018/07/25	Rupinder Sihota
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	5647341	2018/07/25	2018/07/25	Barbara Wowk
Strong Acid Leachable Metals by ICPMS	ICP/MS	5643167	2018/07/23	2018/07/25	Daniel Teclu
Moisture	BAL	5644443	N/A	2018/07/24	Min Yang
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	5647329	2018/07/25	2018/07/26	Mitesh Raj
pH CaCl2 EXTRACT	AT	5644870	2018/07/25	2018/07/25	Gnana Thomas
Sodium Adsorption Ratio (SAR)	CALC/MET	5641390	N/A	2018/07/25	Automated Statchk
Volatile Organic Compounds and F1 PHCs	GC/MSFD	5645989	N/A	2018/07/26	Yang (Philip) Yu

Maxxam ID: HGW398
Sample ID: TP18-11-2
Matrix: Soil

Collected: 2018/07/18
Shipped:
Received: 2018/07/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	5675316	2018/08/11	2018/08/13	Daniel Teclu

Maxxam ID: HGW400
Sample ID: QC2
Matrix: Soil

Collected: 2018/07/18
Shipped:
Received: 2018/07/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	5641387	N/A	2018/07/30	Automated Statchk
Hot Water Extractable Boron	ICP	5643097	2018/07/23	2018/07/24	Suban Kanapathippllai
1,3-Dichloropropene Sum	CALC	5641388	N/A	2018/07/26	Automated Statchk
Free (WAD) Cyanide	TECH	5644606	2018/07/24	2018/07/25	Louise Harding
Conductivity	AT	5644585	2018/07/24	2018/07/24	Tahir Anwar
Hexavalent Chromium in Soil by IC	IC/SPEC	5646213	2018/07/25	2018/07/25	Rupinder Sihota
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	5647341	2018/07/25	2018/07/26	Barbara Wowk
Strong Acid Leachable Metals by ICPMS	ICP/MS	5643167	2018/07/23	2018/07/25	Daniel Teclu
Moisture	BAL	5644443	N/A	2018/07/24	Min Yang
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	5647329	2018/07/25	2018/07/26	Mitesh Raj
pH CaCl2 EXTRACT	AT	5644870	2018/07/25	2018/07/25	Gnana Thomas

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TEST SUMMARY

Maxxam ID: HGW400 **Collected:** 2018/07/18
Sample ID: QC2 **Shipped:**
Matrix: Soil **Received:** 2018/07/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Sodium Adsorption Ratio (SAR)	CALC/MET	5641390	N/A	2018/07/25	Automated Statchk
Volatile Organic Compounds and F1 PHCs	GC/MSFD	5645989	N/A	2018/07/26	Yang (Philip) Yu

Maxxam ID: HGW402 **Collected:** 2018/07/18
Sample ID: TP18-12-2 **Shipped:**
Matrix: Soil **Received:** 2018/07/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	5641387	N/A	2018/07/30	Automated Statchk
Hot Water Extractable Boron	ICP	5643256	2018/07/23	2018/07/24	Suban Kanapathippllai
1,3-Dichloropropene Sum	CALC	5641388	N/A	2018/07/26	Automated Statchk
Free (WAD) Cyanide	TECH	5644606	2018/07/24	2018/07/25	Louise Harding
Conductivity	AT	5644585	2018/07/24	2018/07/24	Tahir Anwar
Hexavalent Chromium in Soil by IC	IC/SPEC	5646213	2018/07/25	2018/07/25	Rupinder Sihota
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	5647341	2018/07/25	2018/07/26	Barbara Wowk
Strong Acid Leachable Metals by ICPMS	ICP/MS	5643167	2018/07/23	2018/07/25	Daniel Teclu
Moisture	BAL	5644627	N/A	2018/07/24	Min Yang
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	5647329	2018/07/25	2018/07/26	Mitesh Raj
pH CaCl2 EXTRACT	AT	5644870	2018/07/25	2018/07/25	Gnana Thomas
Sodium Adsorption Ratio (SAR)	CALC/MET	5641390	N/A	2018/07/25	Automated Statchk
Volatile Organic Compounds and F1 PHCs	GC/MSFD	5645989	N/A	2018/07/26	Yang (Philip) Yu

Maxxam ID: HGW402 Dup **Collected:** 2018/07/18
Sample ID: TP18-12-2 **Shipped:**
Matrix: Soil **Received:** 2018/07/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Conductivity	AT	5644585	2018/07/24	2018/07/24	Tahir Anwar

Maxxam ID: HGW403 **Collected:** 2018/07/18
Sample ID: TP18-12-3 **Shipped:**
Matrix: Soil **Received:** 2018/07/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	5675316	2018/08/11	2018/08/13	Daniel Teclu

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GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	2.7°C
Package 2	2.0°C

Revised Report [2018/08/17]: Requested analysis for metals added to sample TP18-11-2, TP18-12-3, TP18-6-3 and TP18-3-2 and PAH to TP18-9-3 as per client request.

Sample HGW355 [TP18-5-2] : VOCF1 Analysis: Greater than 10g of soil was submitted in the field preserved vial. This significantly exceeds the protocol specification of approximately 5g. Additional methanol was added to the vial to ensure extraction efficiency.

Sample HGW358 [TP18-6-2] : SAR Analysis: Sodium was not detected. To report SAR the sodium detection limit was used in the calculation. This value represents a maximum ratio.

Sample HGW362 [TP18-7-3] : SAR Analysis: Sodium was not detected. To report SAR the sodium detection limit was used in the calculation. This value represents a maximum ratio.

Sample HGW374 [TP18-9-2] : VOCF1 Analysis: Greater than 10g of soil was submitted in the field preserved vial. This significantly exceeds the protocol specification of approximately 5g. Additional methanol was added to the vial to ensure extraction efficiency.

Sample HGW379 [TP18-10-2] : SAR Analysis: Sodium was not detected. To report SAR the sodium detection limit was used in the calculation. This value represents a maximum ratio.

Sample HGW397 [TP18-11-1] : SAR Analysis: Sodium was not detected. To report SAR the sodium detection limit was used in the calculation. This value represents a maximum ratio.

Sample HGW400 [QC2] : SAR Analysis: Sodium was not detected. To report SAR the sodium detection limit was used in the calculation. This value represents a maximum ratio.

Sample HGW402 [TP18-12-2] : SAR Analysis: Sodium was not detected. To report SAR the sodium detection limit was used in the calculation. This value represents a maximum ratio.

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
5643014	DT1	Matrix Spike	Acid Extractable Antimony (Sb)	2018/07/25		91	%	75 - 125
			Acid Extractable Arsenic (As)	2018/07/25		94	%	75 - 125
			Acid Extractable Barium (Ba)	2018/07/25		NC	%	75 - 125
			Acid Extractable Beryllium (Be)	2018/07/25		95	%	75 - 125
			Acid Extractable Boron (B)	2018/07/25		90	%	75 - 125
			Acid Extractable Cadmium (Cd)	2018/07/25		97	%	75 - 125
			Acid Extractable Chromium (Cr)	2018/07/25		97	%	75 - 125
			Acid Extractable Cobalt (Co)	2018/07/25		97	%	75 - 125
			Acid Extractable Copper (Cu)	2018/07/25		98	%	75 - 125
			Acid Extractable Lead (Pb)	2018/07/25		101	%	75 - 125
			Acid Extractable Molybdenum (Mo)	2018/07/25		96	%	75 - 125
			Acid Extractable Nickel (Ni)	2018/07/25		98	%	75 - 125
			Acid Extractable Selenium (Se)	2018/07/25		95	%	75 - 125
			Acid Extractable Silver (Ag)	2018/07/25		93	%	75 - 125
			Acid Extractable Thallium (Tl)	2018/07/25		95	%	75 - 125
			Acid Extractable Uranium (U)	2018/07/25		96	%	75 - 125
			Acid Extractable Vanadium (V)	2018/07/25		97	%	75 - 125
			Acid Extractable Zinc (Zn)	2018/07/25		95	%	75 - 125
5643014	DT1	Spiked Blank	Acid Extractable Antimony (Sb)	2018/07/25		102	%	80 - 120
			Acid Extractable Arsenic (As)	2018/07/25		101	%	80 - 120
			Acid Extractable Barium (Ba)	2018/07/25		103	%	80 - 120
			Acid Extractable Beryllium (Be)	2018/07/25		100	%	80 - 120
			Acid Extractable Boron (B)	2018/07/25		97	%	80 - 120
			Acid Extractable Cadmium (Cd)	2018/07/25		101	%	80 - 120
			Acid Extractable Chromium (Cr)	2018/07/25		99	%	80 - 120
			Acid Extractable Cobalt (Co)	2018/07/25		100	%	80 - 120
			Acid Extractable Copper (Cu)	2018/07/25		101	%	80 - 120
			Acid Extractable Lead (Pb)	2018/07/25		102	%	80 - 120
			Acid Extractable Molybdenum (Mo)	2018/07/25		104	%	80 - 120
			Acid Extractable Nickel (Ni)	2018/07/25		100	%	80 - 120
			Acid Extractable Selenium (Se)	2018/07/25		103	%	80 - 120
			Acid Extractable Silver (Ag)	2018/07/25		97	%	80 - 120
			Acid Extractable Thallium (Tl)	2018/07/25		100	%	80 - 120
			Acid Extractable Uranium (U)	2018/07/25		99	%	80 - 120
			Acid Extractable Vanadium (V)	2018/07/25		98	%	80 - 120
			Acid Extractable Zinc (Zn)	2018/07/25		100	%	80 - 120
5643014	DT1	Method Blank	Acid Extractable Antimony (Sb)	2018/07/25	<0.20		ug/g	
			Acid Extractable Arsenic (As)	2018/07/25	<1.0		ug/g	
			Acid Extractable Barium (Ba)	2018/07/25	<0.50		ug/g	
			Acid Extractable Beryllium (Be)	2018/07/25	<0.20		ug/g	
			Acid Extractable Boron (B)	2018/07/25	<5.0		ug/g	
			Acid Extractable Cadmium (Cd)	2018/07/25	<0.10		ug/g	
			Acid Extractable Chromium (Cr)	2018/07/25	<1.0		ug/g	
			Acid Extractable Cobalt (Co)	2018/07/25	<0.10		ug/g	
			Acid Extractable Copper (Cu)	2018/07/25	<0.50		ug/g	
			Acid Extractable Lead (Pb)	2018/07/25	<1.0		ug/g	
			Acid Extractable Molybdenum (Mo)	2018/07/25	<0.50		ug/g	
			Acid Extractable Nickel (Ni)	2018/07/25	<0.50		ug/g	
			Acid Extractable Selenium (Se)	2018/07/25	<0.50		ug/g	
			Acid Extractable Silver (Ag)	2018/07/25	<0.20		ug/g	
			Acid Extractable Thallium (Tl)	2018/07/25	<0.050		ug/g	
			Acid Extractable Uranium (U)	2018/07/25	<0.050		ug/g	
			Acid Extractable Vanadium (V)	2018/07/25	<5.0		ug/g	
			Acid Extractable Zinc (Zn)	2018/07/25	<5.0		ug/g	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
5643014	DT1	RPD	Acid Extractable Boron (B)	2018/07/25	NC		%	30
5643097	SUK	Matrix Spike	Hot Water Ext. Boron (B)	2018/07/24		NC	%	75 - 125
5643097	SUK	Spiked Blank	Hot Water Ext. Boron (B)	2018/07/24		108	%	75 - 125
5643097	SUK	Method Blank	Hot Water Ext. Boron (B)	2018/07/24	<0.050		ug/g	
5643097	SUK	RPD	Hot Water Ext. Boron (B)	2018/07/24	3.0		%	40
5643167	DT1	Matrix Spike [HGW364-01]	Acid Extractable Antimony (Sb)	2018/07/25		102	%	75 - 125
			Acid Extractable Arsenic (As)	2018/07/25		102	%	75 - 125
			Acid Extractable Barium (Ba)	2018/07/25		NC	%	75 - 125
			Acid Extractable Beryllium (Be)	2018/07/25		106	%	75 - 125
			Acid Extractable Boron (B)	2018/07/25		99	%	75 - 125
			Acid Extractable Cadmium (Cd)	2018/07/25		106	%	75 - 125
			Acid Extractable Chromium (Cr)	2018/07/25		99	%	75 - 125
			Acid Extractable Cobalt (Co)	2018/07/25		104	%	75 - 125
			Acid Extractable Copper (Cu)	2018/07/25		100	%	75 - 125
			Acid Extractable Lead (Pb)	2018/07/25		NC	%	75 - 125
			Acid Extractable Molybdenum (Mo)	2018/07/25		110	%	75 - 125
			Acid Extractable Nickel (Ni)	2018/07/25		102	%	75 - 125
			Acid Extractable Selenium (Se)	2018/07/25		102	%	75 - 125
			Acid Extractable Silver (Ag)	2018/07/25		106	%	75 - 125
			Acid Extractable Thallium (Tl)	2018/07/25		106	%	75 - 125
			Acid Extractable Uranium (U)	2018/07/25		106	%	75 - 125
			Acid Extractable Vanadium (V)	2018/07/25		102	%	75 - 125
			Acid Extractable Zinc (Zn)	2018/07/25		NC	%	75 - 125
			Acid Extractable Mercury (Hg)	2018/07/25		111	%	75 - 125
5643167	DT1	Spiked Blank	Acid Extractable Antimony (Sb)	2018/07/25		105	%	80 - 120
			Acid Extractable Arsenic (As)	2018/07/25		102	%	80 - 120
			Acid Extractable Barium (Ba)	2018/07/25		105	%	80 - 120
			Acid Extractable Beryllium (Be)	2018/07/25		102	%	80 - 120
			Acid Extractable Boron (B)	2018/07/25		99	%	80 - 120
			Acid Extractable Cadmium (Cd)	2018/07/25		103	%	80 - 120
			Acid Extractable Chromium (Cr)	2018/07/25		102	%	80 - 120
			Acid Extractable Cobalt (Co)	2018/07/25		103	%	80 - 120
			Acid Extractable Copper (Cu)	2018/07/25		106	%	80 - 120
			Acid Extractable Lead (Pb)	2018/07/25		105	%	80 - 120
			Acid Extractable Molybdenum (Mo)	2018/07/25		105	%	80 - 120
			Acid Extractable Nickel (Ni)	2018/07/25		103	%	80 - 120
			Acid Extractable Selenium (Se)	2018/07/25		103	%	80 - 120
			Acid Extractable Silver (Ag)	2018/07/25		103	%	80 - 120
			Acid Extractable Thallium (Tl)	2018/07/25		102	%	80 - 120
			Acid Extractable Uranium (U)	2018/07/25		102	%	80 - 120
			Acid Extractable Vanadium (V)	2018/07/25		101	%	80 - 120
			Acid Extractable Zinc (Zn)	2018/07/25		104	%	80 - 120
			Acid Extractable Mercury (Hg)	2018/07/25		103	%	80 - 120
5643167	DT1	Method Blank	Acid Extractable Antimony (Sb)	2018/07/25	<0.20		ug/g	
			Acid Extractable Arsenic (As)	2018/07/25	<1.0		ug/g	
			Acid Extractable Barium (Ba)	2018/07/25	<0.50		ug/g	
			Acid Extractable Beryllium (Be)	2018/07/25	<0.20		ug/g	
			Acid Extractable Boron (B)	2018/07/25	<5.0		ug/g	
			Acid Extractable Cadmium (Cd)	2018/07/25	<0.10		ug/g	
			Acid Extractable Chromium (Cr)	2018/07/25	<1.0		ug/g	
			Acid Extractable Cobalt (Co)	2018/07/25	<0.10		ug/g	
			Acid Extractable Copper (Cu)	2018/07/25	<0.50		ug/g	
			Acid Extractable Lead (Pb)	2018/07/25	<1.0		ug/g	

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Acid Extractable Molybdenum (Mo)	2018/07/25	<0.50		ug/g	
			Acid Extractable Nickel (Ni)	2018/07/25	<0.50		ug/g	
			Acid Extractable Selenium (Se)	2018/07/25	<0.50		ug/g	
			Acid Extractable Silver (Ag)	2018/07/25	<0.20		ug/g	
			Acid Extractable Thallium (Tl)	2018/07/25	<0.050		ug/g	
			Acid Extractable Uranium (U)	2018/07/25	<0.050		ug/g	
			Acid Extractable Vanadium (V)	2018/07/25	<5.0		ug/g	
			Acid Extractable Zinc (Zn)	2018/07/25	<5.0		ug/g	
			Acid Extractable Mercury (Hg)	2018/07/25	<0.050		ug/g	
5643167	DT1	RPD [HGW364-01]	Acid Extractable Antimony (Sb)	2018/07/25	NC		%	30
			Acid Extractable Arsenic (As)	2018/07/25	13		%	30
			Acid Extractable Barium (Ba)	2018/07/25	4.1		%	30
			Acid Extractable Beryllium (Be)	2018/07/25	6.0		%	30
			Acid Extractable Boron (B)	2018/07/25	NC		%	30
			Acid Extractable Cadmium (Cd)	2018/07/25	24		%	30
			Acid Extractable Chromium (Cr)	2018/07/25	12		%	30
			Acid Extractable Cobalt (Co)	2018/07/25	9.6		%	30
			Acid Extractable Copper (Cu)	2018/07/25	3.7		%	30
			Acid Extractable Lead (Pb)	2018/07/25	5.9		%	30
			Acid Extractable Molybdenum (Mo)	2018/07/25	3.2		%	30
			Acid Extractable Nickel (Ni)	2018/07/25	3.2		%	30
			Acid Extractable Selenium (Se)	2018/07/25	NC		%	30
			Acid Extractable Silver (Ag)	2018/07/25	NC		%	30
			Acid Extractable Thallium (Tl)	2018/07/25	3.1		%	30
			Acid Extractable Uranium (U)	2018/07/25	4.2		%	30
			Acid Extractable Vanadium (V)	2018/07/25	0.58		%	30
			Acid Extractable Zinc (Zn)	2018/07/25	5.7		%	30
			Acid Extractable Mercury (Hg)	2018/07/25	NC		%	30
5643256	SUK	Matrix Spike	Hot Water Ext. Boron (B)	2018/07/24		93	%	75 - 125
5643256	SUK	Spiked Blank	Hot Water Ext. Boron (B)	2018/07/23		95	%	75 - 125
5643256	SUK	Method Blank	Hot Water Ext. Boron (B)	2018/07/23	<0.050		ug/g	
5643256	SUK	RPD	Hot Water Ext. Boron (B)	2018/07/24	NC		%	40
5644042	MS4	Matrix Spike	4-Bromofluorobenzene	2018/07/25		100	%	60 - 140
			D10-o-Xylene	2018/07/25		119	%	60 - 130
			D4-1,2-Dichloroethane	2018/07/25		103	%	60 - 140
			D8-Toluene	2018/07/25		104	%	60 - 140
			Acetone (2-Propanone)	2018/07/25		104	%	60 - 140
			Benzene	2018/07/25		96	%	60 - 140
			Bromodichloromethane	2018/07/25		96	%	60 - 140
			Bromoform	2018/07/25		107	%	60 - 140
			Bromomethane	2018/07/25		105	%	60 - 140
			Carbon Tetrachloride	2018/07/25		99	%	60 - 140
			Chlorobenzene	2018/07/25		98	%	60 - 140
			Chloroform	2018/07/25		100	%	60 - 140
			Dibromochloromethane	2018/07/25		102	%	60 - 140
			1,2-Dichlorobenzene	2018/07/25		101	%	60 - 140
			1,3-Dichlorobenzene	2018/07/25		103	%	60 - 140
			1,4-Dichlorobenzene	2018/07/25		98	%	60 - 140
			Dichlorodifluoromethane (FREON 12)	2018/07/25		86	%	60 - 140
			1,1-Dichloroethane	2018/07/25		108	%	60 - 140
			1,2-Dichloroethane	2018/07/25		100	%	60 - 140
			1,1-Dichloroethylene	2018/07/25		110	%	60 - 140
			cis-1,2-Dichloroethylene	2018/07/25		102	%	60 - 140
			trans-1,2-Dichloroethylene	2018/07/25		105	%	60 - 140

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			1,2-Dichloropropane	2018/07/25		98	%	60 - 140
			cis-1,3-Dichloropropene	2018/07/25		81	%	60 - 140
			trans-1,3-Dichloropropene	2018/07/25		82	%	60 - 140
			Ethylbenzene	2018/07/25		97	%	60 - 140
			Ethylene Dibromide	2018/07/25		102	%	60 - 140
			Hexane	2018/07/25		109	%	60 - 140
			Methylene Chloride(Dichloromethane)	2018/07/25		104	%	60 - 140
			Methyl Ethyl Ketone (2-Butanone)	2018/07/25		98	%	60 - 140
			Methyl Isobutyl Ketone	2018/07/25		94	%	60 - 140
			Methyl t-butyl ether (MTBE)	2018/07/25		111	%	60 - 140
			Styrene	2018/07/25		106	%	60 - 140
			1,1,1,2-Tetrachloroethane	2018/07/25		102	%	60 - 140
			1,1,2,2-Tetrachloroethane	2018/07/25		102	%	60 - 140
			Tetrachloroethylene	2018/07/25		95	%	60 - 140
			Toluene	2018/07/25		93	%	60 - 140
			1,1,1-Trichloroethane	2018/07/25		100	%	60 - 140
			1,1,2-Trichloroethane	2018/07/25		99	%	60 - 140
			Trichloroethylene	2018/07/25		95	%	60 - 140
			Trichlorofluoromethane (FREON 11)	2018/07/25		113	%	60 - 140
			Vinyl Chloride	2018/07/25		106	%	60 - 140
			p+m-Xylene	2018/07/25		95	%	60 - 140
			o-Xylene	2018/07/25		99	%	60 - 140
			F1 (C6-C10)	2018/07/25		106	%	60 - 140
5644042	MS4	Spiked Blank	4-Bromofluorobenzene	2018/07/25		101	%	60 - 140
			D10-o-Xylene	2018/07/25		108	%	60 - 130
			D4-1,2-Dichloroethane	2018/07/25		102	%	60 - 140
			D8-Toluene	2018/07/25		103	%	60 - 140
			Acetone (2-Propanone)	2018/07/25		100	%	60 - 140
			Benzene	2018/07/25		93	%	60 - 130
			Bromodichloromethane	2018/07/25		96	%	60 - 130
			Bromoform	2018/07/25		103	%	60 - 130
			Bromomethane	2018/07/25		90	%	60 - 140
			Carbon Tetrachloride	2018/07/25		95	%	60 - 130
			Chlorobenzene	2018/07/25		95	%	60 - 130
			Chloroform	2018/07/25		96	%	60 - 130
			Dibromochloromethane	2018/07/25		99	%	60 - 130
			1,2-Dichlorobenzene	2018/07/25		98	%	60 - 130
			1,3-Dichlorobenzene	2018/07/25		99	%	60 - 130
			1,4-Dichlorobenzene	2018/07/25		93	%	60 - 130
			Dichlorodifluoromethane (FREON 12)	2018/07/25		88	%	60 - 140
			1,1-Dichloroethane	2018/07/25		96	%	60 - 130
			1,2-Dichloroethane	2018/07/25		98	%	60 - 130
			1,1-Dichloroethylene	2018/07/25		93	%	60 - 130
			cis-1,2-Dichloroethylene	2018/07/25		95	%	60 - 130
			trans-1,2-Dichloroethylene	2018/07/25		92	%	60 - 130
			1,2-Dichloropropane	2018/07/25		97	%	60 - 130
			cis-1,3-Dichloropropene	2018/07/25		82	%	60 - 130
			trans-1,3-Dichloropropene	2018/07/25		80	%	60 - 130
			Ethylbenzene	2018/07/25		94	%	60 - 130
			Ethylene Dibromide	2018/07/25		100	%	60 - 130
			Hexane	2018/07/25		92	%	60 - 130
			Methylene Chloride(Dichloromethane)	2018/07/25		90	%	60 - 130
			Methyl Ethyl Ketone (2-Butanone)	2018/07/25		99	%	60 - 140
			Methyl Isobutyl Ketone	2018/07/25		98	%	60 - 130

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Methyl t-butyl ether (MTBE)	2018/07/25		95	%	60 - 130
			Styrene	2018/07/25		102	%	60 - 130
			1,1,1,2-Tetrachloroethane	2018/07/25		100	%	60 - 130
			1,1,2,2-Tetrachloroethane	2018/07/25		102	%	60 - 130
			Tetrachloroethylene	2018/07/25		93	%	60 - 130
			Toluene	2018/07/25		91	%	60 - 130
			1,1,1-Trichloroethane	2018/07/25		95	%	60 - 130
			1,1,2-Trichloroethane	2018/07/25		97	%	60 - 130
			Trichloroethylene	2018/07/25		94	%	60 - 130
			Trichlorofluoromethane (FREON 11)	2018/07/25		98	%	60 - 130
			Vinyl Chloride	2018/07/25		90	%	60 - 130
			p+m-Xylene	2018/07/25		91	%	60 - 130
			o-Xylene	2018/07/25		95	%	60 - 130
			F1 (C6-C10)	2018/07/25		101	%	80 - 120
5644042	MS4	Method Blank	4-Bromofluorobenzene	2018/07/25		90	%	60 - 140
			D10-o-Xylene	2018/07/25		99	%	60 - 130
			D4-1,2-Dichloroethane	2018/07/25		102	%	60 - 140
			D8-Toluene	2018/07/25		96	%	60 - 140
			Acetone (2-Propanone)	2018/07/25	<0.50		ug/g	
			Benzene	2018/07/25	<0.020		ug/g	
			Bromodichloromethane	2018/07/25	<0.050		ug/g	
			Bromoform	2018/07/25	<0.050		ug/g	
			Bromomethane	2018/07/25	<0.050		ug/g	
			Carbon Tetrachloride	2018/07/25	<0.050		ug/g	
			Chlorobenzene	2018/07/25	<0.050		ug/g	
			Chloroform	2018/07/25	<0.050		ug/g	
			Dibromochloromethane	2018/07/25	<0.050		ug/g	
			1,2-Dichlorobenzene	2018/07/25	<0.050		ug/g	
			1,3-Dichlorobenzene	2018/07/25	<0.050		ug/g	
			1,4-Dichlorobenzene	2018/07/25	<0.050		ug/g	
			Dichlorodifluoromethane (FREON 12)	2018/07/25	<0.050		ug/g	
			1,1-Dichloroethane	2018/07/25	<0.050		ug/g	
			1,2-Dichloroethane	2018/07/25	<0.050		ug/g	
			1,1-Dichloroethylene	2018/07/25	<0.050		ug/g	
			cis-1,2-Dichloroethylene	2018/07/25	<0.050		ug/g	
			trans-1,2-Dichloroethylene	2018/07/25	<0.050		ug/g	
			1,2-Dichloropropane	2018/07/25	<0.050		ug/g	
			cis-1,3-Dichloropropene	2018/07/25	<0.030		ug/g	
			trans-1,3-Dichloropropene	2018/07/25	<0.040		ug/g	
			Ethylbenzene	2018/07/25	<0.020		ug/g	
			Ethylene Dibromide	2018/07/25	<0.050		ug/g	
			Hexane	2018/07/25	<0.050		ug/g	
			Methylene Chloride(Dichloromethane)	2018/07/25	<0.050		ug/g	
			Methyl Ethyl Ketone (2-Butanone)	2018/07/25	<0.50		ug/g	
			Methyl Isobutyl Ketone	2018/07/25	<0.50		ug/g	
			Methyl t-butyl ether (MTBE)	2018/07/25	<0.050		ug/g	
			Styrene	2018/07/25	<0.050		ug/g	
			1,1,1,2-Tetrachloroethane	2018/07/25	<0.050		ug/g	
			1,1,2,2-Tetrachloroethane	2018/07/25	<0.050		ug/g	
			Tetrachloroethylene	2018/07/25	<0.050		ug/g	
			Toluene	2018/07/25	<0.020		ug/g	
			1,1,1-Trichloroethane	2018/07/25	<0.050		ug/g	
			1,1,2-Trichloroethane	2018/07/25	<0.050		ug/g	
			Trichloroethylene	2018/07/25	<0.050		ug/g	

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Trichlorofluoromethane (FREON 11)	2018/07/25	<0.050		ug/g	
			Vinyl Chloride	2018/07/25	<0.020		ug/g	
			p+m-Xylene	2018/07/25	<0.020		ug/g	
			o-Xylene	2018/07/25	<0.020		ug/g	
			Total Xylenes	2018/07/25	<0.020		ug/g	
			F1 (C6-C10)	2018/07/25	<10		ug/g	
			F1 (C6-C10) - BTEX	2018/07/25	<10		ug/g	
5644042	MS4	RPD	Acetone (2-Propanone)	2018/07/25	NC		%	50
			Benzene	2018/07/25	NC		%	50
			Bromodichloromethane	2018/07/25	NC		%	50
			Bromoform	2018/07/25	NC		%	50
			Bromomethane	2018/07/25	NC		%	50
			Carbon Tetrachloride	2018/07/25	NC		%	50
			Chlorobenzene	2018/07/25	NC		%	50
			Chloroform	2018/07/25	NC		%	50
			Dibromochloromethane	2018/07/25	NC		%	50
			1,2-Dichlorobenzene	2018/07/25	NC		%	50
			1,3-Dichlorobenzene	2018/07/25	NC		%	50
			1,4-Dichlorobenzene	2018/07/25	NC		%	50
			Dichlorodifluoromethane (FREON 12)	2018/07/25	NC		%	50
			1,1-Dichloroethane	2018/07/25	NC		%	50
			1,2-Dichloroethane	2018/07/25	NC		%	50
			1,1-Dichloroethylene	2018/07/25	NC		%	50
			cis-1,2-Dichloroethylene	2018/07/25	NC		%	50
			trans-1,2-Dichloroethylene	2018/07/25	NC		%	50
			1,2-Dichloropropane	2018/07/25	NC		%	50
			cis-1,3-Dichloropropene	2018/07/25	NC		%	50
			trans-1,3-Dichloropropene	2018/07/25	NC		%	50
			Ethylbenzene	2018/07/25	NC		%	50
			Ethylene Dibromide	2018/07/25	NC		%	50
			Hexane	2018/07/25	NC		%	50
			Methylene Chloride(Dichloromethane)	2018/07/25	NC		%	50
			Methyl Ethyl Ketone (2-Butanone)	2018/07/25	NC		%	50
			Methyl Isobutyl Ketone	2018/07/25	NC		%	50
			Methyl t-butyl ether (MTBE)	2018/07/25	NC		%	50
			Styrene	2018/07/25	NC		%	50
			1,1,1,2-Tetrachloroethane	2018/07/25	NC		%	50
			1,1,2,2-Tetrachloroethane	2018/07/25	NC		%	50
			Tetrachloroethylene	2018/07/25	NC		%	50
			Toluene	2018/07/25	NC		%	50
			1,1,1-Trichloroethane	2018/07/25	NC		%	50
			1,1,2-Trichloroethane	2018/07/25	NC		%	50
			Trichloroethylene	2018/07/25	NC		%	50
			Trichlorofluoromethane (FREON 11)	2018/07/25	NC		%	50
			Vinyl Chloride	2018/07/25	NC		%	50
			p+m-Xylene	2018/07/25	NC		%	50
			o-Xylene	2018/07/25	NC		%	50
			Total Xylenes	2018/07/25	NC		%	50
			F1 (C6-C10)	2018/07/25	NC		%	30
			F1 (C6-C10) - BTEX	2018/07/25	NC		%	30
5644443	GYA	RPD	Moisture	2018/07/24	7.2		%	20
5644585	TA1	Spiked Blank	Conductivity	2018/07/24		99	%	90 - 110
5644585	TA1	Method Blank	Conductivity	2018/07/24	<0.002		mS/cm	
5644585	TA1	RPD [HGW402-01]	Conductivity	2018/07/24	9.0		%	10

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
5644606	LHA	Matrix Spike	WAD Cyanide (Free)	2018/07/25		105	%	75 - 125
5644606	LHA	Spiked Blank	WAD Cyanide (Free)	2018/07/25		97	%	80 - 120
5644606	LHA	Method Blank	WAD Cyanide (Free)	2018/07/25	<0.01		ug/g	
5644606	LHA	RPD	WAD Cyanide (Free)	2018/07/25	NC		%	35
5644627	GYA	RPD	Moisture	2018/07/24	5.0		%	20
5644870	GTO	Spiked Blank	Available (CaCl2) pH	2018/07/25		100	%	97 - 103
5644870	GTO	RPD	Available (CaCl2) pH	2018/07/25	0.016		%	N/A
5645989	YY	Matrix Spike [HGW379-03]	4-Bromofluorobenzene	2018/07/25		100	%	60 - 140
			D10-o-Xylene	2018/07/25		105	%	60 - 130
			D4-1,2-Dichloroethane	2018/07/25		101	%	60 - 140
			D8-Toluene	2018/07/25		104	%	60 - 140
			Acetone (2-Propanone)	2018/07/25		92	%	60 - 140
			Benzene	2018/07/25		97	%	60 - 140
			Bromodichloromethane	2018/07/25		97	%	60 - 140
			Bromoform	2018/07/25		84	%	60 - 140
			Bromomethane	2018/07/25		96	%	60 - 140
			Carbon Tetrachloride	2018/07/25		100	%	60 - 140
			Chlorobenzene	2018/07/25		89	%	60 - 140
			Chloroform	2018/07/25		99	%	60 - 140
			Dibromochloromethane	2018/07/25		89	%	60 - 140
			1,2-Dichlorobenzene	2018/07/25		88	%	60 - 140
			1,3-Dichlorobenzene	2018/07/25		89	%	60 - 140
			1,4-Dichlorobenzene	2018/07/25		91	%	60 - 140
			Dichlorodifluoromethane (FREON 12)	2018/07/25		92	%	60 - 140
			1,1-Dichloroethane	2018/07/25		103	%	60 - 140
			1,2-Dichloroethane	2018/07/25		99	%	60 - 140
			1,1-Dichloroethylene	2018/07/25		103	%	60 - 140
			cis-1,2-Dichloroethylene	2018/07/25		98	%	60 - 140
			trans-1,2-Dichloroethylene	2018/07/25		98	%	60 - 140
			1,2-Dichloropropane	2018/07/25		99	%	60 - 140
			cis-1,3-Dichloropropene	2018/07/25		85	%	60 - 140
			trans-1,3-Dichloropropene	2018/07/25		81	%	60 - 140
			Ethylbenzene	2018/07/25		91	%	60 - 140
			Ethylene Dibromide	2018/07/25		88	%	60 - 140
			Hexane	2018/07/25		109	%	60 - 140
			Methylene Chloride(Dichloromethane)	2018/07/25		97	%	60 - 140
			Methyl Ethyl Ketone (2-Butanone)	2018/07/25		96	%	60 - 140
			Methyl Isobutyl Ketone	2018/07/25		95	%	60 - 140
			Methyl t-butyl ether (MTBE)	2018/07/25		95	%	60 - 140
			Styrene	2018/07/25		73	%	60 - 140
			1,1,1,2-Tetrachloroethane	2018/07/25		92	%	60 - 140
			1,1,2,2-Tetrachloroethane	2018/07/25		88	%	60 - 140
			Tetrachloroethylene	2018/07/25		92	%	60 - 140
			Toluene	2018/07/25		91	%	60 - 140
			1,1,1-Trichloroethane	2018/07/25		101	%	60 - 140
			1,1,2-Trichloroethane	2018/07/25		93	%	60 - 140
			Trichloroethylene	2018/07/25		96	%	60 - 140
			Trichlorofluoromethane (FREON 11)	2018/07/25		105	%	60 - 140
			Vinyl Chloride	2018/07/25		100	%	60 - 140
			p+m-Xylene	2018/07/25		90	%	60 - 140
			o-Xylene	2018/07/25		91	%	60 - 140
			F1 (C6-C10)	2018/07/25		110	%	60 - 140
5645989	YY	Spiked Blank	4-Bromofluorobenzene	2018/07/25		97	%	60 - 140

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			D10-o-Xylene	2018/07/25		121	%	60 - 130
			D4-1,2-Dichloroethane	2018/07/25		102	%	60 - 140
			D8-Toluene	2018/07/25		109	%	60 - 140
			Acetone (2-Propanone)	2018/07/25		101	%	60 - 140
			Benzene	2018/07/25		112	%	60 - 130
			Bromodichloromethane	2018/07/25		110	%	60 - 130
			Bromoform	2018/07/25		102	%	60 - 130
			Bromomethane	2018/07/25		108	%	60 - 140
			Carbon Tetrachloride	2018/07/25		116	%	60 - 130
			Chlorobenzene	2018/07/25		109	%	60 - 130
			Chloroform	2018/07/25		113	%	60 - 130
			Dibromochloromethane	2018/07/25		108	%	60 - 130
			1,2-Dichlorobenzene	2018/07/25		110	%	60 - 130
			1,3-Dichlorobenzene	2018/07/25		112	%	60 - 130
			1,4-Dichlorobenzene	2018/07/25		115	%	60 - 130
			Dichlorodifluoromethane (FREON 12)	2018/07/25		124	%	60 - 140
			1,1-Dichloroethane	2018/07/25		118	%	60 - 130
			1,2-Dichloroethane	2018/07/25		112	%	60 - 130
			1,1-Dichloroethylene	2018/07/25		120	%	60 - 130
			cis-1,2-Dichloroethylene	2018/07/25		112	%	60 - 130
			trans-1,2-Dichloroethylene	2018/07/25		113	%	60 - 130
			1,2-Dichloropropane	2018/07/25		113	%	60 - 130
			cis-1,3-Dichloropropene	2018/07/25		86	%	60 - 130
			trans-1,3-Dichloropropene	2018/07/25		87	%	60 - 130
			Ethylbenzene	2018/07/25		111	%	60 - 130
			Ethylene Dibromide	2018/07/25		107	%	60 - 130
			Hexane	2018/07/25		126	%	60 - 130
			Methylene Chloride(Dichloromethane)	2018/07/25		110	%	60 - 130
			Methyl Ethyl Ketone (2-Butanone)	2018/07/25		105	%	60 - 140
			Methyl Isobutyl Ketone	2018/07/25		105	%	60 - 130
			Methyl t-butyl ether (MTBE)	2018/07/25		107	%	60 - 130
			Styrene	2018/07/25		89	%	60 - 130
			1,1,1,2-Tetrachloroethane	2018/07/25		112	%	60 - 130
			1,1,2,2-Tetrachloroethane	2018/07/25		106	%	60 - 130
			Tetrachloroethylene	2018/07/25		114	%	60 - 130
			Toluene	2018/07/25		112	%	60 - 130
			1,1,1-Trichloroethane	2018/07/25		116	%	60 - 130
			1,1,2-Trichloroethane	2018/07/25		114	%	60 - 130
			Trichloroethylene	2018/07/25		110	%	60 - 130
			Trichlorofluoromethane (FREON 11)	2018/07/25		123	%	60 - 130
			Vinyl Chloride	2018/07/25		120	%	60 - 130
			p+m-Xylene	2018/07/25		110	%	60 - 130
			o-Xylene	2018/07/25		111	%	60 - 130
			F1 (C6-C10)	2018/07/25		91	%	80 - 120
5645989	YY	Method Blank	4-Bromofluorobenzene	2018/07/25		90	%	60 - 140
			D10-o-Xylene	2018/07/25		93	%	60 - 130
			D4-1,2-Dichloroethane	2018/07/25		105	%	60 - 140
			D8-Toluene	2018/07/25		95	%	60 - 140
			Acetone (2-Propanone)	2018/07/25	<0.50		ug/g	
			Benzene	2018/07/25	<0.020		ug/g	
			Bromodichloromethane	2018/07/25	<0.050		ug/g	
			Bromoform	2018/07/25	<0.050		ug/g	
			Bromomethane	2018/07/25	<0.050		ug/g	
			Carbon Tetrachloride	2018/07/25	<0.050		ug/g	

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Chlorobenzene	2018/07/25	<0.050		ug/g	
			Chloroform	2018/07/25	<0.050		ug/g	
			Dibromochloromethane	2018/07/25	<0.050		ug/g	
			1,2-Dichlorobenzene	2018/07/25	<0.050		ug/g	
			1,3-Dichlorobenzene	2018/07/25	<0.050		ug/g	
			1,4-Dichlorobenzene	2018/07/25	<0.050		ug/g	
			Dichlorodifluoromethane (FREON 12)	2018/07/25	<0.050		ug/g	
			1,1-Dichloroethane	2018/07/25	<0.050		ug/g	
			1,2-Dichloroethane	2018/07/25	<0.050		ug/g	
			1,1-Dichloroethylene	2018/07/25	<0.050		ug/g	
			cis-1,2-Dichloroethylene	2018/07/25	<0.050		ug/g	
			trans-1,2-Dichloroethylene	2018/07/25	<0.050		ug/g	
			1,2-Dichloropropane	2018/07/25	<0.050		ug/g	
			cis-1,3-Dichloropropene	2018/07/25	<0.030		ug/g	
			trans-1,3-Dichloropropene	2018/07/25	<0.040		ug/g	
			Ethylbenzene	2018/07/25	<0.020		ug/g	
			Ethylene Dibromide	2018/07/25	<0.050		ug/g	
			Hexane	2018/07/25	<0.050		ug/g	
			Methylene Chloride(Dichloromethane)	2018/07/25	<0.050		ug/g	
			Methyl Ethyl Ketone (2-Butanone)	2018/07/25	<0.50		ug/g	
			Methyl Isobutyl Ketone	2018/07/25	<0.50		ug/g	
			Methyl t-butyl ether (MTBE)	2018/07/25	<0.050		ug/g	
			Styrene	2018/07/25	<0.050		ug/g	
			1,1,1,2-Tetrachloroethane	2018/07/25	<0.050		ug/g	
			1,1,2,2-Tetrachloroethane	2018/07/25	<0.050		ug/g	
			Tetrachloroethylene	2018/07/25	<0.050		ug/g	
			Toluene	2018/07/25	<0.020		ug/g	
			1,1,1-Trichloroethane	2018/07/25	<0.050		ug/g	
			1,1,2-Trichloroethane	2018/07/25	<0.050		ug/g	
			Trichloroethylene	2018/07/25	<0.050		ug/g	
			Trichlorofluoromethane (FREON 11)	2018/07/25	<0.050		ug/g	
			Vinyl Chloride	2018/07/25	<0.020		ug/g	
			p+m-Xylene	2018/07/25	<0.020		ug/g	
			o-Xylene	2018/07/25	<0.020		ug/g	
			Total Xylenes	2018/07/25	<0.020		ug/g	
			F1 (C6-C10)	2018/07/25	<10		ug/g	
			F1 (C6-C10) - BTEX	2018/07/25	<10		ug/g	
5645989	YY	RPD [HGW379-03]	Acetone (2-Propanone)	2018/07/26	NC		%	50
			Benzene	2018/07/26	NC		%	50
			Bromodichloromethane	2018/07/26	NC		%	50
			Bromoform	2018/07/26	NC		%	50
			Bromomethane	2018/07/26	NC		%	50
			Carbon Tetrachloride	2018/07/26	NC		%	50
			Chlorobenzene	2018/07/26	NC		%	50
			Chloroform	2018/07/26	NC		%	50
			Dibromochloromethane	2018/07/26	NC		%	50
			1,2-Dichlorobenzene	2018/07/26	NC		%	50
			1,3-Dichlorobenzene	2018/07/26	NC		%	50
			1,4-Dichlorobenzene	2018/07/26	NC		%	50
			Dichlorodifluoromethane (FREON 12)	2018/07/26	NC		%	50
			1,1-Dichloroethane	2018/07/26	NC		%	50
			1,2-Dichloroethane	2018/07/26	NC		%	50
			1,1-Dichloroethylene	2018/07/26	NC		%	50
			cis-1,2-Dichloroethylene	2018/07/26	NC		%	50

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			trans-1,2-Dichloroethylene	2018/07/26	NC		%	50
			1,2-Dichloropropane	2018/07/26	NC		%	50
			cis-1,3-Dichloropropene	2018/07/26	NC		%	50
			trans-1,3-Dichloropropene	2018/07/26	NC		%	50
			Ethylbenzene	2018/07/26	NC		%	50
			Ethylene Dibromide	2018/07/26	NC		%	50
			Hexane	2018/07/26	NC		%	50
			Methylene Chloride(Dichloromethane)	2018/07/26	NC		%	50
			Methyl Ethyl Ketone (2-Butanone)	2018/07/26	NC		%	50
			Methyl Isobutyl Ketone	2018/07/26	NC		%	50
			Methyl t-butyl ether (MTBE)	2018/07/26	NC		%	50
			Styrene	2018/07/26	NC		%	50
			1,1,1,2-Tetrachloroethane	2018/07/26	NC		%	50
			1,1,2,2-Tetrachloroethane	2018/07/26	NC		%	50
			Tetrachloroethylene	2018/07/26	NC		%	50
			Toluene	2018/07/26	NC		%	50
			1,1,1-Trichloroethane	2018/07/26	NC		%	50
			1,1,2-Trichloroethane	2018/07/26	NC		%	50
			Trichloroethylene	2018/07/26	NC		%	50
			Trichlorofluoromethane (FREON 11)	2018/07/26	NC		%	50
			Vinyl Chloride	2018/07/26	NC		%	50
			p+m-Xylene	2018/07/26	NC		%	50
			o-Xylene	2018/07/26	NC		%	50
			Total Xylenes	2018/07/26	NC		%	50
			F1 (C6-C10)	2018/07/26	NC		%	30
			F1 (C6-C10) - BTEX	2018/07/26	NC		%	30
5646213	RSU	Matrix Spike	Chromium (VI)	2018/07/25		28 (1)	%	70 - 130
5646213	RSU	Spiked Blank	Chromium (VI)	2018/07/25		87	%	80 - 120
5646213	RSU	Method Blank	Chromium (VI)	2018/07/25	<0.2		ug/g	
5646213	RSU	RPD	Chromium (VI)	2018/07/25	NC		%	35
5647329	RAJ	Matrix Spike [HGW379-02]	D10-Anthracene	2018/07/26		89	%	50 - 130
			D14-Terphenyl (FS)	2018/07/26		84	%	50 - 130
			D8-Acenaphthylene	2018/07/26		79	%	50 - 130
			Acenaphthene	2018/07/26		94	%	50 - 130
			Acenaphthylene	2018/07/26		92	%	50 - 130
			Anthracene	2018/07/26		91	%	50 - 130
			Benzo(a)anthracene	2018/07/26		92	%	50 - 130
			Benzo(a)pyrene	2018/07/26		96	%	50 - 130
			Benzo(b/j)fluoranthene	2018/07/26		98	%	50 - 130
			Benzo(g,h,i)perylene	2018/07/26		89	%	50 - 130
			Benzo(k)fluoranthene	2018/07/26		100	%	50 - 130
			Chrysene	2018/07/26		95	%	50 - 130
			Dibenz(a,h)anthracene	2018/07/26		84	%	50 - 130
			Fluoranthene	2018/07/26		98	%	50 - 130
			Fluorene	2018/07/26		89	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2018/07/26		91	%	50 - 130
			1-Methylnaphthalene	2018/07/26		101	%	50 - 130
			2-Methylnaphthalene	2018/07/26		91	%	50 - 130
			Naphthalene	2018/07/26		93	%	50 - 130
			Phenanthrene	2018/07/26		97	%	50 - 130
			Pyrene	2018/07/26		98	%	50 - 130
5647329	RAJ	Spiked Blank	D10-Anthracene	2018/07/26		86	%	50 - 130
			D14-Terphenyl (FS)	2018/07/26		81	%	50 - 130

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			D8-Acenaphthylene	2018/07/26		78	%	50 - 130
			Acenaphthene	2018/07/26		90	%	50 - 130
			Acenaphthylene	2018/07/26		88	%	50 - 130
			Anthracene	2018/07/26		86	%	50 - 130
			Benzo(a)anthracene	2018/07/26		86	%	50 - 130
			Benzo(a)pyrene	2018/07/26		94	%	50 - 130
			Benzo(b/j)fluoranthene	2018/07/26		99	%	50 - 130
			Benzo(g,h,i)perylene	2018/07/26		88	%	50 - 130
			Benzo(k)fluoranthene	2018/07/26		100	%	50 - 130
			Chrysene	2018/07/26		91	%	50 - 130
			Dibenz(a,h)anthracene	2018/07/26		76	%	50 - 130
			Fluoranthene	2018/07/26		92	%	50 - 130
			Fluorene	2018/07/26		85	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2018/07/26		91	%	50 - 130
			1-Methylnaphthalene	2018/07/26		98	%	50 - 130
			2-Methylnaphthalene	2018/07/26		89	%	50 - 130
			Naphthalene	2018/07/26		92	%	50 - 130
			Phenanthrene	2018/07/26		92	%	50 - 130
			Pyrene	2018/07/26		93	%	50 - 130
5647329	RAJ	Method Blank	D10-Anthracene	2018/07/26		88	%	50 - 130
			D14-Terphenyl (FS)	2018/07/26		81	%	50 - 130
			D8-Acenaphthylene	2018/07/26		76	%	50 - 130
			Acenaphthene	2018/07/26	<0.0050		ug/g	
			Acenaphthylene	2018/07/26	<0.0050		ug/g	
			Anthracene	2018/07/26	<0.0050		ug/g	
			Benzo(a)anthracene	2018/07/26	<0.0050		ug/g	
			Benzo(a)pyrene	2018/07/26	<0.0050		ug/g	
			Benzo(b/j)fluoranthene	2018/07/26	<0.0050		ug/g	
			Benzo(g,h,i)perylene	2018/07/26	<0.0050		ug/g	
			Benzo(k)fluoranthene	2018/07/26	<0.0050		ug/g	
			Chrysene	2018/07/26	<0.0050		ug/g	
			Dibenz(a,h)anthracene	2018/07/26	<0.0050		ug/g	
			Fluoranthene	2018/07/26	<0.0050		ug/g	
			Fluorene	2018/07/26	<0.0050		ug/g	
			Indeno(1,2,3-cd)pyrene	2018/07/26	<0.0050		ug/g	
			1-Methylnaphthalene	2018/07/26	<0.0050		ug/g	
			2-Methylnaphthalene	2018/07/26	<0.0050		ug/g	
			Naphthalene	2018/07/26	<0.0050		ug/g	
			Phenanthrene	2018/07/26	<0.0050		ug/g	
			Pyrene	2018/07/26	<0.0050		ug/g	
5647329	RAJ	RPD [HGW379-02]	Acenaphthene	2018/07/26	NC		%	40
			Acenaphthylene	2018/07/26	NC		%	40
			Anthracene	2018/07/26	NC		%	40
			Benzo(a)anthracene	2018/07/26	NC		%	40
			Benzo(a)pyrene	2018/07/26	NC		%	40
			Benzo(b/j)fluoranthene	2018/07/26	NC		%	40
			Benzo(g,h,i)perylene	2018/07/26	NC		%	40
			Benzo(k)fluoranthene	2018/07/26	NC		%	40
			Chrysene	2018/07/26	NC		%	40
			Dibenz(a,h)anthracene	2018/07/26	NC		%	40
			Fluoranthene	2018/07/26	NC		%	40
			Fluorene	2018/07/26	NC		%	40
			Indeno(1,2,3-cd)pyrene	2018/07/26	NC		%	40
			1-Methylnaphthalene	2018/07/26	NC		%	40

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			2-Methylnaphthalene	2018/07/26	NC		%	40
			Naphthalene	2018/07/26	NC		%	40
			Phenanthrene	2018/07/26	NC		%	40
			Pyrene	2018/07/26	NC		%	40
5647341	BWW	Matrix Spike [HGW379-02]	o-Terphenyl	2018/07/26		89	%	60 - 130
			F2 (C10-C16 Hydrocarbons)	2018/07/26		88	%	50 - 130
			F3 (C16-C34 Hydrocarbons)	2018/07/26		92	%	50 - 130
			F4 (C34-C50 Hydrocarbons)	2018/07/26		90	%	50 - 130
5647341	BWW	Spiked Blank	o-Terphenyl	2018/07/26		83	%	60 - 130
			F2 (C10-C16 Hydrocarbons)	2018/07/26		82	%	80 - 120
			F3 (C16-C34 Hydrocarbons)	2018/07/26		85	%	80 - 120
			F4 (C34-C50 Hydrocarbons)	2018/07/26		84	%	80 - 120
5647341	BWW	Method Blank	o-Terphenyl	2018/07/25		85	%	60 - 130
			F2 (C10-C16 Hydrocarbons)	2018/07/25	<10		ug/g	
			F3 (C16-C34 Hydrocarbons)	2018/07/25	<50		ug/g	
			F4 (C34-C50 Hydrocarbons)	2018/07/25	<50		ug/g	
5647341	BWW	RPD [HGW379-02]	F2 (C10-C16 Hydrocarbons)	2018/07/26	NC		%	30
			F3 (C16-C34 Hydrocarbons)	2018/07/26	NC		%	30
			F4 (C34-C50 Hydrocarbons)	2018/07/26	NC		%	30
5675316	DT1	Matrix Spike	Acid Extractable Antimony (Sb)	2018/08/13		93	%	75 - 125
			Acid Extractable Arsenic (As)	2018/08/13		98	%	75 - 125
			Acid Extractable Barium (Ba)	2018/08/13		NC	%	75 - 125
			Acid Extractable Beryllium (Be)	2018/08/13		103	%	75 - 125
			Acid Extractable Boron (B)	2018/08/13		102	%	75 - 125
			Acid Extractable Cadmium (Cd)	2018/08/13		102	%	75 - 125
			Acid Extractable Chromium (Cr)	2018/08/13		101	%	75 - 125
			Acid Extractable Cobalt (Co)	2018/08/13		101	%	75 - 125
			Acid Extractable Copper (Cu)	2018/08/13		99	%	75 - 125
			Acid Extractable Lead (Pb)	2018/08/13		106	%	75 - 125
			Acid Extractable Molybdenum (Mo)	2018/08/13		102	%	75 - 125
			Acid Extractable Nickel (Ni)	2018/08/13		101	%	75 - 125
			Acid Extractable Selenium (Se)	2018/08/13		100	%	75 - 125
			Acid Extractable Silver (Ag)	2018/08/13		99	%	75 - 125
			Acid Extractable Thallium (Tl)	2018/08/13		105	%	75 - 125
			Acid Extractable Uranium (U)	2018/08/13		106	%	75 - 125
			Acid Extractable Vanadium (V)	2018/08/13		NC	%	75 - 125
			Acid Extractable Zinc (Zn)	2018/08/13		NC	%	75 - 125
5675316	DT1	Spiked Blank	Acid Extractable Antimony (Sb)	2018/08/13		102	%	80 - 120
			Acid Extractable Arsenic (As)	2018/08/13		101	%	80 - 120
			Acid Extractable Barium (Ba)	2018/08/13		100	%	80 - 120
			Acid Extractable Beryllium (Be)	2018/08/13		101	%	80 - 120
			Acid Extractable Boron (B)	2018/08/13		95	%	80 - 120
			Acid Extractable Cadmium (Cd)	2018/08/13		101	%	80 - 120
			Acid Extractable Chromium (Cr)	2018/08/13		101	%	80 - 120
			Acid Extractable Cobalt (Co)	2018/08/13		101	%	80 - 120
			Acid Extractable Copper (Cu)	2018/08/13		100	%	80 - 120
			Acid Extractable Lead (Pb)	2018/08/13		108	%	80 - 120
			Acid Extractable Molybdenum (Mo)	2018/08/13		102	%	80 - 120
			Acid Extractable Nickel (Ni)	2018/08/13		102	%	80 - 120
			Acid Extractable Selenium (Se)	2018/08/13		103	%	80 - 120
			Acid Extractable Silver (Ag)	2018/08/13		100	%	80 - 120
			Acid Extractable Thallium (Tl)	2018/08/13		107	%	80 - 120
			Acid Extractable Uranium (U)	2018/08/13		106	%	80 - 120

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Acid Extractable Vanadium (V)	2018/08/13		98	%	80 - 120
			Acid Extractable Zinc (Zn)	2018/08/13		96	%	80 - 120
5675316	DT1	Method Blank	Acid Extractable Antimony (Sb)	2018/08/13	<0.20		ug/g	
			Acid Extractable Arsenic (As)	2018/08/13	<1.0		ug/g	
			Acid Extractable Barium (Ba)	2018/08/13	<0.50		ug/g	
			Acid Extractable Beryllium (Be)	2018/08/13	<0.20		ug/g	
			Acid Extractable Boron (B)	2018/08/13	<5.0		ug/g	
			Acid Extractable Cadmium (Cd)	2018/08/13	<0.10		ug/g	
			Acid Extractable Chromium (Cr)	2018/08/13	<1.0		ug/g	
			Acid Extractable Cobalt (Co)	2018/08/13	<0.10		ug/g	
			Acid Extractable Copper (Cu)	2018/08/13	<0.50		ug/g	
			Acid Extractable Lead (Pb)	2018/08/13	<1.0		ug/g	
			Acid Extractable Molybdenum (Mo)	2018/08/13	<0.50		ug/g	
			Acid Extractable Nickel (Ni)	2018/08/13	<0.50		ug/g	
			Acid Extractable Selenium (Se)	2018/08/13	<0.50		ug/g	
			Acid Extractable Silver (Ag)	2018/08/13	<0.20		ug/g	
			Acid Extractable Thallium (Tl)	2018/08/13	<0.050		ug/g	
			Acid Extractable Uranium (U)	2018/08/13	<0.050		ug/g	
			Acid Extractable Vanadium (V)	2018/08/13	<5.0		ug/g	
			Acid Extractable Zinc (Zn)	2018/08/13	<5.0		ug/g	
5675316	DT1	RPD	Acid Extractable Antimony (Sb)	2018/08/13	NC		%	30
			Acid Extractable Arsenic (As)	2018/08/13	NC		%	30
			Acid Extractable Barium (Ba)	2018/08/13	0.45		%	30
			Acid Extractable Beryllium (Be)	2018/08/13	0.95		%	30
			Acid Extractable Boron (B)	2018/08/13	NC		%	30
			Acid Extractable Cadmium (Cd)	2018/08/13	NC		%	30
			Acid Extractable Chromium (Cr)	2018/08/13	2.9		%	30
			Acid Extractable Cobalt (Co)	2018/08/13	1.3		%	30
			Acid Extractable Copper (Cu)	2018/08/13	2.5		%	30
			Acid Extractable Lead (Pb)	2018/08/13	5.1		%	30
			Acid Extractable Molybdenum (Mo)	2018/08/13	4.8		%	30
			Acid Extractable Nickel (Ni)	2018/08/13	1.9		%	30
			Acid Extractable Selenium (Se)	2018/08/13	NC		%	30
			Acid Extractable Silver (Ag)	2018/08/13	NC		%	30
			Acid Extractable Thallium (Tl)	2018/08/13	9.8		%	30
			Acid Extractable Uranium (U)	2018/08/13	5.1		%	30
			Acid Extractable Vanadium (V)	2018/08/13	4.8		%	30
			Acid Extractable Zinc (Zn)	2018/08/13	0.020		%	30
5675488	JGH	RPD	Moisture	2018/08/11	4.3		%	20
5679549	JET	Matrix Spike	D10-Anthracene	2018/08/15		92	%	50 - 130
			D14-Terphenyl (FS)	2018/08/15		87	%	50 - 130
			D8-Acenaphthylene	2018/08/15		96	%	50 - 130
			Acenaphthene	2018/08/15		88	%	50 - 130
			Acenaphthylene	2018/08/15		91	%	50 - 130
			Anthracene	2018/08/15		89	%	50 - 130
			Benzo(a)anthracene	2018/08/15		94	%	50 - 130
			Benzo(a)pyrene	2018/08/15		93	%	50 - 130
			Benzo(b/j)fluoranthene	2018/08/15		82	%	50 - 130
			Benzo(g,h,i)perylene	2018/08/15		90	%	50 - 130
			Benzo(k)fluoranthene	2018/08/15		83	%	50 - 130
			Chrysene	2018/08/15		89	%	50 - 130
			Dibenz(a,h)anthracene	2018/08/15		99	%	50 - 130
			Fluoranthene	2018/08/15		87	%	50 - 130
			Fluorene	2018/08/15		89	%	50 - 130

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Indeno(1,2,3-cd)pyrene	2018/08/15		97	%	50 - 130
			1-Methylnaphthalene	2018/08/15		112	%	50 - 130
			2-Methylnaphthalene	2018/08/15		93	%	50 - 130
			Naphthalene	2018/08/15		83	%	50 - 130
			Phenanthrene	2018/08/15		91	%	50 - 130
			Pyrene	2018/08/15		90	%	50 - 130
5679549	JET	Spiked Blank	D10-Anthracene	2018/08/14		81	%	50 - 130
			D14-Terphenyl (FS)	2018/08/14		78	%	50 - 130
			D8-Acenaphthylene	2018/08/14		84	%	50 - 130
			Acenaphthene	2018/08/14		82	%	50 - 130
			Acenaphthylene	2018/08/14		80	%	50 - 130
			Anthracene	2018/08/14		81	%	50 - 130
			Benzo(a)anthracene	2018/08/14		88	%	50 - 130
			Benzo(a)pyrene	2018/08/14		88	%	50 - 130
			Benzo(b/j)fluoranthene	2018/08/14		86	%	50 - 130
			Benzo(g,h,i)perylene	2018/08/14		88	%	50 - 130
			Benzo(k)fluoranthene	2018/08/14		85	%	50 - 130
			Chrysene	2018/08/14		85	%	50 - 130
			Dibenz(a,h)anthracene	2018/08/14		95	%	50 - 130
			Fluoranthene	2018/08/14		80	%	50 - 130
			Fluorene	2018/08/14		83	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2018/08/14		95	%	50 - 130
			1-Methylnaphthalene	2018/08/14		102	%	50 - 130
			2-Methylnaphthalene	2018/08/14		84	%	50 - 130
			Naphthalene	2018/08/14		79	%	50 - 130
			Phenanthrene	2018/08/14		85	%	50 - 130
			Pyrene	2018/08/14		83	%	50 - 130
5679549	JET	Method Blank	D10-Anthracene	2018/08/15		78	%	50 - 130
			D14-Terphenyl (FS)	2018/08/15		74	%	50 - 130
			D8-Acenaphthylene	2018/08/15		80	%	50 - 130
			Acenaphthene	2018/08/15	<0.0050		ug/g	
			Acenaphthylene	2018/08/15	<0.0050		ug/g	
			Anthracene	2018/08/15	<0.0050		ug/g	
			Benzo(a)anthracene	2018/08/15	<0.0050		ug/g	
			Benzo(a)pyrene	2018/08/15	<0.0050		ug/g	
			Benzo(b/j)fluoranthene	2018/08/15	<0.0050		ug/g	
			Benzo(g,h,i)perylene	2018/08/15	<0.0050		ug/g	
			Benzo(k)fluoranthene	2018/08/15	<0.0050		ug/g	
			Chrysene	2018/08/15	<0.0050		ug/g	
			Dibenz(a,h)anthracene	2018/08/15	<0.0050		ug/g	
			Fluoranthene	2018/08/15	<0.0050		ug/g	
			Fluorene	2018/08/15	<0.0050		ug/g	
			Indeno(1,2,3-cd)pyrene	2018/08/15	<0.0050		ug/g	
			1-Methylnaphthalene	2018/08/15	<0.0050		ug/g	
			2-Methylnaphthalene	2018/08/15	<0.0050		ug/g	
			Naphthalene	2018/08/15	<0.0050		ug/g	
			Phenanthrene	2018/08/15	<0.0050		ug/g	
			Pyrene	2018/08/15	<0.0050		ug/g	
5679549	JET	RPD	Acenaphthene	2018/08/15	NC		%	40
			Acenaphthylene	2018/08/15	NC		%	40
			Anthracene	2018/08/15	NC		%	40
			Benzo(a)anthracene	2018/08/15	NC		%	40
			Benzo(a)pyrene	2018/08/15	NC		%	40
			Benzo(b/j)fluoranthene	2018/08/15	NC		%	40

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Benzo(g,h,i)perylene	2018/08/15	NC		%	40
			Benzo(k)fluoranthene	2018/08/15	NC		%	40
			Chrysene	2018/08/15	NC		%	40
			Dibenz(a,h)anthracene	2018/08/15	NC		%	40
			Fluoranthene	2018/08/15	NC		%	40
			Fluorene	2018/08/15	NC		%	40
			Indeno(1,2,3-cd)pyrene	2018/08/15	NC		%	40
			1-Methylnaphthalene	2018/08/15	NC		%	40
			2-Methylnaphthalene	2018/08/15	NC		%	40
			Naphthalene	2018/08/15	NC		%	40
			Phenanthrene	2018/08/15	NC		%	40
			Pyrene	2018/08/15	NC		%	40

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) The matrix spike recovery was below the lower control limit. This may be due in part to the reducing environment of the sample. The matrix spike was reanalyzed to confirm result.

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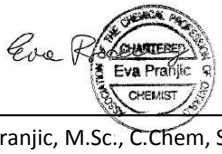
Maxxam Job #: B8I3680
Report Date: 2018/08/20

Stantec Consulting Ltd
Client Project #: 161413338
Sampler Initials: AK

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Cristina Carriere, Scientific Service Specialist



Ewa Pranjic, M.Sc., C.Chem, Scientific Specialist

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

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20-Jul-18 15:12
Augustyna Dobosz
B8I3680
URE ENV-1119

Page 1 of 4

Use Only:
Bottle Order #: 672815
Project Manager: Augustyna Dobosz
C#672815-06-01

INVOICE TO:		REPORT TO:		PROJECT INFORMATION:	
Company Name:	#50575 Stantec Consulting Ltd	Company Name:		Quotation #:	B77373
Attention:	Accounts Payable	Attention:	Mike Stendzis	P.O. #:	
Address:	835 Paramount Drive, Suite 200 Stoney Creek ON L8J 0B4	Address:		Project #:	161413338
				Project Name:	
Tel:	(905) 381-3211 Fax: (905) 631-8960	Tel:	(905) 381-3285 Fax:	Site #:	
Email:	SAPinvoices@Stantec.com	Email:	Michael.Stendzis@stantec.com	Sampled By:	Aseel Kaiser

MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE MAXXAM DRINKING WATER CHAIN OF CUSTODY

Regulation 153 (2011)
- ☐ Table 1 ☒ Res/Park ☐ Medium/Fine
- ☒ Table 2 ☐ Ind/Comm ☐ Coarse
- ☐ Table 3 ☐ Agri/Other ☐ For RSC
- ☐ Table ___

Other Regulations
- ☐ CCME ☐ Sanitary Sewer Bylaw
- ☐ Reg 558 ☐ Storm Sewer Bylaw
- ☐ MISA Municipality ___
- ☐ PWQO
- ☐ Other ___

Special Instructions

Include Criteria on Certificate of Analysis (Y/N)? ___

Turnaround Time (TAT) Required:
Please provide advance notice for rush projects

Regular (Standard) TAT: ☒
(will be applied if Rush TAT is not specified)
Standard TAT = 5-7 Working days for most tests.
Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

Job Specific Rush TAT (if applies to entire submission)
Date Required: ___ Time Required: ___ ☐
Rush Confirmation Number: ___ *(call lab for #)*

	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Field Filtered (please circle): Metals / Hg / Cr VI	O Reg 153 VOCs & F1/BTEX-F4 (Soil)	O Reg 153 PAHs	O Reg 153 Metals & Inorganics Pkg	O Reg 153 ICPMS Metals Only (no Inorganics)	# of Bottles	Comments
1		TP18-1-1-EW	Jul 17/18	10:15 am	Soil					X	1	
2		TP18-1-2-EW		10:45 am						X	1	ON Hold
3		TP18-2-1-NW		10:00 am						X	1	
4		TP18-2-2-NW		11:15 am						X	1	ON Hold
5		TP18-3-1-WW		10:20 am						X	1	
6		TP18-3-2-WW		10:35 am						X	1	ON Hold
7		TP18-4-1-SW		10:05 am						X	1	
8		TP18-4-2-SW		11:05 am						X	1	ON Hold
9		TP18-3-3-Base		11:25 am						X	1	ON Hold
10	✓	TP18-5-1		12:55 pm			X	X	X		4	ON Hold

* RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# jars used and not submitted
KNight Dlight	18/07/19	130pm	see page 1	2018/07/20	15:12	

Laboratory Use Only
Time Sensitive
Temperature (°C) on Receipt: 2/3/3 ICE

Custody Seal	Yes	No
Present	✓	
Intact	✓	

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO MAXXAM'S STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.MAXXAM.CA/TERMS.

* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

** SAMPLE CONTAINER, PRESERVATION, HOLD TIME AND PACKAGE INFORMATION CAN BE VIEWED AT HTTP://MAXXAM.CA/WP-CONTENT/UPLOADS/ONTARIO-COC.PDF.

SAMPLES MUST BE KEPT COOL (< 10° C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

White: Maxxa Yellow: Client

419790

3/1/2 ice

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CHAIN OF CUSTODY RECORD

INVOICE TO:		REPORT TO:		PROJECT INFORMATION:		Laboratory Use Only:	
Company Name:	#50575 Stantec Consulting Ltd	Company Name:		Quotation #:	B77373	Maxxam Job #:	Bottle Order #:
Attention:	Accounts Payable	Attention:	Mike Stendzis	P.O. #:			672815
Address:	835 Paramount Drive, Suite 200 Stoney Creek ON L8J 0B4	Address:		Project:	161413338	COC #:	Project Manager:
Tel:	(905) 381-3211 Fax: (905) 631-8960	Tel:	(905) 381-3285 Fax:	Project Name:		C#672815-08-01	Augustyna Dobosz
Email:	SAPinvoices@Stantec.com	Email:	Michael.Stendzis@stantec.com	Site #:			
				Sampled By:	Aseel Kaiser		

MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE MAXXAM DRINKING WATER CHAIN OF CUSTODY

Regulation 153 (2011)	Other Regulations	Special Instructions
☐ Table 1 ☒ Res/Park ☐ Medium/Fine ☒ Table 2 ☐ Ind/Comm ☐ Coarse ☐ Table 3 ☐ Agri/Other ☐ For RSC ☐ Table ___	☐ CCME ☐ Sanitary Sewer Bylaw ☐ Reg 558 ☐ Storm Sewer Bylaw ☐ MISA Municipality ___ ☐ PWQO ☐ Other ___	

Include Criteria on Certificate of Analysis (Y/N)? ___

ANALYSIS REQUESTED (PLEASE BE SPECIFIC)

Turnaround Time (TAT) Required:

Please provide advance notice for rush projects

Regular (Standard) TAT: ☒
(will be applied if Rush TAT is not specified):
Standard TAT = 5-7 Working days for most tests.
Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

Job Specific Rush TAT (if applies to entire submission)
Date Required: ___ Time Required: ___ ☐
Rush Confirmation Number: ___ *(call lab for #)*

	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Field Filtered (please circle): Metals / Hg / Cr VI	O Reg 153 VOCs & F1/BTEX-F4 (Soil)	O Reg 153 PAHs	O Reg 153 Metals & Inorganics Pkg	O Reg 153 ICPMS Metals Only (no Inorganics)	# of Bottles	Comments
1	✓	TP18-5-2	17 Jul 18	1:05 pm	Soil		X	X	X		4	
2	✓	TP18-5-3		1:20 pm			X	X	X		4	ON Hold
3	–	TP18-6-1		2:00 pm			X	X	X		4	ON Hold
4	–	TP18-6-2		2:15 pm			X	X	X		4	
5	–	TP18-6-3		2:25 pm			X	X	X		4	ON Hold
6	–	TP18-7-1		3:00 pm			X	X	X		4	ON Hold
7	–	TP18-7-2		3:20 pm			X	X	X		4	ON Hold
8	–	TP18-7-3		3:30 pm			X	X	X		4	
9	–	TP18-7-4		3:45 pm			X	X	X		4	ON Hold
10	✓	TP18-8-1	↓	4:20 pm	↓		X	X	X		4	

* RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# jars used and not submitted	Laboratory Use Only: Time Sensitive	Temperature (°C) on Recei	Custody Seal: Present	Yes	No
Knight Kuft	18/07/19	130pm	~~AHS Inc AHS Inc~~ See page 1	2018/07/20	15:12	18/07/20			Intact		

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SAMPLES MUST BE KEPT COOL (< 10° C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

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CHAIN OF CUSTODY RECORD

Page 3 of 4

INVOICE TO:		REPORT TO:		PROJECT INFORMATION:		Laboratory Use Only:	
Company Name:	#50575 Stantec Consulting Ltd	Company Name:		Quotation #:	B77373	Maxxam Job #:	Bottle Order #:
Attention:	Accounts Payable	Attention:	Mike Stendzis	P.O. #:			672815
Address:	835 Paramount Drive, Suite 200	Address:		Project:	161413338	COC #:	Project Manager:
	Stoney Creek ON L8J 0B4			Project Name:		C#672815-09-01	Augustyna Dobosz
Tel:	(905) 381-3211 Fax: (905) 631-8960	Tel:	(905) 381-3285 Fax:	Site #:			
Email:	SAPinvoices@Stantec.com	Email:	Michael.Stendzis@stantec.com	Sampled By:	Aseel Kaiser		

MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE MAXXAM DRINKING WATER CHAIN OF CUSTODY

Regulation 153 (2011)	Other Regulations	Special Instructions
☐ Table 1 ☒ Res/Park ☐ Medium/Fine	☐ CCME ☐ Sanitary Sewer Bylaw	
☒ Table 2 ☐ Ind/Comm ☐ Coarse	☐ Reg 558 ☐ Storm Sewer Bylaw	
☐ Table 3 ☐ Agri/Other ☐ For RSC	☐ MISA Municipality _____	
☐ Table ___	☐ PWQO	
	☐ Other _____	

Include Criteria on Certificate of Analysis (Y/N)? _____

Field Filtered (please circle): Metals / Hg / Cr VI

ANALYSIS REQUESTED (PLEASE BE SPECIFIC):

	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	O.Reg 153 VOCs & F1/BTEX-F4 (Soil)	O.Reg 153 PAHs	O.Reg 153 Metals & Inorganics Pkg	O.Reg 153 ICPMS Metals Only (no Inorganics)	# of Bottles	* Comments
1	✓	TP18-8-2	17Jul18	4:40 pm	Soil	X	X	X		4	ON Hold
2	✓	TP18-9-1	17Jul	5:05 pm		X	X	X			ON Hold
3	✓	TP18-9-2	17Jul	5:55 pm		X	X	X			
4	✓	QC1	17Jul	5:55 pm		X	X	X			
5	✓	TP18-9-3	18Jul	8:15 am		X	X	X			ON Hold
6	✓	TP18-9-4		8:25 am		X	X	X			ON Hold
7	✓	TP18-10-1		8:55 am		X	X	X			ON Hold
8	✓	TP18-10-2		9:10 am		X	X	X			
9	✓	TP18-10-3		9:20 am		X	X	X			ON Hold
10	✓	TP18-10-4		9:25 am		X	X	X			ON Hold

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Date Required: _____ Time Required: _____ ☐
Rush Confirmation Number: _____ *(call lab for #)*

* RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# jars used and not submitted
KWright KW	18/07/19	130pm	See page1			

Laboratory Use Only				
Time Sensitive	Temperature (°C) on Rece	Custody Seal	Yes	No
		Present		
		Intact		

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CHAIN OF CUSTODY RECORD

Page 4 of 4

INVOICE TO:		REPORT TO:		PROJECT INFORMATION:		Laboratory Use Only:	
Company Name:	#50575 Stantec Consulting Ltd	Company Name:		Quotation #:	B77373	Maxxam Job #:	Bottle Order #:
Attention:	Accounts Payable	Attention:	Mike Stendzis	P.O. #:			672815
Address:	835 Paramount Drive, Suite 200 Stoney Creek ON L8J 0B4	Address:		Project:	161413338	COC #:	Project Manager:
Tel:	(905) 381-3211 Fax: (905) 631-8960	Tel:	(905) 381-3285 Fax:	Project Name:		C#672815-10-01	Augustyna Dobosz
Email:	SAPinvoices@Stantec.com	Email:	Michael.Stendzis@stantec.com	Site #:			
				Sampled By:	Aseel Kaiser		

MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE MAXXAM DRINKING WATER CHAIN OF CUSTODY

Regulation 153 (2011)	Other Regulations	Special Instructions
☐ Table 1 ☒ Res/Park ☐ Medium/Fine ☒ Table 2 ☐ Ind/Comm ☐ Coarse ☐ Table 3 ☐ Agri/Other ☐ For RSC ☐ Table ___	☐ CCME ☐ Sanitary Sewer Bylaw ☐ Reg 558 ☐ Storm Sewer Bylaw ☐ MISA Municipality ___ ☐ PWQO ☐ Other ___	

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Job Specific Rush TAT (if applies to entire submission)
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	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Field Filtered (please circle): Metals / Hg / Cr VI	ANALYSIS REQUESTED (PLEASE BE SPECIFIC): O Reg 153 VOCs & F1/BTEX-F4 (Soil)	O Reg 153 PAHs	O Reg 153 Metals & Inorganics Pkg	O Reg 153 ICPMS Metals Only (no inorganics)	# of Bottles	Comments
1	—	TP18-11-1	18 Jul 19	9:50 am	Soil		X	X	X		4	
2	—	TP18-11-2		9:55 am			X	X	X			ON Hold
3	—	TP18-11-3		10:15 am			X	X	X			ON Hold
4	—	QC2		9:50 am			X	X	X			
5	—	TP18-12-1		10:35 am			X	X	X			ON Hold
6	—	TP18-12-2		10:45 am			X	X	X			
7	—	TP18-12-3		11:40 am			X	X	X			ON Hold
8												
9												
10												

* RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# jars used and not submitted	Laboratory Use Only: Time Sensitive	Temperature (°C) on Recei	Custody Seal Present	Yes	No
KWright Zuft	18/07/19	130pm	See page 1						Intact		

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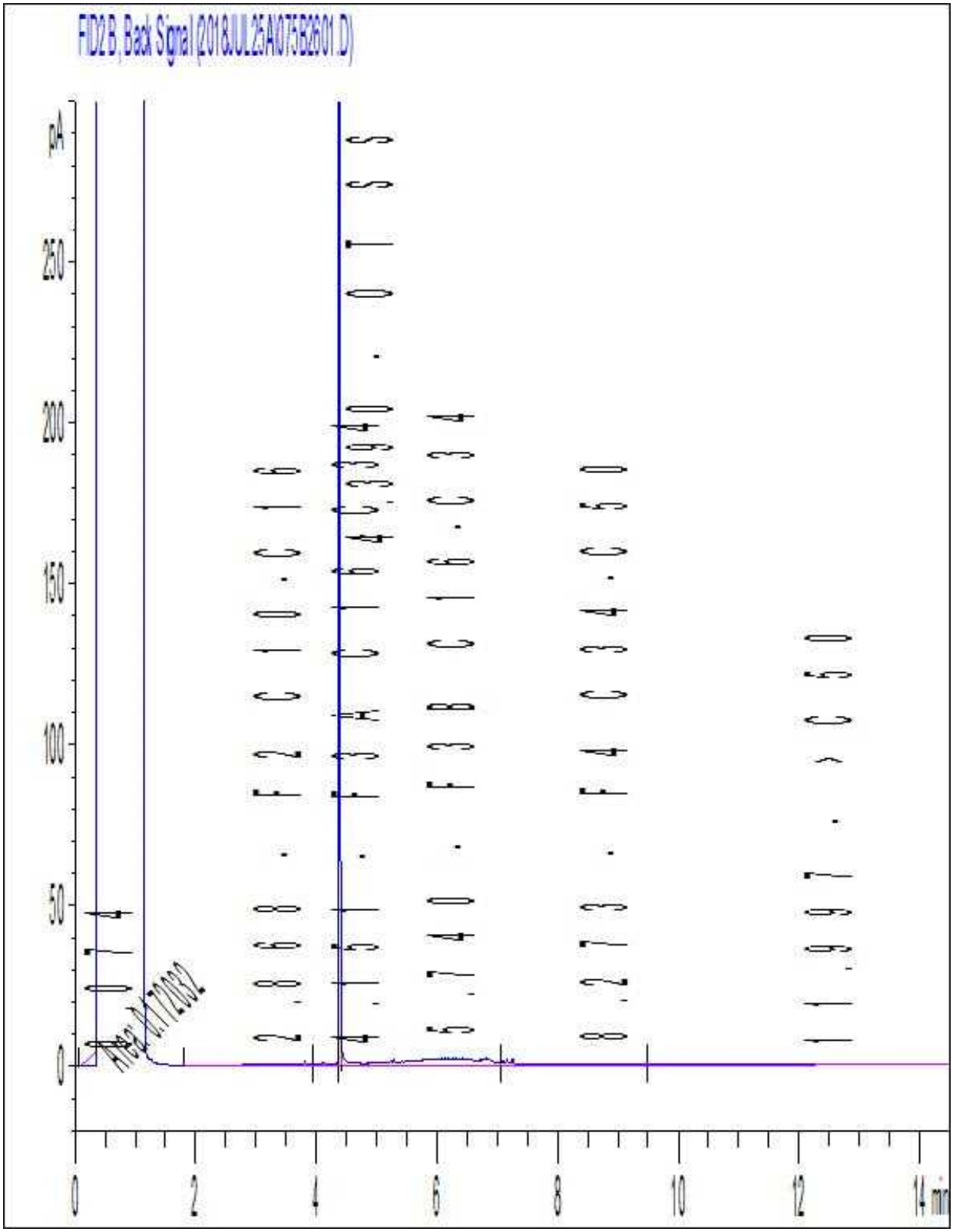
Maxxam Job #: B8I3680
Report Date: 2018/08/20
Maxxam Sample: HGW355

Stantec Consulting Ltd
Client Project #: 161413338
Client ID: TP18-5-2

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram

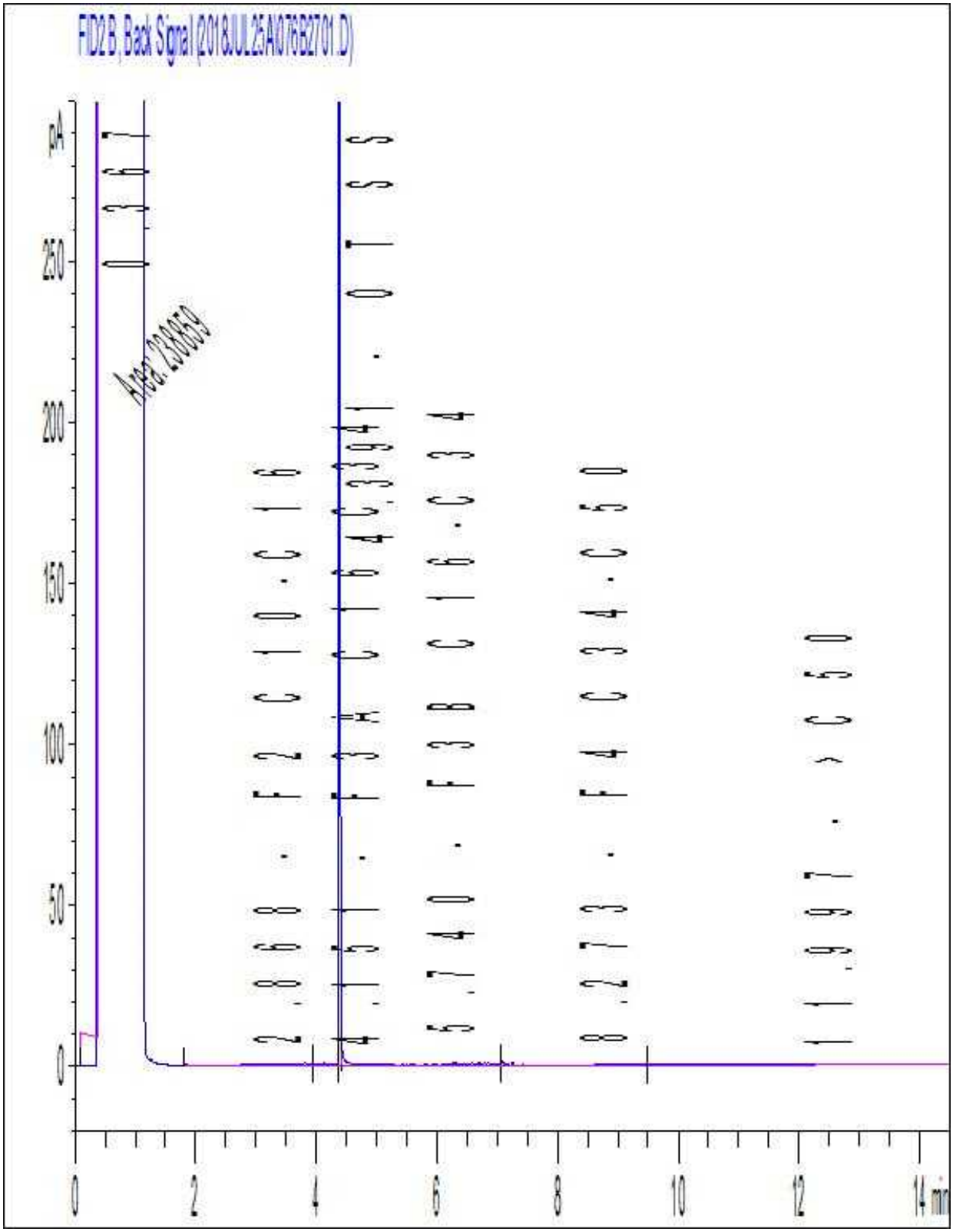


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Maxxam Job #: B8I3680
Report Date: 2018/08/20
Maxxam Sample: HGW358

Stantec Consulting Ltd
Client Project #: 161413338
Client ID: TP18-6-2

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram

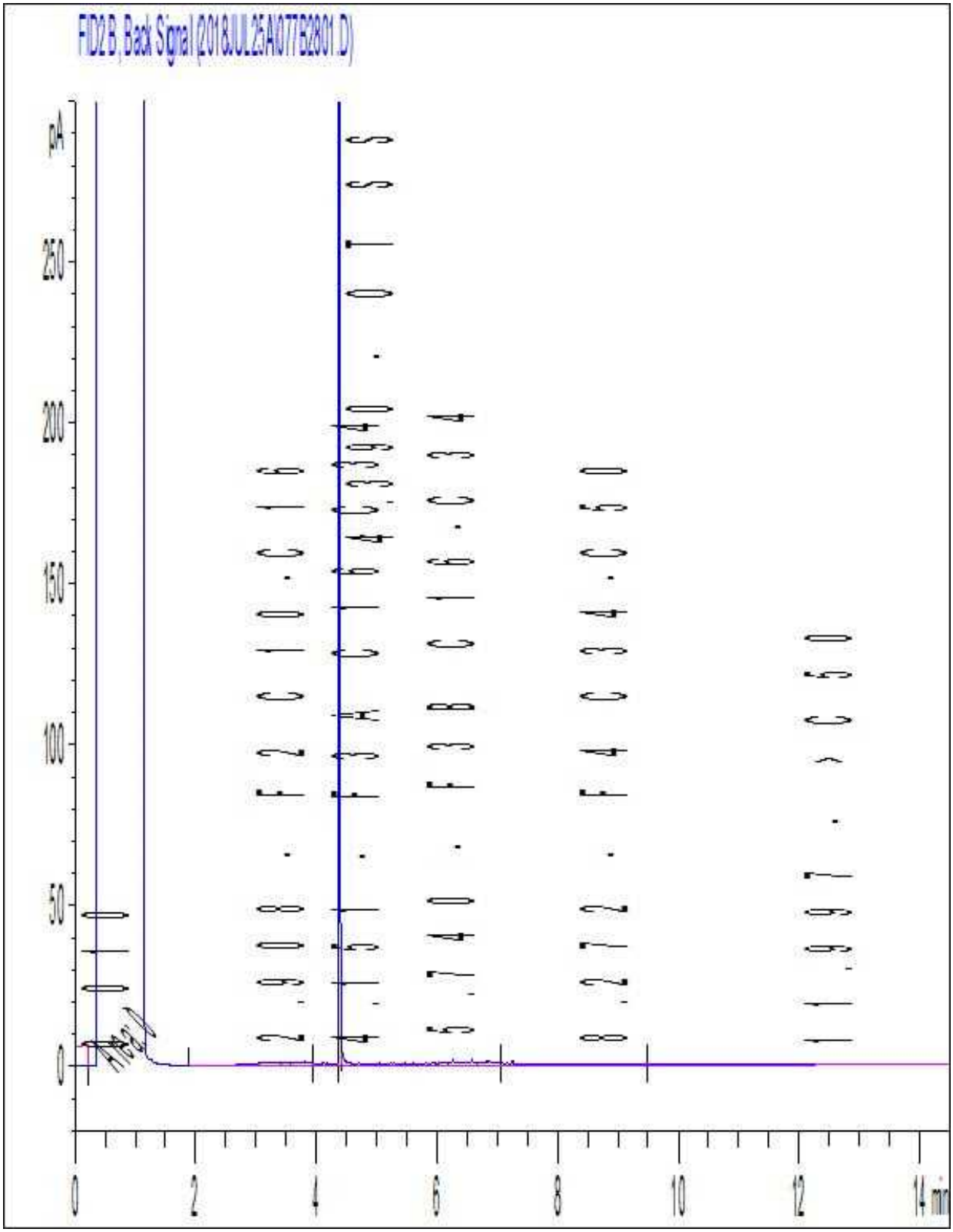


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Maxxam Job #: B8I3680
Report Date: 2018/08/20
Maxxam Sample: HGW362

Stantec Consulting Ltd
Client Project #: 161413338
Client ID: TP18-7-3

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram

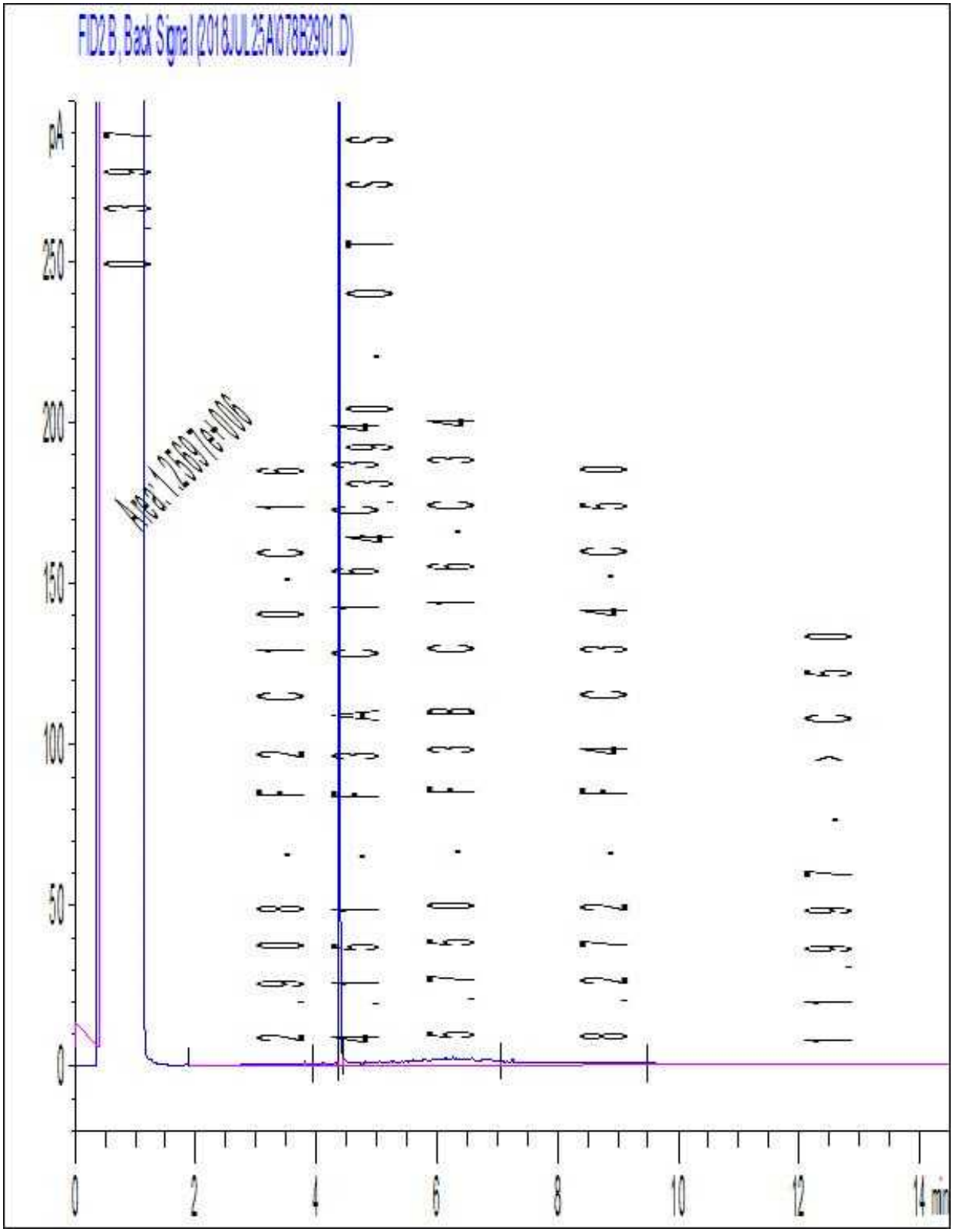


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Maxxam Job #: B8I3680
Report Date: 2018/08/20
Maxxam Sample: HGW364

Stantec Consulting Ltd
Client Project #: 161413338
Client ID: TP18-8-1

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram

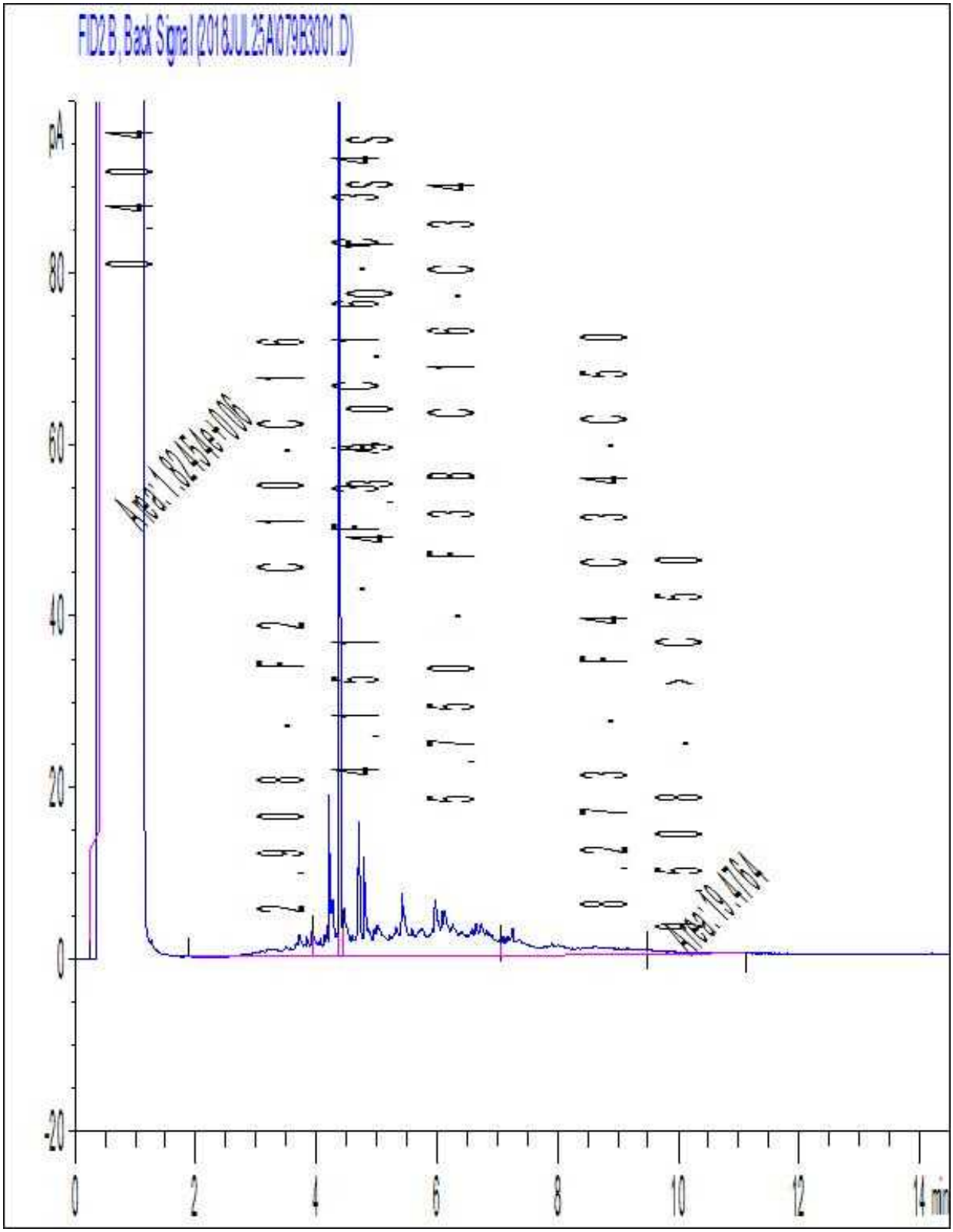


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Maxxam Job #: B8I3680
Report Date: 2018/08/20
Maxxam Sample: HGW374

Stantec Consulting Ltd
Client Project #: 161413338
Client ID: TP18-9-2

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram

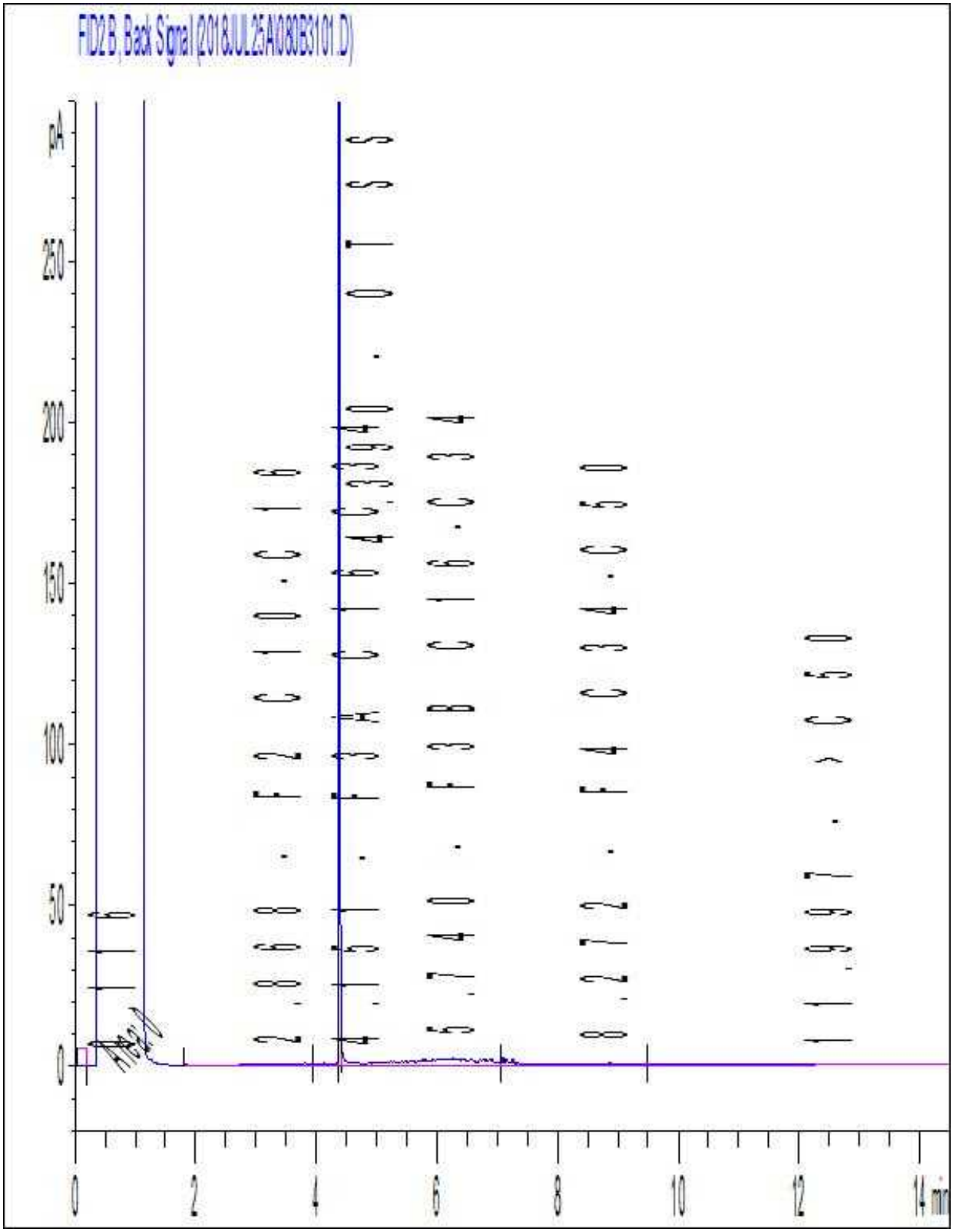


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Maxxam Job #: B8I3680
Report Date: 2018/08/20
Maxxam Sample: HGW375

Stantec Consulting Ltd
Client Project #: 161413338
Client ID: QC1

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram

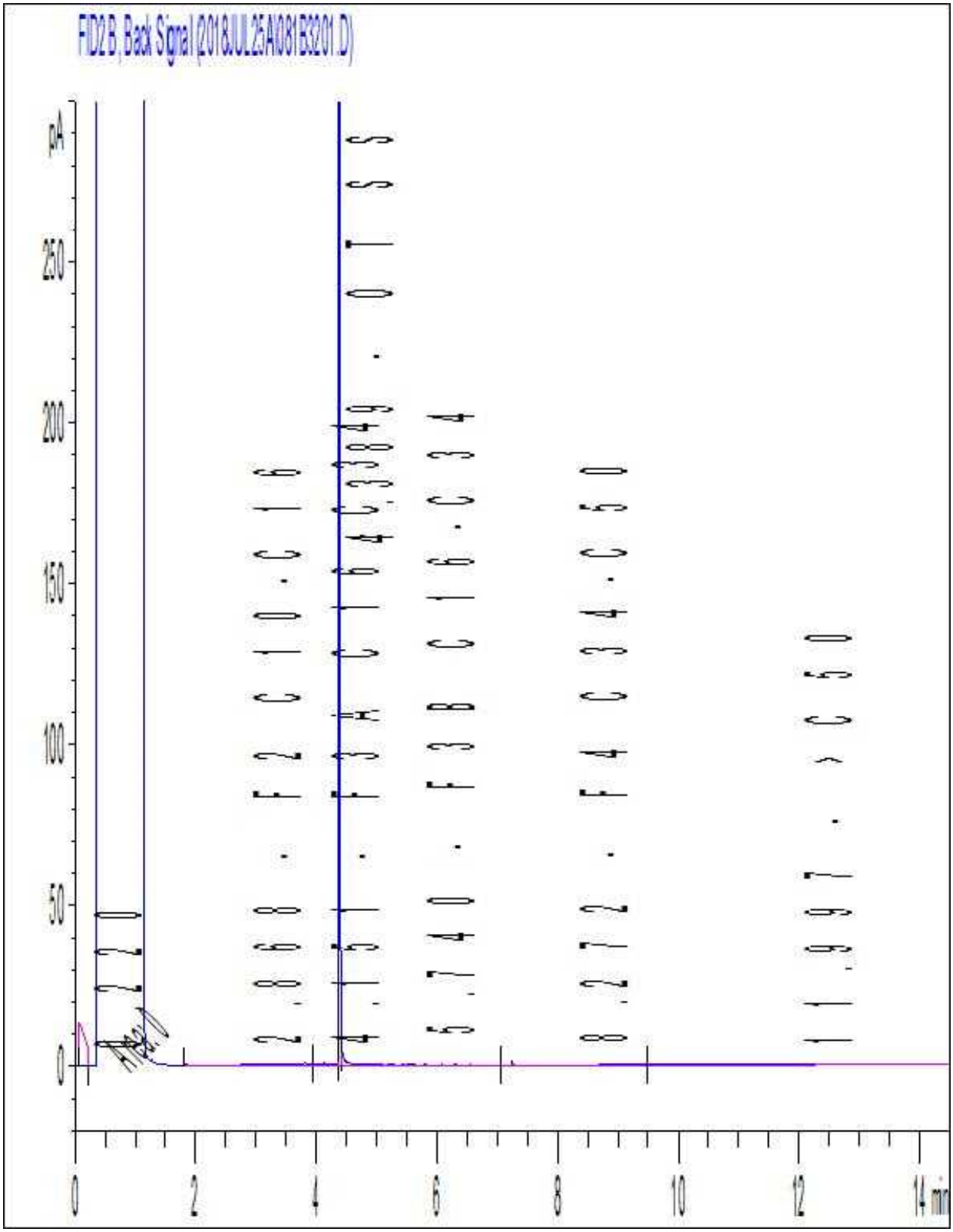


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Maxxam Job #: B8I3680
Report Date: 2018/08/20
Maxxam Sample: HGW379

Stantec Consulting Ltd
Client Project #: 161413338
Client ID: TP18-10-2

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram

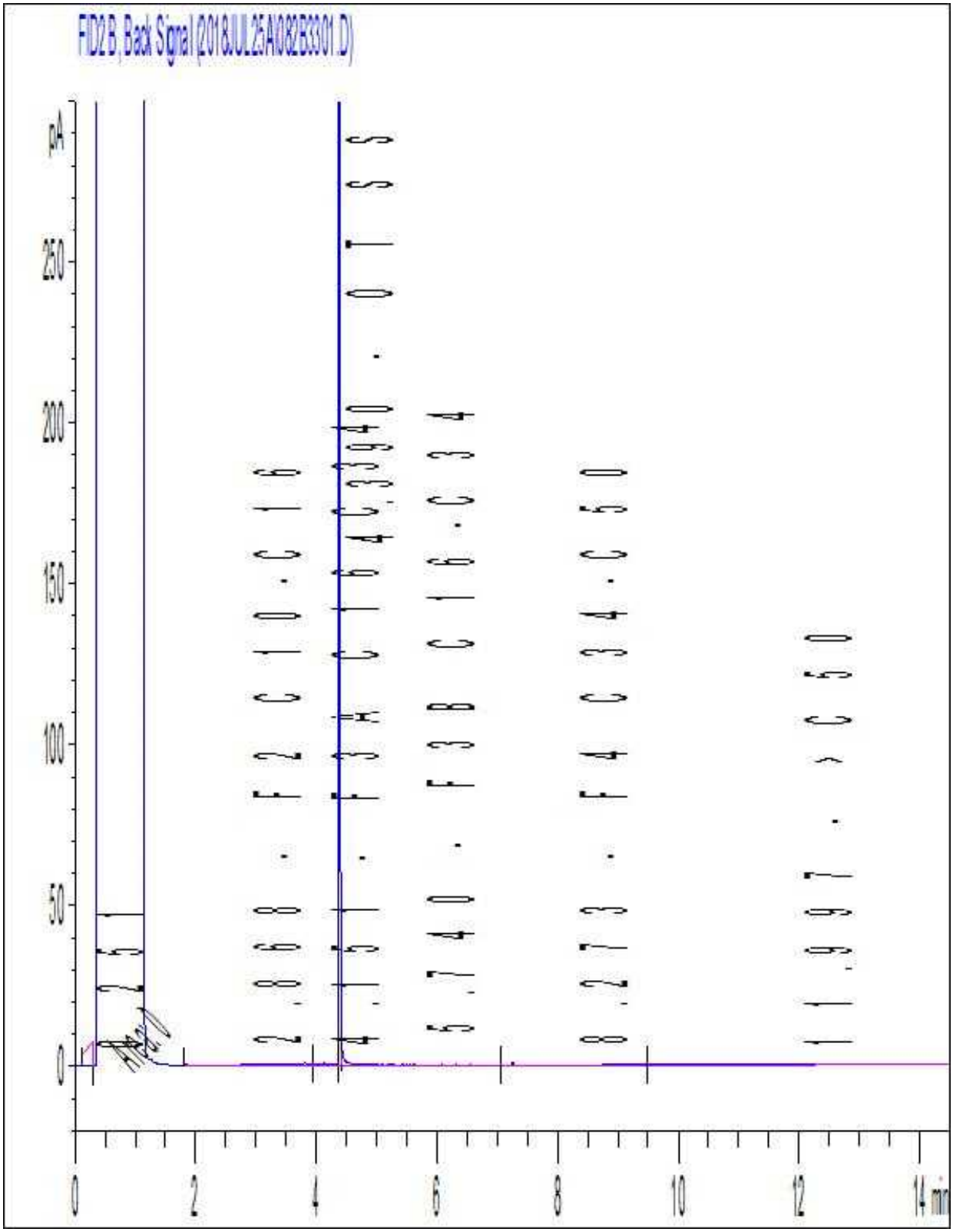


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Maxxam Job #: B8I3680
Report Date: 2018/08/20
Maxxam Sample: HGW379 Lab-Dup

Stantec Consulting Ltd
Client Project #: 161413338
Client ID: TP18-10-2

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram

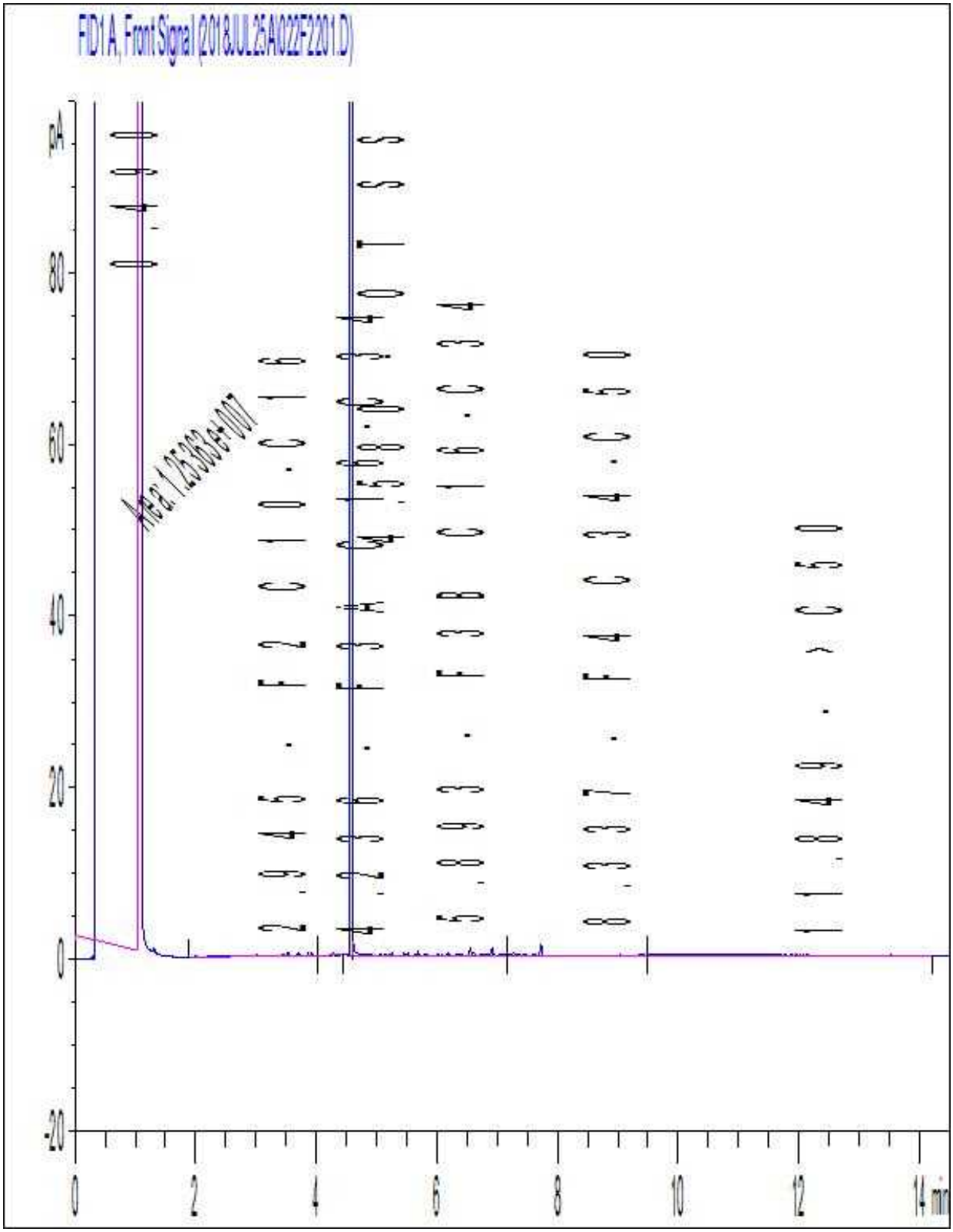


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Maxxam Job #: B8I3680
Report Date: 2018/08/20
Maxxam Sample: HGW397

Stantec Consulting Ltd
Client Project #: 161413338
Client ID: TP18-11-1

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram

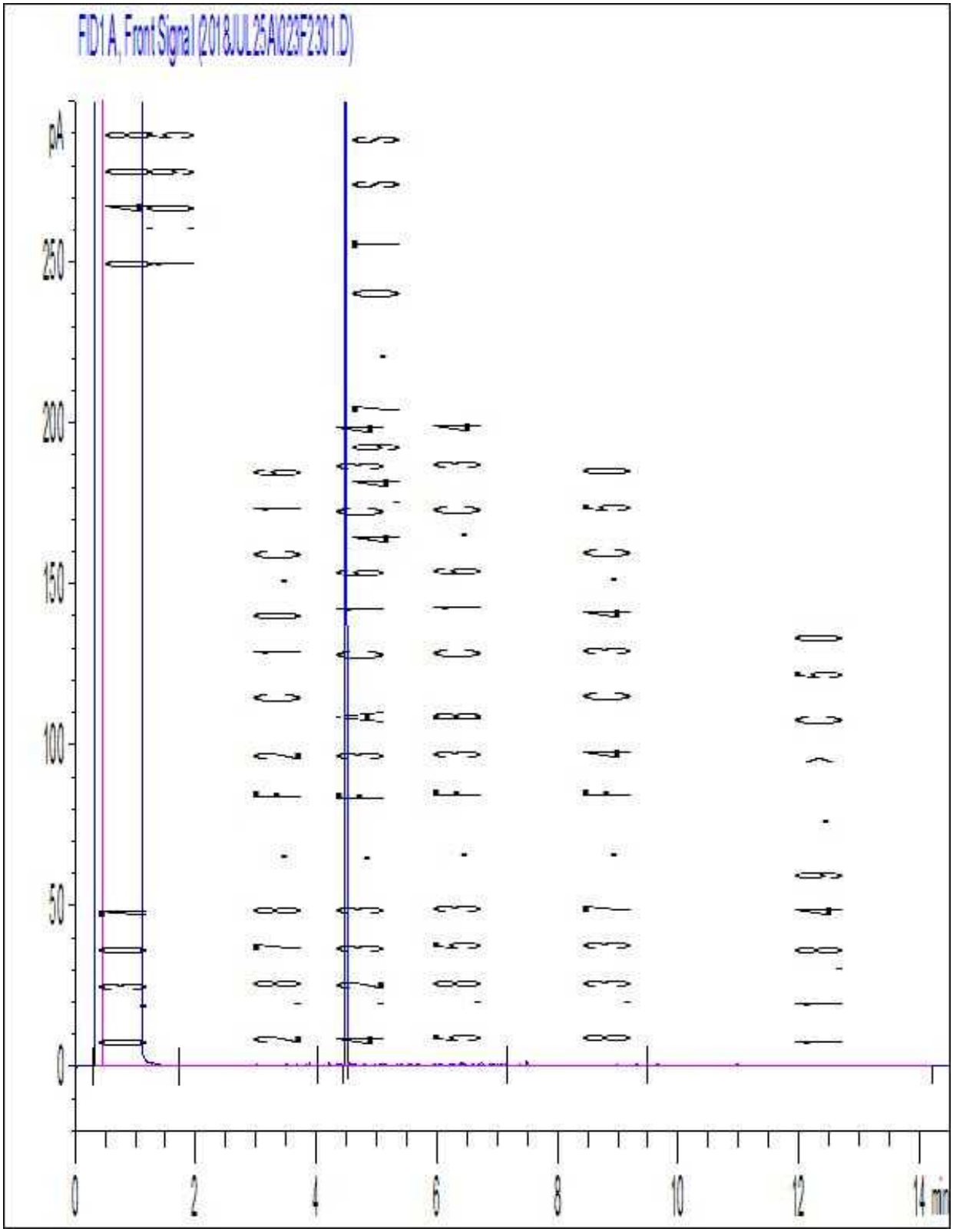


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Maxxam Job #: B8I3680
Report Date: 2018/08/20
Maxxam Sample: HGW400

Stantec Consulting Ltd
Client Project #: 161413338
Client ID: QC2

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram

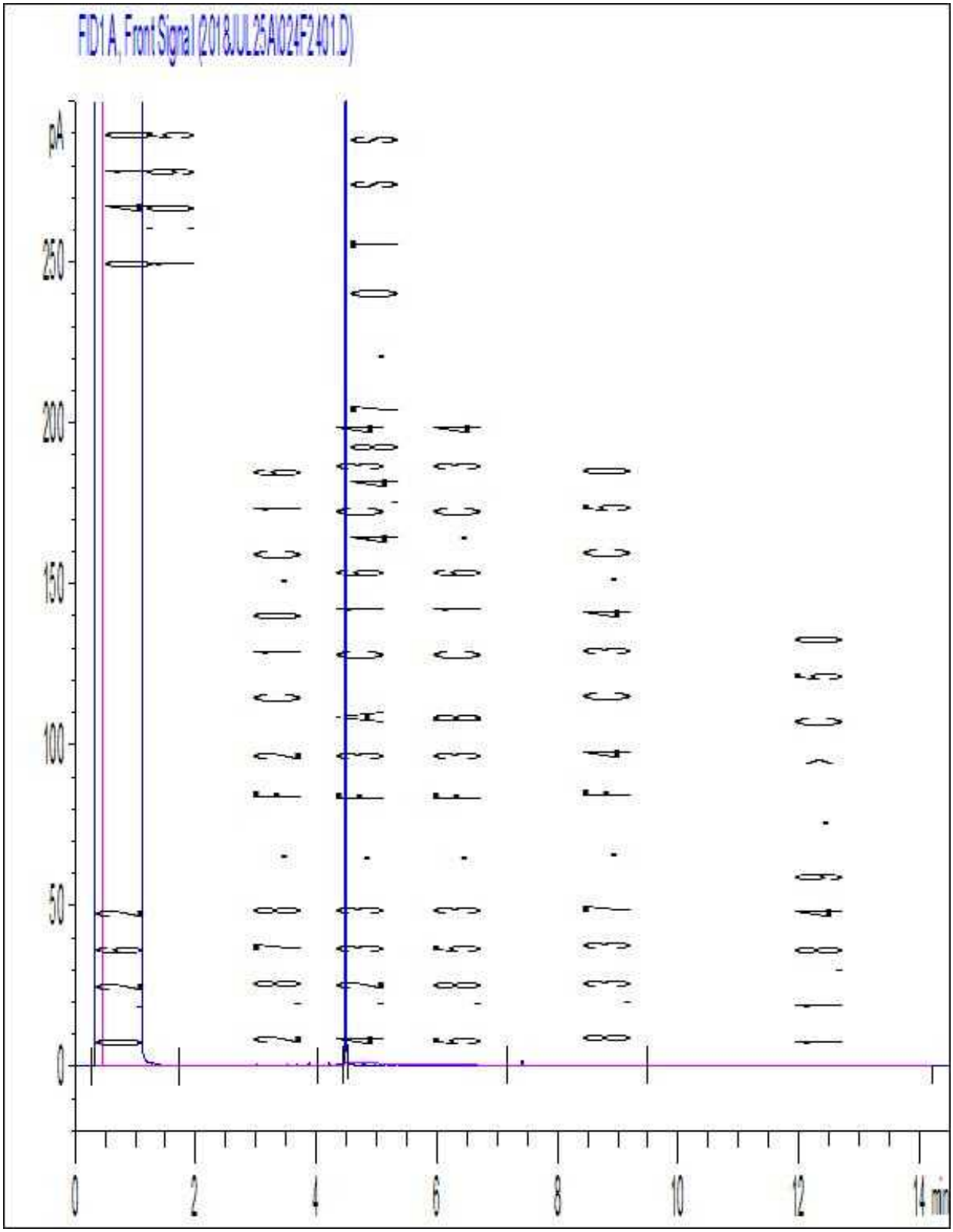


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Maxxam Job #: B8I3680
Report Date: 2018/08/20
Maxxam Sample: HGW402

Stantec Consulting Ltd
Client Project #: 161413338
Client ID: TP18-12-2

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Maxxam
A Bureau Veritas Group Company

Your Project #: 161423338
Site Location: 220 ARKELL RD, GUELPH
Your C.O.C. #: 709508-02-01

Attention: Mike Stendzis

Stantec Consulting Ltd
835 Paramount Drive, Suite 200
Stoney Creek, ON
CANADA L8J 0B4

Report Date: 2019/05/01
Report #: R5691890
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B9A9257
Received: 2019/04/25, 18:40

Sample Matrix: Soil
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Strong Acid Leachable Metals by ICPMS	2	2019/04/29	2019/04/30	CAM SOP-00447	EPA 6020B m

Remarks:

Maxxam Analytics' laboratories are accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Maxxam are based upon recognized Provincial, Federal or US method compendia such as CCME, MDDELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Maxxam's profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Maxxam in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Maxxam Analytics' liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Maxxam has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Maxxam, unless otherwise agreed in writing. Maxxam is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Maxxam, results relate to the supplied samples tested.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Augustyna Dobosz, Project Manager
Email: ADobosz@maxxam.ca
Phone# (905)817-5700 Ext:5798

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Maxxam Job #: B9A9257
Report Date: 2019/05/01

Stantec Consulting Ltd
Client Project #: 161423338
Site Location: 220 ARKELL RD, GUELPH
Sampler Initials: AK

O.REG 153 ICPMS METALS (SOIL)

Maxxam ID		JNT389	JNT390		
Sampling Date		2019/04/24 11:35	2019/04/24 11:50		
COC Number		709508-02-01	709508-02-01		
	UNITS	SS21	SS22	RDL	QC Batch
Metals					
Acid Extractable Antimony (Sb)	ug/g	<0.20	<0.20	0.20	6093145
Acid Extractable Arsenic (As)	ug/g	2.8	1.6	1.0	6093145
Acid Extractable Barium (Ba)	ug/g	17	20	0.50	6093145
Acid Extractable Beryllium (Be)	ug/g	<0.20	<0.20	0.20	6093145
Acid Extractable Boron (B)	ug/g	<5.0	5.4	5.0	6093145
Acid Extractable Cadmium (Cd)	ug/g	0.60	0.66	0.10	6093145
Acid Extractable Chromium (Cr)	ug/g	7.9	6.1	1.0	6093145
Acid Extractable Cobalt (Co)	ug/g	2.7	2.3	0.10	6093145
Acid Extractable Copper (Cu)	ug/g	12	7.5	0.50	6093145
Acid Extractable Lead (Pb)	ug/g	25	33	1.0	6093145
Acid Extractable Molybdenum (Mo)	ug/g	<0.50	<0.50	0.50	6093145
Acid Extractable Nickel (Ni)	ug/g	6.7	4.9	0.50	6093145
Acid Extractable Selenium (Se)	ug/g	<0.50	<0.50	0.50	6093145
Acid Extractable Silver (Ag)	ug/g	<0.20	<0.20	0.20	6093145
Acid Extractable Thallium (Tl)	ug/g	0.086	0.054	0.050	6093145
Acid Extractable Uranium (U)	ug/g	0.46	0.46	0.050	6093145
Acid Extractable Vanadium (V)	ug/g	19	13	5.0	6093145
Acid Extractable Zinc (Zn)	ug/g	450	280	5.0	6093145

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B9A9257
Report Date: 2019/05/01

Stantec Consulting Ltd
Client Project #: 161423338
Site Location: 220 ARKELL RD, GUELPH
Sampler Initials: AK

TEST SUMMARY

Maxxam ID: JNT389
Sample ID: SS21
Matrix: Soil

Collected: 2019/04/24
Shipped:
Received: 2019/04/25

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	6093145	2019/04/29	2019/04/30	Daniel Teclu

Maxxam ID: JNT390
Sample ID: SS22
Matrix: Soil

Collected: 2019/04/24
Shipped:
Received: 2019/04/25

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	6093145	2019/04/29	2019/04/30	Daniel Teclu

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B9A9257
Report Date: 2019/05/01

Stantec Consulting Ltd
Client Project #: 161423338
Site Location: 220 ARKELL RD, GUELPH
Sampler Initials: AK

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	1.0°C

Results relate only to the items tested.

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Maxxam Job #: B9A9257
Report Date: 2019/05/01

Stantec Consulting Ltd
Client Project #: 161423338
Site Location: 220 ARKELL RD, GUELPH
Sampler Initials: AK

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
6093145	DT1	Matrix Spike	Acid Extractable Antimony (Sb)	2019/04/30		95	%	75 - 125
			Acid Extractable Arsenic (As)	2019/04/30		102	%	75 - 125
			Acid Extractable Barium (Ba)	2019/04/30		NC	%	75 - 125
			Acid Extractable Beryllium (Be)	2019/04/30		101	%	75 - 125
			Acid Extractable Boron (B)	2019/04/30		101	%	75 - 125
			Acid Extractable Cadmium (Cd)	2019/04/30		100	%	75 - 125
			Acid Extractable Chromium (Cr)	2019/04/30		97	%	75 - 125
			Acid Extractable Cobalt (Co)	2019/04/30		98	%	75 - 125
			Acid Extractable Copper (Cu)	2019/04/30		95	%	75 - 125
			Acid Extractable Lead (Pb)	2019/04/30		101	%	75 - 125
			Acid Extractable Molybdenum (Mo)	2019/04/30		98	%	75 - 125
			Acid Extractable Nickel (Ni)	2019/04/30		102	%	75 - 125
			Acid Extractable Selenium (Se)	2019/04/30		103	%	75 - 125
			Acid Extractable Silver (Ag)	2019/04/30		99	%	75 - 125
			Acid Extractable Thallium (Tl)	2019/04/30		101	%	75 - 125
			Acid Extractable Uranium (U)	2019/04/30		100	%	75 - 125
			Acid Extractable Vanadium (V)	2019/04/30		100	%	75 - 125
			Acid Extractable Zinc (Zn)	2019/04/30		103	%	75 - 125
6093145	DT1	Spiked Blank	Acid Extractable Antimony (Sb)	2019/04/30		101	%	80 - 120
			Acid Extractable Arsenic (As)	2019/04/30		101	%	80 - 120
			Acid Extractable Barium (Ba)	2019/04/30		101	%	80 - 120
			Acid Extractable Beryllium (Be)	2019/04/30		100	%	80 - 120
			Acid Extractable Boron (B)	2019/04/30		102	%	80 - 120
			Acid Extractable Cadmium (Cd)	2019/04/30		103	%	80 - 120
			Acid Extractable Chromium (Cr)	2019/04/30		97	%	80 - 120
			Acid Extractable Cobalt (Co)	2019/04/30		98	%	80 - 120
			Acid Extractable Copper (Cu)	2019/04/30		99	%	80 - 120
			Acid Extractable Lead (Pb)	2019/04/30		102	%	80 - 120
			Acid Extractable Molybdenum (Mo)	2019/04/30		99	%	80 - 120
			Acid Extractable Nickel (Ni)	2019/04/30		100	%	80 - 120
			Acid Extractable Selenium (Se)	2019/04/30		105	%	80 - 120
			Acid Extractable Silver (Ag)	2019/04/30		102	%	80 - 120
			Acid Extractable Thallium (Tl)	2019/04/30		102	%	80 - 120
			Acid Extractable Uranium (U)	2019/04/30		102	%	80 - 120
			Acid Extractable Vanadium (V)	2019/04/30		99	%	80 - 120
			Acid Extractable Zinc (Zn)	2019/04/30		103	%	80 - 120
6093145	DT1	Method Blank	Acid Extractable Antimony (Sb)	2019/04/30	<0.20		ug/g	
			Acid Extractable Arsenic (As)	2019/04/30	<1.0		ug/g	
			Acid Extractable Barium (Ba)	2019/04/30	<0.50		ug/g	
			Acid Extractable Beryllium (Be)	2019/04/30	<0.20		ug/g	
			Acid Extractable Boron (B)	2019/04/30	<5.0		ug/g	
			Acid Extractable Cadmium (Cd)	2019/04/30	<0.10		ug/g	
			Acid Extractable Chromium (Cr)	2019/04/30	<1.0		ug/g	
			Acid Extractable Cobalt (Co)	2019/04/30	<0.10		ug/g	
			Acid Extractable Copper (Cu)	2019/04/30	<0.50		ug/g	
			Acid Extractable Lead (Pb)	2019/04/30	<1.0		ug/g	
			Acid Extractable Molybdenum (Mo)	2019/04/30	<0.50		ug/g	
			Acid Extractable Nickel (Ni)	2019/04/30	<0.50		ug/g	
			Acid Extractable Selenium (Se)	2019/04/30	<0.50		ug/g	
			Acid Extractable Silver (Ag)	2019/04/30	<0.20		ug/g	
			Acid Extractable Thallium (Tl)	2019/04/30	<0.050		ug/g	
			Acid Extractable Uranium (U)	2019/04/30	<0.050		ug/g	
			Acid Extractable Vanadium (V)	2019/04/30	<5.0		ug/g	

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B9A9257
Report Date: 2019/05/01

Stantec Consulting Ltd
Client Project #: 161423338
Site Location: 220 ARKELL RD, GUELPH
Sampler Initials: AK

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Acid Extractable Zinc (Zn)	2019/04/30	<5.0		ug/g	
6093145	DT1	RPD	Acid Extractable Antimony (Sb)	2019/04/30	NC		%	30
			Acid Extractable Arsenic (As)	2019/04/30	NC		%	30
			Acid Extractable Barium (Ba)	2019/04/30	2.6		%	30
			Acid Extractable Beryllium (Be)	2019/04/30	NC		%	30
			Acid Extractable Boron (B)	2019/04/30	NC		%	30
			Acid Extractable Cadmium (Cd)	2019/04/30	NC		%	30
			Acid Extractable Chromium (Cr)	2019/04/30	1.4		%	30
			Acid Extractable Cobalt (Co)	2019/04/30	5.5		%	30
			Acid Extractable Copper (Cu)	2019/04/30	0.048		%	30
			Acid Extractable Lead (Pb)	2019/04/30	8.0		%	30
			Acid Extractable Molybdenum (Mo)	2019/04/30	NC		%	30
			Acid Extractable Nickel (Ni)	2019/04/30	2.1		%	30
			Acid Extractable Selenium (Se)	2019/04/30	NC		%	30
			Acid Extractable Silver (Ag)	2019/04/30	NC		%	30
			Acid Extractable Thallium (Tl)	2019/04/30	8.3		%	30
			Acid Extractable Uranium (U)	2019/04/30	6.1		%	30
			Acid Extractable Vanadium (V)	2019/04/30	5.7		%	30
			Acid Extractable Zinc (Zn)	2019/04/30	8.3		%	30

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

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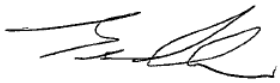
Maxxam Job #: B9A9257
Report Date: 2019/05/01

Stantec Consulting Ltd
Client Project #: 161423338
Site Location: 220 ARKELL RD, GUELPH
Sampler Initials: AK

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



Brad Newman, Scientific Service Specialist

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

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Maxxam Analytics International Corporation o/a Maxxam Analytics
6740 Campobello Road, Mississauga, Ontario Canada L5N 2L8 Tel:(905) 817-5700 Toll-free:800-563-6266 Fax:(905) 817-5777 www.maxxam.ca

STANTEC CHAIN OF CUSTODY RECORD

Page 1 of 1

INVOICE INFORMATION:

Company Name: #50575 Stantec Consulting Ltd
Contact Name: Accounts Payable
Address: 835 Paramount Drive, Suite 200
Stoney Creek ON L8J 0B4
Phone: (905) 381-3211 Fax: (905) 631-8960
Email: SAPinvoices@Stantec.com

REPORT INFORMATION(if differs from invoice):

Company Name:
Contact Name: ~~Joel van Pepta~~ Michael Stendzis
Address: Michael.Stendzis@Stantec.com
Phone: (905) 381-3273 Fax:
Email: ~~Joel.VanPepta@stantec.com~~

PROJECT INFORMATION:

Quotation #: B77373
Task #: 161423338-813
Project #: ~~121120250~~
Profit Centre: ~~1984~~
Site #: 220 Arkell Rd., Guelph
Sampled By: Aseel Kaiser

Laboratory Use Only:

Maxxam Job #:	Bottle Order #:
	709508
COC #:	Project Manager:
C#709508-02-01	Augustyna Dobosz

MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE MAXXAM DRINKING WATER CHAIN OF CUSTODY

Regulation 153 (2011)
- [ ] Table 1 [X] Res/Park [ ] Medium/Fine
- [X] Table 2 [ ] Ind/Comm [X] Coarse
- [ ] Table 3 [ ] Agri/Other [ ] For RSC
- [ ] Table ___

Other Regulations
- [ ] CCME [ ] Sanitary Sewer Bylaw
- [ ] Reg 558. [ ] Storm Sewer Bylaw
- [ ] MISA Municipality ___
- [ ] PWQO
- [ ] Other ___

Special Instructions

Include Criteria on Certificate of Analysis (Y/N)? ___

Field Filtered (please circle): Metals / Hg / Cr VI

ANALYSIS REQUESTED (PLEASE BE SPECIFIC)

Turnaround Time (TAT) Required:
Please provide advance notice for rush projects

Regular (Standard) TAT: [X]
(will be applied if Rush TAT is not specified):
Standard TAT = 5-7 Working days for most tests..
Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

Job Specific Rush TAT (if applies to entire submission)
Date Required: ___ Time Required: ___ [ ]
Rush Confirmation Number: ___ *(call lab for #)*

	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	O. Reg 153 PHCs, BTEX/F1-F4	O. Reg 153 ICPMS Metals (Soil)								# of Bottles	Comments
1		SS 21	24 April 2019	11:35 am	Soil	NA		X							1	
2		SS 22	↓	11:50 am	↓	↓		X							1	
3		SS 23	↓	12:00 PM	↓			X							1	ON HOLD
4																
5																
6																
7																
8																
9																
10																

25-Apr-19 18:40
Augustyna Dobosz
B9A9257
GK1 ENV-1146

* RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# jars used and not submitted
Brent Ferguson	April 25, 2019	10:xx am		2019/04/25	12:40	

Laboratory Use Only

Time Sensitive	Temperature (°C) on Recei	Custody Seal	Yes	No
	2 | 1 (	Present		
		Intact		

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO MAXXAM'S STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.MAXXAM.CA/TERMS.

* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

** SAMPLE CONTAINER, PRESERVATION, HOLD TIME AND PACKAGE INFORMATION CAN BE VIEWED AT HTTP://MAXXAM.CA/WP-CONTENT/UPLOADS/ONTARIO-COC.PDF.

SAMPLES MUST BE KEPT COOL (< 10° C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

White: Maxxa Yellow: Client

Maxxam Analytics International Corporation o/a Maxxam Analytics

Maxxam
A Bureau Veritas Group Company

Your Project #: 161423338
Site Location: 220 ARKELL RD,GUELPH
Your C.O.C. #: C#696206-02-01

Attention: Mike Stendzis

Stantec Consulting Ltd
835 Paramount Drive, Suite 200
Stoney Creek, ON
CANADA L8J 0B4

Report Date: 2018/12/19
Report #: R5531684
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B8X6073
Received: 2018/12/14, 15:51

Sample Matrix: Soil
Samples Received: 5

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Strong Acid Leachable Metals by ICPMS	5	2018/12/18	2018/12/18	CAM SOP-00447	EPA 6020B m

Remarks:

Maxxam Analytics' laboratories are accredited to ISO/IEC 17025:2005 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Maxxam are based upon recognized Provincial, Federal or US method compendia such as CCME, MDDELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Maxxam's profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Maxxam in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Maxxam Analytics' liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Maxxam has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Maxxam, unless otherwise agreed in writing. Maxxam is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Maxxam, results relate to the supplied samples tested.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Augustyna Dobosz, Project Manager
Email: ADobosz@maxxam.ca
Phone# (905)817-5700 Ext:5798

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Maxxam Job #: B8X6073
Report Date: 2018/12/19

Stantec Consulting Ltd
Client Project #: 161423338
Site Location: 220 ARKELL RD,GUELPH
Sampler Initials: AK

O.REG 153 ICPMS METALS (SOIL)

Maxxam ID		IOH342	IOH343	IOH344	IOH345	IOH346		
Sampling Date		2018/12/13 12:50	2018/12/13 12:40	2018/12/13 01:00	2018/12/13 12:25	2018/12/13 12:40		
COC Number		C#696206-02-01	C#696206-02-01	C#696206-02-01	C#696206-02-01	C#696206-02-01		
	UNITS	**SS17**	**SS18**	**SS19**	**SS20**	**S-DUP3**	**RDL**	**QC Batch**
Metals								
Acid Extractable Antimony (Sb)	ug/g	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	5894085
Acid Extractable Arsenic (As)	ug/g	2.0	1.9	1.6	1.1	1.5	1.0	5894085
Acid Extractable Barium (Ba)	ug/g	24	25	12	5.5	22	0.50	5894085
Acid Extractable Beryllium (Be)	ug/g	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	5894085
Acid Extractable Boron (B)	ug/g	5.5	5.7	5.3	<5.0	5.6	5.0	5894085
Acid Extractable Cadmium (Cd)	ug/g	0.39	0.30	0.53	0.45	0.37	0.10	5894085
Acid Extractable Chromium (Cr)	ug/g	6.8	7.2	6.2	4.6	7.1	1.0	5894085
Acid Extractable Cobalt (Co)	ug/g	2.9	2.7	2.0	1.4	2.6	0.10	5894085
Acid Extractable Copper (Cu)	ug/g	7.5	7.6	9.9	3.9	6.9	0.50	5894085
Acid Extractable Lead (Pb)	ug/g	20	20	62	36	20	1.0	5894085
Acid Extractable Molybdenum (Mo)	ug/g	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	5894085
Acid Extractable Nickel (Ni)	ug/g	5.5	6.1	5.5	2.4	5.5	0.50	5894085
Acid Extractable Selenium (Se)	ug/g	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	5894085
Acid Extractable Silver (Ag)	ug/g	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	5894085
Acid Extractable Thallium (Tl)	ug/g	0.058	0.059	0.062	<0.050	<0.050	0.050	5894085
Acid Extractable Uranium (U)	ug/g	0.43	0.45	0.48	0.45	0.43	0.050	5894085
Acid Extractable Vanadium (V)	ug/g	14	14	15	12	14	5.0	5894085
Acid Extractable Zinc (Zn)	ug/g	210	160	450	280	160	5.0	5894085

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B8X6073
Report Date: 2018/12/19

Stantec Consulting Ltd
Client Project #: 161423338
Site Location: 220 ARKELL RD,GUELPH
Sampler Initials: AK

TEST SUMMARY

Maxxam ID: IOH342 **Collected:** 2018/12/13
Sample ID: SS17 **Shipped:**
Matrix: Soil **Received:** 2018/12/14

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	5894085	2018/12/18	2018/12/18	Daniel Teclu

Maxxam ID: IOH343 **Collected:** 2018/12/13
Sample ID: SS18 **Shipped:**
Matrix: Soil **Received:** 2018/12/14

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	5894085	2018/12/18	2018/12/18	Daniel Teclu

Maxxam ID: IOH344 **Collected:** 2018/12/13
Sample ID: SS19 **Shipped:**
Matrix: Soil **Received:** 2018/12/14

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	5894085	2018/12/18	2018/12/18	Daniel Teclu

Maxxam ID: IOH345 **Collected:** 2018/12/13
Sample ID: SS20 **Shipped:**
Matrix: Soil **Received:** 2018/12/14

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	5894085	2018/12/18	2018/12/18	Daniel Teclu

Maxxam ID: IOH346 **Collected:** 2018/12/13
Sample ID: S-DUP3 **Shipped:**
Matrix: Soil **Received:** 2018/12/14

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	5894085	2018/12/18	2018/12/18	Daniel Teclu

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B8X6073
Report Date: 2018/12/19

Stantec Consulting Ltd
Client Project #: 161423338
Site Location: 220 ARKELL RD,GUELPH
Sampler Initials: AK

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	3.3°C

Results relate only to the items tested.

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Maxxam Job #: B8X6073
Report Date: 2018/12/19

Stantec Consulting Ltd
Client Project #: 161423338
Site Location: 220 ARKELL RD,GUELPH
Sampler Initials: AK

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
5894085	DT1	Matrix Spike	Acid Extractable Antimony (Sb)	2018/12/18		100	%	75 - 125
			Acid Extractable Arsenic (As)	2018/12/18		106	%	75 - 125
			Acid Extractable Barium (Ba)	2018/12/18		NC	%	75 - 125
			Acid Extractable Beryllium (Be)	2018/12/18		102	%	75 - 125
			Acid Extractable Boron (B)	2018/12/18		98	%	75 - 125
			Acid Extractable Cadmium (Cd)	2018/12/18		99	%	75 - 125
			Acid Extractable Chromium (Cr)	2018/12/18		103	%	75 - 125
			Acid Extractable Cobalt (Co)	2018/12/18		104	%	75 - 125
			Acid Extractable Copper (Cu)	2018/12/18		98	%	75 - 125
			Acid Extractable Lead (Pb)	2018/12/18		98	%	75 - 125
			Acid Extractable Molybdenum (Mo)	2018/12/18		102	%	75 - 125
			Acid Extractable Nickel (Ni)	2018/12/18		106	%	75 - 125
			Acid Extractable Selenium (Se)	2018/12/18		106	%	75 - 125
			Acid Extractable Silver (Ag)	2018/12/18		99	%	75 - 125
			Acid Extractable Thallium (Tl)	2018/12/18		96	%	75 - 125
			Acid Extractable Uranium (U)	2018/12/18		97	%	75 - 125
			Acid Extractable Vanadium (V)	2018/12/18		108	%	75 - 125
			Acid Extractable Zinc (Zn)	2018/12/18		NC	%	75 - 125
5894085	DT1	Spiked Blank	Acid Extractable Antimony (Sb)	2018/12/18		101	%	80 - 120
			Acid Extractable Arsenic (As)	2018/12/18		106	%	80 - 120
			Acid Extractable Barium (Ba)	2018/12/18		100	%	80 - 120
			Acid Extractable Beryllium (Be)	2018/12/18		97	%	80 - 120
			Acid Extractable Boron (B)	2018/12/18		93	%	80 - 120
			Acid Extractable Cadmium (Cd)	2018/12/18		101	%	80 - 120
			Acid Extractable Chromium (Cr)	2018/12/18		103	%	80 - 120
			Acid Extractable Cobalt (Co)	2018/12/18		101	%	80 - 120
			Acid Extractable Copper (Cu)	2018/12/18		98	%	80 - 120
			Acid Extractable Lead (Pb)	2018/12/18		99	%	80 - 120
			Acid Extractable Molybdenum (Mo)	2018/12/18		98	%	80 - 120
			Acid Extractable Nickel (Ni)	2018/12/18		104	%	80 - 120
			Acid Extractable Selenium (Se)	2018/12/18		106	%	80 - 120
			Acid Extractable Silver (Ag)	2018/12/18		99	%	80 - 120
			Acid Extractable Thallium (Tl)	2018/12/18		98	%	80 - 120
			Acid Extractable Uranium (U)	2018/12/18		97	%	80 - 120
			Acid Extractable Vanadium (V)	2018/12/18		102	%	80 - 120
			Acid Extractable Zinc (Zn)	2018/12/18		103	%	80 - 120
5894085	DT1	Method Blank	Acid Extractable Antimony (Sb)	2018/12/18	<0.20		ug/g	
			Acid Extractable Arsenic (As)	2018/12/18	<1.0		ug/g	
			Acid Extractable Barium (Ba)	2018/12/18	<0.50		ug/g	
			Acid Extractable Beryllium (Be)	2018/12/18	<0.20		ug/g	
			Acid Extractable Boron (B)	2018/12/18	<5.0		ug/g	
			Acid Extractable Cadmium (Cd)	2018/12/18	<0.10		ug/g	
			Acid Extractable Chromium (Cr)	2018/12/18	<1.0		ug/g	
			Acid Extractable Cobalt (Co)	2018/12/18	<0.10		ug/g	
			Acid Extractable Copper (Cu)	2018/12/18	<0.50		ug/g	
			Acid Extractable Lead (Pb)	2018/12/18	<1.0		ug/g	
			Acid Extractable Molybdenum (Mo)	2018/12/18	<0.50		ug/g	
			Acid Extractable Nickel (Ni)	2018/12/18	<0.50		ug/g	
			Acid Extractable Selenium (Se)	2018/12/18	<0.50		ug/g	
			Acid Extractable Silver (Ag)	2018/12/18	<0.20		ug/g	
			Acid Extractable Thallium (Tl)	2018/12/18	<0.050		ug/g	
			Acid Extractable Uranium (U)	2018/12/18	<0.050		ug/g	
			Acid Extractable Vanadium (V)	2018/12/18	<5.0		ug/g	

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Maxxam Job #: B8X6073
Report Date: 2018/12/19

Stantec Consulting Ltd
Client Project #: 161423338
Site Location: 220 ARKELL RD,GUELPH
Sampler Initials: AK

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Acid Extractable Zinc (Zn)	2018/12/18	<5.0		ug/g	
5894085	DT1	RPD	Acid Extractable Lead (Pb)	2018/12/18	0.79		%	30

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

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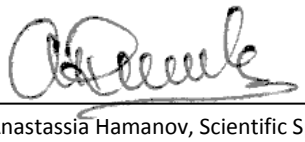
Maxxam Job #: B8X6073
Report Date: 2018/12/19

Stantec Consulting Ltd
Client Project #: 161423338
Site Location: 220 ARKELL RD,GUELPH
Sampler Initials: AK

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



Anastassia Hamanov, Scientific Specialist

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STANTEC CHAIN OF CUSTODY RECORD

Page 1 of 1

INVOICE INFORMATION:		REPORT INFORMATION(if differs from invoice):		PROJECT INFORMATION:		Laboratory Use Only:	
Company Name:	#50575 Stantec Consulting Ltd	Company Name:		Quotation #:	B77373	Maxxam Job #:	Bottle Order #:
Contact Name:	Accounts Payable	Contact Name:	Mike Stendzis	Task #:			696206
Address:	835 Paramount Drive, Suite 200 Stoney Creek ON L8J 0B4	Address:		Project #:	164233388-813	COC #:	Project Manager:
Phone:	(905) 381-3211 Fax: (905) 631-8960	Phone:	Fax:	Profit Centre:		C#696206-02-01	Augustyna Dobosz
Email:	SAPinvoices@Stantec.com	Email:	Michael.Stendzis@Stantec.com	Site #:	220 Arkell Rd, Guelph Aseel Kanser		
				Sampled By:			

MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE MAXXAM DRINKING WATER CHAIN OF CUSTODY

Regulation 153 (2011)	Other Regulations	Special Instructions
☐ Table 1 ☒ Res/Park ☐ Medium/Fine	☐ CCME ☐ Sanitary Sewer Bylaw	
☒ Table 2 ☐ Ind/Comm ☒ Coarse	☐ Reg 558 ☐ Storm Sewer Bylaw	
☐ Table 3 ☐ Agri/Other ☐ For RSC	☐ MISA Municipality ____	
☐ Table ___	☐ PWQO	
	☐ Other ____	

Include Criteria on Certificate of Analysis (Y/N)? ____

ANALYSIS REQUESTED (PLEASE BE SPECIFIC)

Turnaround Time (TAT) Required:
Please provide advance notice for rush projects

Regular (Standard) TAT: ☒
(will be applied if Rush TAT is not specified):
Standard TAT = 5-7 Working days for most tests..
Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

Job Specific Rush TAT (if applies to entire submission)
Date Required: ____ Time Required: ____ ☐
Rush Confirmation Number: ____ *(call lab for #)*

	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Field Filtered (please circle): Metals / Hg / Cr VI	O. Reg 153 ICPMS Metals (Soil)	# of Bottles	Comments
1		SS17	13 Dec 2018	12:50 PM	Soil	N/A	X	1	
2		SS18		12:40			X	1	
3		SS19		1:00			X	1	
4		SS 20		12:25			X	1	
5		S-DUP3		12:40			X	1	
6									
7									
8									
9									
10									

14-Dec-18 15:51
Augustyna Dobosz
B8X6073
GUS ENV-1417

* RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# jars used and not submitted
Joel VanPelt	18/12/14	9:00		2018/12/14	15:51	

Laboratory Use Only

Time Sensitive	Temperature (°C) on Recei	Custody Seal	Yes	No
	5/5/0	Present	✓	
		Intact		

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO MAXXAM'S STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.MAXXAM.CA/TERMS.

* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

** SAMPLE CONTAINER, PRESERVATION, HOLD TIME AND PACKAGE INFORMATION CAN BE VIEWED AT HTTP://MAXXAM.CA/WP-CONTENT/UPLOADS/ONTARIO-COC.PDF.

SAMPLES MUST BE KEPT COOL (< 10° C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

White: Maxxa Yellow: Client

Maxxam Analytics International Corporation o/a Maxxam Analytics

Your Project #: 161413338
Site Location: 220 ARKELL RD
Your C.O.C. #: 728913-01-01

Attention: Mike Stendzis

Stantec Consulting Ltd
835 Paramount Drive, Suite 200
Stoney Creek, ON
CANADA L8J 0B4

Report Date: 2019/08/19
Report #: R5844908
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BV LABS JOB #: B9L3424
Received: 2019/08/01, 13:04

Sample Matrix: Soil
Samples Received: 9

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Hot Water Extractable Boron	6	2019/08/03	2019/08/06	CAM SOP-00408	R153 Ana. Prot. 2011
Hot Water Extractable Boron	3	2019/08/13	2019/08/13	CAM SOP-00408	R153 Ana. Prot. 2011
Hexavalent Chromium in Soil by IC (1)	6	2019/08/06	2019/08/07	CAM SOP-00436	EPA 3060/7199 m
Hexavalent Chromium in Soil by IC (1)	3	2019/08/13	2019/08/13	CAM SOP-00436	EPA 3060/7199 m
Strong Acid Leachable Metals by ICPMS	6	2019/08/03	2019/08/08	CAM SOP-00447	EPA 6020B m
Strong Acid Leachable Metals by ICPMS	2	2019/08/13	2019/08/14	CAM SOP-00447	EPA 6020B m
Strong Acid Leachable Metals by ICPMS	1	2019/08/13	2019/08/16	CAM SOP-00447	EPA 6020B m
Moisture	6	N/A	2019/08/02	CAM SOP-00445	Carter 2nd ed 51.2 m
Moisture	3	N/A	2019/08/12	CAM SOP-00445	Carter 2nd ed 51.2 m

Remarks:

Bureau Veritas Laboratories are accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by BV Labs are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in BV Labs profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and BV Labs in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

BV Labs liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. BV Labs has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by BV Labs, unless otherwise agreed in writing. BV Labs is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by BV Labs, results relate to the supplied samples tested.

Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) Soils are reported on a dry weight basis unless otherwise specified.

Your Project #: 161413338
Site Location: 220 ARKELL RD
Your C.O.C. #: 728913-01-01

Attention: Mike Stendzis

Stantec Consulting Ltd
835 Paramount Drive, Suite 200
Stoney Creek, ON
CANADA L8J 0B4

Report Date: 2019/08/19
Report #: R5844908
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BV LABS JOB #: B9L3424
Received: 2019/08/01, 13:04

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Augustyna Dobosz, Project Manager
Email: Augustyna.Dobosz@bvlabs.com
Phone# (905)817-5798

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BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

BV Labs Job #: B9L3424
Report Date: 2019/08/19

Stantec Consulting Ltd
Client Project #: 161413338
Site Location: 220 ARKELL RD
Sampler Initials: RT

O.REG 153 METALS PACKAGE (SOIL)

BV Labs ID		KKQ739	KKQ740	KKQ741		KKQ742	KKQ743		
Sampling Date		2019/07/30 09:00	2019/07/30 09:15	2019/07/30		2019/07/30 09:30	2019/07/30 09:45		
COC Number		728913-01-01	728913-01-01	728913-01-01		728913-01-01	728913-01-01		
	UNITS	TP19-02	TP19-01	QC-01	QC Batch	TP19-10	TP19-09	RDL	QC Batch
Inorganics									
Moisture	%	10	10	10	6262148	8.5	11	1.0	6275243
Chromium (VI)	ug/g	<0.2	<0.2	<0.2	6264281	<0.2	<0.2	0.2	6276651
Metals									
Hot Water Ext. Boron (B)	ug/g	0.13	<0.050	<0.050	6263548	<0.050	<0.050	0.050	6276758
Acid Extractable Antimony (Sb)	ug/g	<0.20	<0.20	<0.20	6263490	<0.20	<0.20	0.20	6276635
Acid Extractable Arsenic (As)	ug/g	2.8	2.0	2.1	6263490	2.7	2.4	1.0	6276635
Acid Extractable Barium (Ba)	ug/g	22	15	17	6263490	21	19	0.50	6276635
Acid Extractable Beryllium (Be)	ug/g	0.23	<0.20	<0.20	6263490	<0.20	<0.20	0.20	6276635
Acid Extractable Boron (B)	ug/g	5.1	<5.0	5.2	6263490	<5.0	5.3	5.0	6276635
Acid Extractable Cadmium (Cd)	ug/g	0.68	0.38	0.39	6263490	0.36	0.83	0.10	6276635
Acid Extractable Chromium (Cr)	ug/g	8.5	8.9	8.1	6263490	8.5	7.1	1.0	6276635
Acid Extractable Cobalt (Co)	ug/g	3.1	2.7	3.0	6263490	3.9	3.0	0.10	6276635
Acid Extractable Copper (Cu)	ug/g	10	7.3	7.9	6263490	14	9.6	0.50	6276635
Acid Extractable Lead (Pb)	ug/g	41	38	36	6263490	21	42	1.0	6276635
Acid Extractable Molybdenum (Mo)	ug/g	<0.50	<0.50	<0.50	6263490	<0.50	<0.50	0.50	6276635
Acid Extractable Nickel (Ni)	ug/g	7.1	5.5	5.9	6263490	7.8	7.2	0.50	6276635
Acid Extractable Selenium (Se)	ug/g	<0.50	<0.50	<0.50	6263490	<0.50	<0.50	0.50	6276635
Acid Extractable Silver (Ag)	ug/g	<0.20	<0.20	<0.20	6263490	<0.20	<0.20	0.20	6276635
Acid Extractable Thallium (Tl)	ug/g	0.085	0.068	0.069	6263490	0.088	0.078	0.050	6276635
Acid Extractable Uranium (U)	ug/g	0.49	0.48	0.46	6263490	0.42	0.54	0.050	6276635
Acid Extractable Vanadium (V)	ug/g	19	24	23	6263490	21	16	5.0	6276635
Acid Extractable Zinc (Zn)	ug/g	420	280	290	6263490	220	560	5.0	6276635
Acid Extractable Mercury (Hg)	ug/g	<0.050	<0.050	<0.050	6263490	<0.050	<0.050	0.050	6276635

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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BV Labs Job #: B9L3424
Report Date: 2019/08/19

Stantec Consulting Ltd
Client Project #: 161413338
Site Location: 220 ARKELL RD
Sampler Initials: RT

O.REG 153 METALS PACKAGE (SOIL)

BV Labs ID		KKQ744	KKQ745	KKQ746		KKQ749		
Sampling Date		2019/07/30 10:00	2019/07/30 10:25	2019/07/30 10:40		2019/07/30 11:35		
COC Number		728913-01-01	728913-01-01	728913-01-01		728913-01-01		
	UNITS	TP19-04	TP19-03	TP19-05	QC Batch	TP19-08	RDL	QC Batch
Inorganics								
Moisture	%	11	12	14	6262148	11	1.0	6275243
Chromium (VI)	ug/g	<0.2	<0.2	<0.2	6264281	<0.2	0.2	6276651
Metals								
Hot Water Ext. Boron (B)	ug/g	0.062	0.064	<0.050	6263548	<0.050	0.050	6276758
Acid Extractable Antimony (Sb)	ug/g	<0.20	<0.20	<0.20	6263490	<0.20	0.20	6276756
Acid Extractable Arsenic (As)	ug/g	1.7	2.9	1.5	6263490	<1.0	1.0	6276756
Acid Extractable Barium (Ba)	ug/g	21	21	10	6263490	<0.50	0.50	6276756
Acid Extractable Beryllium (Be)	ug/g	<0.20	0.23	<0.20	6263490	<0.20	0.20	6276756
Acid Extractable Boron (B)	ug/g	5.8	<5.0	<5.0	6263490	<5.0	5.0	6276756
Acid Extractable Cadmium (Cd)	ug/g	0.79	0.54	0.30	6263490	<0.10	0.10	6276756
Acid Extractable Chromium (Cr)	ug/g	6.5	11	5.9	6263490	<1.0	1.0	6276756
Acid Extractable Cobalt (Co)	ug/g	2.2	3.5	1.6	6263490	<0.10	0.10	6276756
Acid Extractable Copper (Cu)	ug/g	7.9	13	4.7	6263490	<0.50	0.50	6276756
Acid Extractable Lead (Pb)	ug/g	27	32	35	6263490	<1.0	1.0	6276756
Acid Extractable Molybdenum (Mo)	ug/g	<0.50	<0.50	<0.50	6263490	<0.50	0.50	6276756
Acid Extractable Nickel (Ni)	ug/g	5.2	8.1	3.7	6263490	<0.50	0.50	6276756
Acid Extractable Selenium (Se)	ug/g	<0.50	<0.50	<0.50	6263490	<0.50	0.50	6276756
Acid Extractable Silver (Ag)	ug/g	<0.20	<0.20	<0.20	6263490	<0.20	0.20	6276756
Acid Extractable Thallium (Tl)	ug/g	0.053	0.084	<0.050	6263490	<0.050	0.050	6276756
Acid Extractable Uranium (U)	ug/g	0.48	0.48	0.44	6263490	<0.050	0.050	6276756
Acid Extractable Vanadium (V)	ug/g	14	24	16	6263490	<5.0	5.0	6276756
Acid Extractable Zinc (Zn)	ug/g	320	410	180	6263490	<5.0	5.0	6276756
Acid Extractable Mercury (Hg)	ug/g	<0.050	<0.050	<0.050	6263490	<0.050	0.050	6276756

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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BV Labs Job #: B9L3424
Report Date: 2019/08/19

Stantec Consulting Ltd
Client Project #: 161413338
Site Location: 220 ARKELL RD
Sampler Initials: RT

O.REG 153 METALS PACKAGE (SOIL)

BV Labs ID		KKQ749		
Sampling Date		2019/07/30 11:35		
COC Number		728913-01-01		
	UNITS	TP19-08 Lab-Dup	RDL	QC Batch
Inorganics				
Chromium (VI)	ug/g	<0.2	0.2	6276651

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

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TEST SUMMARY

BV Labs ID: KKQ739
Sample ID: TP19-02
Matrix: Soil

Collected: 2019/07/30
Shipped:
Received: 2019/08/01

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Hot Water Extractable Boron	ICP	6263548	2019/08/03	2019/08/06	Archana Patel
Hexavalent Chromium in Soil by IC	IC/SPEC	6264281	2019/08/06	2019/08/07	Sally Norouz Coughlin
Strong Acid Leachable Metals by ICPMS	ICP/MS	6263490	2019/08/03	2019/08/08	Daniel Teclu
Moisture	BAL	6262148	N/A	2019/08/02	Amitoj Singh Uppal

BV Labs ID: KKQ740
Sample ID: TP19-01
Matrix: Soil

Collected: 2019/07/30
Shipped:
Received: 2019/08/01

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Hot Water Extractable Boron	ICP	6263548	2019/08/03	2019/08/06	Archana Patel
Hexavalent Chromium in Soil by IC	IC/SPEC	6264281	2019/08/06	2019/08/07	Sally Norouz Coughlin
Strong Acid Leachable Metals by ICPMS	ICP/MS	6263490	2019/08/03	2019/08/08	Daniel Teclu
Moisture	BAL	6262148	N/A	2019/08/02	Amitoj Singh Uppal

BV Labs ID: KKQ741
Sample ID: QC-01
Matrix: Soil

Collected: 2019/07/30
Shipped:
Received: 2019/08/01

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Hot Water Extractable Boron	ICP	6263548	2019/08/03	2019/08/06	Archana Patel
Hexavalent Chromium in Soil by IC	IC/SPEC	6264281	2019/08/06	2019/08/07	Sally Norouz Coughlin
Strong Acid Leachable Metals by ICPMS	ICP/MS	6263490	2019/08/03	2019/08/08	Daniel Teclu
Moisture	BAL	6262148	N/A	2019/08/02	Amitoj Singh Uppal

BV Labs ID: KKQ742
Sample ID: TP19-10
Matrix: Soil

Collected: 2019/07/30
Shipped:
Received: 2019/08/01

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Hot Water Extractable Boron	ICP	6276758	2019/08/13	2019/08/13	Jolly John
Hexavalent Chromium in Soil by IC	IC/SPEC	6276651	2019/08/13	2019/08/13	Sally Norouz Coughlin
Strong Acid Leachable Metals by ICPMS	ICP/MS	6276635	2019/08/13	2019/08/14	Daniel Teclu
Moisture	BAL	6275243	N/A	2019/08/12	Mithunaa Sasitheepan

BV Labs ID: KKQ743
Sample ID: TP19-09
Matrix: Soil

Collected: 2019/07/30
Shipped:
Received: 2019/08/01

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Hot Water Extractable Boron	ICP	6276758	2019/08/13	2019/08/13	Jolly John
Hexavalent Chromium in Soil by IC	IC/SPEC	6276651	2019/08/13	2019/08/13	Sally Norouz Coughlin
Strong Acid Leachable Metals by ICPMS	ICP/MS	6276635	2019/08/13	2019/08/14	Daniel Teclu
Moisture	BAL	6275243	N/A	2019/08/12	Mithunaa Sasitheepan

TEST SUMMARY

BV Labs ID: KKQ744
Sample ID: TP19-04
Matrix: Soil

Collected: 2019/07/30
Shipped:
Received: 2019/08/01

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Hot Water Extractable Boron	ICP	6263548	2019/08/03	2019/08/06	Archana Patel
Hexavalent Chromium in Soil by IC	IC/SPEC	6264281	2019/08/06	2019/08/07	Sally Norouz Coughlin
Strong Acid Leachable Metals by ICPMS	ICP/MS	6263490	2019/08/03	2019/08/08	Daniel Teclu
Moisture	BAL	6262148	N/A	2019/08/02	Amitoj Singh Uppal

BV Labs ID: KKQ745
Sample ID: TP19-03
Matrix: Soil

Collected: 2019/07/30
Shipped:
Received: 2019/08/01

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Hot Water Extractable Boron	ICP	6263548	2019/08/03	2019/08/06	Archana Patel
Hexavalent Chromium in Soil by IC	IC/SPEC	6264281	2019/08/06	2019/08/07	Sally Norouz Coughlin
Strong Acid Leachable Metals by ICPMS	ICP/MS	6263490	2019/08/03	2019/08/08	Daniel Teclu
Moisture	BAL	6262148	N/A	2019/08/02	Amitoj Singh Uppal

BV Labs ID: KKQ746
Sample ID: TP19-05
Matrix: Soil

Collected: 2019/07/30
Shipped:
Received: 2019/08/01

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Hot Water Extractable Boron	ICP	6263548	2019/08/03	2019/08/06	Archana Patel
Hexavalent Chromium in Soil by IC	IC/SPEC	6264281	2019/08/06	2019/08/07	Sally Norouz Coughlin
Strong Acid Leachable Metals by ICPMS	ICP/MS	6263490	2019/08/03	2019/08/08	Daniel Teclu
Moisture	BAL	6262148	N/A	2019/08/02	Amitoj Singh Uppal

BV Labs ID: KKQ749
Sample ID: TP19-08
Matrix: Soil

Collected: 2019/07/30
Shipped:
Received: 2019/08/01

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Hot Water Extractable Boron	ICP	6276758	2019/08/13	2019/08/13	Jolly John
Hexavalent Chromium in Soil by IC	IC/SPEC	6276651	2019/08/13	2019/08/13	Sally Norouz Coughlin
Strong Acid Leachable Metals by ICPMS	ICP/MS	6276756	2019/08/13	2019/08/16	Daniel Teclu
Moisture	BAL	6275243	N/A	2019/08/12	Mithunaa Sasitheepan

BV Labs ID: KKQ749 Dup
Sample ID: TP19-08
Matrix: Soil

Collected: 2019/07/30
Shipped:
Received: 2019/08/01

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Hexavalent Chromium in Soil by IC	IC/SPEC	6276651	2019/08/13	2019/08/13	Sally Norouz Coughlin

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BV Labs Job #: B9L3424
Report Date: 2019/08/19

Stantec Consulting Ltd
Client Project #: 161413338
Site Location: 220 ARKELL RD
Sampler Initials: RT

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	8.0°C

Revised Report (2019/08/19): Analysis has been included on samples TP19-08, TP19-09, & TP-10 as per client request.

Results relate only to the items tested.

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BV Labs Job #: B9L3424
Report Date: 2019/08/19

Stantec Consulting Ltd
Client Project #: 161413338
Site Location: 220 ARKELL RD
Sampler Initials: RT

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
6262148	GYA	RPD	Moisture	2019/08/02	7.4		%	20
6263490	DT1	Matrix Spike	Acid Extractable Antimony (Sb)	2019/08/08		89	%	75 - 125
			Acid Extractable Arsenic (As)	2019/08/08		91	%	75 - 125
			Acid Extractable Barium (Ba)	2019/08/08		82	%	75 - 125
			Acid Extractable Beryllium (Be)	2019/08/08		90	%	75 - 125
			Acid Extractable Boron (B)	2019/08/08		87	%	75 - 125
			Acid Extractable Cadmium (Cd)	2019/08/08		91	%	75 - 125
			Acid Extractable Chromium (Cr)	2019/08/08		83	%	75 - 125
			Acid Extractable Cobalt (Co)	2019/08/08		88	%	75 - 125
			Acid Extractable Copper (Cu)	2019/08/08		85	%	75 - 125
			Acid Extractable Lead (Pb)	2019/08/08		91	%	75 - 125
			Acid Extractable Molybdenum (Mo)	2019/08/08		89	%	75 - 125
			Acid Extractable Nickel (Ni)	2019/08/08		90	%	75 - 125
			Acid Extractable Selenium (Se)	2019/08/08		95	%	75 - 125
			Acid Extractable Silver (Ag)	2019/08/08		91	%	75 - 125
			Acid Extractable Thallium (Tl)	2019/08/08		92	%	75 - 125
			Acid Extractable Uranium (U)	2019/08/08		92	%	75 - 125
			Acid Extractable Vanadium (V)	2019/08/08		83	%	75 - 125
			Acid Extractable Zinc (Zn)	2019/08/08		81	%	75 - 125
			Acid Extractable Mercury (Hg)	2019/08/08		84	%	75 - 125
6263490	DT1	Spiked Blank	Acid Extractable Antimony (Sb)	2019/08/08		102	%	80 - 120
			Acid Extractable Arsenic (As)	2019/08/08		103	%	80 - 120
			Acid Extractable Barium (Ba)	2019/08/08		97	%	80 - 120
			Acid Extractable Beryllium (Be)	2019/08/08		96	%	80 - 120
			Acid Extractable Boron (B)	2019/08/08		100	%	80 - 120
			Acid Extractable Cadmium (Cd)	2019/08/08		101	%	80 - 120
			Acid Extractable Chromium (Cr)	2019/08/08		98	%	80 - 120
			Acid Extractable Cobalt (Co)	2019/08/08		99	%	80 - 120
			Acid Extractable Copper (Cu)	2019/08/08		96	%	80 - 120
			Acid Extractable Lead (Pb)	2019/08/08		104	%	80 - 120
			Acid Extractable Molybdenum (Mo)	2019/08/08		100	%	80 - 120
			Acid Extractable Nickel (Ni)	2019/08/08		99	%	80 - 120
			Acid Extractable Selenium (Se)	2019/08/08		107	%	80 - 120
			Acid Extractable Silver (Ag)	2019/08/08		101	%	80 - 120
			Acid Extractable Thallium (Tl)	2019/08/08		103	%	80 - 120
			Acid Extractable Uranium (U)	2019/08/08		102	%	80 - 120
			Acid Extractable Vanadium (V)	2019/08/08		98	%	80 - 120
			Acid Extractable Zinc (Zn)	2019/08/08		97	%	80 - 120
			Acid Extractable Mercury (Hg)	2019/08/08		93	%	80 - 120
6263490	DT1	Method Blank	Acid Extractable Antimony (Sb)	2019/08/09	<0.20		ug/g	
			Acid Extractable Arsenic (As)	2019/08/09	<1.0		ug/g	
			Acid Extractable Barium (Ba)	2019/08/09	<0.50		ug/g	
			Acid Extractable Beryllium (Be)	2019/08/09	<0.20		ug/g	
			Acid Extractable Boron (B)	2019/08/09	<5.0		ug/g	
			Acid Extractable Cadmium (Cd)	2019/08/09	<0.10		ug/g	
			Acid Extractable Chromium (Cr)	2019/08/09	<1.0		ug/g	
			Acid Extractable Cobalt (Co)	2019/08/09	<0.10		ug/g	
			Acid Extractable Copper (Cu)	2019/08/09	<0.50		ug/g	
			Acid Extractable Lead (Pb)	2019/08/09	<1.0		ug/g	
			Acid Extractable Molybdenum (Mo)	2019/08/09	<0.50		ug/g	
			Acid Extractable Nickel (Ni)	2019/08/09	<0.50		ug/g	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Acid Extractable Selenium (Se)	2019/08/09	<0.50		ug/g	
			Acid Extractable Silver (Ag)	2019/08/09	<0.20		ug/g	
			Acid Extractable Thallium (Tl)	2019/08/09	<0.050		ug/g	
			Acid Extractable Uranium (U)	2019/08/09	<0.050		ug/g	
			Acid Extractable Vanadium (V)	2019/08/09	<5.0		ug/g	
			Acid Extractable Zinc (Zn)	2019/08/09	<5.0		ug/g	
			Acid Extractable Mercury (Hg)	2019/08/09	<0.050		ug/g	
6263490	DT1	RPD	Acid Extractable Antimony (Sb)	2019/08/09	NC		%	30
			Acid Extractable Arsenic (As)	2019/08/09	NC		%	30
			Acid Extractable Barium (Ba)	2019/08/09	4.0		%	30
			Acid Extractable Beryllium (Be)	2019/08/09	NC		%	30
			Acid Extractable Boron (B)	2019/08/09	NC		%	30
			Acid Extractable Cadmium (Cd)	2019/08/09	NC		%	30
			Acid Extractable Chromium (Cr)	2019/08/09	2.8		%	30
			Acid Extractable Cobalt (Co)	2019/08/09	4.0		%	30
			Acid Extractable Copper (Cu)	2019/08/09	4.3		%	30
			Acid Extractable Lead (Pb)	2019/08/09	2.0		%	30
			Acid Extractable Molybdenum (Mo)	2019/08/09	NC		%	30
			Acid Extractable Nickel (Ni)	2019/08/09	2.6		%	30
			Acid Extractable Selenium (Se)	2019/08/09	NC		%	30
			Acid Extractable Silver (Ag)	2019/08/09	NC		%	30
			Acid Extractable Thallium (Tl)	2019/08/09	NC		%	30
			Acid Extractable Uranium (U)	2019/08/09	14		%	30
			Acid Extractable Vanadium (V)	2019/08/09	2.6		%	30
			Acid Extractable Zinc (Zn)	2019/08/09	5.6		%	30
			Acid Extractable Mercury (Hg)	2019/08/09	NC		%	30
6263548	APT	Matrix Spike	Hot Water Ext. Boron (B)	2019/08/06		103	%	75 - 125
6263548	APT	Spiked Blank	Hot Water Ext. Boron (B)	2019/08/06		99	%	75 - 125
6263548	APT	Method Blank	Hot Water Ext. Boron (B)	2019/08/06	<0.050		ug/g	
6263548	APT	RPD	Hot Water Ext. Boron (B)	2019/08/06	16		%	40
6264281	SAC	Matrix Spike	Chromium (VI)	2019/08/07		92	%	70 - 130
6264281	SAC	Spiked Blank	Chromium (VI)	2019/08/07		94	%	80 - 120
6264281	SAC	Method Blank	Chromium (VI)	2019/08/07	<0.2		ug/g	
6264281	SAC	RPD	Chromium (VI)	2019/08/07	NC		%	35
6275243	GYA	RPD	Moisture	2019/08/12	2.5		%	20
6276635	DT1	Matrix Spike	Acid Extractable Antimony (Sb)	2019/08/14		83	%	75 - 125
			Acid Extractable Arsenic (As)	2019/08/14		91	%	75 - 125
			Acid Extractable Barium (Ba)	2019/08/14		NC	%	75 - 125
			Acid Extractable Beryllium (Be)	2019/08/14		89	%	75 - 125
			Acid Extractable Boron (B)	2019/08/14		83	%	75 - 125
			Acid Extractable Cadmium (Cd)	2019/08/14		92	%	75 - 125
			Acid Extractable Chromium (Cr)	2019/08/14		90	%	75 - 125
			Acid Extractable Cobalt (Co)	2019/08/14		88	%	75 - 125
			Acid Extractable Copper (Cu)	2019/08/14		88	%	75 - 125
			Acid Extractable Lead (Pb)	2019/08/14		87	%	75 - 125
			Acid Extractable Molybdenum (Mo)	2019/08/14		93	%	75 - 125
			Acid Extractable Nickel (Ni)	2019/08/14		90	%	75 - 125
			Acid Extractable Selenium (Se)	2019/08/14		94	%	75 - 125
			Acid Extractable Silver (Ag)	2019/08/14		93	%	75 - 125
			Acid Extractable Thallium (Tl)	2019/08/14		93	%	75 - 125
			Acid Extractable Uranium (U)	2019/08/14		95	%	75 - 125

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Acid Extractable Vanadium (V)	2019/08/14		90	%	75 - 125
			Acid Extractable Zinc (Zn)	2019/08/14		NC	%	75 - 125
			Acid Extractable Mercury (Hg)	2019/08/14		81	%	75 - 125
6276635	DT1	Spiked Blank	Acid Extractable Antimony (Sb)	2019/08/14		100	%	80 - 120
			Acid Extractable Arsenic (As)	2019/08/14		102	%	80 - 120
			Acid Extractable Barium (Ba)	2019/08/14		97	%	80 - 120
			Acid Extractable Beryllium (Be)	2019/08/14		96	%	80 - 120
			Acid Extractable Boron (B)	2019/08/14		94	%	80 - 120
			Acid Extractable Cadmium (Cd)	2019/08/14		101	%	80 - 120
			Acid Extractable Chromium (Cr)	2019/08/14		99	%	80 - 120
			Acid Extractable Cobalt (Co)	2019/08/14		100	%	80 - 120
			Acid Extractable Copper (Cu)	2019/08/14		98	%	80 - 120
			Acid Extractable Lead (Pb)	2019/08/14		103	%	80 - 120
			Acid Extractable Molybdenum (Mo)	2019/08/14		99	%	80 - 120
			Acid Extractable Nickel (Ni)	2019/08/14		100	%	80 - 120
			Acid Extractable Selenium (Se)	2019/08/14		103	%	80 - 120
			Acid Extractable Silver (Ag)	2019/08/14		103	%	80 - 120
			Acid Extractable Thallium (Tl)	2019/08/14		103	%	80 - 120
			Acid Extractable Uranium (U)	2019/08/14		105	%	80 - 120
			Acid Extractable Vanadium (V)	2019/08/14		98	%	80 - 120
			Acid Extractable Zinc (Zn)	2019/08/14		104	%	80 - 120
			Acid Extractable Mercury (Hg)	2019/08/14		92	%	80 - 120
6276635	DT1	Method Blank	Acid Extractable Antimony (Sb)	2019/08/14	<0.20		ug/g	
			Acid Extractable Arsenic (As)	2019/08/14	<1.0		ug/g	
			Acid Extractable Barium (Ba)	2019/08/14	<0.50		ug/g	
			Acid Extractable Beryllium (Be)	2019/08/14	<0.20		ug/g	
			Acid Extractable Boron (B)	2019/08/14	<5.0		ug/g	
			Acid Extractable Cadmium (Cd)	2019/08/14	<0.10		ug/g	
			Acid Extractable Chromium (Cr)	2019/08/14	<1.0		ug/g	
			Acid Extractable Cobalt (Co)	2019/08/14	<0.10		ug/g	
			Acid Extractable Copper (Cu)	2019/08/14	<0.50		ug/g	
			Acid Extractable Lead (Pb)	2019/08/14	<1.0		ug/g	
			Acid Extractable Molybdenum (Mo)	2019/08/14	<0.50		ug/g	
			Acid Extractable Nickel (Ni)	2019/08/14	<0.50		ug/g	
			Acid Extractable Selenium (Se)	2019/08/14	<0.50		ug/g	
			Acid Extractable Silver (Ag)	2019/08/14	<0.20		ug/g	
			Acid Extractable Thallium (Tl)	2019/08/14	<0.050		ug/g	
			Acid Extractable Uranium (U)	2019/08/14	<0.050		ug/g	
			Acid Extractable Vanadium (V)	2019/08/14	<5.0		ug/g	
			Acid Extractable Zinc (Zn)	2019/08/14	<5.0		ug/g	
			Acid Extractable Mercury (Hg)	2019/08/14	<0.050		ug/g	
6276635	DT1	RPD	Acid Extractable Antimony (Sb)	2019/08/14	NC		%	30
			Acid Extractable Arsenic (As)	2019/08/14	2.1		%	30
			Acid Extractable Barium (Ba)	2019/08/14	7.8		%	30
			Acid Extractable Beryllium (Be)	2019/08/14	11		%	30
			Acid Extractable Boron (B)	2019/08/14	0.94		%	30
			Acid Extractable Cadmium (Cd)	2019/08/14	5.1		%	30
			Acid Extractable Chromium (Cr)	2019/08/14	8.1		%	30
			Acid Extractable Cobalt (Co)	2019/08/14	11		%	30
			Acid Extractable Copper (Cu)	2019/08/14	10		%	30
			Acid Extractable Lead (Pb)	2019/08/14	11		%	30

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Acid Extractable Molybdenum (Mo)	2019/08/14	NC		%	30
			Acid Extractable Nickel (Ni)	2019/08/14	9.0		%	30
			Acid Extractable Selenium (Se)	2019/08/14	NC		%	30
			Acid Extractable Silver (Ag)	2019/08/14	NC		%	30
			Acid Extractable Thallium (Tl)	2019/08/14	12		%	30
			Acid Extractable Uranium (U)	2019/08/14	0.31		%	30
			Acid Extractable Vanadium (V)	2019/08/14	4.6		%	30
			Acid Extractable Zinc (Zn)	2019/08/14	9.2		%	30
6276651	SAC	Matrix Spike [KKQ749-01]	Chromium (VI)	2019/08/13		102	%	70 - 130
6276651	SAC	Spiked Blank	Chromium (VI)	2019/08/13		95	%	80 - 120
6276651	SAC	Method Blank	Chromium (VI)	2019/08/13	<0.2		ug/g	
6276651	SAC	RPD [KKQ749-01]	Chromium (VI)	2019/08/13	NC		%	35
6276756	DT1	Matrix Spike	Acid Extractable Antimony (Sb)	2019/08/16		103	%	75 - 125
			Acid Extractable Arsenic (As)	2019/08/16		106	%	75 - 125
			Acid Extractable Barium (Ba)	2019/08/16		NC	%	75 - 125
			Acid Extractable Beryllium (Be)	2019/08/16		104	%	75 - 125
			Acid Extractable Boron (B)	2019/08/16		111	%	75 - 125
			Acid Extractable Cadmium (Cd)	2019/08/16		104	%	75 - 125
			Acid Extractable Chromium (Cr)	2019/08/16		104	%	75 - 125
			Acid Extractable Cobalt (Co)	2019/08/16		101	%	75 - 125
			Acid Extractable Copper (Cu)	2019/08/16		102	%	75 - 125
			Acid Extractable Lead (Pb)	2019/08/16		103	%	75 - 125
			Acid Extractable Molybdenum (Mo)	2019/08/16		108	%	75 - 125
			Acid Extractable Nickel (Ni)	2019/08/16		103	%	75 - 125
			Acid Extractable Selenium (Se)	2019/08/16		109	%	75 - 125
			Acid Extractable Silver (Ag)	2019/08/16		106	%	75 - 125
			Acid Extractable Thallium (Tl)	2019/08/16		101	%	75 - 125
			Acid Extractable Uranium (U)	2019/08/16		106	%	75 - 125
			Acid Extractable Vanadium (V)	2019/08/16		104	%	75 - 125
			Acid Extractable Zinc (Zn)	2019/08/16		NC	%	75 - 125
			Acid Extractable Mercury (Hg)	2019/08/16		102	%	75 - 125
6276756	DT1	Spiked Blank	Acid Extractable Antimony (Sb)	2019/08/16		99	%	80 - 120
			Acid Extractable Arsenic (As)	2019/08/16		101	%	80 - 120
			Acid Extractable Barium (Ba)	2019/08/16		95	%	80 - 120
			Acid Extractable Beryllium (Be)	2019/08/16		99	%	80 - 120
			Acid Extractable Boron (B)	2019/08/16		98	%	80 - 120
			Acid Extractable Cadmium (Cd)	2019/08/16		99	%	80 - 120
			Acid Extractable Chromium (Cr)	2019/08/16		98	%	80 - 120
			Acid Extractable Cobalt (Co)	2019/08/16		99	%	80 - 120
			Acid Extractable Copper (Cu)	2019/08/16		98	%	80 - 120
			Acid Extractable Lead (Pb)	2019/08/16		102	%	80 - 120
			Acid Extractable Molybdenum (Mo)	2019/08/16		100	%	80 - 120
			Acid Extractable Nickel (Ni)	2019/08/16		97	%	80 - 120
			Acid Extractable Selenium (Se)	2019/08/16		99	%	80 - 120
			Acid Extractable Silver (Ag)	2019/08/16		102	%	80 - 120
			Acid Extractable Thallium (Tl)	2019/08/16		100	%	80 - 120
			Acid Extractable Uranium (U)	2019/08/16		102	%	80 - 120
			Acid Extractable Vanadium (V)	2019/08/16		98	%	80 - 120
			Acid Extractable Zinc (Zn)	2019/08/16		98	%	80 - 120
			Acid Extractable Mercury (Hg)	2019/08/16		95	%	80 - 120
6276756	DT1	Method Blank	Acid Extractable Antimony (Sb)	2019/08/16	<0.20		ug/g	

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Acid Extractable Arsenic (As)	2019/08/16	<1.0		ug/g	
			Acid Extractable Barium (Ba)	2019/08/16	<0.50		ug/g	
			Acid Extractable Beryllium (Be)	2019/08/16	<0.20		ug/g	
			Acid Extractable Boron (B)	2019/08/16	<5.0		ug/g	
			Acid Extractable Cadmium (Cd)	2019/08/16	<0.10		ug/g	
			Acid Extractable Chromium (Cr)	2019/08/16	<1.0		ug/g	
			Acid Extractable Cobalt (Co)	2019/08/16	<0.10		ug/g	
			Acid Extractable Copper (Cu)	2019/08/16	<0.50		ug/g	
			Acid Extractable Lead (Pb)	2019/08/16	<1.0		ug/g	
			Acid Extractable Molybdenum (Mo)	2019/08/16	<0.50		ug/g	
			Acid Extractable Nickel (Ni)	2019/08/16	<0.50		ug/g	
			Acid Extractable Selenium (Se)	2019/08/16	<0.50		ug/g	
			Acid Extractable Silver (Ag)	2019/08/16	<0.20		ug/g	
			Acid Extractable Thallium (Tl)	2019/08/16	<0.050		ug/g	
			Acid Extractable Uranium (U)	2019/08/16	<0.050		ug/g	
			Acid Extractable Vanadium (V)	2019/08/16	<5.0		ug/g	
			Acid Extractable Zinc (Zn)	2019/08/16	<5.0		ug/g	
			Acid Extractable Mercury (Hg)	2019/08/16	<0.050		ug/g	
6276756	DT1	RPD	Acid Extractable Antimony (Sb)	2019/08/16	2.3		%	30
			Acid Extractable Arsenic (As)	2019/08/16	1.5		%	30
			Acid Extractable Barium (Ba)	2019/08/16	4.5		%	30
			Acid Extractable Beryllium (Be)	2019/08/16	3.1		%	30
			Acid Extractable Boron (B)	2019/08/16	2.1		%	30
			Acid Extractable Cadmium (Cd)	2019/08/16	1.5		%	30
			Acid Extractable Chromium (Cr)	2019/08/16	4.7		%	30
			Acid Extractable Cobalt (Co)	2019/08/16	12		%	30
			Acid Extractable Copper (Cu)	2019/08/16	7.1		%	30
			Acid Extractable Lead (Pb)	2019/08/16	4.7		%	30
			Acid Extractable Molybdenum (Mo)	2019/08/16	11		%	30
			Acid Extractable Nickel (Ni)	2019/08/16	4.8		%	30
			Acid Extractable Selenium (Se)	2019/08/16	NC		%	30
			Acid Extractable Silver (Ag)	2019/08/16	NC		%	30
			Acid Extractable Thallium (Tl)	2019/08/16	1.1		%	30
			Acid Extractable Uranium (U)	2019/08/16	7.4		%	30
			Acid Extractable Vanadium (V)	2019/08/16	6.5		%	30
			Acid Extractable Zinc (Zn)	2019/08/16	6.2		%	30
			Acid Extractable Mercury (Hg)	2019/08/16	NC		%	30
6276758	JOH	Matrix Spike	Hot Water Ext. Boron (B)	2019/08/13		92	%	75 - 125
6276758	JOH	Spiked Blank	Hot Water Ext. Boron (B)	2019/08/13		93	%	75 - 125
6276758	JOH	Method Blank	Hot Water Ext. Boron (B)	2019/08/13	<0.050		ug/g	
6276758	JOH	RPD	Hot Water Ext. Boron (B)	2019/08/13	3.8		%	40

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

BV Labs Job #: B9L3424
Report Date: 2019/08/19

Stantec Consulting Ltd
Client Project #: 161413338
Site Location: 220 ARKELL RD
Sampler Initials: RT

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Anastassia Hamanov, Scientific Specialist

Ewa Pranjic, M.Sc., C.Chem, Scientific Specialist

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports.
For Service Group specific validation please refer to the Validation Signature Page.

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Page 1 of 2

STANTEC CHAIN OF CUSTODY RECORD

INVOICE INFORMATION:		REPORT INFORMATION(if differs from invoice):		PROJECT INFORMATION:		Laboratory Use Only:	
Company Name:	#50575 Stantec Consulting Ltd	Company Name:		Quotation #:	B77373	BV Labs Job #:	Bottle Order #: 728913
Contact Name:	Accounts Payable	Contact Name:	Mike Stendzis	Task #:			
Address:	835 Paramount Drive, Suite 200 Stoney Creek ON L8J 0B4	Address:		Project #:	161413338	COC #: C#728913-01-01	Project Manager: Augustyna Dobosz
Phone:	(905) 381-3211 Fax: (905) 631-8960	Phone:	(905) 381-3285 Fax:	Profit Centre:	4201		
Email:	SAPinvoices@Stantec.com	Email:	Michael.Stendzis@stantec.com	Site #:	220 Burrell		
				Sampled By:	R. Thom		

MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE BV LABS DRINKING WATER CHAIN OF CUSTODY

Regulation 153 (2011): ☐ Table 1 ☒ Res/Park ☐ Medium/Fine ☒ Table 2 ☐ Ind/Comm ☒ Coarse ☐ Table 3 ☐ Agri/Other ☐ For RSC ☐ Table ___

Other Regulations: ☐ CCME ☐ Sanitary Sewer Bylaw ☐ Reg 558 ☐ Storm Sewer Bylaw ☐ MISA ☐ PWQO Municipality ☐ Other

Special Instructions

Include Criteria on Certificate of Analysis (Y/N)? ___

Turnaround Time (TAT) Required:
Please provide advance notice for rush projects

Regular (Standard) TAT: ☒
(will be applied if Rush TAT is not specified):
Standard TAT = 5-7 Working days for most tests.
Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

Job Specific Rush TAT (if applies to entire submission)
Date Required: ___ Time Required: ___ ☐
Rush Confirmation Number: ___ *(call lab for #)*

	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Field Filtered (please circle): Metals / Hg / Cr VI	O.Reg 153 Metals Package								HOLD	# of Bottles	Comments
1		TP19-02	19/07/30	0900	SO	N/A	X									1	
2		TP19-01		0915			X									1	REC'D IN WATERLOO
3		QC-01		—			X									1	
4		TP19-10		0930			X								X	1	
5		TP19-09		0945											X	1	
6		TP19-04		1000			X									1	
7		TP19-03		1025			X									1	
8		TP19-05		1040			X									1	
9		TP19-06		11 00											X	1	
10*		TP19-07		~~1115~~ 1115											X	1	

01-Aug-19 13:04
Augustyna Dobosz
B9L3424
KVG ENV-221

* RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# jars used and not submitted	Laboratory Use Only: Time Sensitive	Temperature (°C) on Recei	Custody Seal	Yes	No
Ryan Thom	19/07/30	13:00	MAHMOUD AMIN	19/08/01	13:04	0		6/9/9 FCE	Present	✓	
			KVG GEVARIYAN	2019/08/01	18:10				Intact	✓	

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BV LABS' STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVLABS.COM/TERMS-AND-CONDITIONS.

* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

** SAMPLE CONTAINER, PRESERVATION, HOLD TIME AND PACKAGE INFORMATION CAN BE VIEWED AT WWW.BVLABS.COM/RESOURCES/CHAIN-OF-CUSTODY-FORMS.

SAMPLES MUST BE KEPT COOL (< 10° C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BV LABS

White: BV Labs Yellow: Client

Bureau Veritas Canada (2019) Inc.

7/5/11

Bureau Veritas Laboratories
5740 Campobello Road, Mississauga, Ontario Canada L5N 2L8 Tel (905) 817-5700 Toll-free 800-563-6266 Fax (905) 817-5777 www.bvlabs.com

STANTEC CHAIN OF CUSTODY RECORD

INVOICE INFORMATION:		REPORT INFORMATION (if differs from invoice):		PROJECT INFORMATION:		Laboratory Use Only:	
Company Name:	#50575 Stantec Consulting Ltd	Company Name:		Quotation #:	B77373	BV Labs Job #:	Bottle Order #: 728913
Contact Name:	Accounts Payable	Contact Name:	Mike Stendzis	Task #:			
Address:	835 Paramount Drive, Suite 200 Stoney Creek ON L8J 0B4	Address:		Project #:	161413338		
Phone:	(905) 381-3211 Fax: (905) 631-8960	Phone:	(905) 381-3285 Fax:	Profit Centre:		COC #:	Project Manager:
Email:	SAPinvoices@Stantec.com	Email:	Michael.Stendzis@stantec.com	Site #:	220 Arkell	C#728913-03-01	Augustyna Dobosz
				Sampled By:	R. Thorn		

MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE BV LABS DRINKING WATER CHAIN OF CUSTODY

Regulation 153 (2011)	Other Regulations	Special Instructions
☐ Table 1 ☒ Res/Park ☐ Medium/Fine ☒ Table 2 ☐ Ind/Comm ☒ Coarse ☐ Table 3 ☐ Agri/Other ☐ For RSC ☐ Table ___	☐ CCME ☐ Sanitary Sewer Bylaw ☐ Reg 558 ☐ Storm Sewer Bylaw ☐ MISA Municipality ___ ☐ PWQO ☐ Other ___	

Include Criteria on Certificate of Analysis (Y/N)? ___

Turnaround Time (TAT) Required:
Please provide advance notice for rush projects

Regular (Standard) TAT: ☒
(will be applied if Rush TAT is not specified):
Standard TAT = 5-7 Working days for most tests.
Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

Job Specific Rush TAT (if applies to entire submission)
Date Required: ___ Time Required: ___ ☐
Rush Confirmation Number: ___ *(call lab for #)*

	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Field Filtered (please circle): Metals / Hg / Cr VI	O.Reg 153 Metals Package								HOLD	# of Bottles	Comments
1		TP19-08	19/07/30	~~1140~~ 1135	SO	N/A									X	1	
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

* RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# jars used and not submitted	Laboratory Use Only: Time Sensitive	Temperature (°C) on Recei	Custody Seal	Yes	No
Ryan Thorn	19/07/30	13:00	See page SEE PAGE 1			0			Present		
									Intact		

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BV LABS' STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVLABS.COM/TERMS-AND-CONDITIONS.

* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

** SAMPLE CONTAINER, PRESERVATION, HOLD TIME AND PACKAGE INFORMATION CAN BE VIEWED AT WWW.BVLABS.COM/RESOURCES/CHAIN-OF-CUSTODY-FORMS.

SAMPLES MUST BE KEPT COOL (< 10° C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BV LABS

White: BV Labs Yellow: Client

Your Project #: 161423338
Site Location: 220 ARKELL RD., GUELPH
Your C.O.C. #: 696209-01-01

Attention: Mike Stendzis

Stantec Consulting Ltd
835 Paramount Drive, Suite 200
Stoney Creek, ON
CANADA L8J 0B4

Report Date: 2019/06/05
Report #: R5739569
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9E7326
Received: 2019/05/31, 15:20

Sample Matrix: Soil
Samples Received: 5

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Strong Acid Leachable Metals by ICPMS	5	2019/06/03	2019/06/04	CAM SOP-00447	EPA 6020B m

Remarks:

Bureau Veritas Laboratories are accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by BV Labs are based upon recognized Provincial, Federal or US method compendia such as CCME, MDDELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in BV Labs profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and BV Labs in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

BV Labs liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. BV Labs has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by BV Labs, unless otherwise agreed in writing. BV Labs is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by BV Labs, results relate to the supplied samples tested.

Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Augustyna Dobosz, Project Manager
Email: Augustyna.Dobosz@bvlabs.com
Phone# (905)817-5798

==========

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

BV Labs Job #: B9E7326
Report Date: 2019/06/05

Stantec Consulting Ltd
Client Project #: 161423338
Site Location: 220 ARKELL RD., GUELPH
Sampler Initials: AK

O.REG 153 ICPMS METALS (SOIL)

BV Labs ID		JWH789	JWH790	JWH791	JWH792	JWH793		
Sampling Date		2019/05/31 13:40	2019/05/31 13:35	2019/05/31 13:00	2019/05/31 13:05	2019/05/31 13:10		
COC Number		696209-01-01	696209-01-01	696209-01-01	696209-01-01	696209-01-01		
	UNITS	**SS24**	**SS25**	**SS26**	**SS27**	**SS28**	**RDL**	**QC Batch**
Metals								
Acid Extractable Antimony (Sb)	ug/g	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	6154921
Acid Extractable Arsenic (As)	ug/g	1.5	1.8	3.3	2.3	2.2	1.0	6154921
Acid Extractable Barium (Ba)	ug/g	18	22	20	18	28	0.50	6154921
Acid Extractable Beryllium (Be)	ug/g	<0.20	<0.20	0.26	0.21	0.25	0.20	6154921
Acid Extractable Boron (B)	ug/g	5.5	6.4	5.1	6.1	6.2	5.0	6154921
Acid Extractable Cadmium (Cd)	ug/g	0.62	0.71	0.47	0.63	1.1	0.10	6154921
Acid Extractable Chromium (Cr)	ug/g	5.7	6.2	8.6	6.2	7.8	1.0	6154921
Acid Extractable Cobalt (Co)	ug/g	2.1	2.3	2.9	2.5	3.0	0.10	6154921
Acid Extractable Copper (Cu)	ug/g	7.9	8.4	11	11	10	0.50	6154921
Acid Extractable Lead (Pb)	ug/g	29	31	23	42	30	1.0	6154921
Acid Extractable Molybdenum (Mo)	ug/g	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	6154921
Acid Extractable Nickel (Ni)	ug/g	4.5	5.2	6.8	5.6	6.7	0.50	6154921
Acid Extractable Selenium (Se)	ug/g	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	6154921
Acid Extractable Silver (Ag)	ug/g	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	6154921
Acid Extractable Thallium (Tl)	ug/g	<0.050	0.052	0.054	<0.050	0.068	0.050	6154921
Acid Extractable Uranium (U)	ug/g	0.42	0.49	0.46	0.44	0.42	0.050	6154921
Acid Extractable Vanadium (V)	ug/g	12	14	20	13	16	5.0	6154921
Acid Extractable Zinc (Zn)	ug/g	270	280	220	450	390	5.0	6154921

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

BV Labs Job #: B9E7326
Report Date: 2019/06/05

Stantec Consulting Ltd
Client Project #: 161423338
Site Location: 220 ARKELL RD., GUELPH
Sampler Initials: AK

TEST SUMMARY

BV Labs ID: JWH789
Sample ID: SS24
Matrix: Soil
Collected: 2019/05/31
Shipped:
Received: 2019/05/31

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	6154921	2019/06/03	2019/06/04	Daniel Teclu

BV Labs ID: JWH790
Sample ID: SS25
Matrix: Soil
Collected: 2019/05/31
Shipped:
Received: 2019/05/31

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	6154921	2019/06/03	2019/06/04	Daniel Teclu

BV Labs ID: JWH791
Sample ID: SS26
Matrix: Soil
Collected: 2019/05/31
Shipped:
Received: 2019/05/31

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	6154921	2019/06/03	2019/06/04	Daniel Teclu

BV Labs ID: JWH792
Sample ID: SS27
Matrix: Soil
Collected: 2019/05/31
Shipped:
Received: 2019/05/31

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	6154921	2019/06/03	2019/06/04	Daniel Teclu

BV Labs ID: JWH793
Sample ID: SS28
Matrix: Soil
Collected: 2019/05/31
Shipped:
Received: 2019/05/31

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	6154921	2019/06/03	2019/06/04	Daniel Teclu

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GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	7.3°C

Results relate only to the items tested.

BV Labs Job #: B9E7326
Report Date: 2019/06/05

Stantec Consulting Ltd
Client Project #: 161423338
Site Location: 220 ARKELL RD., GUELPH
Sampler Initials: AK

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
6154921	DT1	Matrix Spike	Acid Extractable Antimony (Sb)	2019/06/04		91	%	75 - 125
			Acid Extractable Arsenic (As)	2019/06/04		103	%	75 - 125
			Acid Extractable Barium (Ba)	2019/06/04		NC	%	75 - 125
			Acid Extractable Beryllium (Be)	2019/06/04		101	%	75 - 125
			Acid Extractable Boron (B)	2019/06/04		105	%	75 - 125
			Acid Extractable Cadmium (Cd)	2019/06/04		103	%	75 - 125
			Acid Extractable Chromium (Cr)	2019/06/04		108	%	75 - 125
			Acid Extractable Cobalt (Co)	2019/06/04		102	%	75 - 125
			Acid Extractable Copper (Cu)	2019/06/04		104	%	75 - 125
			Acid Extractable Lead (Pb)	2019/06/04		104	%	75 - 125
			Acid Extractable Molybdenum (Mo)	2019/06/04		104	%	75 - 125
			Acid Extractable Nickel (Ni)	2019/06/04		101	%	75 - 125
			Acid Extractable Selenium (Se)	2019/06/04		105	%	75 - 125
			Acid Extractable Silver (Ag)	2019/06/04		102	%	75 - 125
			Acid Extractable Thallium (Tl)	2019/06/04		101	%	75 - 125
			Acid Extractable Uranium (U)	2019/06/04		104	%	75 - 125
			Acid Extractable Vanadium (V)	2019/06/04		119	%	75 - 125
			Acid Extractable Zinc (Zn)	2019/06/04		NC	%	75 - 125
6154921	DT1	Spiked Blank	Acid Extractable Antimony (Sb)	2019/06/04		106	%	80 - 120
			Acid Extractable Arsenic (As)	2019/06/04		103	%	80 - 120
			Acid Extractable Barium (Ba)	2019/06/04		107	%	80 - 120
			Acid Extractable Beryllium (Be)	2019/06/04		104	%	80 - 120
			Acid Extractable Boron (B)	2019/06/04		101	%	80 - 120
			Acid Extractable Cadmium (Cd)	2019/06/04		102	%	80 - 120
			Acid Extractable Chromium (Cr)	2019/06/04		97	%	80 - 120
			Acid Extractable Cobalt (Co)	2019/06/04		99	%	80 - 120
			Acid Extractable Copper (Cu)	2019/06/04		100	%	80 - 120
			Acid Extractable Lead (Pb)	2019/06/04		101	%	80 - 120
			Acid Extractable Molybdenum (Mo)	2019/06/04		103	%	80 - 120
			Acid Extractable Nickel (Ni)	2019/06/04		96	%	80 - 120
			Acid Extractable Selenium (Se)	2019/06/04		102	%	80 - 120
			Acid Extractable Silver (Ag)	2019/06/04		99	%	80 - 120
			Acid Extractable Thallium (Tl)	2019/06/04		99	%	80 - 120
			Acid Extractable Uranium (U)	2019/06/04		99	%	80 - 120
			Acid Extractable Vanadium (V)	2019/06/04		98	%	80 - 120
			Acid Extractable Zinc (Zn)	2019/06/04		104	%	80 - 120
6154921	DT1	Method Blank	Acid Extractable Antimony (Sb)	2019/06/04	<0.20		ug/g	
			Acid Extractable Arsenic (As)	2019/06/04	<1.0		ug/g	
			Acid Extractable Barium (Ba)	2019/06/04	<0.50		ug/g	
			Acid Extractable Beryllium (Be)	2019/06/04	<0.20		ug/g	
			Acid Extractable Boron (B)	2019/06/04	<5.0		ug/g	
			Acid Extractable Cadmium (Cd)	2019/06/04	<0.10		ug/g	
			Acid Extractable Chromium (Cr)	2019/06/04	<1.0		ug/g	
			Acid Extractable Cobalt (Co)	2019/06/04	<0.10		ug/g	
			Acid Extractable Copper (Cu)	2019/06/04	<0.50		ug/g	
			Acid Extractable Lead (Pb)	2019/06/04	<1.0		ug/g	
			Acid Extractable Molybdenum (Mo)	2019/06/04	<0.50		ug/g	
			Acid Extractable Nickel (Ni)	2019/06/04	<0.50		ug/g	
			Acid Extractable Selenium (Se)	2019/06/04	<0.50		ug/g	
			Acid Extractable Silver (Ag)	2019/06/04	<0.20		ug/g	
			Acid Extractable Thallium (Tl)	2019/06/04	<0.050		ug/g	
			Acid Extractable Uranium (U)	2019/06/04	<0.050		ug/g	
			Acid Extractable Vanadium (V)	2019/06/04	<5.0		ug/g	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Acid Extractable Zinc (Zn)	2019/06/04	<5.0		ug/g	
6154921	DT1	RPD	Acid Extractable Antimony (Sb)	2019/06/04	NC		%	30
			Acid Extractable Arsenic (As)	2019/06/04	17		%	30
			Acid Extractable Barium (Ba)	2019/06/04	24		%	30
			Acid Extractable Beryllium (Be)	2019/06/04	9.9		%	30
			Acid Extractable Boron (B)	2019/06/04	2.5		%	30
			Acid Extractable Cadmium (Cd)	2019/06/04	NC		%	30
			Acid Extractable Chromium (Cr)	2019/06/04	8.7		%	30
			Acid Extractable Cobalt (Co)	2019/06/04	1.1		%	30
			Acid Extractable Copper (Cu)	2019/06/04	3.0		%	30
			Acid Extractable Lead (Pb)	2019/06/04	9.3		%	30
			Acid Extractable Molybdenum (Mo)	2019/06/04	4.3		%	30
			Acid Extractable Nickel (Ni)	2019/06/04	1.6		%	30
			Acid Extractable Selenium (Se)	2019/06/04	NC		%	30
			Acid Extractable Silver (Ag)	2019/06/04	NC		%	30
			Acid Extractable Thallium (Tl)	2019/06/04	2.0		%	30
			Acid Extractable Uranium (U)	2019/06/04	5.4		%	30
			Acid Extractable Vanadium (V)	2019/06/04	10		%	30
			Acid Extractable Zinc (Zn)	2019/06/04	8.3		%	30

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

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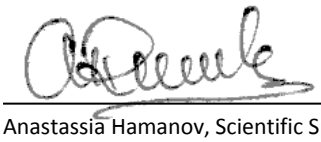
BV Labs Job #: B9E7326
Report Date: 2019/06/05

Stantec Consulting Ltd
Client Project #: 161423338
Site Location: 220 ARKELL RD., GUELPH
Sampler Initials: AK

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



Anastassia Hamanov, Scientific Specialist

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

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RUSH!!

Maxxam Analytics International Corporation o/a Maxxam Analytics
6740 Campobello Road, Mississauga, Ontario Canada L5N 2L8 Tel (905) 817-5700 Toll-free 800-563-6266 Fax (905) 817-5777 www.maxxam.ca

STANTEC CH

31-May-19 15:20
Augustyna Dobosz

B9E7326

MAF ENV-861

Page of

le Order #:

396209

Project Manager:
Augustyna Dobosz

C#696209-01-01

INVOICE INFORMATION:		REPORT INFORMATION(if differs from invoice):		PROJECT INFORMATION:	
Company Name:	#9197 Stantec Consulting Ltd	Company Name:		Quotation #:	B77373
Contact Name:	Accounts Payable	Contact Name:	Michael Stendzis	Task #:	161423338-813
Address:	~~300 Hagey Blvd Suite 100~~ 835 Paramount Dr. ~~Waterloo ON N2L 0A4~~ Stoney Creek, ON	Address:		Project #:	
				Profit Centre:	
Phone:	(519) ~~579-4418~~ 381-3211 Fax: ~~(519) 579-6733~~ 905-631-8910	Phone:	Fax:	Site #:	270 Arkell Rd, Guelph
Email:	SAPinvoices@Stantec.com	Email:	michael.stendzis@stantec.com	Sampled By:	Aseel Kaiser

MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE MAXXAM DRINKING WATER CHAIN OF CUSTODY

Regulation 153 (2011)	Other Regulations	Special Instructions
☐ Table 1 ☒ Res/Park ☐ Medium/Fine	☐ CCME ☐ Sanitary Sewer Bylaw	3 day TAT
☒ Table 2 ☐ Ind/Comm ☒ Coarse	☐ Reg 558 ☐ Storm Sewer Bylaw	
☐ Table 3 ☐ Agri/Other ☐ For RSC	☐ MISA Municipality	
☐ Table	☐ PWQO	
	☐ Other	

Include Criteria on Certificate of Analysis (Y/N)?

ANALYSIS REQUESTED (PLEASE BE SPECIFIC):

Turnaround Time (TAT) Required:

Please provide advance notice for rush projects

Regular (Standard) TAT:
(will be applied if Rush TAT is not specified)
Standard TAT = 5-7 Working days for most tests.
Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

Job Specific Rush TAT (if applies to entire submission) 3day TAT ☒
Date Required: Time Required:
Rush Confirmation Number: *(call lab for #)*

	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Field Filtered (please circle): Metals / Hg / Cr VI	Metals & Reg 153 ICPMS	# of Bottles	Comments
1		SS24	May 31 2019 (PM)	1:40	Soil		X	1	
2		SS25		1:35			X	1	3 day TAT
3		SS26		1:00			X	1	
4		SS 27		1:05			X	1	
5		SS 28		1:10			X	1	
6									
7									
8									
9									
10									

* RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# jars used and not submitted
Client / Aseel Kaiser	31 May 2019	3:18 Pm	DHL / Mail Wmt	2019/05/31	15:30	

Laboratory Use Only

Time Sensitive	Temperature (°C) on Receipt	Custody Seal	Yes	No
	8 / 7 / 7 Ice	Present		
		Intact		

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO MAXXAM'S STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.MAXXAM.CA/TERMS.

* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

** SAMPLE CONTAINER, PRESERVATION, HOLD TIME AND PACKAGE INFORMATION CAN BE VIEWED AT HTTP://MAXXAM.CA/WP-CONTENT/UPLOADS/ONTARIO-COC.PDF.

SAMPLES MUST BE KEPT COOL (< 10° C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

White: Maxxa Yellow: Client

Maxxam
A Bureau Veritas Group Company

Your Project #: 161423338
Your C.O.C. #: 683063-05-01, 683063-04-01

Attention: Mike Stendzis

Stantec Consulting Ltd
835 Paramount Drive, Suite 200
Stoney Creek, ON
CANADA L8J 0B4

Report Date: 2018/11/26
Report #: R5499367
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B8U8938
Received: 2018/11/19, 15:20

Sample Matrix: Soil
Samples Received: 18

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Methylnaphthalene Sum	18	N/A	2018/11/25	CAM SOP-00301	EPA 8270D m
Strong Acid Leachable Metals by ICPMS	17	2018/11/21	2018/11/21	CAM SOP-00447	EPA 6020B m
Strong Acid Leachable Metals by ICPMS	1	2018/11/21	2018/11/22	CAM SOP-00447	EPA 6020B m
Moisture	18	N/A	2018/11/21	CAM SOP-00445	Carter 2nd ed 51.2 m
PAH Compounds in Soil by GC/MS (SIM)	18	2018/11/22	2018/11/23	CAM SOP-00318	EPA 8270D m

Remarks:

Maxxam Analytics' laboratories are accredited to ISO/IEC 17025:2005 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Maxxam are based upon recognized Provincial, Federal or US method compendia such as CCME, MDDELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Maxxam's profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Maxxam in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Maxxam Analytics' liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Maxxam has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Maxxam, unless otherwise agreed in writing. Maxxam is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Maxxam, results relate to the supplied samples tested.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

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Your Project #: 161423338
Your C.O.C. #: 683063-05-01, 683063-04-01

Attention: Mike Stendzis

Stantec Consulting Ltd
835 Paramount Drive, Suite 200
Stoney Creek, ON
CANADA L8J 0B4

Report Date: 2018/11/26
Report #: R5499367
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B8U8938
Received: 2018/11/19, 15:20

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Augustyna Dobosz, Project Manager
Email: ADobosz@maxxam.ca
Phone# (905)817-5700 Ext:5798

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Maxxam Job #: B8U8938
Report Date: 2018/11/26

Stantec Consulting Ltd
Client Project #: 161423338
Sampler Initials: AK

O.REG 153 ICPMS METALS (SOIL)

Maxxam ID		III898	III899	III900	III901	III902		
Sampling Date		2018/11/16 13:20	2018/11/16 13:30	2018/11/16 13:35	2018/11/16 13:45	2018/11/16 16:10		
COC Number		683063-05-01	683063-05-01	683063-05-01	683063-05-01	683063-05-01		
	UNITS	SS1	SS2	SS3	SS4	SS5	RDL	QC Batch
Metals								
Acid Extractable Antimony (Sb)	ug/g	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	5848917
Acid Extractable Arsenic (As)	ug/g	1.9	2.1	3.5	2.0	1.5	1.0	5848917
Acid Extractable Barium (Ba)	ug/g	15	19	41	11	32	0.50	5848917
Acid Extractable Beryllium (Be)	ug/g	<0.20	<0.20	0.38	<0.20	0.22	0.20	5848917
Acid Extractable Boron (B)	ug/g	<5.0	<5.0	<5.0	<5.0	5.1	5.0	5848917
Acid Extractable Cadmium (Cd)	ug/g	0.49	0.51	0.61	0.29	0.27	0.10	5848917
Acid Extractable Chromium (Cr)	ug/g	7.6	8.5	12	6.3	8.8	1.0	5848917
Acid Extractable Cobalt (Co)	ug/g	2.4	3.0	4.5	2.7	3.3	0.10	5848917
Acid Extractable Copper (Cu)	ug/g	8.1	11	11	9.2	8.9	0.50	5848917
Acid Extractable Lead (Pb)	ug/g	30	31	38	18	13	1.0	5848917
Acid Extractable Molybdenum (Mo)	ug/g	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	5848917
Acid Extractable Nickel (Ni)	ug/g	5.8	6.6	9.0	5.6	6.8	0.50	5848917
Acid Extractable Selenium (Se)	ug/g	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	5848917
Acid Extractable Silver (Ag)	ug/g	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	5848917
Acid Extractable Thallium (Tl)	ug/g	0.057	0.068	0.086	0.076	0.067	0.050	5848917
Acid Extractable Uranium (U)	ug/g	0.48	0.41	0.41	0.38	0.42	0.050	5848917
Acid Extractable Vanadium (V)	ug/g	19	20	23	15	16	5.0	5848917
Acid Extractable Zinc (Zn)	ug/g	350	470	270	240	87	5.0	5848917

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B8U8938
Report Date: 2018/11/26

Stantec Consulting Ltd
Client Project #: 161423338
Sampler Initials: AK

O.REG 153 ICPMS METALS (SOIL)

Maxxam ID		III903	III904	III905	III905	III906		
Sampling Date		2018/11/16 15:55	2018/11/16 15:45	2018/11/16 14:55	2018/11/16 14:55	2018/11/16 14:40		
COC Number		683063-05-01	683063-05-01	683063-05-01	683063-05-01	683063-05-01		
	UNITS	SS6	SS7	SS8	SS8 Lab-Dup	SS9	RDL	QC Batch
Metals								
Acid Extractable Antimony (Sb)	ug/g	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	5848917
Acid Extractable Arsenic (As)	ug/g	1.5	1.1	1.7	1.7	1.0	1.0	5848917
Acid Extractable Barium (Ba)	ug/g	24	17	23	21	4.3	0.50	5848917
Acid Extractable Beryllium (Be)	ug/g	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	5848917
Acid Extractable Boron (B)	ug/g	5.6	<5.0	5.7	5.7	<5.0	5.0	5848917
Acid Extractable Cadmium (Cd)	ug/g	0.33	0.57	1.1	1.0	0.23	0.10	5848917
Acid Extractable Chromium (Cr)	ug/g	7.0	5.8	6.9	7.0	3.4	1.0	5848917
Acid Extractable Cobalt (Co)	ug/g	2.7	2.1	2.4	2.6	1.0	0.10	5848917
Acid Extractable Copper (Cu)	ug/g	6.9	7.5	9.6	9.6	3.7	0.50	5848917
Acid Extractable Lead (Pb)	ug/g	20	26	24	24	23	1.0	5848917
Acid Extractable Molybdenum (Mo)	ug/g	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	5848917
Acid Extractable Nickel (Ni)	ug/g	5.2	4.1	6.3	5.8	1.9	0.50	5848917
Acid Extractable Selenium (Se)	ug/g	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	5848917
Acid Extractable Silver (Ag)	ug/g	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	5848917
Acid Extractable Thallium (Tl)	ug/g	0.065	<0.050	0.081	0.070	<0.050	0.050	5848917
Acid Extractable Uranium (U)	ug/g	0.46	0.38	0.43	0.42	0.40	0.050	5848917
Acid Extractable Vanadium (V)	ug/g	13	11	13	13	9.2	5.0	5848917
Acid Extractable Zinc (Zn)	ug/g	200	230	380	380	110	5.0	5848917

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

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Maxxam Job #: B8U8938
Report Date: 2018/11/26

Stantec Consulting Ltd
Client Project #: 161423338
Sampler Initials: AK

O.REG 153 ICPMS METALS (SOIL)

Maxxam ID		III907	III908	III909	III910	III911		
Sampling Date		2018/11/16 15:30	2018/11/16 15:35	2018/11/16 14:10	2018/11/16 14:00	2018/11/16 14:25		
COC Number		683063-05-01	683063-04-01	683063-04-01	683063-04-01	683063-04-01		
	UNITS	**SS10**	**SS11**	**SS12**	**SS13**	**SS14**	**RDL**	**QC Batch**
Metals								
Acid Extractable Antimony (Sb)	ug/g	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	5848917
Acid Extractable Arsenic (As)	ug/g	1.2	<1.0	1.4	2.5	2.0	1.0	5848917
Acid Extractable Barium (Ba)	ug/g	22	22	20	33	17	0.50	5848917
Acid Extractable Beryllium (Be)	ug/g	<0.20	<0.20	<0.20	0.31	<0.20	0.20	5848917
Acid Extractable Boron (B)	ug/g	5.5	5.2	<5.0	5.4	5.2	5.0	5848917
Acid Extractable Cadmium (Cd)	ug/g	0.27	0.28	0.26	0.29	0.62	0.10	5848917
Acid Extractable Chromium (Cr)	ug/g	6.9	6.5	8.7	12	8.0	1.0	5848917
Acid Extractable Cobalt (Co)	ug/g	2.6	2.3	3.3	4.1	2.4	0.10	5848917
Acid Extractable Copper (Cu)	ug/g	6.3	6.4	9.6	12	7.6	0.50	5848917
Acid Extractable Lead (Pb)	ug/g	29	20	16	24	57	1.0	5848917
Acid Extractable Molybdenum (Mo)	ug/g	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	5848917
Acid Extractable Nickel (Ni)	ug/g	5.3	4.9	7.4	8.4	5.5	0.50	5848917
Acid Extractable Selenium (Se)	ug/g	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	5848917
Acid Extractable Silver (Ag)	ug/g	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	5848917
Acid Extractable Thallium (Tl)	ug/g	<0.050	<0.050	0.097	0.070	0.076	0.050	5848917
Acid Extractable Uranium (U)	ug/g	0.44	0.49	0.41	0.47	0.53	0.050	5848917
Acid Extractable Vanadium (V)	ug/g	13	12	20	23	16	5.0	5848917
Acid Extractable Zinc (Zn)	ug/g	130	120	300	100	300	5.0	5848917

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B8U8938
Report Date: 2018/11/26

Stantec Consulting Ltd
Client Project #: 161423338
Sampler Initials: AK

O.REG 153 ICPMS METALS (SOIL)

Maxxam ID		III912	III913	III914	III915		
Sampling Date		2018/11/16 16:00	2018/11/16 14:15	2018/11/16 13:20	2018/11/16 14:10		
COC Number		683063-04-01	683063-04-01	683063-04-01	683063-04-01		
	UNITS	SS15	SS16	S-DUP 1	S-DUP 2	RDL	QC Batch
Metals							
Acid Extractable Antimony (Sb)	ug/g	<0.20	<0.20	<0.20	<0.20	0.20	5848917
Acid Extractable Arsenic (As)	ug/g	1.5	3.1	2.8	1.3	1.0	5848917
Acid Extractable Barium (Ba)	ug/g	23	38	17	18	0.50	5848917
Acid Extractable Beryllium (Be)	ug/g	<0.20	0.33	<0.20	<0.20	0.20	5848917
Acid Extractable Boron (B)	ug/g	5.2	<5.0	<5.0	<5.0	5.0	5848917
Acid Extractable Cadmium (Cd)	ug/g	0.28	0.23	0.63	0.38	0.10	5848917
Acid Extractable Chromium (Cr)	ug/g	6.2	12	7.5	7.9	1.0	5848917
Acid Extractable Cobalt (Co)	ug/g	2.3	4.3	2.6	2.9	0.10	5848917
Acid Extractable Copper (Cu)	ug/g	6.4	13	12	9.2	0.50	5848917
Acid Extractable Lead (Pb)	ug/g	22	25	29	15	1.0	5848917
Acid Extractable Molybdenum (Mo)	ug/g	<0.50	0.52	<0.50	<0.50	0.50	5848917
Acid Extractable Nickel (Ni)	ug/g	5.2	9.4	6.5	6.8	0.50	5848917
Acid Extractable Selenium (Se)	ug/g	<0.50	<0.50	<0.50	<0.50	0.50	5848917
Acid Extractable Silver (Ag)	ug/g	<0.20	<0.20	<0.20	<0.20	0.20	5848917
Acid Extractable Thallium (Tl)	ug/g	0.059	0.069	0.076	0.072	0.050	5848917
Acid Extractable Uranium (U)	ug/g	0.42	0.41	0.48	0.36	0.050	5848917
Acid Extractable Vanadium (V)	ug/g	12	23	19	18	5.0	5848917
Acid Extractable Zinc (Zn)	ug/g	150	94	440	310	5.0	5848917

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B8U8938
Report Date: 2018/11/26

Stantec Consulting Ltd
Client Project #: 161423338
Sampler Initials: AK

O.REG 153 PAHS (SOIL)

Maxxam ID		III898			III898			III899	III900		
Sampling Date		2018/11/16 13:20			2018/11/16 13:20			2018/11/16 13:30	2018/11/16 13:35		
COC Number		683063-05-01			683063-05-01			683063-05-01	683063-05-01		
	UNITS	SS1	RDL	QC Batch	SS1 Lab-Dup	RDL	QC Batch	SS2	SS3	RDL	QC Batch
Inorganics											
Moisture	%	11	1.0	5848748	11	1.0	5848748	12	21	1.0	5848748
Calculated Parameters											
Methylnaphthalene, 2-(1-)	ug/g	<0.0071	0.0071	5845606				<0.0071	<0.0071	0.0071	5845606
Polyaromatic Hydrocarbons											
Acenaphthene	ug/g	<0.0050	0.0050	5851656				<0.0050	<0.0050	0.0050	5851656
Acenaphthylene	ug/g	<0.0050	0.0050	5851656				<0.0050	<0.0050	0.0050	5851656
Anthracene	ug/g	<0.0050	0.0050	5851656				<0.0050	<0.0050	0.0050	5851656
Benzo(a)anthracene	ug/g	<0.0050	0.0050	5851656				<0.0050	0.0084	0.0050	5851656
Benzo(a)pyrene	ug/g	<0.0050	0.0050	5851656				<0.0050	0.0097	0.0050	5851656
Benzo(b/j)fluoranthene	ug/g	<0.0050	0.0050	5851656				0.0053	0.015	0.0050	5851656
Benzo(g,h,i)perylene	ug/g	<0.0050	0.0050	5851656				<0.0050	0.0080	0.0050	5851656
Benzo(k)fluoranthene	ug/g	<0.0050	0.0050	5851656				<0.0050	0.0056	0.0050	5851656
Chrysene	ug/g	<0.0050	0.0050	5851656				<0.0050	0.0090	0.0050	5851656
Dibenz(a,h)anthracene	ug/g	<0.0050	0.0050	5851656				<0.0050	<0.0050	0.0050	5851656
Fluoranthene	ug/g	<0.0050	0.0050	5851656				0.0096	0.023	0.0050	5851656
Fluorene	ug/g	<0.0050	0.0050	5851656				<0.0050	<0.0050	0.0050	5851656
Indeno(1,2,3-cd)pyrene	ug/g	<0.0050	0.0050	5851656				<0.0050	0.0080	0.0050	5851656
1-Methylnaphthalene	ug/g	<0.0050	0.0050	5851656				<0.0050	<0.0050	0.0050	5851656
2-Methylnaphthalene	ug/g	<0.0050	0.0050	5851656				<0.0050	<0.0050	0.0050	5851656
Naphthalene	ug/g	<0.0050	0.0050	5851656				<0.0050	<0.0050	0.0050	5851656
Phenanthrene	ug/g	<0.0050	0.0050	5851656				0.0070	0.010	0.0050	5851656
Pyrene	ug/g	<0.0050	0.0050	5851656				0.0072	0.018	0.0050	5851656
Surrogate Recovery (%)											
D10-Anthracene	%	100		5851656				101	100		5851656
D14-Terphenyl (FS)	%	94		5851656				96	94		5851656
D8-Acenaphthylene	%	90		5851656				93	93		5851656

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

Maxxam Job #: B8U8938
Report Date: 2018/11/26

Stantec Consulting Ltd
Client Project #: 161423338
Sampler Initials: AK

O.REG 153 PAHS (SOIL)

Maxxam ID		III901	III902	III903	III904	III905	III906		
Sampling Date		2018/11/16 13:45	2018/11/16 16:10	2018/11/16 15:55	2018/11/16 15:45	2018/11/16 14:55	2018/11/16 14:40		
COC Number		683063-05-01	683063-05-01	683063-05-01	683063-05-01	683063-05-01	683063-05-01		
	UNITS	SS4	SS5	SS6	SS7	SS8	SS9	RDL	QC Batch
Inorganics									
Moisture	%	11	8.8	8.7	10	11	17	1.0	5848748
Calculated Parameters									
Methylnaphthalene, 2-(1-)	ug/g	<0.0071	<0.0071	<0.0071	<0.0071	<0.0071	<0.0071	0.0071	5845606
Polyaromatic Hydrocarbons									
Acenaphthene	ug/g	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	5851656
Acenaphthylene	ug/g	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	5851656
Anthracene	ug/g	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	5851656
Benzo(a)anthracene	ug/g	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	5851656
Benzo(a)pyrene	ug/g	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	5851656
Benzo(b/j)fluoranthene	ug/g	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	5851656
Benzo(g,h,i)perylene	ug/g	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	5851656
Benzo(k)fluoranthene	ug/g	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	5851656
Chrysene	ug/g	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	5851656
Dibenz(a,h)anthracene	ug/g	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	5851656
Fluoranthene	ug/g	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	5851656
Fluorene	ug/g	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	5851656
Indeno(1,2,3-cd)pyrene	ug/g	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	5851656
1-Methylnaphthalene	ug/g	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	5851656
2-Methylnaphthalene	ug/g	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	5851656
Naphthalene	ug/g	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	5851656
Phenanthrene	ug/g	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	5851656
Pyrene	ug/g	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	5851656
Surrogate Recovery (%)									
D10-Anthracene	%	103	101	104	99	102	94		5851656
D14-Terphenyl (FS)	%	97	92	96	92	96	88		5851656
D8-Acenaphthylene	%	92	88	92	87	89	84		5851656

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Maxxam Job #: B8U8938
Report Date: 2018/11/26

Stantec Consulting Ltd
Client Project #: 161423338
Sampler Initials: AK

O.REG 153 PAHS (SOIL)

Maxxam ID		III906			III907	III908	III909	III910		
Sampling Date		2018/11/16 14:40			2018/11/16 15:30	2018/11/16 15:35	2018/11/16 14:10	2018/11/16 14:00		
COC Number		683063-05-01			683063-05-01	683063-04-01	683063-04-01	683063-04-01		
	UNITS	SS9 Lab-Dup	RDL	QC Batch	SS10	SS11	SS12	SS13	RDL	QC Batch
Inorganics										
Moisture	%				7.6	9.1	12	12	1.0	5848748
Calculated Parameters										
Methylnaphthalene, 2-(1-)	ug/g				<0.0071	<0.0071	<0.0071	<0.0071	0.0071	5845606
Polyaromatic Hydrocarbons										
Acenaphthene	ug/g	<0.0050	0.0050	5851656	<0.0050	<0.0050	<0.0050	0.013	0.0050	5851656
Acenaphthylene	ug/g	<0.0050	0.0050	5851656	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	5851656
Anthracene	ug/g	<0.0050	0.0050	5851656	<0.0050	<0.0050	<0.0050	0.023	0.0050	5851656
Benzo(a)anthracene	ug/g	<0.0050	0.0050	5851656	<0.0050	<0.0050	<0.0050	0.056	0.0050	5851656
Benzo(a)pyrene	ug/g	<0.0050	0.0050	5851656	<0.0050	<0.0050	<0.0050	0.052	0.0050	5851656
Benzo(b/j)fluoranthene	ug/g	<0.0050	0.0050	5851656	<0.0050	<0.0050	<0.0050	0.075	0.0050	5851656
Benzo(g,h,i)perylene	ug/g	<0.0050	0.0050	5851656	<0.0050	<0.0050	<0.0050	0.031	0.0050	5851656
Benzo(k)fluoranthene	ug/g	<0.0050	0.0050	5851656	<0.0050	<0.0050	<0.0050	0.026	0.0050	5851656
Chrysene	ug/g	<0.0050	0.0050	5851656	<0.0050	<0.0050	<0.0050	0.049	0.0050	5851656
Dibenz(a,h)anthracene	ug/g	<0.0050	0.0050	5851656	<0.0050	<0.0050	<0.0050	0.0082	0.0050	5851656
Fluoranthene	ug/g	<0.0050	0.0050	5851656	<0.0050	<0.0050	<0.0050	0.13	0.0050	5851656
Fluorene	ug/g	<0.0050	0.0050	5851656	<0.0050	<0.0050	<0.0050	0.013	0.0050	5851656
Indeno(1,2,3-cd)pyrene	ug/g	<0.0050	0.0050	5851656	<0.0050	<0.0050	<0.0050	0.034	0.0050	5851656
1-Methylnaphthalene	ug/g	<0.0050	0.0050	5851656	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	5851656
2-Methylnaphthalene	ug/g	<0.0050	0.0050	5851656	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	5851656
Naphthalene	ug/g	<0.0050	0.0050	5851656	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	5851656
Phenanthrene	ug/g	<0.0050	0.0050	5851656	<0.0050	<0.0050	<0.0050	0.099	0.0050	5851656
Pyrene	ug/g	<0.0050	0.0050	5851656	<0.0050	<0.0050	<0.0050	0.10	0.0050	5851656
Surrogate Recovery (%)										
D10-Anthracene	%	102		5851656	98	97	101	96		5851656
D14-Terphenyl (FS)	%	96		5851656	93	91	95	92		5851656
D8-Acenaphthylene	%	91		5851656	88	87	91	91		5851656

RDL = Reportable Detection Limit
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Maxxam Job #: B8U8938
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Stantec Consulting Ltd
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O.REG 153 PAHS (SOIL)

Maxxam ID		III911	III912	III913	III914	III915		
Sampling Date		2018/11/16 14:25	2018/11/16 16:00	2018/11/16 14:15	2018/11/16 13:20	2018/11/16 14:10		
COC Number		683063-04-01	683063-04-01	683063-04-01	683063-04-01	683063-04-01		
	UNITS	SS14	SS15	SS16	S-DUP 1	S-DUP 2	RDL	QC Batch
Inorganics								
Moisture	%	13	8.3	14	9.9	11	1.0	5848748
Calculated Parameters								
Methylnaphthalene, 2-(1-)	ug/g	<0.0071	<0.0071	<0.0071	<0.0071	<0.0071	0.0071	5845606
Polyaromatic Hydrocarbons								
Acenaphthene	ug/g	<0.0050	<0.0050	0.0062	<0.0050	<0.0050	0.0050	5851656
Acenaphthylene	ug/g	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	5851656
Anthracene	ug/g	<0.0050	<0.0050	0.029	<0.0050	<0.0050	0.0050	5851656
Benzo(a)anthracene	ug/g	<0.0050	<0.0050	0.033	<0.0050	<0.0050	0.0050	5851656
Benzo(a)pyrene	ug/g	<0.0050	<0.0050	0.031	<0.0050	<0.0050	0.0050	5851656
Benzo(b/j)fluoranthene	ug/g	<0.0050	<0.0050	0.046	<0.0050	<0.0050	0.0050	5851656
Benzo(g,h,i)perylene	ug/g	<0.0050	<0.0050	0.022	<0.0050	<0.0050	0.0050	5851656
Benzo(k)fluoranthene	ug/g	<0.0050	<0.0050	0.017	<0.0050	<0.0050	0.0050	5851656
Chrysene	ug/g	<0.0050	<0.0050	0.028	<0.0050	<0.0050	0.0050	5851656
Dibenz(a,h)anthracene	ug/g	<0.0050	<0.0050	0.0057	<0.0050	<0.0050	0.0050	5851656
Fluoranthene	ug/g	<0.0050	<0.0050	0.083	<0.0050	<0.0050	0.0050	5851656
Fluorene	ug/g	<0.0050	<0.0050	0.012	<0.0050	<0.0050	0.0050	5851656
Indeno(1,2,3-cd)pyrene	ug/g	<0.0050	<0.0050	0.023	<0.0050	<0.0050	0.0050	5851656
1-Methylnaphthalene	ug/g	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	5851656
2-Methylnaphthalene	ug/g	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	5851656
Naphthalene	ug/g	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	5851656
Phenanthrene	ug/g	<0.0050	<0.0050	0.081	<0.0050	<0.0050	0.0050	5851656
Pyrene	ug/g	<0.0050	<0.0050	0.063	<0.0050	<0.0050	0.0050	5851656
Surrogate Recovery (%)								
D10-Anthracene	%	99	101	97	103	97		5851656
D14-Terphenyl (FS)	%	93	95	93	96	91		5851656
D8-Acenaphthylene	%	90	92	91	91	86		5851656

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B8U8938
Report Date: 2018/11/26

Stantec Consulting Ltd
Client Project #: 161423338
Sampler Initials: AK

TEST SUMMARY

Maxxam ID: III898
Sample ID: SS1
Matrix: Soil

Collected: 2018/11/16
Shipped:
Received: 2018/11/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	5845606	N/A	2018/11/25	Automated Statchk
Strong Acid Leachable Metals by ICPMS	ICP/MS	5848917	2018/11/21	2018/11/21	Matthew Ritenburg
Moisture	BAL	5848748	N/A	2018/11/21	Prgya Panchal
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	5851656	2018/11/22	2018/11/23	Mitesh Raj

Maxxam ID: III898 Dup
Sample ID: SS1
Matrix: Soil

Collected: 2018/11/16
Shipped:
Received: 2018/11/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Moisture	BAL	5848748	N/A	2018/11/21	Prgya Panchal

Maxxam ID: III899
Sample ID: SS2
Matrix: Soil

Collected: 2018/11/16
Shipped:
Received: 2018/11/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	5845606	N/A	2018/11/25	Automated Statchk
Strong Acid Leachable Metals by ICPMS	ICP/MS	5848917	2018/11/21	2018/11/21	Matthew Ritenburg
Moisture	BAL	5848748	N/A	2018/11/21	Prgya Panchal
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	5851656	2018/11/22	2018/11/23	Mitesh Raj

Maxxam ID: III900
Sample ID: SS3
Matrix: Soil

Collected: 2018/11/16
Shipped:
Received: 2018/11/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	5845606	N/A	2018/11/25	Automated Statchk
Strong Acid Leachable Metals by ICPMS	ICP/MS	5848917	2018/11/21	2018/11/22	Matthew Ritenburg
Moisture	BAL	5848748	N/A	2018/11/21	Prgya Panchal
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	5851656	2018/11/22	2018/11/23	Mitesh Raj

Maxxam ID: III901
Sample ID: SS4
Matrix: Soil

Collected: 2018/11/16
Shipped:
Received: 2018/11/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	5845606	N/A	2018/11/25	Automated Statchk
Strong Acid Leachable Metals by ICPMS	ICP/MS	5848917	2018/11/21	2018/11/21	Matthew Ritenburg
Moisture	BAL	5848748	N/A	2018/11/21	Prgya Panchal
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	5851656	2018/11/22	2018/11/23	Mitesh Raj

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Maxxam Job #: B8U8938
Report Date: 2018/11/26

Stantec Consulting Ltd
Client Project #: 161423338
Sampler Initials: AK

TEST SUMMARY

Maxxam ID: III902
Sample ID: SS5
Matrix: Soil

Collected: 2018/11/16
Shipped:
Received: 2018/11/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	5845606	N/A	2018/11/25	Automated Statchk
Strong Acid Leachable Metals by ICPMS	ICP/MS	5848917	2018/11/21	2018/11/21	Matthew Ritenburg
Moisture	BAL	5848748	N/A	2018/11/21	Prgya Panchal
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	5851656	2018/11/22	2018/11/23	Mitesh Raj

Maxxam ID: III903
Sample ID: SS6
Matrix: Soil

Collected: 2018/11/16
Shipped:
Received: 2018/11/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	5845606	N/A	2018/11/25	Automated Statchk
Strong Acid Leachable Metals by ICPMS	ICP/MS	5848917	2018/11/21	2018/11/21	Matthew Ritenburg
Moisture	BAL	5848748	N/A	2018/11/21	Prgya Panchal
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	5851656	2018/11/22	2018/11/23	Mitesh Raj

Maxxam ID: III904
Sample ID: SS7
Matrix: Soil

Collected: 2018/11/16
Shipped:
Received: 2018/11/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	5845606	N/A	2018/11/25	Automated Statchk
Strong Acid Leachable Metals by ICPMS	ICP/MS	5848917	2018/11/21	2018/11/21	Matthew Ritenburg
Moisture	BAL	5848748	N/A	2018/11/21	Prgya Panchal
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	5851656	2018/11/22	2018/11/23	Mitesh Raj

Maxxam ID: III905
Sample ID: SS8
Matrix: Soil

Collected: 2018/11/16
Shipped:
Received: 2018/11/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	5845606	N/A	2018/11/25	Automated Statchk
Strong Acid Leachable Metals by ICPMS	ICP/MS	5848917	2018/11/21	2018/11/21	Matthew Ritenburg
Moisture	BAL	5848748	N/A	2018/11/21	Prgya Panchal
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	5851656	2018/11/22	2018/11/23	Mitesh Raj

Maxxam ID: III905 Dup
Sample ID: SS8
Matrix: Soil

Collected: 2018/11/16
Shipped:
Received: 2018/11/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	5848917	2018/11/21	2018/11/21	Matthew Ritenburg

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Maxxam Job #: B8U8938
Report Date: 2018/11/26

Stantec Consulting Ltd
Client Project #: 161423338
Sampler Initials: AK

TEST SUMMARY

Maxxam ID: III906
Sample ID: SS9
Matrix: Soil

Collected: 2018/11/16
Shipped:
Received: 2018/11/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	5845606	N/A	2018/11/25	Automated Statchk
Strong Acid Leachable Metals by ICPMS	ICP/MS	5848917	2018/11/21	2018/11/21	Matthew Ritenburg
Moisture	BAL	5848748	N/A	2018/11/21	Prgya Panchal
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	5851656	2018/11/22	2018/11/23	Mitesh Raj

Maxxam ID: III906 Dup
Sample ID: SS9
Matrix: Soil

Collected: 2018/11/16
Shipped:
Received: 2018/11/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	5851656	2018/11/22	2018/11/23	Mitesh Raj

Maxxam ID: III907
Sample ID: SS10
Matrix: Soil

Collected: 2018/11/16
Shipped:
Received: 2018/11/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	5845606	N/A	2018/11/25	Automated Statchk
Strong Acid Leachable Metals by ICPMS	ICP/MS	5848917	2018/11/21	2018/11/21	Matthew Ritenburg
Moisture	BAL	5848748	N/A	2018/11/21	Prgya Panchal
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	5851656	2018/11/22	2018/11/23	Mitesh Raj

Maxxam ID: III908
Sample ID: SS11
Matrix: Soil

Collected: 2018/11/16
Shipped:
Received: 2018/11/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	5845606	N/A	2018/11/25	Automated Statchk
Strong Acid Leachable Metals by ICPMS	ICP/MS	5848917	2018/11/21	2018/11/21	Matthew Ritenburg
Moisture	BAL	5848748	N/A	2018/11/21	Prgya Panchal
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	5851656	2018/11/22	2018/11/23	Mitesh Raj

Maxxam ID: III909
Sample ID: SS12
Matrix: Soil

Collected: 2018/11/16
Shipped:
Received: 2018/11/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	5845606	N/A	2018/11/25	Automated Statchk
Strong Acid Leachable Metals by ICPMS	ICP/MS	5848917	2018/11/21	2018/11/21	Matthew Ritenburg
Moisture	BAL	5848748	N/A	2018/11/21	Prgya Panchal
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	5851656	2018/11/22	2018/11/23	Mitesh Raj

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Maxxam Job #: B8U8938
Report Date: 2018/11/26

Stantec Consulting Ltd
Client Project #: 161423338
Sampler Initials: AK

TEST SUMMARY

Maxxam ID: III910
Sample ID: SS13
Matrix: Soil

Collected: 2018/11/16
Shipped:
Received: 2018/11/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	5845606	N/A	2018/11/25	Automated Statchk
Strong Acid Leachable Metals by ICPMS	ICP/MS	5848917	2018/11/21	2018/11/21	Matthew Ritenburg
Moisture	BAL	5848748	N/A	2018/11/21	Prgya Panchal
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	5851656	2018/11/22	2018/11/23	Mitesh Raj

Maxxam ID: III911
Sample ID: SS14
Matrix: Soil

Collected: 2018/11/16
Shipped:
Received: 2018/11/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	5845606	N/A	2018/11/25	Automated Statchk
Strong Acid Leachable Metals by ICPMS	ICP/MS	5848917	2018/11/21	2018/11/21	Matthew Ritenburg
Moisture	BAL	5848748	N/A	2018/11/21	Prgya Panchal
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	5851656	2018/11/22	2018/11/23	Mitesh Raj

Maxxam ID: III912
Sample ID: SS15
Matrix: Soil

Collected: 2018/11/16
Shipped:
Received: 2018/11/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	5845606	N/A	2018/11/25	Automated Statchk
Strong Acid Leachable Metals by ICPMS	ICP/MS	5848917	2018/11/21	2018/11/21	Matthew Ritenburg
Moisture	BAL	5848748	N/A	2018/11/21	Prgya Panchal
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	5851656	2018/11/22	2018/11/23	Mitesh Raj

Maxxam ID: III913
Sample ID: SS16
Matrix: Soil

Collected: 2018/11/16
Shipped:
Received: 2018/11/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	5845606	N/A	2018/11/25	Automated Statchk
Strong Acid Leachable Metals by ICPMS	ICP/MS	5848917	2018/11/21	2018/11/21	Matthew Ritenburg
Moisture	BAL	5848748	N/A	2018/11/21	Prgya Panchal
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	5851656	2018/11/22	2018/11/23	Mitesh Raj

Maxxam ID: III914
Sample ID: S-DUP 1
Matrix: Soil

Collected: 2018/11/16
Shipped:
Received: 2018/11/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	5845606	N/A	2018/11/25	Automated Statchk
Strong Acid Leachable Metals by ICPMS	ICP/MS	5848917	2018/11/21	2018/11/21	Matthew Ritenburg
Moisture	BAL	5848748	N/A	2018/11/21	Prgya Panchal
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	5851656	2018/11/22	2018/11/23	Mitesh Raj

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Maxxam Job #: B8U8938
Report Date: 2018/11/26

Stantec Consulting Ltd
Client Project #: 161423338
Sampler Initials: AK

TEST SUMMARY

Maxxam ID: III915
Sample ID: S-DUP 2
Matrix: Soil

Collected: 2018/11/16
Shipped:
Received: 2018/11/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	5845606	N/A	2018/11/25	Automated Statchk
Strong Acid Leachable Metals by ICPMS	ICP/MS	5848917	2018/11/21	2018/11/21	Matthew Ritenburg
Moisture	BAL	5848748	N/A	2018/11/21	Prgya Panchal
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	5851656	2018/11/22	2018/11/23	Mitesh Raj

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GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	2.3°C

Results relate only to the items tested.

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Maxxam Job #: B8U8938
Report Date: 2018/11/26

Stantec Consulting Ltd
Client Project #: 161423338
Sampler Initials: AK

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
5848748	GYA	RPD [III898-01]	Moisture	2018/11/21	3.7		%	20
5848917	MRG	Matrix Spike [III905-01]	Acid Extractable Antimony (Sb)	2018/11/21		97	%	75 - 125
			Acid Extractable Arsenic (As)	2018/11/21		100	%	75 - 125
			Acid Extractable Barium (Ba)	2018/11/21		91	%	75 - 125
			Acid Extractable Beryllium (Be)	2018/11/21		97	%	75 - 125
			Acid Extractable Boron (B)	2018/11/21		92	%	75 - 125
			Acid Extractable Cadmium (Cd)	2018/11/21		97	%	75 - 125
			Acid Extractable Chromium (Cr)	2018/11/21		97	%	75 - 125
			Acid Extractable Cobalt (Co)	2018/11/21		98	%	75 - 125
			Acid Extractable Copper (Cu)	2018/11/21		93	%	75 - 125
			Acid Extractable Lead (Pb)	2018/11/21		92	%	75 - 125
			Acid Extractable Molybdenum (Mo)	2018/11/21		101	%	75 - 125
			Acid Extractable Nickel (Ni)	2018/11/21		98	%	75 - 125
			Acid Extractable Selenium (Se)	2018/11/21		100	%	75 - 125
			Acid Extractable Silver (Ag)	2018/11/21		99	%	75 - 125
			Acid Extractable Thallium (Tl)	2018/11/21		95	%	75 - 125
			Acid Extractable Uranium (U)	2018/11/21		95	%	75 - 125
			Acid Extractable Vanadium (V)	2018/11/21		98	%	75 - 125
			Acid Extractable Zinc (Zn)	2018/11/21		NC	%	75 - 125
5848917	MRG	Spiked Blank	Acid Extractable Antimony (Sb)	2018/11/21		99	%	80 - 120
			Acid Extractable Arsenic (As)	2018/11/21		100	%	80 - 120
			Acid Extractable Barium (Ba)	2018/11/21		97	%	80 - 120
			Acid Extractable Beryllium (Be)	2018/11/21		96	%	80 - 120
			Acid Extractable Boron (B)	2018/11/21		95	%	80 - 120
			Acid Extractable Cadmium (Cd)	2018/11/21		98	%	80 - 120
			Acid Extractable Chromium (Cr)	2018/11/21		99	%	80 - 120
			Acid Extractable Cobalt (Co)	2018/11/21		98	%	80 - 120
			Acid Extractable Copper (Cu)	2018/11/21		97	%	80 - 120
			Acid Extractable Lead (Pb)	2018/11/21		97	%	80 - 120
			Acid Extractable Molybdenum (Mo)	2018/11/21		96	%	80 - 120
			Acid Extractable Nickel (Ni)	2018/11/21		99	%	80 - 120
			Acid Extractable Selenium (Se)	2018/11/21		102	%	80 - 120
			Acid Extractable Silver (Ag)	2018/11/21		100	%	80 - 120
			Acid Extractable Thallium (Tl)	2018/11/21		97	%	80 - 120
			Acid Extractable Uranium (U)	2018/11/21		96	%	80 - 120
			Acid Extractable Vanadium (V)	2018/11/21		98	%	80 - 120
			Acid Extractable Zinc (Zn)	2018/11/21		98	%	80 - 120
5848917	MRG	Method Blank	Acid Extractable Antimony (Sb)	2018/11/21	<0.20		ug/g	
			Acid Extractable Arsenic (As)	2018/11/21	<1.0		ug/g	
			Acid Extractable Barium (Ba)	2018/11/21	<0.50		ug/g	
			Acid Extractable Beryllium (Be)	2018/11/21	<0.20		ug/g	
			Acid Extractable Boron (B)	2018/11/21	<5.0		ug/g	
			Acid Extractable Cadmium (Cd)	2018/11/21	<0.10		ug/g	
			Acid Extractable Chromium (Cr)	2018/11/21	<1.0		ug/g	
			Acid Extractable Cobalt (Co)	2018/11/21	<0.10		ug/g	
			Acid Extractable Copper (Cu)	2018/11/21	<0.50		ug/g	
			Acid Extractable Lead (Pb)	2018/11/21	<1.0		ug/g	
			Acid Extractable Molybdenum (Mo)	2018/11/21	<0.50		ug/g	
			Acid Extractable Nickel (Ni)	2018/11/21	<0.50		ug/g	
			Acid Extractable Selenium (Se)	2018/11/21	<0.50		ug/g	
			Acid Extractable Silver (Ag)	2018/11/21	<0.20		ug/g	
			Acid Extractable Thallium (Tl)	2018/11/21	<0.050		ug/g	
			Acid Extractable Uranium (U)	2018/11/21	<0.050		ug/g	
			Acid Extractable Vanadium (V)	2018/11/21	<5.0		ug/g	

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Acid Extractable Zinc (Zn)	2018/11/21	<5.0		ug/g	
5848917	MRG	RPD [III905-01]	Acid Extractable Antimony (Sb)	2018/11/21	NC		%	30
			Acid Extractable Arsenic (As)	2018/11/21	1.8		%	30
			Acid Extractable Barium (Ba)	2018/11/21	6.6		%	30
			Acid Extractable Beryllium (Be)	2018/11/21	NC		%	30
			Acid Extractable Boron (B)	2018/11/21	0.093		%	30
			Acid Extractable Cadmium (Cd)	2018/11/21	4.8		%	30
			Acid Extractable Chromium (Cr)	2018/11/21	1.1		%	30
			Acid Extractable Cobalt (Co)	2018/11/21	9.0		%	30
			Acid Extractable Copper (Cu)	2018/11/21	0.27		%	30
			Acid Extractable Lead (Pb)	2018/11/21	1.2		%	30
			Acid Extractable Molybdenum (Mo)	2018/11/21	NC		%	30
			Acid Extractable Nickel (Ni)	2018/11/21	8.1		%	30
			Acid Extractable Selenium (Se)	2018/11/21	NC		%	30
			Acid Extractable Silver (Ag)	2018/11/21	NC		%	30
			Acid Extractable Thallium (Tl)	2018/11/21	14		%	30
			Acid Extractable Uranium (U)	2018/11/21	3.6		%	30
			Acid Extractable Vanadium (V)	2018/11/21	0.16		%	30
			Acid Extractable Zinc (Zn)	2018/11/21	0.33		%	30
5851656	RAJ	Matrix Spike [III906-01]	D10-Anthracene	2018/11/23		94	%	50 - 130
			D14-Terphenyl (FS)	2018/11/23		90	%	50 - 130
			D8-Acenaphthylene	2018/11/23		87	%	50 - 130
			Acenaphthene	2018/11/23		94	%	50 - 130
			Acenaphthylene	2018/11/23		90	%	50 - 130
			Anthracene	2018/11/23		90	%	50 - 130
			Benzo(a)anthracene	2018/11/23		96	%	50 - 130
			Benzo(a)pyrene	2018/11/23		92	%	50 - 130
			Benzo(b/j)fluoranthene	2018/11/23		94	%	50 - 130
			Benzo(g,h,i)perylene	2018/11/23		84	%	50 - 130
			Benzo(k)fluoranthene	2018/11/23		93	%	50 - 130
			Chrysene	2018/11/23		94	%	50 - 130
			Dibenz(a,h)anthracene	2018/11/23		91	%	50 - 130
			Fluoranthene	2018/11/23		97	%	50 - 130
			Fluorene	2018/11/23		98	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2018/11/23		89	%	50 - 130
			1-Methylnaphthalene	2018/11/23		118	%	50 - 130
			2-Methylnaphthalene	2018/11/23		104	%	50 - 130
			Naphthalene	2018/11/23		88	%	50 - 130
			Phenanthrene	2018/11/23		91	%	50 - 130
			Pyrene	2018/11/23		93	%	50 - 130
5851656	RAJ	Spiked Blank	D10-Anthracene	2018/11/23		99	%	50 - 130
			D14-Terphenyl (FS)	2018/11/23		95	%	50 - 130
			D8-Acenaphthylene	2018/11/23		94	%	50 - 130
			Acenaphthene	2018/11/23		97	%	50 - 130
			Acenaphthylene	2018/11/23		94	%	50 - 130
			Anthracene	2018/11/23		95	%	50 - 130
			Benzo(a)anthracene	2018/11/23		100	%	50 - 130
			Benzo(a)pyrene	2018/11/23		96	%	50 - 130
			Benzo(b/j)fluoranthene	2018/11/23		99	%	50 - 130
			Benzo(g,h,i)perylene	2018/11/23		88	%	50 - 130
			Benzo(k)fluoranthene	2018/11/23		96	%	50 - 130
			Chrysene	2018/11/23		98	%	50 - 130
			Dibenz(a,h)anthracene	2018/11/23		95	%	50 - 130
			Fluoranthene	2018/11/23		103	%	50 - 130

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Fluorene	2018/11/23		105	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2018/11/23		94	%	50 - 130
			1-Methylnaphthalene	2018/11/23		125	%	50 - 130
			2-Methylnaphthalene	2018/11/23		110	%	50 - 130
			Naphthalene	2018/11/23		93	%	50 - 130
			Phenanthrene	2018/11/23		94	%	50 - 130
			Pyrene	2018/11/23		97	%	50 - 130
5851656	RAJ	Method Blank	D10-Anthracene	2018/11/23		101	%	50 - 130
			D14-Terphenyl (FS)	2018/11/23		94	%	50 - 130
			D8-Acenaphthylene	2018/11/23		90	%	50 - 130
			Acenaphthene	2018/11/23	<0.0050		ug/g	
			Acenaphthylene	2018/11/23	<0.0050		ug/g	
			Anthracene	2018/11/23	<0.0050		ug/g	
			Benzo(a)anthracene	2018/11/23	<0.0050		ug/g	
			Benzo(a)pyrene	2018/11/23	<0.0050		ug/g	
			Benzo(b/j)fluoranthene	2018/11/23	<0.0050		ug/g	
			Benzo(g,h,i)perylene	2018/11/23	<0.0050		ug/g	
			Benzo(k)fluoranthene	2018/11/23	<0.0050		ug/g	
			Chrysene	2018/11/23	<0.0050		ug/g	
			Dibenz(a,h)anthracene	2018/11/23	<0.0050		ug/g	
			Fluoranthene	2018/11/23	<0.0050		ug/g	
			Fluorene	2018/11/23	<0.0050		ug/g	
			Indeno(1,2,3-cd)pyrene	2018/11/23	<0.0050		ug/g	
			1-Methylnaphthalene	2018/11/23	<0.0050		ug/g	
			2-Methylnaphthalene	2018/11/23	<0.0050		ug/g	
			Naphthalene	2018/11/23	<0.0050		ug/g	
			Phenanthrene	2018/11/23	<0.0050		ug/g	
			Pyrene	2018/11/23	<0.0050		ug/g	
5851656	RAJ	RPD [III906-01]	Acenaphthene	2018/11/23	NC		%	40
			Acenaphthylene	2018/11/23	NC		%	40
			Anthracene	2018/11/23	NC		%	40
			Benzo(a)anthracene	2018/11/23	NC		%	40
			Benzo(a)pyrene	2018/11/23	NC		%	40
			Benzo(b/j)fluoranthene	2018/11/23	NC		%	40
			Benzo(g,h,i)perylene	2018/11/23	NC		%	40
			Benzo(k)fluoranthene	2018/11/23	NC		%	40
			Chrysene	2018/11/23	NC		%	40
			Dibenz(a,h)anthracene	2018/11/23	NC		%	40
			Fluoranthene	2018/11/23	NC		%	40
			Fluorene	2018/11/23	NC		%	40
			Indeno(1,2,3-cd)pyrene	2018/11/23	NC		%	40
			1-Methylnaphthalene	2018/11/23	NC		%	40
			2-Methylnaphthalene	2018/11/23	NC		%	40
			Naphthalene	2018/11/23	NC		%	40
			Phenanthrene	2018/11/23	NC		%	40

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Pyrene	2018/11/23	NC		%	40

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

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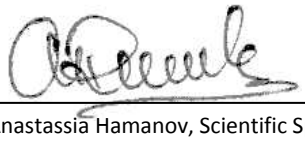
Maxxam Job #: B8U8938
Report Date: 2018/11/26

Stantec Consulting Ltd
Client Project #: 161423338
Sampler Initials: AK

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



Anastassia Hamanov, Scientific Specialist

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

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6740 Campobello Road, Mississauga, Ontario Canada L5N 2L8 Tel (905) 817-5700 Toll-free 800-563-6266 Fax (905) 817-5777 www.maxxam.ca

STANTEC CHAIN OF CUSTODY RECORD

Page 1 of 2

INVOICE INFORMATION:		REPORT INFORMATION(if differs from invoice):		PROJECT INFORMATION:		Laboratory Use Only:	
Company Name:	#50575 Stantec Consulting Ltd	Company Name:		Quotation #:	B77373	Maxxam Job #:	Bottle Order #:
Contact Name:	Accounts Payable	Contact Name:	~~Rachael Harman-Denhoed~~ Mike Stendzis	PO #:	~~12170231~~ 161423338-813		683063
Address:	835 Paramount Drive, Suite 200	Address:		Project #:		COC #:	Project Manager:
	Stoney Creek ON L8J 0B4			Profit Centre:		C#683063-05-01	Augustyna Dobosz
Phone:	(905) 381-3211 Fax: (905) 631-8960	Phone:	Michael.Stendzis@Stantec.com	Site #:			
Email:	SAPinvoices@Stantec.com	Email:	Rachael.Harman-Denhoed@stantec.com	Sampled By:	Aseel Kaiser		

MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE MAXXAM DRINKING WATER CHAIN OF CUSTODY

Regulation 153 (2011)	Other Regulations	Special Instructions
☐ Table 1 ☒ Res/Park ☐ Medium/Fine	☐ CCME ☐ Sanitary Sewer Bylaw	
☒ Table 2 ☐ Ind/Comm ☐ Coarse	☐ Reg 558 ☐ Storm Sewer Bylaw	
☐ Table 3 ☐ Agri/Other ☐ For RSC	☐ MISA Municipality ____	
☐ Table ___	☐ PWQO	
	☐ Other ____	

Include Criteria on Certificate of Analysis (Y/N)? N

Turnaround Time (TAT) Required:

Please provide advance notice for rush projects

Regular (Standard) TAT: ☒
(will be applied if Rush TAT is not specified)
Standard TAT = 5-7 Working days for most tests.
Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

Job Specific Rush TAT (if applies to entire submission)
Date Required: ____ Time Required: ____ ☐
Rush Confirmation Number: ____ *(call lab for #)*

ANALYSIS REQUESTED (PLEASE BE SPECIFIC):

	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Field Filtered (please circle) Metals / Hg / Cr VI	O Reg 153 VOCs by HS & F1-F4 (Soil)	O Reg 153 ICPMS Metals (Soil)	O Reg 153 PAHs (Soil)	O Reg 558 TCLP Inorganics Package	O Reg 558 TCLP PCBs	O Reg 558 TCLP Volatile Organics HS	TCLP Petroleum Hydrocarbons	Ignitability of a Sample	PAH Compounds in Leachate by GC/MS (SIM)	# of Bottles	Comments
1	✓	SS1	Nov 16 2018	1:20 PM	Soil			X	X							1	
2	✓	SS2		1:30				X	X							1	
3	✓	SS3		1:35				X	X							1	
4	✓	SS4		1:45				X	X							1	
5	✓	SS5		4:10				X	X							1	
6	✓	SS6		3:55				X	X							1	
7	✓	SS7		3:45				X	X							1	
8	✓	SS8		2:55				X	X							1	
9	✓	SS9		2:40				X	X							1	
10	✓	SS10		3:30				X	X							1	

19-Nov-18 15:20
Augustyna Dobosz
B8U8938
ASR ENV-632

* RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# jars used and not submitted
KWright	18/11/19	9am		2018/11/19	15:20	

Laboratory Use Only					
Time Sensitive	Temperature (°C) on Receipt	2 2 3	Custody Seal Present	Yes	No
			Intact	Y	

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO MAXXAM'S STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.MAXXAM.CA/TERMS.

* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

** SAMPLE CONTAINER, PRESERVATION, HOLD TIME AND PACKAGE INFORMATION CAN BE VIEWED AT HTTP://MAXXAM.CA/WP-CONTENT/UPLOADS/ONTARIO-COC.PDF.

SAMPLES MUST BE KEPT COOL (< 10° C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

White: Maxxa Yellow: Client

40268

Maxxam Analytics International Corporation o/a Maxxam Analytics

Maxxam
A Bureau Veritas Group Company

Maxxam Analytics International Corporation o/a Maxxam Analytics
6740 Campobello Road, Mississauga, Ontario Canada L5N 2L8 Tel (905) 817-5700 Toll-free 800-563-6266 Fax (905) 817-5777 www.maxxam.ca

STANTEC CHAIN OF CUSTODY RECORD

Page 2 of 2

INVOICE INFORMATION:		REPORT INFORMATION(if differs from invoice):		PROJECT INFORMATION:		Laboratory Use Only:	
Company Name:	#50575 Stantec Consulting Ltd	Company Name:		Quotation #:	B77373	Maxxam Job #:	Bottle Order #:
Contact Name:	Accounts Payable	Contact Name:	~~Rachael Harman-Denhoed~~ Mike Stendzis	Task #:	~~123470231~~ 161423338 813		683063
Address:	835 Paramount Drive, Suite 200	Address:		Project #:		COC #:	Project Manager:
	Stoney Creek ON L8J 0B4			Profit Centre:		C#683063-04-01	Augustyna Dobosz
Phone:	(905) 381-3211 Fax: (905) 631-8960	Phone:	see page 1 Fax:	Site #:			
Email:	SAPinvoices@Stantec.com	Email:	Rachael.Harman-Denhoed@stantec.com	Sampled By:	Aseel Kaiser		

MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE MAXXAM DRINKING WATER CHAIN OF CUSTODY

Regulation 153 (2011): ☐ Table 1 ☒ Res/Park ☐ Medium/Fine ☒ Table 2 ☐ Ind/Comm ☐ Coarse ☐ Table 3 ☐ Agri/Other ☐ For RSC ☐ Table ___

Other Regulations: ☐ CCME ☐ Sanitary Sewer Bylaw ☐ Reg 558 ☐ Storm Sewer Bylaw ☐ MISA Municipality: ☐ PWQO ☐ Other

Special Instructions

Include Criteria on Certificate of Analysis (Y/N)? N

ANALYSIS REQUESTED (PLEASE BE SPECIFIC):

	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Field Filtered (please circle) Metals / Hg / Cr VI	O Reg 153 VOCs by HS & F1-F4 (Soil)	O Reg 153 ICPMS Metals (Soil)	O Reg 153 PAHs (Soil)	O Reg 558 TCLP Inorganics Package	O Reg 558 TCLP PCBs	O Reg 558 TCLP Volatile Organics HS	TCLP Petroleum Hydrocarbons	Ignitability of a Sample	PAH Compounds in Leachate by GC/MS (SIM)	# of Bottles	Comments
1	✓	SS11	Nov 16 2018	3:35	Soil			X	X							1	
2	✓	SS12		2:10				X	X							1	
3	✓	SS13		2:00				X	X							1	
4	✓	SS14		2:25				X	X							1	
5	✓	SS15		4:00				X	X							1	
6	✓	SS16		2:15				X	X							1	
7	✓	S-DUP1		1:20				X	X							1	
8	✓	S-DUP2		2:10				X	X							1	
9																	
10																	

Turnaround Time (TAT) Required:

Please provide advance notice for rush projects

Regular (Standard) TAT: ☒
(will be applied if Rush TAT is not specified)
Standard TAT = 5-7 Working days for most tests.
Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

Job Specific Rush TAT (if applies to entire submission)
Date Required: ___ Time Required: ___ ☐
Rush Confirmation Number: ___ *(call lab for #)*

* RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# jars used and not submitted
Kwight Gulf	18/11/19	9am	see page 1			

Laboratory Use Only					
Time Sensitive	Temperature (°C) on Recei	Custody Seal	Yes	No
		Present		
		Intact		

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO MAXXAM'S STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.MAXXAM.CA/TERMS.

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** SAMPLE CONTAINER, PRESERVATION, HOLD TIME AND PACKAGE INFORMATION CAN BE VIEWED AT HTTP://MAXXAM.CA/WP-CONTENT/UPLOADS/ONTARIO-COC.PDF.

SAMPLES MUST BE KEPT COOL (< 10° C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

White: Maxxa Yellow: Client

Maxxam Analytics International Corporation o/a Maxxam Analytics

Your Project #: 161413338
Site Location: 220 ARKELL RD, GUELPH
Your C.O.C. #: N/A

Attention: Mike Stendzis

Stantec Consulting Ltd
835 Paramount Drive, Suite 200
Stoney Creek, ON
CANADA L8J 0B4

Report Date: 2019/11/14
Report #: R5964622
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9V8161
Received: 2019/11/12, 14:15

Sample Matrix: Soil
Samples Received: 4

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Strong Acid Leachable Metals by ICPMS	4	2019/11/13	2019/11/13	CAM SOP-00447	EPA 6020B m

Remarks:

Bureau Veritas Laboratories are accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by BV Labs are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in BV Labs profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and BV Labs in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

BV Labs liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. BV Labs has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by BV Labs, unless otherwise agreed in writing. BV Labs is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by BV Labs, results relate to the supplied samples tested.

Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Your Project #: 161413338
Site Location: 220 ARKELL RD, GUELPH
Your C.O.C. #: N/A

Attention: Mike Stendzis

Stantec Consulting Ltd
835 Paramount Drive, Suite 200
Stoney Creek, ON
CANADA L8J 0B4

Report Date: 2019/11/14
Report #: R5964622
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9V8161
Received: 2019/11/12, 14:15

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Augustyna Dobosz, Project Manager
Email: Augustyna.Dobosz@bvlabs.com
Phone# (905)817-5798

==========

BV Labs Job #: B9V8161
Report Date: 2019/11/14

Stantec Consulting Ltd
Client Project #: 161413338
Site Location: 220 ARKELL RD, GUELPH
Sampler Initials: AK

O.REG 153 ICPMS METALS (SOIL)

BV Labs ID		LGZ704	LGZ704	LGZ705	LGZ706	LGZ707		
Sampling Date		2019/11/12 12:05	2019/11/12 12:05	2019/11/12 12:10	2019/11/12 12:15	2019/11/12 12:20		
COC Number		N/A	N/A	N/A	N/A	N/A		
	UNITS	SS30	SS30 Lab-Dup	SS31	SS32	SS33	RDL	QC Batch
Metals								
Acid Extractable Antimony (Sb)	ug/g	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	6440042
Acid Extractable Arsenic (As)	ug/g	2.4	2.3	2.6	2.2	1.8	1.0	6440042
Acid Extractable Barium (Ba)	ug/g	19	21	28	16	8.3	0.50	6440042
Acid Extractable Beryllium (Be)	ug/g	<0.20	<0.20	0.26	<0.20	<0.20	0.20	6440042
Acid Extractable Boron (B)	ug/g	5.1	5.1	7.2	<5.0	<5.0	5.0	6440042
Acid Extractable Cadmium (Cd)	ug/g	0.41	0.38	0.66	0.18	0.27	0.10	6440042
Acid Extractable Chromium (Cr)	ug/g	8.4	8.5	10	6.6	7.3	1.0	6440042
Acid Extractable Cobalt (Co)	ug/g	4.2	4.3	4.3	2.7	1.8	0.10	6440042
Acid Extractable Copper (Cu)	ug/g	12	12	11	9.8	5.9	0.50	6440042
Acid Extractable Lead (Pb)	ug/g	22	23	38	9.7	16	1.0	6440042
Acid Extractable Molybdenum (Mo)	ug/g	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	6440042
Acid Extractable Nickel (Ni)	ug/g	7.6	7.6	8.9	5.5	3.6	0.50	6440042
Acid Extractable Selenium (Se)	ug/g	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	6440042
Acid Extractable Silver (Ag)	ug/g	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	6440042
Acid Extractable Thallium (Tl)	ug/g	0.10	0.10	0.094	0.077	<0.050	0.050	6440042
Acid Extractable Uranium (U)	ug/g	0.38	0.36	0.43	0.34	0.37	0.050	6440042
Acid Extractable Vanadium (V)	ug/g	21	21	21	20	23	5.0	6440042
Acid Extractable Zinc (Zn)	ug/g	260	260	290	83	130	5.0	6440042

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

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BV Labs Job #: B9V8161
Report Date: 2019/11/14

Stantec Consulting Ltd
Client Project #: 161413338
Site Location: 220 ARKELL RD, GUELPH
Sampler Initials: AK

TEST SUMMARY

BV Labs ID: LGZ704 **Collected:** 2019/11/12
Sample ID: SS30 **Shipped:**
Matrix: Soil **Received:** 2019/11/12

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	6440042	2019/11/13	2019/11/13	Daniel Teclu

BV Labs ID: LGZ704 Dup **Collected:** 2019/11/12
Sample ID: SS30 **Shipped:**
Matrix: Soil **Received:** 2019/11/12

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	6440042	2019/11/13	2019/11/13	Daniel Teclu

BV Labs ID: LGZ705 **Collected:** 2019/11/12
Sample ID: SS31 **Shipped:**
Matrix: Soil **Received:** 2019/11/12

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	6440042	2019/11/13	2019/11/13	Daniel Teclu

BV Labs ID: LGZ706 **Collected:** 2019/11/12
Sample ID: SS32 **Shipped:**
Matrix: Soil **Received:** 2019/11/12

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	6440042	2019/11/13	2019/11/13	Daniel Teclu

BV Labs ID: LGZ707 **Collected:** 2019/11/12
Sample ID: SS33 **Shipped:**
Matrix: Soil **Received:** 2019/11/12

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	6440042	2019/11/13	2019/11/13	Daniel Teclu

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

BV Labs Job #: B9V8161
Report Date: 2019/11/14

Stantec Consulting Ltd
Client Project #: 161413338
Site Location: 220 ARKELL RD, GUELPH
Sampler Initials: AK

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	2.3°C

Results relate only to the items tested.

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

BV Labs Job #: B9V8161
Report Date: 2019/11/14

Stantec Consulting Ltd
Client Project #: 161413338
Site Location: 220 ARKELL RD, GUELPH
Sampler Initials: AK

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
6440042	DT1	Matrix Spike [LGZ704-01]	Acid Extractable Antimony (Sb)	2019/11/13		106	%	75 - 125
			Acid Extractable Arsenic (As)	2019/11/13		102	%	75 - 125
			Acid Extractable Barium (Ba)	2019/11/13		101	%	75 - 125
			Acid Extractable Beryllium (Be)	2019/11/13		104	%	75 - 125
			Acid Extractable Boron (B)	2019/11/13		104	%	75 - 125
			Acid Extractable Cadmium (Cd)	2019/11/13		107	%	75 - 125
			Acid Extractable Chromium (Cr)	2019/11/13		106	%	75 - 125
			Acid Extractable Cobalt (Co)	2019/11/13		103	%	75 - 125
			Acid Extractable Copper (Cu)	2019/11/13		106	%	75 - 125
			Acid Extractable Lead (Pb)	2019/11/13		104	%	75 - 125
			Acid Extractable Molybdenum (Mo)	2019/11/13		108	%	75 - 125
			Acid Extractable Nickel (Ni)	2019/11/13		103	%	75 - 125
			Acid Extractable Selenium (Se)	2019/11/13		103	%	75 - 125
			Acid Extractable Silver (Ag)	2019/11/13		106	%	75 - 125
			Acid Extractable Thallium (Tl)	2019/11/13		100	%	75 - 125
			Acid Extractable Uranium (U)	2019/11/13		100	%	75 - 125
			Acid Extractable Vanadium (V)	2019/11/13		103	%	75 - 125
			Acid Extractable Zinc (Zn)	2019/11/13		NC	%	75 - 125
6440042	DT1	Spiked Blank	Acid Extractable Antimony (Sb)	2019/11/13		104	%	80 - 120
			Acid Extractable Arsenic (As)	2019/11/13		104	%	80 - 120
			Acid Extractable Barium (Ba)	2019/11/13		98	%	80 - 120
			Acid Extractable Beryllium (Be)	2019/11/13		100	%	80 - 120
			Acid Extractable Boron (B)	2019/11/13		100	%	80 - 120
			Acid Extractable Cadmium (Cd)	2019/11/13		102	%	80 - 120
			Acid Extractable Chromium (Cr)	2019/11/13		105	%	80 - 120
			Acid Extractable Cobalt (Co)	2019/11/13		106	%	80 - 120
			Acid Extractable Copper (Cu)	2019/11/13		102	%	80 - 120
			Acid Extractable Lead (Pb)	2019/11/13		102	%	80 - 120
			Acid Extractable Molybdenum (Mo)	2019/11/13		100	%	80 - 120
			Acid Extractable Nickel (Ni)	2019/11/13		104	%	80 - 120
			Acid Extractable Selenium (Se)	2019/11/13		105	%	80 - 120
			Acid Extractable Silver (Ag)	2019/11/13		105	%	80 - 120
			Acid Extractable Thallium (Tl)	2019/11/13		101	%	80 - 120
			Acid Extractable Uranium (U)	2019/11/13		100	%	80 - 120
			Acid Extractable Vanadium (V)	2019/11/13		104	%	80 - 120
			Acid Extractable Zinc (Zn)	2019/11/13		103	%	80 - 120
6440042	DT1	Method Blank	Acid Extractable Antimony (Sb)	2019/11/13	<0.20		ug/g	
			Acid Extractable Arsenic (As)	2019/11/13	<1.0		ug/g	
			Acid Extractable Barium (Ba)	2019/11/13	<0.50		ug/g	
			Acid Extractable Beryllium (Be)	2019/11/13	<0.20		ug/g	
			Acid Extractable Boron (B)	2019/11/13	<5.0		ug/g	
			Acid Extractable Cadmium (Cd)	2019/11/13	<0.10		ug/g	
			Acid Extractable Chromium (Cr)	2019/11/13	<1.0		ug/g	
			Acid Extractable Cobalt (Co)	2019/11/13	<0.10		ug/g	
			Acid Extractable Copper (Cu)	2019/11/13	<0.50		ug/g	
			Acid Extractable Lead (Pb)	2019/11/13	<1.0		ug/g	
			Acid Extractable Molybdenum (Mo)	2019/11/13	<0.50		ug/g	
			Acid Extractable Nickel (Ni)	2019/11/13	<0.50		ug/g	
			Acid Extractable Selenium (Se)	2019/11/13	<0.50		ug/g	
			Acid Extractable Silver (Ag)	2019/11/13	<0.20		ug/g	
			Acid Extractable Thallium (Tl)	2019/11/13	<0.050		ug/g	

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Acid Extractable Uranium (U)	2019/11/13	<0.050		ug/g	
			Acid Extractable Vanadium (V)	2019/11/13	<5.0		ug/g	
			Acid Extractable Zinc (Zn)	2019/11/13	<5.0		ug/g	
6440042	DT1	RPD [LGZ704-01]	Acid Extractable Antimony (Sb)	2019/11/13	NC		%	30
			Acid Extractable Arsenic (As)	2019/11/13	6.0		%	30
			Acid Extractable Barium (Ba)	2019/11/13	7.2		%	30
			Acid Extractable Beryllium (Be)	2019/11/13	NC		%	30
			Acid Extractable Boron (B)	2019/11/13	0.54		%	30
			Acid Extractable Cadmium (Cd)	2019/11/13	8.6		%	30
			Acid Extractable Chromium (Cr)	2019/11/13	1.3		%	30
			Acid Extractable Cobalt (Co)	2019/11/13	1.8		%	30
			Acid Extractable Copper (Cu)	2019/11/13	0.51		%	30
			Acid Extractable Lead (Pb)	2019/11/13	6.0		%	30
			Acid Extractable Molybdenum (Mo)	2019/11/13	NC		%	30
			Acid Extractable Nickel (Ni)	2019/11/13	0.19		%	30
			Acid Extractable Selenium (Se)	2019/11/13	NC		%	30
			Acid Extractable Silver (Ag)	2019/11/13	NC		%	30
			Acid Extractable Thallium (Tl)	2019/11/13	2.9		%	30
			Acid Extractable Uranium (U)	2019/11/13	6.5		%	30
			Acid Extractable Vanadium (V)	2019/11/13	0.37		%	30
			Acid Extractable Zinc (Zn)	2019/11/13	0.59		%	30

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

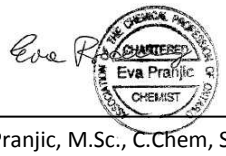
Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

BV Labs Job #: B9V8161
Report Date: 2019/11/14

Stantec Consulting Ltd
Client Project #: 161413338
Site Location: 220 ARKELL RD, GUELPH
Sampler Initials: AK

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



Ewa Pranjic, M.Sc., C.Chem, Scientific Specialist

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports.
For Service Group specific validation please refer to the Validation Signature Page.

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RUSH!

Bureau Veritas Laboratories
6740 Campobello Road, Mississauga, Ontario Canada L5N 2L8 Tel:(905) 817-5700 Toll-free:800-563-6266 Fax:(905) 817-5777 www.bvlabs.com

CHAIN OF CUSTODY RECORD

INVOICE TO:		REPORT TO:		PROJECT INFORMATION:		Laboratory Use Only:	
Company Name:	#50575 Stantec Consulting Ltd	Company Name:		Quotation #:	B77373	BV Labs Job #:	Bottle Order #: 739857
Attention:	Accounts Payable	Attention:	~~Marc Oudejans~~ Michael Stendzis	P.O. #:	204.101		
Address:	835 Paramount Drive, Suite 200 Stoney Creek ON L8J 0B4	Address:		Project:	~~122160165~~ 161413338-819	COC #: C#739857-04-01	Project Manager: Augustyna Dobosz
Tel:	(905) 381-3211 Fax: (905) 631-8960	Tel:	michal.Stendzis Fax:	Project Name:	220 Arkell Rd, Guelph		
Email:	SAPinvoices@Stantec.com	Email:	~~marc.oudejans~~@stantec.com	Site #:			
				Sampled By:	Aseel Kaiser		

MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE BV LABS DRINKING WATER CHAIN OF CUSTODY

Regulation 153 (2011)
- ☐ Table 1 ☒ Res/Park ☐ Medium/Fine
- ☒ Table 2 ☐ Ind/Comm ☒ Coarse
- ☐ Table 3 ☐ Agri/Other ☐ For RSC
- ☐ Table ___

Other Regulations
- ☐ CCME ☐ Sanitary Sewer Bylaw
- ☐ Reg 558 ☐ Storm Sewer Bylaw
- ☐ MISA Municipality ___
- ☐ PWQO
- ☐ Other ___

Special Instructions: 2 day TAT

Include Criteria on Certificate of Analysis (Y/N)? No

Field Filtered (please circle): Metals / Hg / Cr VI

ANALYSIS REQUESTED (PLEASE BE SPECIFIC)

Turnaround Time (TAT) Required:
Please provide advance notice for rush projects

Regular (Standard) TAT:
(will be applied if Rush TAT is not specified):
Standard TAT = 5-7 Working days for most tests.
Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

Job Specific Rush TAT (if applies to entire submission)
Date Required: ___ Time Required: ___ ☒
Rush Confirmation Number: Ad20191112-01 *(call lab for #)*

	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	~~O.Reg 153 VOCs by HS~~	O.Reg 153 Metals ICMP	# of Bottles	Comments
1		SS 30	12 Nov 2019	12:05 pm	Soil		X	1	2-day Rush
2		SS 31	↓	12:10 pm	↓		X	1	
3		SS 32		12:15 pm			X	1	
4		SS 33		12:20 pm			X	1	
5									
6									
7									
8									
9									
10									

12-Nov-19 14:15
Augustyna Dobosz
B9V8161
THP ENV-1084

* RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# jars used and not submitted
Aseel Kaiser	12 Nov 2019	2:13 pm	[illegible]	2019/11/12	1415	

Laboratory Use Only
Time Sensitive | Temperature (°C) on Recei: 2 3 2 ILC

Custody Seal	Yes	No
Present		✓
Intact		✓

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BV LABS' STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVLABS.COM/TERMS-AND-CONDITIONS.

* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

** SAMPLE CONTAINER, PRESERVATION, HOLD TIME AND PACKAGE INFORMATION CAN BE VIEWED AT WWW.BVLABS.COM/RESOURCES/CHAIN-OF-CUSTODY-FORMS.

SAMPLES MUST BE KEPT COOL (< 10° C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BV LABS

White: BV Labs Yellow: Client

Bureau Veritas Canada (2019) Inc.

APPENDIX G:
QUALITY ASSURANCE / QUALITY CONTROL

Appendix G QUALITY ASSURANCE / QUALITY CONTROL

The overall data quality objective (DQO) for the investigation was to collect data that were precise, accurate, reproducible, complete, and suitable for comparison with the Table 2 SCS.

Soil samples were placed into glass sample jars supplied by Bureau Veritas Canada (2019) Inc. (BV). Sample jars used for organic parameters (e.g., petroleum hydrocarbons) were equipped with Teflon lined caps. Samples for analysis of petroleum hydrocarbon fraction 1 (PHC F1) and volatile organic compound (VOC) parameters were collected and placed into containers containing methanol that were provided by the laboratory.

Each sample was labeled with a unique identification number, packed into coolers with ice, and transported to BV under chain of custody documentation. To meet the DQO, quality assurance/quality control (QA/QC) procedures were incorporated into both field and laboratory methods. Efforts were made during sampling to reduce the potential for contamination to obtain representative samples. Accordingly, soil sampling was completed using a new pair of disposable nitrile gloves for each sample.

Calibration checks on field instruments were completed prior to use.

As a check on the laboratory analytical methods and on sample precision, the following QC samples were submitted:

- Five blind field duplicate soil sample (QC1, QC2, S-Dup2, S-Dup3 and QC-01) from the test pitting program and remedial excavation activities, as shown on **Tables 1 and 2** in **Appendix E**.

The blind field duplicate samples were used to assess the precision of the sampling and analytical procedures. Typically, the relative percent different (RPD) is calculated for the concentrations in the original sample and its duplicate. The RPD was calculated using the following formula:

$$RPD = \left| \frac{C_1 - C_2}{(C_1 + C_2)/2} \right| \times 100$$

Where: C1 is the concentration in the original sample; and
C2 is the concentration in the sample duplicate.

If the results for either or both the original sample and the duplicate were less than the laboratory reporting limits (RLs), the RPD was not calculated. RPDs were only calculated if both analytical results were greater than five times the RL.

The recommended alert criteria from Maxxam Analytics International Corporation's Ontario QA/QC Interpretation Guideline for soil field duplicates is 30% or less for PHC, 50% or less for volatile organic compounds (VOCs) including benzene, toluene, ethylbenzene and xylenes (BTEX), 40% or less for polycyclic aromatic hydrocarbons (PAHs) and 30% or less for metals and inorganic parameters.

In addition to the assessment of the duplicate samples, BV conducted further internal quality assurance / quality control (QA/QC) tests, which included replicate sample analyses, process blanks, process recovery and matrix spike analyses. The results of these tests are provided with the laboratory certificate of analysis in **Appendix F**.

Evaluation of Laboratory Quality Assurance / Quality Control

As a first step in the review of the laboratory data, the laboratory QA/QC data were assessed (blanks, duplicates analyses, matrix and blank spikes, surrogate analytical recovery).

Lab certificate of analysis B8I3680: BV reported issues in their laboratory certificates of analysis related to soil samples TP18-5-2 and TP18-9-2 for VOCs and PHC F1 fraction analysis. BV reported that greater than 10 grams of soil was placed in the field preserved vial, which exceeds the specification of 5 grams of soil. Additional methanol was added to the vial for extraction efficiency and analysis proceeded. BV reported that sodium was not detected in TP18-6-2, TP187-3, TP18-10-2, TP18-11-1 and TP18-12-2 soil samples for SAR analysis. Sodium detection limit was used in the calculation to report SAR. BV reported that the matrix spike recovery for chromium VI was below the lower control limit. This was inferred by BV to be a result of the reducing environment of the sample.

The above-mentioned issues did not affect the overall interpretation of the analytical results.

Evaluation of Field Quality Assurance / Quality Control

The analytical results for the field duplicate samples are shown in **Table 1** and **Table 2.** RPDs for the parent and field duplicate soil samples for the majority of the parameters could not be calculated because one or both results were less than laboratory RLs or were less than 5 times the RL.

Where calculable, the RPDs were typically below the applicable alert criteria, with the exception of various PAHs parameters in sample TP18-9-2. The elevated RPD values are inferred to be the result of sample heterogeneity. As measure of conservatism the higher of the PAHs results were considered to represent conditions at this location.

Conclusions

Based on the QA/QC evaluation, it was concluded that the DQO for this investigation was satisfied and that the data were considered acceptable for use in this report.

APPENDIX H:
2016 MEMO:
ENVIRONMENTAL TEST PITTING

Stantec

Memo

To:	Kevin Brousseau Waterloo, Ontario	From:	Michael Stendzis Stoney Creek, Ontario
File:	161413338	Date:	December 16, 2016

Reference: Environmental Test Pitting – 220 Arkell Road, Guelph, Ontario

This memo has been prepared to document the environmental sampling results from the test pitting program completed in the former pond area located at 220 Arkell Road in Guelph, Ontario (the Site) for our client Carson Reid Homes. The results are intended to be used to characterize environmental quality of the fill material used in the backfilling of the former pond and assist in determining appropriate management options for the material should development of the Site occur.

SAMPLING PROGRAM AND ANALYTICAL RESULTS

During a Site visit completed by Stantec, a former pond was identified as an Area of Potential Environmental Concern (APEC), based on fill of unknown quality having been used historically to in fill the pond. A test pitting program was recommended to assess the quality of the fill materials in the former pond. Soil samples were collected at five (5) test pit locations (TP1 to TP4, TP6) within the former pond area on November 11, 2016. One sample from each test pit was submitted to Maxxam Analytics Inc. (Maxxam) of Mississauga, Ontario, and analyzed for concentrations of metals and inorganic parameters (including free cyanide, electrical conductivity, and sodium adsorption ratio (SAR)), polycyclic aromatic hydrocarbons (PAHs), volatile organic compounds (VOCs), and petroleum hydrocarbon (PHC) fractions 1 to 4 (F1 to F4). Test pit locations are presented on the attached figure 1.

The laboratory analytical data from soil samples was compared with the site condition standards (SCS) listed in Table 2 provided in the Ontario Ministry of the Environment and Climate Change (MOECC) 2011 document *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act*. The Table 2 SCS representing conditions appropriate for a residential/parkland/institutional property use with coarse textured soils and a potable groundwater condition were considered applicable to the Site.

Soil analytical data from the test pits indicate that the concentration of zinc exceeds the Table 2 SCS at one sampling location (test pit TP3, at a depth of approximately 2.1 m below ground surface (BGS)). Concentrations of zinc in the sample submitted from TP3 at a depth of approximately 3.0 m BGS met the Table 2 SCS. Concentrations of all parameters tested, including zinc, were below the Table 2 SCS in the samples submitted for analysis from test pits TP1, TP2, TP4, and TP6. Waste and debris, such as wood and pipe, was noted in fill materials identified at each of the test pits. Fill material was encountered from ground surface to depths ranging from 1.0 m BGS to 3.0 m BGS.

RECOMMENDATIONS

SOIL MANAGEMENT

Given that the fill contains the presence of waste and debris and concentrations of zinc in one of the soil samples exceed the Table 2 SCS, the fill material used in the former pond area is not considered to be 'inert' and is therefore not exempt from regulations and guidelines that pertain to excess fill management.

According to Stantec geotechnical personnel, the fill materials identified are not geotechnically suitable to allow for the development of the Site, and should be removed. Segregation and off-site management of soils adjacent to test pit TP3 should be considered, in accordance with the guidance provided in the MOECC 2014 document *Management of Excess Soil – A Guide for Best Management Practices*. Subject to geotechnical screening and further confirmatory environmental testing, soils beyond the area of TP3 could be considered for re-use on-site.

An initial calculation of the volume of fill materials located in the former pond is approximately 10,000 to 15,000 metric tonnes. In Stantec's experience, the cost to dispose of fill materials such as those identified in this memo at a MOECC licensed landfill typically ranges from $35 to $45 per metric tonne, inclusive of trucking and tipping fees. Based on the test pitting results, it is assumed that approximately 80% of the fill materials could be re-used at the Site, and the remaining 20% (i.e., fill materials adjacent to test pit TP3) would require off-site disposal. Costs for off-site disposal of identified fill materials adjacent to TP3, including consulting fees, trucking and tipping fees could range from $70,000 to $140,000. Additional screening of the remaining fill materials would be required during Site development. Costs for further screening, testing and reporting could range between $40,000 and $60,000 in consulting and laboratory fees. Based on MOECC guidance, testing of the fill materials would be completed at an approximate frequency of one sample submitted for laboratory analysis for every 100 to 150 m^3 of fill material.

FURTHER ENVIRONMENTAL ASSESSMENT

It is Stantec's understanding that should development of the Site occur, the City of Guelph will require the review of environmental reports as a part of the development permit application process. As detailed in the *City of Guelph Guidelines for Development of Contaminated or Potentially Contaminated Sites 2016*, a Phase I Environmental Site Assessment (ESA) Report will be required to be submitted to the City as a part of the development permit, along with an environmetnal screening questionnaire. Given the identification of soils exceeding the applicable Table 2 SCS, a Phase 2 ESA report and documentation of the restoration of the Site to conditions meeting the applicable Table 2 SCS will also be required to be submitted. Because the land use of the Site (residential) is not changing to a more sensitive use, there is not a driver for a Record of Site Condition (RSC) according to Ontario Regulation 153/04, and therefore it is Stantec's understanding that a RSC will not be required. Confirmation of the opinion with the City of Guelph should be sought.

Costs to finalize the Phase I ESA for the Site, produce a Phase II ESA report, and produce a report documenting the removal/management of fill from the former pond area of the Site are likely to range between $10,000 and $15,000. Should groundwater be encountered during excavation associated with the removal of the fill materials, additional characterization may be recommended.

CLOSURE

This report documents work that was performed in accordance with generally accepted professional standards at the time and location in which the services were provided. No other representations, warranties or guarantees are made concerning the accuracy or completeness of the data or conclusions contained within this report, including no assurance that this work has uncovered all potential liabilities associated with the identified property.

This report provides an evaluation of selected environmental conditions associated with the identified portion of the property that was assessed at the time the work was conducted and is based on information obtained by and/or provided to Stantec at that time. There are no assurances regarding the accuracy and completeness of this information. All information received from the client or third parties in the preparation of this report has been assumed by Stantec to be correct. Stantec assumes no responsibility for any deficiency or inaccuracy in information received from others.

The opinions in this report can only be relied upon as they relate to the condition of the portion of the identified property that was assessed at the time the work was conducted. Activities at the property subsequent to Stantec's assessment may have significantly altered the property's condition. Stantec cannot comment on other areas of the property that were not assessed.

Conclusions made within this report consist of Stantec's professional opinion as of the time of the writing of this report, and are based solely on the scope of work described in the report, the limited data available and the results of the work. They are not a certification of the property's environmental condition. This report should not be construed as legal advice.

This report has been prepared for the exclusive use of the client identified herein and any use by any third party is prohibited. Stantec assumes no responsibility for losses, damages, liabilities or claims, howsoever arising, from third party use of this report.

This report is limited by the following:

- Sampling locations outlined on the attached figure

The locations of any utilities, buildings and structures, and property boundaries illustrated in or described within this report, if any, including pole lines, conduits, water mains, sewers and other surface or sub-surface utilities and structures are not guaranteed. Before starting work, the exact location of all such utilities and structures should be confirmed and Stantec assumes no liability for damage to them.

The conclusions are based on the site conditions encountered by Stantec at the time the work was performed at the specific testing and/or sampling locations, and conditions may vary among sampling locations. Factors such as areas of potential concern identified in previous studies, site conditions (e.g., utilities) and cost may have constrained the sampling locations used in this assessment. In addition, analysis has been carried out for only a limited number of chemical parameters, and it should not be inferred that other chemical species are not present. Due to the nature of the investigation and the limited data available, Stantec does not warrant against

Reference: Environmental Test Pitting – 220 Arkell Road, Guelph, Ontario

undiscovered environmental liabilities nor that the sampling results are indicative of the condition of the entire site. As the purpose of this report is to identify site conditions which may pose an environmental risk; the identification of non-environmental risks to structures or people on the site is beyond the scope of this assessment.

Should additional information become available which differs significantly from our understanding of conditions presented in this report, Stantec specifically disclaims any responsibility to update the conclusions in this report.

This report was prepared by Michael Stendzis, B.Sc., P.Geo. and reviewed by Brent Ferguson, P.Geo.

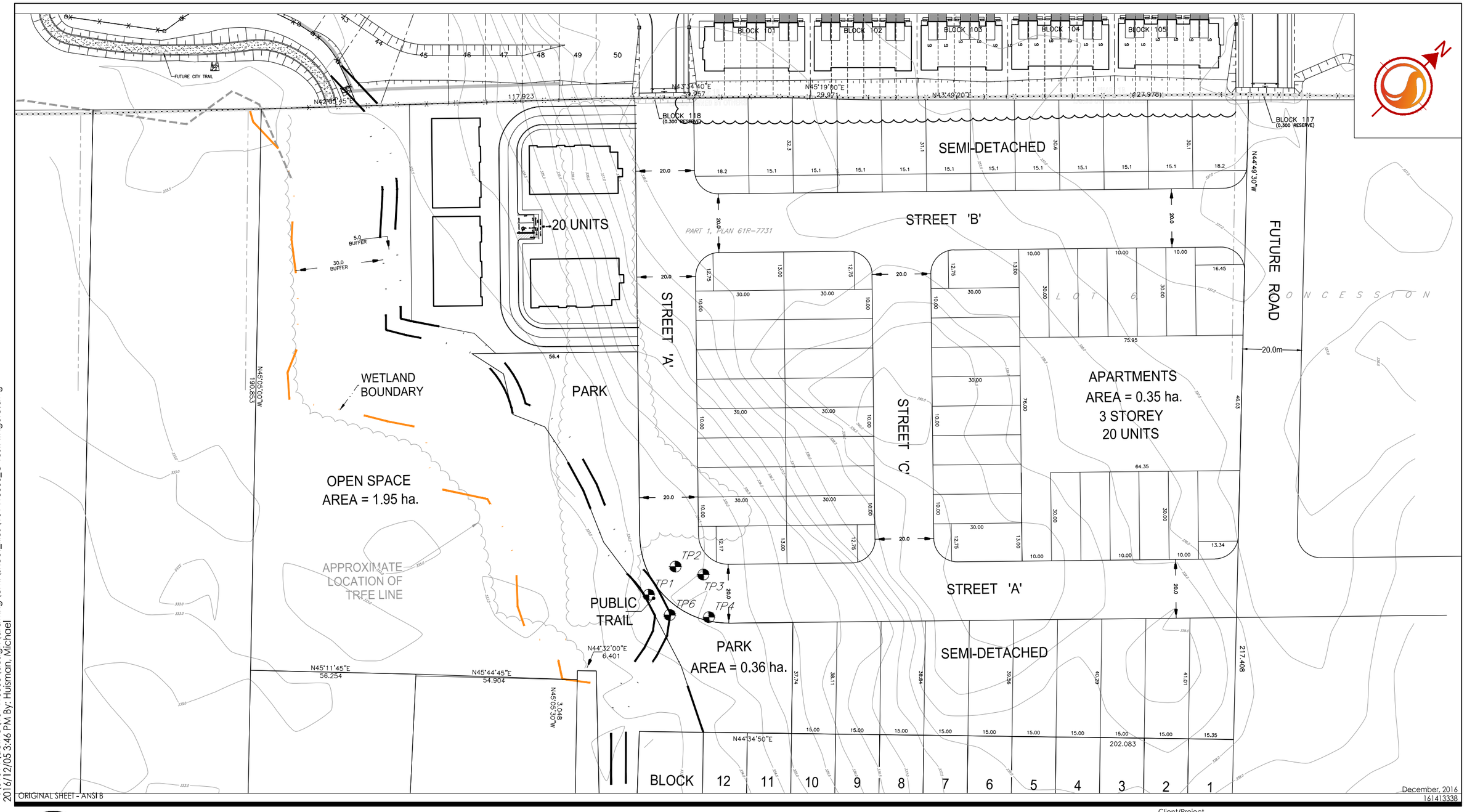
We trust that this is sufficient for your current requirements. If you have any questions or require anything further at this time, please do not hesitate to contact the undersigned.

STANTEC CONSULTING LTD.

December 16, 2016

Michael Stendzis
Project Manager, Environmental Remediation
Phone: (905) 381-3285
Fax: (905) 385-3534
Michael.Stendzis@stantec.com

Attachment: Site Plan, Laboratory Certificate of Analysis



V:\01614\active\161413338\design\drawing\civil\sheet_files\161413338_C-TestPitFigure.dwg
2016/12/05 3:46 PM By: Huisman, Michael

ORIGINAL SHEET - ANSI B

December, 2016
161413338

Stantec

300 Hagey Blvd. Suite 100
Waterloo, ON, N2L 0A4
Tel. 519.579.4410
www.stantec.com

Legend

Notes

1:1250 0 12.5 37.5 62.5m

Client/Project

220 ARKELL ROAD

Figure No.

Figure 1.0

Title

TEST PIT LOCATION

Maxxam
A Bureau Veritas Group Company

Your Project #: 161413338.101
Site Location: ARKELL ROAD
Your C.O.C. #: 586927-02-01, 586927-01-01

Attention:Erika Ryter

Stantec Consulting Ltd
835 Paramount Drive, Suite 200
Stoney Creek, ON
L8J 0B4

Report Date: 2016/11/30
Report #: R4268865
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

MAXXAM JOB #: B6O8574
Received: 2016/11/15, 15:18

Sample Matrix: Soil
Samples Received: 6

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Methylnaphthalene Sum	5	N/A	2016/11/19	CAM SOP-00301	EPA 8270D m
Hot Water Extractable Boron	5	2016/11/21	2016/11/21	CAM SOP-00408	R153 Ana. Prot. 2011
Hot Water Extractable Boron	1	2016/11/28	2016/11/28	CAM SOP-00408	R153 Ana. Prot. 2011
1,3-Dichloropropene Sum	5	N/A	2016/11/18		EPA 8260C m
Free (WAD) Cyanide	5	2016/11/17	2016/11/18	CAM SOP-00457	OMOE E3015 m
Free (WAD) Cyanide	1	2016/11/25	2016/11/28	CAM SOP-00457	OMOE E3015 m
Conductivity	5	2016/11/21	2016/11/21	CAM SOP-00414	OMOE E3530 v1 m
Conductivity	1	2016/11/28	2016/11/28	CAM SOP-00414	OMOE E3530 v1 m
Hexavalent Chromium in Soil by IC (1)	5	2016/11/17	2016/11/18	CAM SOP-00436	EPA 3060/7199 m
Hexavalent Chromium in Soil by IC (1)	1	2016/11/25	2016/11/29	CAM SOP-00436	EPA 3060/7199 m
Petroleum Hydrocarbons F2-F4 in Soil (2)	5	2016/11/18	2016/11/19	CAM SOP-00316	CCME CWS m
Strong Acid Leachable Metals by ICPMS	5	2016/11/18	2016/11/18	CAM SOP-00447	EPA 6020B m
Strong Acid Leachable Metals by ICPMS	1	2016/11/25	2016/11/25	CAM SOP-00447	EPA 6020B m
Moisture	5	N/A	2016/11/17	CAM SOP-00445	Carter 2nd ed 51.2 m
Moisture	1	N/A	2016/11/26	CAM SOP-00445	Carter 2nd ed 51.2 m
PAH Compounds in Soil by GC/MS (SIM)	5	2016/11/18	2016/11/19	CAM SOP-00318	EPA 8270D m
pH CaCl2 EXTRACT	5	2016/11/18	2016/11/18	CAM SOP-00413	EPA 9045 D m
pH CaCl2 EXTRACT	1	2016/11/28	2016/11/28	CAM SOP-00413	EPA 9045 D m
Sodium Adsorption Ratio (SAR)	5	N/A	2016/11/22	CAM SOP-00102	EPA 6010C
Sodium Adsorption Ratio (SAR)	1	N/A	2016/11/28	CAM SOP-00102	EPA 6010C
SAR - ICP Metals	5	2016/11/21	2016/11/21	CAM SOP-00408	EPA 6010C m
SAR - ICP Metals	1	2016/11/28	2016/11/28	CAM SOP-00408	EPA 6010C m
Volatile Organic Compounds and F1 PHCs	1	N/A	2016/11/17	CAM SOP-00230	EPA 8260C m
Volatile Organic Compounds and F1 PHCs	4	N/A	2016/11/18	CAM SOP-00230	EPA 8260C m

Remarks:

Maxxam Analytics' laboratories are accredited to ISO/IEC 17025:2005 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Maxxam are based upon recognized Provincial, Federal or US method compendia such as CCME, MDDELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Maxxam's profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Maxxam in writing).

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Your Project #: 161413338.101
Site Location: ARKELL ROAD
Your C.O.C. #: 586927-02-01, 586927-01-01

Attention:Erika Ryter

Stantec Consulting Ltd
835 Paramount Drive, Suite 200
Stoney Creek, ON
L8J 0B4

Report Date: 2016/11/30
Report #: R4268865
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

MAXXAM JOB #: B6O8574
Received: 2016/11/15, 15:18

All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported: unless indicated otherwise, associated sample data are not blank corrected.

Maxxam Analytics' liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Maxxam has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Maxxam, unless otherwise agreed in writing.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods. Results relate to samples tested.

Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) Soils are reported on a dry weight basis unless otherwise specified.
(2) All CCME PHC results met required criteria unless otherwise stated in the report. The CWS PHC methods employed by Maxxam conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following “Alberta Environment’s Interpretation of the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil Validation of Performance-Based Alternative Methods September 2003”. Documentation is available upon request. Modifications from Reference Method for the Canada-wide Standard for Petroleum Hydrocarbons in Soil-Tier 1 Method: F2/F3/F4 data reported using validated cold solvent extraction instead of Soxhlet extraction.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Augustyna Dobosz, Project Manager
Email: ADobosz@maxxam.ca
Phone# (905)817-5700 Ext:5798

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Maxxam Job #: B6O8574
Report Date: 2016/11/30

Stantec Consulting Ltd
Client Project #: 161413338.101
Site Location: ARKELL ROAD
Sampler Initials: LS

O.REG 153 METALS & INORGANICS PKG (SOIL)

Maxxam ID		DLM682	DLM685	DLM689		DLM690		
Sampling Date		2016/11/11 09:15	2016/11/11 12:40	2016/11/11 13:35		2016/11/11 13:40		
COC Number		586927-02-01	586927-02-01	586927-02-01		586927-02-01		
	UNITS	TP 1-2	TP 2-2	TP 3-3	QC Batch	TP 3-4	RDL	QC Batch
Calculated Parameters								
Sodium Adsorption Ratio	N/A	0.64	0.25	0.22	4749901	0.37		4761089
Inorganics								
Conductivity	mS/cm	0.18	0.21	0.35	4756969	0.11	0.002	4765808
Free Cyanide	ug/g	0.02	0.02	0.05	4752540	<0.01	0.01	4764949
Moisture	%	8.8	14	38	4753535	8.4	1.0	4767478
Available (CaCl2) pH	pH	7.46	7.24	6.93	4754233	7.66		4768089
Metals								
Soluble Calcium (Ca)	mg/L	20.5	24.1	31.7	4756968	11.5	0.5	4765804
Soluble Magnesium (Mg)	mg/L	2.5	3.9	4.9	4756968	1.5	0.5	4765804
Soluble Sodium (Na)	mg/L	11	5	<5	4756968	<5	5	4765804
Inorganics								
Chromium (VI)	ug/g	<0.2	<0.2	<0.2	4753102	<0.2	0.2	4768127
Metals								
Hot Water Ext. Boron (B)	ug/g	0.34	0.38	0.47	4757143	<0.050	0.050	4768100
Acid Extractable Antimony (Sb)	ug/g	0.25	<0.20	0.40	4754540	<0.20	0.20	4766014
Acid Extractable Arsenic (As)	ug/g	3.1	3.0	4.8	4754540	2.0	1.0	4766014
Acid Extractable Barium (Ba)	ug/g	38	41	58	4754540	24	0.50	4766014
Acid Extractable Beryllium (Be)	ug/g	0.29	0.31	0.50	4754540	<0.20	0.20	4766014
Acid Extractable Boron (B)	ug/g	<5.0	<5.0	7.1	4754540	5.9	5.0	4766014
Acid Extractable Cadmium (Cd)	ug/g	0.28	0.41	1.1	4754540	0.33	0.10	4766014
Acid Extractable Chromium (Cr)	ug/g	11	10	16	4754540	6.4	1.0	4766014
Acid Extractable Cobalt (Co)	ug/g	4.0	4.1	5.9	4754540	2.5	0.10	4766014
Acid Extractable Copper (Cu)	ug/g	12	14	18	4754540	6.9	0.50	4766014
Acid Extractable Lead (Pb)	ug/g	22	27	68	4754540	25	1.0	4766014
Acid Extractable Molybdenum (Mo)	ug/g	<0.50	<0.50	0.54	4754540	<0.50	0.50	4766014
Acid Extractable Nickel (Ni)	ug/g	8.2	8.3	13	4754540	5.3	0.50	4766014
Acid Extractable Selenium (Se)	ug/g	<0.50	<0.50	<0.50	4754540	<0.50	0.50	4766014
Acid Extractable Silver (Ag)	ug/g	<0.20	<0.20	<0.20	4754540	<0.20	0.20	4766014
Acid Extractable Thallium (Tl)	ug/g	0.067	0.090	0.12	4754540	0.063	0.050	4766014
Acid Extractable Uranium (U)	ug/g	0.55	0.39	0.57	4754540	0.42	0.050	4766014
Acid Extractable Vanadium (V)	ug/g	22	21	29	4754540	12	5.0	4766014
Acid Extractable Zinc (Zn)	ug/g	93	180	480	4754540	160	5.0	4766014

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B6O8574
Report Date: 2016/11/30

Stantec Consulting Ltd
Client Project #: 161413338.101
Site Location: ARKELL ROAD
Sampler Initials: LS

O.REG 153 METALS & INORGANICS PKG (SOIL)

Maxxam ID		DLM682	DLM685	DLM689		DLM690		
Sampling Date		2016/11/11 09:15	2016/11/11 12:40	2016/11/11 13:35		2016/11/11 13:40		
COC Number		586927-02-01	586927-02-01	586927-02-01		586927-02-01		
	UNITS	**TP 1-2**	**TP 2-2**	**TP 3-3**	**QC Batch**	**TP 3-4**	**RDL**	**QC Batch**
Acid Extractable Mercury (Hg)	ug/g	<0.050	<0.050	0.066	4754540	<0.050	0.050	4766014

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B6O8574
Report Date: 2016/11/30

Stantec Consulting Ltd
Client Project #: 161413338.101
Site Location: ARKELL ROAD
Sampler Initials: LS

O.REG 153 METALS & INORGANICS PKG (SOIL)

Maxxam ID		DLM692		DLM694	DLM694		
Sampling Date		2016/11/11 10:35		2016/11/11 10:00	2016/11/11 10:00		
COC Number		586927-01-01		586927-01-01	586927-01-01		
	UNITS	TP 4-2	QC Batch	TP 6-1	TP 6-1 Lab-Dup	RDL	QC Batch
Calculated Parameters							
Sodium Adsorption Ratio	N/A	0.30	4749901	0.34			4749901
Inorganics							
Conductivity	mS/cm	0.51	4756969	0.17		0.002	4756969
Free Cyanide	ug/g	0.02	4752540	<0.01		0.01	4752540
Moisture	%	31	4753535	11		1.0	4753172
Available (CaCl2) pH	pH	7.21	4754233	7.57			4754678
Metals							
Soluble Calcium (Ca)	mg/L	60.6	4756968	22.4		0.5	4756968
Soluble Magnesium (Mg)	mg/L	9.2	4756968	3.3		0.5	4756968
Soluble Sodium (Na)	mg/L	10	4756968	6		5	4756968
Inorganics							
Chromium (VI)	ug/g	<0.2	4753102	<0.2		0.2	4753102
Metals							
Hot Water Ext. Boron (B)	ug/g	0.45	4757143	0.35		0.050	4757143
Acid Extractable Antimony (Sb)	ug/g	0.22	4754540	<0.20	<0.20	0.20	4754540
Acid Extractable Arsenic (As)	ug/g	3.4	4754540	2.9	2.7	1.0	4754540
Acid Extractable Barium (Ba)	ug/g	46	4754540	40	40	0.50	4754540
Acid Extractable Beryllium (Be)	ug/g	0.35	4754540	0.32	0.29	0.20	4754540
Acid Extractable Boron (B)	ug/g	<5.0	4754540	<5.0	<5.0	5.0	4754540
Acid Extractable Cadmium (Cd)	ug/g	0.55	4754540	0.34	0.36	0.10	4754540
Acid Extractable Chromium (Cr)	ug/g	12	4754540	11	11	1.0	4754540
Acid Extractable Cobalt (Co)	ug/g	4.8	4754540	4.3	4.1	0.10	4754540
Acid Extractable Copper (Cu)	ug/g	13	4754540	12	12	0.50	4754540
Acid Extractable Lead (Pb)	ug/g	32	4754540	24	22	1.0	4754540
Acid Extractable Molybdenum (Mo)	ug/g	<0.50	4754540	<0.50	<0.50	0.50	4754540
Acid Extractable Nickel (Ni)	ug/g	9.2	4754540	9.6	8.0	0.50	4754540
Acid Extractable Selenium (Se)	ug/g	<0.50	4754540	<0.50	<0.50	0.50	4754540
Acid Extractable Silver (Ag)	ug/g	<0.20	4754540	<0.20	<0.20	0.20	4754540
Acid Extractable Thallium (Tl)	ug/g	0.086	4754540	0.074	0.077	0.050	4754540
Acid Extractable Uranium (U)	ug/g	0.44	4754540	0.46	0.40	0.050	4754540
Acid Extractable Vanadium (V)	ug/g	23	4754540	23	22	5.0	4754540
Acid Extractable Zinc (Zn)	ug/g	180	4754540	100	100	5.0	4754540

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

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Maxxam Job #: B6O8574
Report Date: 2016/11/30

Stantec Consulting Ltd
Client Project #: 161413338.101
Site Location: ARKELL ROAD
Sampler Initials: LS

O.REG 153 METALS & INORGANICS PKG (SOIL)

Maxxam ID		DLM692		DLM694	DLM694		
Sampling Date		2016/11/11 10:35		2016/11/11 10:00	2016/11/11 10:00		
COC Number		586927-01-01		586927-01-01	586927-01-01		
	UNITS	**TP 4-2**	**QC Batch**	**TP 6-1**	**TP 6-1 Lab-Dup**	**RDL**	**QC Batch**
Acid Extractable Mercury (Hg)	ug/g	<0.050	4754540	<0.050	<0.050	0.050	4754540

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

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Maxxam Job #: B6O8574
Report Date: 2016/11/30

Stantec Consulting Ltd
Client Project #: 161413338.101
Site Location: ARKELL ROAD
Sampler Initials: LS

O.REG 153 PAHS (SOIL)

Maxxam ID		DLM682	DLM685		DLM689		DLM692		
Sampling Date		2016/11/11 09:15	2016/11/11 12:40		2016/11/11 13:35		2016/11/11 10:35		
COC Number		586927-02-01	586927-02-01		586927-02-01		586927-01-01		
	UNITS	TP 1-2	TP 2-2	RDL	TP 3-3	RDL	TP 4-2	RDL	QC Batch
Calculated Parameters									
Methylnaphthalene, 2-(1-)	ug/g	<0.0071	<0.0071	0.0071	<0.014	0.014	<0.0071	0.0071	4749900
Polyaromatic Hydrocarbons									
Acenaphthene	ug/g	0.016	<0.0050	0.0050	<0.010	0.010	<0.0060 (1)	0.0060	4755266
Acenaphthylene	ug/g	<0.0050	<0.0050	0.0050	<0.010	0.010	<0.0050	0.0050	4755266
Anthracene	ug/g	0.026	<0.0050	0.0050	<0.010	0.010	<0.0050	0.0050	4755266
Benzo(a)anthracene	ug/g	0.070	0.0051	0.0050	<0.010	0.010	0.014	0.0050	4755266
Benzo(a)pyrene	ug/g	0.061	0.0075	0.0050	0.019	0.010	0.032	0.0050	4755266
Benzo(b/j)fluoranthene	ug/g	0.084	0.0099	0.0050	0.022	0.010	0.015	0.0050	4755266
Benzo(g,h,i)perylene	ug/g	0.036	0.0052	0.0050	0.013	0.010	0.0092	0.0050	4755266
Benzo(k)fluoranthene	ug/g	0.030	<0.0050	0.0050	<0.010	0.010	<0.0050	0.0050	4755266
Chrysene	ug/g	0.062	0.0061	0.0050	0.017	0.010	0.015	0.0050	4755266
Dibenz(a,h)anthracene	ug/g	0.0079	<0.0050	0.0050	<0.010	0.010	<0.0050	0.0050	4755266
Fluoranthene	ug/g	0.16	0.011	0.0050	0.032	0.010	0.029	0.0050	4755266
Fluorene	ug/g	0.018	<0.0050	0.0050	<0.010	0.010	<0.0050	0.0050	4755266
Indeno(1,2,3-cd)pyrene	ug/g	0.039	0.0053	0.0050	0.013	0.010	0.0090	0.0050	4755266
1-Methylnaphthalene	ug/g	<0.0050	<0.0050	0.0050	<0.010	0.010	<0.0050	0.0050	4755266
2-Methylnaphthalene	ug/g	<0.0050	<0.0050	0.0050	<0.010	0.010	<0.0050	0.0050	4755266
Naphthalene	ug/g	<0.0050	<0.0050	0.0050	<0.010	0.010	<0.0050	0.0050	4755266
Phenanthrene	ug/g	0.13	<0.0050	0.0050	0.013	0.010	0.012	0.0050	4755266
Pyrene	ug/g	0.12	0.0089	0.0050	0.023	0.010	0.021	0.0050	4755266
Surrogate Recovery (%)									
D10-Anthracene	%	91	89		94		98		4755266
D14-Terphenyl (FS)	%	85	84		81		80		4755266
D8-Acenaphthylene	%	94	92		97		107		4755266

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1)
DL was raised due to matrix interference.

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Maxxam Job #: B6O8574
Report Date: 2016/11/30

Stantec Consulting Ltd
Client Project #: 161413338.101
Site Location: ARKELL ROAD
Sampler Initials: LS

O.REG 153 PAHS (SOIL)

Maxxam ID		DLM694		
Sampling Date		2016/11/11 10:00		
COC Number		586927-01-01		
	UNITS	TP 6-1	RDL	QC Batch
Calculated Parameters				
Methylnaphthalene, 2-(1-)	ug/g	<0.0071	0.0071	4749900
Polyaromatic Hydrocarbons				
Acenaphthene	ug/g	<0.0050	0.0050	4755266
Acenaphthylene	ug/g	0.0070	0.0050	4755266
Anthracene	ug/g	0.015	0.0050	4755266
Benzo(a)anthracene	ug/g	0.047	0.0050	4755266
Benzo(a)pyrene	ug/g	0.034	0.0050	4755266
Benzo(b/j)fluoranthene	ug/g	0.046	0.0050	4755266
Benzo(g,h,i)perylene	ug/g	0.020	0.0050	4755266
Benzo(k)fluoranthene	ug/g	0.012	0.0050	4755266
Chrysene	ug/g	0.040	0.0050	4755266
Dibenz(a,h)anthracene	ug/g	<0.0050	0.0050	4755266
Fluoranthene	ug/g	0.089	0.0050	4755266
Fluorene	ug/g	<0.0050	0.0050	4755266
Indeno(1,2,3-cd)pyrene	ug/g	0.023	0.0050	4755266
1-Methylnaphthalene	ug/g	<0.0050	0.0050	4755266
2-Methylnaphthalene	ug/g	<0.0050	0.0050	4755266
Naphthalene	ug/g	<0.0050	0.0050	4755266
Phenanthrene	ug/g	0.042	0.0050	4755266
Pyrene	ug/g	0.071	0.0050	4755266
Surrogate Recovery (%)				
D10-Anthracene	%	102		4755266
D14-Terphenyl (FS)	%	95		4755266
D8-Acenaphthylene	%	116		4755266

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B6O8574
Report Date: 2016/11/30

Stantec Consulting Ltd
Client Project #: 161413338.101
Site Location: ARKELL ROAD
Sampler Initials: LS

O.REG 153 VOCS & F1-F4 (SOIL)

Maxxam ID		DLM682	DLM685	DLM689	DLM692	DLM694		
Sampling Date		2016/11/11 09:15	2016/11/11 12:40	2016/11/11 13:35	2016/11/11 10:35	2016/11/11 10:00		
COC Number		586927-02-01	586927-02-01	586927-02-01	586927-01-01	586927-01-01		
	UNITS	TP 1-2	TP 2-2	TP 3-3	TP 4-2	TP 6-1	RDL	QC Batch
Calculated Parameters								
1,3-Dichloropropene (cis+trans)	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	4749916
Volatile Organics								
Acetone (2-Propanone)	ug/g	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	4751168
Benzene	ug/g	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	4751168
Bromodichloromethane	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	4751168
Bromoform	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	4751168
Bromomethane	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	4751168
Carbon Tetrachloride	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	4751168
Chlorobenzene	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	4751168
Chloroform	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	4751168
Dibromochloromethane	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	4751168
1,2-Dichlorobenzene	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	4751168
1,3-Dichlorobenzene	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	4751168
1,4-Dichlorobenzene	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	4751168
Dichlorodifluoromethane (FREON 12)	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	4751168
1,1-Dichloroethane	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	4751168
1,2-Dichloroethane	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	4751168
1,1-Dichloroethylene	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	4751168
cis-1,2-Dichloroethylene	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	4751168
trans-1,2-Dichloroethylene	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	4751168
1,2-Dichloropropane	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	4751168
cis-1,3-Dichloropropene	ug/g	<0.030	<0.030	<0.030	<0.030	<0.030	0.030	4751168
trans-1,3-Dichloropropene	ug/g	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	4751168
Ethylbenzene	ug/g	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	4751168
Ethylene Dibromide	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	4751168
Hexane	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	4751168
Methylene Chloride(Dichloromethane)	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	4751168
Methyl Ethyl Ketone (2-Butanone)	ug/g	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	4751168
Methyl Isobutyl Ketone	ug/g	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	4751168
Methyl t-butyl ether (MTBE)	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	4751168
Styrene	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	4751168
1,1,1,2-Tetrachloroethane	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	4751168
1,1,2,2-Tetrachloroethane	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	4751168

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B6O8574
Report Date: 2016/11/30

Stantec Consulting Ltd
Client Project #: 161413338.101
Site Location: ARKELL ROAD
Sampler Initials: LS

O.REG 153 VOCS & F1-F4 (SOIL)

Maxxam ID		DLM682	DLM685	DLM689	DLM692	DLM694		
Sampling Date		2016/11/11 09:15	2016/11/11 12:40	2016/11/11 13:35	2016/11/11 10:35	2016/11/11 10:00		
COC Number		586927-02-01	586927-02-01	586927-02-01	586927-01-01	586927-01-01		
	UNITS	**TP 1-2**	**TP 2-2**	**TP 3-3**	**TP 4-2**	**TP 6-1**	**RDL**	**QC Batch**
Tetrachloroethylene	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	4751168
Toluene	ug/g	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	4751168
1,1,1-Trichloroethane	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	4751168
1,1,2-Trichloroethane	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	4751168
Trichloroethylene	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	4751168
Trichlorofluoromethane (FREON 11)	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	4751168
Vinyl Chloride	ug/g	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	4751168
p+m-Xylene	ug/g	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	4751168
o-Xylene	ug/g	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	4751168
Total Xylenes	ug/g	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	4751168
F1 (C6-C10)	ug/g	<10	<10	<10	<10	<10	10	4751168
F1 (C6-C10) - BTEX	ug/g	<10	<10	<10	<10	<10	10	4751168
F2-F4 Hydrocarbons								
F2 (C10-C16 Hydrocarbons)	ug/g	<10	<10	<10	<10	<10	10	4754166
F3 (C16-C34 Hydrocarbons)	ug/g	<50	<50	83	90	<50	50	4754166
F4 (C34-C50 Hydrocarbons)	ug/g	<50	<50	<50	<50	<50	50	4754166
Reached Baseline at C50	ug/g	Yes	Yes	Yes	Yes	Yes		4754166
Surrogate Recovery (%)								
o-Terphenyl	%	85	83	83	82	80		4754166
4-Bromofluorobenzene	%	94	95	95	94	94		4751168
D10-o-Xylene	%	93	92	90	96	93		4751168
D4-1,2-Dichloroethane	%	99	99	101	100	99		4751168
D8-Toluene	%	99	97	97	97	97		4751168

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B6O8574
Report Date: 2016/11/30

Stantec Consulting Ltd
Client Project #: 161413338.101
Site Location: ARKELL ROAD
Sampler Initials: LS

TEST SUMMARY

Maxxam ID: DLM682
Sample ID: TP 1-2
Matrix: Soil

Collected: 2016/11/11
Shipped:
Received: 2016/11/15

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	4749900	N/A	2016/11/19	Automated Statchk
Hot Water Extractable Boron	ICP	4757143	2016/11/21	2016/11/21	Jolly John
1,3-Dichloropropene Sum	CALC	4749916	N/A	2016/11/18	Automated Statchk
Free (WAD) Cyanide	TECH	4752540	2016/11/17	2016/11/18	Xuanhong Qiu
Conductivity	AT	4756969	2016/11/21	2016/11/21	Tahir Anwar
Hexavalent Chromium in Soil by IC	IC/SPEC	4753102	2016/11/17	2016/11/18	Sally Coughlin
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	4754166	2016/11/18	2016/11/19	Barbara Wowk
Strong Acid Leachable Metals by ICPMS	ICP/MS	4754540	2016/11/18	2016/11/18	Daniel Teclu
Moisture	BAL	4753535	N/A	2016/11/17	Min Yang
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	4755266	2016/11/18	2016/11/19	Mitesh Raj
pH CaCl2 EXTRACT	AT	4754233	2016/11/18	2016/11/18	Neil Dassanayake
Sodium Adsorption Ratio (SAR)	CALC/MET	4749901	N/A	2016/11/22	Automated Statchk
SAR - ICP Metals	ICP	4756968	2016/11/21	2016/11/21	Jolly John
Volatile Organic Compounds and F1 PHCs	GC/MSFD	4751168	N/A	2016/11/17	Denis Reid

Maxxam ID: DLM685
Sample ID: TP 2-2
Matrix: Soil

Collected: 2016/11/11
Shipped:
Received: 2016/11/15

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	4749900	N/A	2016/11/19	Automated Statchk
Hot Water Extractable Boron	ICP	4757143	2016/11/21	2016/11/21	Jolly John
1,3-Dichloropropene Sum	CALC	4749916	N/A	2016/11/18	Automated Statchk
Free (WAD) Cyanide	TECH	4752540	2016/11/17	2016/11/18	Xuanhong Qiu
Conductivity	AT	4756969	2016/11/21	2016/11/21	Tahir Anwar
Hexavalent Chromium in Soil by IC	IC/SPEC	4753102	2016/11/17	2016/11/18	Sally Coughlin
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	4754166	2016/11/18	2016/11/19	Barbara Wowk
Strong Acid Leachable Metals by ICPMS	ICP/MS	4754540	2016/11/18	2016/11/18	Daniel Teclu
Moisture	BAL	4753535	N/A	2016/11/17	Min Yang
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	4755266	2016/11/18	2016/11/19	Mitesh Raj
pH CaCl2 EXTRACT	AT	4754233	2016/11/18	2016/11/18	Neil Dassanayake
Sodium Adsorption Ratio (SAR)	CALC/MET	4749901	N/A	2016/11/22	Automated Statchk
SAR - ICP Metals	ICP	4756968	2016/11/21	2016/11/21	Jolly John
Volatile Organic Compounds and F1 PHCs	GC/MSFD	4751168	N/A	2016/11/18	Denis Reid

Maxxam ID: DLM689
Sample ID: TP 3-3
Matrix: Soil

Collected: 2016/11/11
Shipped:
Received: 2016/11/15

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	4749900	N/A	2016/11/19	Automated Statchk
Hot Water Extractable Boron	ICP	4757143	2016/11/21	2016/11/21	Jolly John
1,3-Dichloropropene Sum	CALC	4749916	N/A	2016/11/18	Automated Statchk
Free (WAD) Cyanide	TECH	4752540	2016/11/17	2016/11/18	Xuanhong Qiu

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Maxxam Job #: B6O8574
Report Date: 2016/11/30

Stantec Consulting Ltd
Client Project #: 161413338.101
Site Location: ARKELL ROAD
Sampler Initials: LS

TEST SUMMARY

Maxxam ID: DLM689
Sample ID: TP 3-3
Matrix: Soil

Collected: 2016/11/11
Shipped:
Received: 2016/11/15

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Conductivity	AT	4756969	2016/11/21	2016/11/21	Tahir Anwar
Hexavalent Chromium in Soil by IC	IC/SPEC	4753102	2016/11/17	2016/11/18	Sally Coughlin
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	4754166	2016/11/18	2016/11/19	Barbara Wowk
Strong Acid Leachable Metals by ICPMS	ICP/MS	4754540	2016/11/18	2016/11/18	Daniel Teclu
Moisture	BAL	4753535	N/A	2016/11/17	Min Yang
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	4755266	2016/11/18	2016/11/19	Mitesh Raj
pH CaCl2 EXTRACT	AT	4754233	2016/11/18	2016/11/18	Neil Dassanayake
Sodium Adsorption Ratio (SAR)	CALC/MET	4749901	N/A	2016/11/22	Automated Statchk
SAR - ICP Metals	ICP	4756968	2016/11/21	2016/11/21	Jolly John
Volatile Organic Compounds and F1 PHCs	GC/MSFD	4751168	N/A	2016/11/18	Denis Reid

Maxxam ID: DLM690
Sample ID: TP 3-4
Matrix: Soil

Collected: 2016/11/11
Shipped:
Received: 2016/11/15

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Hot Water Extractable Boron	ICP	4768100	2016/11/28	2016/11/28	Suban Kanapathippllai
Free (WAD) Cyanide	TECH	4764949	2016/11/25	2016/11/28	Louise Harding
Conductivity	AT	4765808	2016/11/28	2016/11/28	Tahir Anwar
Hexavalent Chromium in Soil by IC	IC/SPEC	4768127	2016/11/25	2016/11/29	Sally Coughlin
Strong Acid Leachable Metals by ICPMS	ICP/MS	4766014	2016/11/25	2016/11/25	Daniel Teclu
Moisture	BAL	4767478	N/A	2016/11/26	Min Yang
pH CaCl2 EXTRACT	AT	4768089	2016/11/28	2016/11/28	Neil Dassanayake
Sodium Adsorption Ratio (SAR)	CALC/MET	4761089	N/A	2016/11/28	Automated Statchk
SAR - ICP Metals	ICP	4765804	2016/11/28	2016/11/28	Suban Kanapathippllai

Maxxam ID: DLM692
Sample ID: TP 4-2
Matrix: Soil

Collected: 2016/11/11
Shipped:
Received: 2016/11/15

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	4749900	N/A	2016/11/19	Automated Statchk
Hot Water Extractable Boron	ICP	4757143	2016/11/21	2016/11/21	Jolly John
1,3-Dichloropropene Sum	CALC	4749916	N/A	2016/11/18	Automated Statchk
Free (WAD) Cyanide	TECH	4752540	2016/11/17	2016/11/18	Xuanhong Qiu
Conductivity	AT	4756969	2016/11/21	2016/11/21	Tahir Anwar
Hexavalent Chromium in Soil by IC	IC/SPEC	4753102	2016/11/17	2016/11/18	Sally Coughlin
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	4754166	2016/11/18	2016/11/19	Barbara Wowk
Strong Acid Leachable Metals by ICPMS	ICP/MS	4754540	2016/11/18	2016/11/18	Daniel Teclu
Moisture	BAL	4753535	N/A	2016/11/17	Min Yang
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	4755266	2016/11/18	2016/11/19	Mitesh Raj
pH CaCl2 EXTRACT	AT	4754233	2016/11/18	2016/11/18	Neil Dassanayake
Sodium Adsorption Ratio (SAR)	CALC/MET	4749901	N/A	2016/11/22	Automated Statchk
SAR - ICP Metals	ICP	4756968	2016/11/21	2016/11/21	Jolly John

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Maxxam Job #: B6O8574
Report Date: 2016/11/30

Stantec Consulting Ltd
Client Project #: 161413338.101
Site Location: ARKELL ROAD
Sampler Initials: LS

TEST SUMMARY

Maxxam ID: DLM692
Sample ID: TP 4-2
Matrix: Soil

Collected: 2016/11/11
Shipped:
Received: 2016/11/15

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Volatile Organic Compounds and F1 PHCs	GC/MSFD	4751168	N/A	2016/11/18	Denis Reid

Maxxam ID: DLM694
Sample ID: TP 6-1
Matrix: Soil

Collected: 2016/11/11
Shipped:
Received: 2016/11/15

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	4749900	N/A	2016/11/19	Automated Statchk
Hot Water Extractable Boron	ICP	4757143	2016/11/21	2016/11/21	Jolly John
1,3-Dichloropropene Sum	CALC	4749916	N/A	2016/11/18	Automated Statchk
Free (WAD) Cyanide	TECH	4752540	2016/11/17	2016/11/18	Xuanhong Qiu
Conductivity	AT	4756969	2016/11/21	2016/11/21	Tahir Anwar
Hexavalent Chromium in Soil by IC	IC/SPEC	4753102	2016/11/17	2016/11/18	Sally Coughlin
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	4754166	2016/11/18	2016/11/19	Barbara Wowk
Strong Acid Leachable Metals by ICPMS	ICP/MS	4754540	2016/11/18	2016/11/18	Daniel Teclu
Moisture	BAL	4753172	N/A	2016/11/17	Prgya Panchal
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	4755266	2016/11/18	2016/11/19	Mitesh Raj
pH CaCl2 EXTRACT	AT	4754678	2016/11/18	2016/11/18	Neil Dassanayake
Sodium Adsorption Ratio (SAR)	CALC/MET	4749901	N/A	2016/11/22	Automated Statchk
SAR - ICP Metals	ICP	4756968	2016/11/21	2016/11/21	Jolly John
Volatile Organic Compounds and F1 PHCs	GC/MSFD	4751168	N/A	2016/11/18	Denis Reid

Maxxam ID: DLM694 Dup
Sample ID: TP 6-1
Matrix: Soil

Collected: 2016/11/11
Shipped:
Received: 2016/11/15

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	4754540	2016/11/18	2016/11/18	Daniel Teclu

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Site Location: ARKELL ROAD
Sampler Initials: LS

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	0.7°C

Revised Report [2016/11/23] O.Reg 153 Soil Metals and Inorganics Package was added to TP3-4.

Sample DLM689 [TP 3-3] : PAH analysis: Detection limits were adjusted for high moisture content.
SAR Analysis: Sodium was not detected. To report SAR the sodium detection limit was used in the calculation. This value represents a maximum ratio.

Sample DLM690 [TP 3-4] : SAR Analysis: Sodium was not detected. To report SAR the sodium detection limit was used in the calculation. This value represents a maximum ratio.

Results relate only to the items tested.

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Maxxam Job #: B6O8574
Report Date: 2016/11/30

Stantec Consulting Ltd
Client Project #: 161413338.101
Site Location: ARKELL ROAD
Sampler Initials: LS

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
4751168	DR1	Matrix Spike	4-Bromofluorobenzene	2016/11/17		100	%	60 - 140
			D10-o-Xylene	2016/11/17		103	%	60 - 130
			D4-1,2-Dichloroethane	2016/11/17		97	%	60 - 140
			D8-Toluene	2016/11/17		104	%	60 - 140
			Acetone (2-Propanone)	2016/11/17		96	%	60 - 140
			Benzene	2016/11/17		93	%	60 - 140
			Bromodichloromethane	2016/11/17		93	%	60 - 140
			Bromoform	2016/11/17		93	%	60 - 140
			Bromomethane	2016/11/17		77	%	60 - 140
			Carbon Tetrachloride	2016/11/17		96	%	60 - 140
			Chlorobenzene	2016/11/17		99	%	60 - 140
			Chloroform	2016/11/17		92	%	60 - 140
			Dibromochloromethane	2016/11/17		95	%	60 - 140
			1,2-Dichlorobenzene	2016/11/17		95	%	60 - 140
			1,3-Dichlorobenzene	2016/11/17		96	%	60 - 140
			1,4-Dichlorobenzene	2016/11/17		97	%	60 - 140
			Dichlorodifluoromethane (FREON 12)	2016/11/17		98	%	60 - 140
			1,1-Dichloroethane	2016/11/17		93	%	60 - 140
			1,2-Dichloroethane	2016/11/17		90	%	60 - 140
			1,1-Dichloroethylene	2016/11/17		100	%	60 - 140
			cis-1,2-Dichloroethylene	2016/11/17		98	%	60 - 140
			trans-1,2-Dichloroethylene	2016/11/17		94	%	60 - 140
			1,2-Dichloropropane	2016/11/17		93	%	60 - 140
			cis-1,3-Dichloropropene	2016/11/17		85	%	60 - 140
			trans-1,3-Dichloropropene	2016/11/17		88	%	60 - 140
			Ethylbenzene	2016/11/17		99	%	60 - 140
			Ethylene Dibromide	2016/11/17		94	%	60 - 140
			Hexane	2016/11/17		103	%	60 - 140
			Methylene Chloride(Dichloromethane)	2016/11/17		100	%	60 - 140
			Methyl Ethyl Ketone (2-Butanone)	2016/11/17		94	%	60 - 140
			Methyl Isobutyl Ketone	2016/11/17		98	%	60 - 140
			Methyl t-butyl ether (MTBE)	2016/11/17		95	%	60 - 140
			Styrene	2016/11/17		96	%	60 - 140
			1,1,1,2-Tetrachloroethane	2016/11/17		96	%	60 - 140
			1,1,2,2-Tetrachloroethane	2016/11/17		95	%	60 - 140
			Tetrachloroethylene	2016/11/17		95	%	60 - 140
			Toluene	2016/11/17		92	%	60 - 140
			1,1,1-Trichloroethane	2016/11/17		93	%	60 - 140
			1,1,2-Trichloroethane	2016/11/17		93	%	60 - 140
			Trichloroethylene	2016/11/17		93	%	60 - 140
			Trichlorofluoromethane (FREON 11)	2016/11/17		100	%	60 - 140
			Vinyl Chloride	2016/11/17		101	%	60 - 140
			p+m-Xylene	2016/11/17		97	%	60 - 140
			o-Xylene	2016/11/17		98	%	60 - 140
			F1 (C6-C10)	2016/11/17		98	%	60 - 140
4751168	DR1	Spiked Blank	4-Bromofluorobenzene	2016/11/17		101	%	60 - 140
			D10-o-Xylene	2016/11/17		99	%	60 - 130
			D4-1,2-Dichloroethane	2016/11/17		97	%	60 - 140
			D8-Toluene	2016/11/17		104	%	60 - 140
			Acetone (2-Propanone)	2016/11/17		93	%	60 - 140
			Benzene	2016/11/17		89	%	60 - 130
			Bromodichloromethane	2016/11/17		89	%	60 - 130

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Bromoform	2016/11/17		89	%	60 - 130
			Bromomethane	2016/11/17		74	%	60 - 140
			Carbon Tetrachloride	2016/11/17		91	%	60 - 130
			Chlorobenzene	2016/11/17		94	%	60 - 130
			Chloroform	2016/11/17		88	%	60 - 130
			Dibromochloromethane	2016/11/17		91	%	60 - 130
			1,2-Dichlorobenzene	2016/11/17		91	%	60 - 130
			1,3-Dichlorobenzene	2016/11/17		91	%	60 - 130
			1,4-Dichlorobenzene	2016/11/17		92	%	60 - 130
			Dichlorodifluoromethane (FREON 12)	2016/11/17		93	%	60 - 140
			1,1-Dichloroethane	2016/11/17		89	%	60 - 130
			1,2-Dichloroethane	2016/11/17		87	%	60 - 130
			1,1-Dichloroethylene	2016/11/17		94	%	60 - 130
			cis-1,2-Dichloroethylene	2016/11/17		93	%	60 - 130
			trans-1,2-Dichloroethylene	2016/11/17		89	%	60 - 130
			1,2-Dichloropropane	2016/11/17		89	%	60 - 130
			cis-1,3-Dichloropropene	2016/11/17		84	%	60 - 130
			trans-1,3-Dichloropropene	2016/11/17		86	%	60 - 130
			Ethylbenzene	2016/11/17		94	%	60 - 130
			Ethylene Dibromide	2016/11/17		91	%	60 - 130
			Hexane	2016/11/17		97	%	60 - 130
			Methylene Chloride(Dichloromethane)	2016/11/17		96	%	60 - 130
			Methyl Ethyl Ketone (2-Butanone)	2016/11/17		91	%	60 - 140
			Methyl Isobutyl Ketone	2016/11/17		94	%	60 - 130
			Methyl t-butyl ether (MTBE)	2016/11/17		92	%	60 - 130
			Styrene	2016/11/17		92	%	60 - 130
			1,1,1,2-Tetrachloroethane	2016/11/17		92	%	60 - 130
			1,1,2,2-Tetrachloroethane	2016/11/17		91	%	60 - 130
			Tetrachloroethylene	2016/11/17		91	%	60 - 130
			Toluene	2016/11/17		88	%	60 - 130
			1,1,1-Trichloroethane	2016/11/17		89	%	60 - 130
			1,1,2-Trichloroethane	2016/11/17		91	%	60 - 130
			Trichloroethylene	2016/11/17		88	%	60 - 130
			Trichlorofluoromethane (FREON 11)	2016/11/17		95	%	60 - 130
			Vinyl Chloride	2016/11/17		96	%	60 - 130
			p+m-Xylene	2016/11/17		92	%	60 - 130
			o-Xylene	2016/11/17		94	%	60 - 130
			F1 (C6-C10)	2016/11/17		95	%	80 - 120
4751168	DR1	Method Blank	4-Bromofluorobenzene	2016/11/17		97	%	60 - 140
			D10-o-Xylene	2016/11/17		94	%	60 - 130
			D4-1,2-Dichloroethane	2016/11/17		99	%	60 - 140
			D8-Toluene	2016/11/17		98	%	60 - 140
			Acetone (2-Propanone)	2016/11/17	<0.50		ug/g	
			Benzene	2016/11/17	<0.020		ug/g	
			Bromodichloromethane	2016/11/17	<0.050		ug/g	
			Bromoform	2016/11/17	<0.050		ug/g	
			Bromomethane	2016/11/17	<0.050		ug/g	
			Carbon Tetrachloride	2016/11/17	<0.050		ug/g	
			Chlorobenzene	2016/11/17	<0.050		ug/g	
			Chloroform	2016/11/17	<0.050		ug/g	
			Dibromochloromethane	2016/11/17	<0.050		ug/g	
			1,2-Dichlorobenzene	2016/11/17	<0.050		ug/g	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			1,3-Dichlorobenzene	2016/11/17	<0.050		ug/g	
			1,4-Dichlorobenzene	2016/11/17	<0.050		ug/g	
			Dichlorodifluoromethane (FREON 12)	2016/11/17	<0.050		ug/g	
			1,1-Dichloroethane	2016/11/17	<0.050		ug/g	
			1,2-Dichloroethane	2016/11/17	<0.050		ug/g	
			1,1-Dichloroethylene	2016/11/17	<0.050		ug/g	
			cis-1,2-Dichloroethylene	2016/11/17	<0.050		ug/g	
			trans-1,2-Dichloroethylene	2016/11/17	<0.050		ug/g	
			1,2-Dichloropropane	2016/11/17	<0.050		ug/g	
			cis-1,3-Dichloropropene	2016/11/17	<0.030		ug/g	
			trans-1,3-Dichloropropene	2016/11/17	<0.040		ug/g	
			Ethylbenzene	2016/11/17	<0.020		ug/g	
			Ethylene Dibromide	2016/11/17	<0.050		ug/g	
			Hexane	2016/11/17	<0.050		ug/g	
			Methylene Chloride(Dichloromethane)	2016/11/17	<0.050		ug/g	
			Methyl Ethyl Ketone (2-Butanone)	2016/11/17	<0.50		ug/g	
			Methyl Isobutyl Ketone	2016/11/17	<0.50		ug/g	
			Methyl t-butyl ether (MTBE)	2016/11/17	<0.050		ug/g	
			Styrene	2016/11/17	<0.050		ug/g	
			1,1,1,2-Tetrachloroethane	2016/11/17	<0.050		ug/g	
			1,1,2,2-Tetrachloroethane	2016/11/17	<0.050		ug/g	
			Tetrachloroethylene	2016/11/17	<0.050		ug/g	
			Toluene	2016/11/17	<0.020		ug/g	
			1,1,1-Trichloroethane	2016/11/17	<0.050		ug/g	
			1,1,2-Trichloroethane	2016/11/17	<0.050		ug/g	
			Trichloroethylene	2016/11/17	<0.050		ug/g	
			Trichlorofluoromethane (FREON 11)	2016/11/17	<0.050		ug/g	
			Vinyl Chloride	2016/11/17	<0.020		ug/g	
			p+m-Xylene	2016/11/17	<0.020		ug/g	
			o-Xylene	2016/11/17	<0.020		ug/g	
			Total Xylenes	2016/11/17	<0.020		ug/g	
			F1 (C6-C10)	2016/11/17	<10		ug/g	
			F1 (C6-C10) - BTEX	2016/11/17	<10		ug/g	
4751168	DR1	RPD	Acetone (2-Propanone)	2016/11/17	NC		%	50
			Benzene	2016/11/17	NC		%	50
			Bromodichloromethane	2016/11/17	NC		%	50
			Bromoform	2016/11/17	NC		%	50
			Bromomethane	2016/11/17	NC		%	50
			Carbon Tetrachloride	2016/11/17	NC		%	50
			Chlorobenzene	2016/11/17	NC		%	50
			Chloroform	2016/11/17	NC		%	50
			Dibromochloromethane	2016/11/17	NC		%	50
			1,2-Dichlorobenzene	2016/11/17	NC		%	50
			1,3-Dichlorobenzene	2016/11/17	NC		%	50
			1,4-Dichlorobenzene	2016/11/17	NC		%	50
			Dichlorodifluoromethane (FREON 12)	2016/11/17	NC		%	50
			1,1-Dichloroethane	2016/11/17	NC		%	50
			1,2-Dichloroethane	2016/11/17	NC		%	50
			1,1-Dichloroethylene	2016/11/17	NC		%	50
			cis-1,2-Dichloroethylene	2016/11/17	NC		%	50
			trans-1,2-Dichloroethylene	2016/11/17	NC		%	50
			1,2-Dichloropropane	2016/11/17	NC		%	50

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			cis-1,3-Dichloropropene	2016/11/17	NC		%	50
			trans-1,3-Dichloropropene	2016/11/17	NC		%	50
			Ethylbenzene	2016/11/17	NC		%	50
			Ethylene Dibromide	2016/11/17	NC		%	50
			Hexane	2016/11/17	NC		%	50
			Methylene Chloride(Dichloromethane)	2016/11/17	NC		%	50
			Methyl Ethyl Ketone (2-Butanone)	2016/11/17	NC		%	50
			Methyl Isobutyl Ketone	2016/11/17	NC		%	50
			Methyl t-butyl ether (MTBE)	2016/11/17	NC		%	50
			Styrene	2016/11/17	NC		%	50
			1,1,1,2-Tetrachloroethane	2016/11/17	NC		%	50
			1,1,2,2-Tetrachloroethane	2016/11/17	NC		%	50
			Tetrachloroethylene	2016/11/17	NC		%	50
			Toluene	2016/11/17	NC		%	50
			1,1,1-Trichloroethane	2016/11/17	NC		%	50
			1,1,2-Trichloroethane	2016/11/17	NC		%	50
			Trichloroethylene	2016/11/17	NC		%	50
			Trichlorofluoromethane (FREON 11)	2016/11/17	NC		%	50
			Vinyl Chloride	2016/11/17	NC		%	50
			p+m-Xylene	2016/11/17	NC		%	50
			o-Xylene	2016/11/17	NC		%	50
			Total Xylenes	2016/11/17	NC		%	50
			F1 (C6-C10)	2016/11/17	NC		%	30
			F1 (C6-C10) - BTEX	2016/11/17	NC		%	30
4752540	XQI	Matrix Spike	Free Cyanide	2016/11/18		97	%	75 - 125
4752540	XQI	Spiked Blank	Free Cyanide	2016/11/18		99	%	80 - 120
4752540	XQI	Method Blank	Free Cyanide	2016/11/18	<0.01		ug/g	
4752540	XQI	RPD	Free Cyanide	2016/11/18	NC		%	35
4753102	SAC	Matrix Spike	Chromium (VI)	2016/11/18		0.63 (1)	%	75 - 125
4753102	SAC	Spiked Blank	Chromium (VI)	2016/11/18		87	%	80 - 120
4753102	SAC	Method Blank	Chromium (VI)	2016/11/18	<0.2		ug/g	
4753102	SAC	RPD	Chromium (VI)	2016/11/18	NC		%	35
4753172	GYA	RPD	Moisture	2016/11/17	0		%	20
4753535	RP5	RPD	Moisture	2016/11/17	NC		%	20
4754166	BWW	Matrix Spike	o-Terphenyl	2016/11/19		90	%	60 - 130
			F2 (C10-C16 Hydrocarbons)	2016/11/19		88	%	50 - 130
			F3 (C16-C34 Hydrocarbons)	2016/11/19		87	%	50 - 130
			F4 (C34-C50 Hydrocarbons)	2016/11/19		83	%	50 - 130
4754166	BWW	Spiked Blank	o-Terphenyl	2016/11/19		88	%	60 - 130
			F2 (C10-C16 Hydrocarbons)	2016/11/19		85	%	80 - 120
			F3 (C16-C34 Hydrocarbons)	2016/11/19		83	%	80 - 120
			F4 (C34-C50 Hydrocarbons)	2016/11/19		81	%	80 - 120
4754166	BWW	Method Blank	o-Terphenyl	2016/11/18		90	%	60 - 130
			F2 (C10-C16 Hydrocarbons)	2016/11/18	<10		ug/g	
			F3 (C16-C34 Hydrocarbons)	2016/11/18	<50		ug/g	
			F4 (C34-C50 Hydrocarbons)	2016/11/18	<50		ug/g	
4754166	BWW	RPD	F2 (C10-C16 Hydrocarbons)	2016/11/19	NC		%	30
			F3 (C16-C34 Hydrocarbons)	2016/11/19	NC		%	30
			F4 (C34-C50 Hydrocarbons)	2016/11/19	NC		%	30
4754233	NYS	Spiked Blank	Available (CaCl2) pH	2016/11/18		99	%	97 - 103
4754233	NYS	RPD	Available (CaCl2) pH	2016/11/18	0.25		%	N/A

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
4754540	DT1	Matrix Spike [DLM694-01]	Acid Extractable Antimony (Sb)	2016/11/18		97	%	75 - 125
			Acid Extractable Arsenic (As)	2016/11/18		103	%	75 - 125
			Acid Extractable Barium (Ba)	2016/11/18		NC	%	75 - 125
			Acid Extractable Beryllium (Be)	2016/11/18		101	%	75 - 125
			Acid Extractable Boron (B)	2016/11/18		98	%	75 - 125
			Acid Extractable Cadmium (Cd)	2016/11/18		100	%	75 - 125
			Acid Extractable Chromium (Cr)	2016/11/18		99	%	75 - 125
			Acid Extractable Cobalt (Co)	2016/11/18		97	%	75 - 125
			Acid Extractable Copper (Cu)	2016/11/18		97	%	75 - 125
			Acid Extractable Lead (Pb)	2016/11/18		NC	%	75 - 125
			Acid Extractable Molybdenum (Mo)	2016/11/18		101	%	75 - 125
			Acid Extractable Nickel (Ni)	2016/11/18		98	%	75 - 125
			Acid Extractable Selenium (Se)	2016/11/18		98	%	75 - 125
			Acid Extractable Silver (Ag)	2016/11/18		99	%	75 - 125
			Acid Extractable Thallium (Tl)	2016/11/18		98	%	75 - 125
			Acid Extractable Uranium (U)	2016/11/18		101	%	75 - 125
			Acid Extractable Vanadium (V)	2016/11/18		NC	%	75 - 125
			Acid Extractable Zinc (Zn)	2016/11/18		NC	%	75 - 125
			Acid Extractable Mercury (Hg)	2016/11/18		97	%	75 - 125
4754540	DT1	Spiked Blank	Acid Extractable Antimony (Sb)	2016/11/18		104	%	80 - 120
			Acid Extractable Arsenic (As)	2016/11/18		101	%	80 - 120
			Acid Extractable Barium (Ba)	2016/11/18		104	%	80 - 120
			Acid Extractable Beryllium (Be)	2016/11/18		99	%	80 - 120
			Acid Extractable Boron (B)	2016/11/18		99	%	80 - 120
			Acid Extractable Cadmium (Cd)	2016/11/18		99	%	80 - 120
			Acid Extractable Chromium (Cr)	2016/11/18		99	%	80 - 120
			Acid Extractable Cobalt (Co)	2016/11/18		99	%	80 - 120
			Acid Extractable Copper (Cu)	2016/11/18		101	%	80 - 120
			Acid Extractable Lead (Pb)	2016/11/18		103	%	80 - 120
			Acid Extractable Molybdenum (Mo)	2016/11/18		101	%	80 - 120
			Acid Extractable Nickel (Ni)	2016/11/18		101	%	80 - 120
			Acid Extractable Selenium (Se)	2016/11/18		103	%	80 - 120
			Acid Extractable Silver (Ag)	2016/11/18		101	%	80 - 120
			Acid Extractable Thallium (Tl)	2016/11/18		100	%	80 - 120
			Acid Extractable Uranium (U)	2016/11/18		102	%	80 - 120
			Acid Extractable Vanadium (V)	2016/11/18		101	%	80 - 120
			Acid Extractable Zinc (Zn)	2016/11/18		93	%	80 - 120
			Acid Extractable Mercury (Hg)	2016/11/18		95	%	80 - 120
4754540	DT1	Method Blank	Acid Extractable Antimony (Sb)	2016/11/18	<0.20		ug/g	
			Acid Extractable Arsenic (As)	2016/11/18	<1.0		ug/g	
			Acid Extractable Barium (Ba)	2016/11/18	<0.50		ug/g	
			Acid Extractable Beryllium (Be)	2016/11/18	<0.20		ug/g	
			Acid Extractable Boron (B)	2016/11/18	<5.0		ug/g	
			Acid Extractable Cadmium (Cd)	2016/11/18	<0.10		ug/g	
			Acid Extractable Chromium (Cr)	2016/11/18	<1.0		ug/g	
			Acid Extractable Cobalt (Co)	2016/11/18	<0.10		ug/g	
			Acid Extractable Copper (Cu)	2016/11/18	<0.50		ug/g	
			Acid Extractable Lead (Pb)	2016/11/18	<1.0		ug/g	
			Acid Extractable Molybdenum (Mo)	2016/11/18	<0.50		ug/g	
			Acid Extractable Nickel (Ni)	2016/11/18	<0.50		ug/g	
			Acid Extractable Selenium (Se)	2016/11/18	<0.50		ug/g	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Acid Extractable Silver (Ag)	2016/11/18	<0.20		ug/g	
			Acid Extractable Thallium (Tl)	2016/11/18	<0.050		ug/g	
			Acid Extractable Uranium (U)	2016/11/18	<0.050		ug/g	
			Acid Extractable Vanadium (V)	2016/11/18	<5.0		ug/g	
			Acid Extractable Zinc (Zn)	2016/11/18	<5.0		ug/g	
			Acid Extractable Mercury (Hg)	2016/11/18	<0.050		ug/g	
4754540	DT1	RPD [DLM694-01]	Acid Extractable Antimony (Sb)	2016/11/18	NC		%	30
			Acid Extractable Arsenic (As)	2016/11/18	NC		%	30
			Acid Extractable Barium (Ba)	2016/11/18	2.2		%	30
			Acid Extractable Beryllium (Be)	2016/11/18	NC		%	30
			Acid Extractable Boron (B)	2016/11/18	NC		%	30
			Acid Extractable Cadmium (Cd)	2016/11/18	NC		%	30
			Acid Extractable Chromium (Cr)	2016/11/18	4.5		%	30
			Acid Extractable Cobalt (Co)	2016/11/18	5.0		%	30
			Acid Extractable Copper (Cu)	2016/11/18	0.88		%	30
			Acid Extractable Lead (Pb)	2016/11/18	7.2		%	30
			Acid Extractable Molybdenum (Mo)	2016/11/18	NC		%	30
			Acid Extractable Nickel (Ni)	2016/11/18	19		%	30
			Acid Extractable Selenium (Se)	2016/11/18	NC		%	30
			Acid Extractable Silver (Ag)	2016/11/18	NC		%	30
			Acid Extractable Thallium (Tl)	2016/11/18	NC		%	30
			Acid Extractable Uranium (U)	2016/11/18	13		%	30
			Acid Extractable Vanadium (V)	2016/11/18	NC		%	30
			Acid Extractable Zinc (Zn)	2016/11/18	0.71		%	30
			Acid Extractable Mercury (Hg)	2016/11/18	NC		%	30
4754678	NYS	Spiked Blank	Available (CaCl2) pH	2016/11/18		98	%	97 - 103
4754678	NYS	RPD	Available (CaCl2) pH	2016/11/18	0.27		%	N/A
4755266	RAJ	Matrix Spike	D10-Anthracene	2016/11/18		93	%	50 - 130
			D14-Terphenyl (FS)	2016/11/18		87	%	50 - 130
			D8-Acenaphthylene	2016/11/18		93	%	50 - 130
			Acenaphthene	2016/11/18		92	%	50 - 130
			Acenaphthylene	2016/11/18		91	%	50 - 130
			Anthracene	2016/11/18		82	%	50 - 130
			Benzo(a)anthracene	2016/11/18		99	%	50 - 130
			Benzo(a)pyrene	2016/11/18		96	%	50 - 130
			Benzo(b/j)fluoranthene	2016/11/18		91	%	50 - 130
			Benzo(g,h,i)perylene	2016/11/18		88	%	50 - 130
			Benzo(k)fluoranthene	2016/11/18		101	%	50 - 130
			Chrysene	2016/11/18		100	%	50 - 130
			Dibenz(a,h)anthracene	2016/11/18		97	%	50 - 130
			Fluoranthene	2016/11/18		91	%	50 - 130
			Fluorene	2016/11/18		90	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2016/11/18		102	%	50 - 130
			1-Methylnaphthalene	2016/11/18		94	%	50 - 130
			2-Methylnaphthalene	2016/11/18		96	%	50 - 130
			Naphthalene	2016/11/18		84	%	50 - 130
			Phenanthrene	2016/11/18		90	%	50 - 130
			Pyrene	2016/11/18		92	%	50 - 130
4755266	RAJ	Spiked Blank	D10-Anthracene	2016/11/18		89	%	50 - 130
			D14-Terphenyl (FS)	2016/11/18		82	%	50 - 130
			D8-Acenaphthylene	2016/11/18		90	%	50 - 130
			Acenaphthene	2016/11/18		88	%	50 - 130

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Acenaphthylene	2016/11/18		86	%	50 - 130
			Anthracene	2016/11/18		78	%	50 - 130
			Benzo(a)anthracene	2016/11/18		92	%	50 - 130
			Benzo(a)pyrene	2016/11/18		95	%	50 - 130
			Benzo(b/j)fluoranthene	2016/11/18		93	%	50 - 130
			Benzo(g,h,i)perylene	2016/11/18		89	%	50 - 130
			Benzo(k)fluoranthene	2016/11/18		106	%	50 - 130
			Chrysene	2016/11/18		96	%	50 - 130
			Dibenz(a,h)anthracene	2016/11/18		95	%	50 - 130
			Fluoranthene	2016/11/18		87	%	50 - 130
			Fluorene	2016/11/18		89	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2016/11/18		101	%	50 - 130
			1-Methylnaphthalene	2016/11/18		97	%	50 - 130
			2-Methylnaphthalene	2016/11/18		99	%	50 - 130
			Naphthalene	2016/11/18		86	%	50 - 130
			Phenanthrene	2016/11/18		87	%	50 - 130
			Pyrene	2016/11/18		88	%	50 - 130
4755266	RAJ	Method Blank	D10-Anthracene	2016/11/18		86	%	50 - 130
			D14-Terphenyl (FS)	2016/11/18		81	%	50 - 130
			D8-Acenaphthylene	2016/11/18		87	%	50 - 130
			Acenaphthene	2016/11/18	<0.0050		ug/g	
			Acenaphthylene	2016/11/18	<0.0050		ug/g	
			Anthracene	2016/11/18	<0.0050		ug/g	
			Benzo(a)anthracene	2016/11/18	<0.0050		ug/g	
			Benzo(a)pyrene	2016/11/18	<0.0050		ug/g	
			Benzo(b/j)fluoranthene	2016/11/18	<0.0050		ug/g	
			Benzo(g,h,i)perylene	2016/11/18	<0.0050		ug/g	
			Benzo(k)fluoranthene	2016/11/18	<0.0050		ug/g	
			Chrysene	2016/11/18	<0.0050		ug/g	
			Dibenz(a,h)anthracene	2016/11/18	<0.0050		ug/g	
			Fluoranthene	2016/11/18	<0.0050		ug/g	
			Fluorene	2016/11/18	<0.0050		ug/g	
			Indeno(1,2,3-cd)pyrene	2016/11/18	<0.0050		ug/g	
			1-Methylnaphthalene	2016/11/18	<0.0050		ug/g	
			2-Methylnaphthalene	2016/11/18	<0.0050		ug/g	
			Naphthalene	2016/11/18	<0.0050		ug/g	
			Phenanthrene	2016/11/18	<0.0050		ug/g	
			Pyrene	2016/11/18	<0.0050		ug/g	
4755266	RAJ	RPD	Acenaphthene	2016/11/18	NC		%	40
			Acenaphthylene	2016/11/18	NC		%	40
			Anthracene	2016/11/18	NC		%	40
			Benzo(a)anthracene	2016/11/18	NC		%	40
			Benzo(a)pyrene	2016/11/18	NC		%	40
			Benzo(b/j)fluoranthene	2016/11/18	NC		%	40
			Benzo(g,h,i)perylene	2016/11/18	NC		%	40
			Benzo(k)fluoranthene	2016/11/18	NC		%	40
			Chrysene	2016/11/18	NC		%	40
			Dibenz(a,h)anthracene	2016/11/18	NC		%	40
			Fluoranthene	2016/11/18	NC		%	40
			Fluorene	2016/11/18	NC		%	40
			Indeno(1,2,3-cd)pyrene	2016/11/18	NC		%	40
			1-Methylnaphthalene	2016/11/18	NC		%	40

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			2-Methylnaphthalene	2016/11/18	NC		%	40
			Naphthalene	2016/11/18	NC		%	40
			Phenanthrene	2016/11/18	NC		%	40
			Pyrene	2016/11/18	NC		%	40
4756968	JOH	Spiked Blank	Soluble Calcium (Ca)	2016/11/21		107	%	80 - 120
			Soluble Magnesium (Mg)	2016/11/21		104	%	80 - 120
			Soluble Sodium (Na)	2016/11/21		99	%	80 - 120
4756968	JOH	Method Blank	Soluble Calcium (Ca)	2016/11/21	<0.5		mg/L	
			Soluble Magnesium (Mg)	2016/11/21	<0.5		mg/L	
			Soluble Sodium (Na)	2016/11/21	<5		mg/L	
4756968	JOH	RPD	Soluble Calcium (Ca)	2016/11/21	NC		%	30
			Soluble Magnesium (Mg)	2016/11/21	NC		%	30
			Soluble Sodium (Na)	2016/11/21	0.13		%	30
4756969	TA1	Spiked Blank	Conductivity	2016/11/21		100	%	90 - 110
4756969	TA1	Method Blank	Conductivity	2016/11/21	<0.002		mS/cm	
4756969	TA1	RPD	Conductivity	2016/11/21	4.2		%	10
4757143	JOH	Matrix Spike	Hot Water Ext. Boron (B)	2016/11/21		NC	%	75 - 125
4757143	JOH	Spiked Blank	Hot Water Ext. Boron (B)	2016/11/21		101	%	75 - 125
4757143	JOH	Method Blank	Hot Water Ext. Boron (B)	2016/11/21	<0.050		ug/g	
4757143	JOH	RPD	Hot Water Ext. Boron (B)	2016/11/21	1.9		%	40
4764949	LHA	Matrix Spike	Free Cyanide	2016/11/28		101	%	75 - 125
4764949	LHA	Spiked Blank	Free Cyanide	2016/11/28		97	%	80 - 120
4764949	LHA	Method Blank	Free Cyanide	2016/11/28	<0.01		ug/g	
4764949	LHA	RPD	Free Cyanide	2016/11/28	NC		%	35
4765804	SUK	Spiked Blank	Soluble Calcium (Ca)	2016/11/28		93	%	80 - 120
			Soluble Magnesium (Mg)	2016/11/28		95	%	80 - 120
			Soluble Sodium (Na)	2016/11/28		95	%	80 - 120
4765804	SUK	Method Blank	Soluble Calcium (Ca)	2016/11/28	<0.5		mg/L	
			Soluble Magnesium (Mg)	2016/11/28	<0.5		mg/L	
			Soluble Sodium (Na)	2016/11/28	<5		mg/L	
4765804	SUK	RPD	Soluble Calcium (Ca)	2016/11/28	2.5		%	30
			Soluble Magnesium (Mg)	2016/11/28	NC		%	30
			Soluble Sodium (Na)	2016/11/28	NC		%	30
4765808	TA1	Spiked Blank	Conductivity	2016/11/28		99	%	90 - 110
4765808	TA1	Method Blank	Conductivity	2016/11/28	<0.002		mS/cm	
4765808	TA1	RPD	Conductivity	2016/11/28	0.20		%	10
4766014	DT1	Matrix Spike	Acid Extractable Antimony (Sb)	2016/11/25		95	%	75 - 125
			Acid Extractable Arsenic (As)	2016/11/25		97	%	75 - 125
			Acid Extractable Barium (Ba)	2016/11/25		87	%	75 - 125
			Acid Extractable Beryllium (Be)	2016/11/25		95	%	75 - 125
			Acid Extractable Boron (B)	2016/11/25		92	%	75 - 125
			Acid Extractable Cadmium (Cd)	2016/11/25		96	%	75 - 125
			Acid Extractable Chromium (Cr)	2016/11/25		100	%	75 - 125
			Acid Extractable Cobalt (Co)	2016/11/25		96	%	75 - 125
			Acid Extractable Copper (Cu)	2016/11/25		97	%	75 - 125
			Acid Extractable Lead (Pb)	2016/11/25		98	%	75 - 125
			Acid Extractable Molybdenum (Mo)	2016/11/25		98	%	75 - 125
			Acid Extractable Nickel (Ni)	2016/11/25		95	%	75 - 125
			Acid Extractable Selenium (Se)	2016/11/25		96	%	75 - 125
			Acid Extractable Silver (Ag)	2016/11/25		102	%	75 - 125
			Acid Extractable Thallium (Tl)	2016/11/25		99	%	75 - 125
			Acid Extractable Uranium (U)	2016/11/25		99	%	75 - 125

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Acid Extractable Vanadium (V)	2016/11/25		NC	%	75 - 125
			Acid Extractable Zinc (Zn)	2016/11/25		95	%	75 - 125
			Acid Extractable Mercury (Hg)	2016/11/25		95	%	75 - 125
4766014	DT1	Spiked Blank	Acid Extractable Antimony (Sb)	2016/11/25		102	%	80 - 120
			Acid Extractable Arsenic (As)	2016/11/25		100	%	80 - 120
			Acid Extractable Barium (Ba)	2016/11/25		96	%	80 - 120
			Acid Extractable Beryllium (Be)	2016/11/25		98	%	80 - 120
			Acid Extractable Boron (B)	2016/11/25		99	%	80 - 120
			Acid Extractable Cadmium (Cd)	2016/11/25		100	%	80 - 120
			Acid Extractable Chromium (Cr)	2016/11/25		101	%	80 - 120
			Acid Extractable Cobalt (Co)	2016/11/25		101	%	80 - 120
			Acid Extractable Copper (Cu)	2016/11/25		102	%	80 - 120
			Acid Extractable Lead (Pb)	2016/11/25		101	%	80 - 120
			Acid Extractable Molybdenum (Mo)	2016/11/25		102	%	80 - 120
			Acid Extractable Nickel (Ni)	2016/11/25		98	%	80 - 120
			Acid Extractable Selenium (Se)	2016/11/25		100	%	80 - 120
			Acid Extractable Silver (Ag)	2016/11/25		103	%	80 - 120
			Acid Extractable Thallium (Tl)	2016/11/25		103	%	80 - 120
			Acid Extractable Uranium (U)	2016/11/25		99	%	80 - 120
			Acid Extractable Vanadium (V)	2016/11/25		100	%	80 - 120
			Acid Extractable Zinc (Zn)	2016/11/25		98	%	80 - 120
			Acid Extractable Mercury (Hg)	2016/11/25		104	%	80 - 120
4766014	DT1	Method Blank	Acid Extractable Antimony (Sb)	2016/11/25	<0.20		ug/g	
			Acid Extractable Arsenic (As)	2016/11/25	<1.0		ug/g	
			Acid Extractable Barium (Ba)	2016/11/25	<0.50		ug/g	
			Acid Extractable Beryllium (Be)	2016/11/25	<0.20		ug/g	
			Acid Extractable Boron (B)	2016/11/25	<5.0		ug/g	
			Acid Extractable Cadmium (Cd)	2016/11/25	<0.10		ug/g	
			Acid Extractable Chromium (Cr)	2016/11/25	<1.0		ug/g	
			Acid Extractable Cobalt (Co)	2016/11/25	<0.10		ug/g	
			Acid Extractable Copper (Cu)	2016/11/25	<0.50		ug/g	
			Acid Extractable Lead (Pb)	2016/11/25	<1.0		ug/g	
			Acid Extractable Molybdenum (Mo)	2016/11/25	<0.50		ug/g	
			Acid Extractable Nickel (Ni)	2016/11/25	<0.50		ug/g	
			Acid Extractable Selenium (Se)	2016/11/25	<0.50		ug/g	
			Acid Extractable Silver (Ag)	2016/11/25	<0.20		ug/g	
			Acid Extractable Thallium (Tl)	2016/11/25	<0.050		ug/g	
			Acid Extractable Uranium (U)	2016/11/25	<0.050		ug/g	
			Acid Extractable Vanadium (V)	2016/11/25	<5.0		ug/g	
			Acid Extractable Zinc (Zn)	2016/11/25	<5.0		ug/g	
			Acid Extractable Mercury (Hg)	2016/11/25	<0.050		ug/g	
4766014	DT1	RPD	Acid Extractable Antimony (Sb)	2016/11/28	NC		%	30
			Acid Extractable Arsenic (As)	2016/11/28	NC		%	30
			Acid Extractable Barium (Ba)	2016/11/28	0.078		%	30
			Acid Extractable Beryllium (Be)	2016/11/28	NC		%	30
			Acid Extractable Boron (B)	2016/11/28	NC		%	30
			Acid Extractable Cadmium (Cd)	2016/11/28	NC		%	30
			Acid Extractable Chromium (Cr)	2016/11/28	2.2		%	30
			Acid Extractable Cobalt (Co)	2016/11/28	5.7		%	30
			Acid Extractable Copper (Cu)	2016/11/28	NC		%	30
			Acid Extractable Lead (Pb)	2016/11/28	NC		%	30
			Acid Extractable Molybdenum (Mo)	2016/11/28	NC		%	30

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Maxxam Job #: B6O8574
Report Date: 2016/11/30

Stantec Consulting Ltd
Client Project #: 161413338.101
Site Location: ARKELL ROAD
Sampler Initials: LS

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Acid Extractable Nickel (Ni)	2016/11/28	1.5		%	30
			Acid Extractable Selenium (Se)	2016/11/28	NC		%	30
			Acid Extractable Silver (Ag)	2016/11/28	NC		%	30
			Acid Extractable Thallium (Tl)	2016/11/28	NC		%	30
			Acid Extractable Uranium (U)	2016/11/28	9.8		%	30
			Acid Extractable Vanadium (V)	2016/11/28	NC		%	30
			Acid Extractable Zinc (Zn)	2016/11/28	NC		%	30
			Acid Extractable Mercury (Hg)	2016/11/28	NC		%	30
4767478	NS3	RPD	Moisture	2016/11/26	2.9		%	20
4768089	NYS	Spiked Blank	Available (CaCl2) pH	2016/11/28		98	%	97 - 103
4768089	NYS	RPD	Available (CaCl2) pH	2016/11/28	1.1		%	N/A
4768100	SUK	Matrix Spike	Hot Water Ext. Boron (B)	2016/11/28		97	%	75 - 125
4768100	SUK	Spiked Blank	Hot Water Ext. Boron (B)	2016/11/28		97	%	75 - 125
4768100	SUK	Method Blank	Hot Water Ext. Boron (B)	2016/11/28	<0.050		ug/g	
4768100	SUK	RPD	Hot Water Ext. Boron (B)	2016/11/28	NC		%	40
4768127	SAC	Matrix Spike	Chromium (VI)	2016/11/29		80	%	75 - 125
4768127	SAC	Spiked Blank	Chromium (VI)	2016/11/29		89	%	80 - 120
4768127	SAC	Method Blank	Chromium (VI)	2016/11/29	<0.2		ug/g	
4768127	SAC	RPD	Chromium (VI)	2016/11/29	NC		%	35

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than 2x that of the native sample concentration).

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (one or both samples < 5x RDL).

(1) The matrix spike recovery was below the lower control limit. This may be due in part to the reducing environment of the sample. The sample was reanalyzed with the same results.

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Maxxam Job #: B6O8574
Report Date: 2016/11/30

Stantec Consulting Ltd
Client Project #: 161413338.101
Site Location: ARKELL ROAD
Sampler Initials: LS

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Cristina Carriere

Cristina Carriere, Scientific Services

Eva Pranjic

Ewa Pranjic, M.Sc., C.Chem, Scientific Specialist

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

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STANTEC CHAIN OF CUSTODY RECORD

Page 1 of 2

INVOICE INFORMATION:		REPORT INFORMATION(if differs from invoice):		PROJECT INFORMATION:		Laboratory Use Only:	
Company Name:	#50575 Stantec Consulting Ltd	Company Name:	Stantec	Quotation #:	B52646	Maxxam Job #:	Bottle Order #: 586927
Contact Name:	Accounts Payable	Contact Name:	Erika Ryter	Task #:			
Address:	835 Paramount Drive, Suite 200, Stoney Creek ON L8J 0B4	Address:		Project #:	161413338 . 101		
Phone:	(905) 381-3211 x Fax: (905) 631-8960	Phone:	(519) 780-8189 x Fax:	Profit Centre:	1614	COC #:	Project Manager:
Email:	accounts.payable.invoices@stantec.com	Email:	Erika.Ryter@stantec.com	Site #:	Ackell Road	C#586927-02-01	Augustyna Dobosz
				Sampled By:	L. Sills		

MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE MAXXAM DRINKING WATER CHAIN OF CUSTODY

Regulation 153 (2011)	Other Regulations	Special Instructions
☐ Table 1 ☒ Res/Park ☐ Medium/Fine	☐ CCME ☐ Sanitary Sewer Bylaw	
☒ Table 2 ☐ Ind/Comm ☐ Coarse	☐ Reg 558 ☐ Storm Sewer Bylaw	
☐ Table 3 ☐ Agri/Other ☐ For RSC	☐ MISA Municipality	
☐ Table	☐ PWQO	
	☐ Other	

Include Criteria on Certificate of Analysis (Y/N)? ✓

Turnaround Time (TAT) Required:
Please provide advance notice for rush projects

Regular (Standard) TAT: ☒
(will be applied if Rush TAT is not specified)
Standard TAT = 5-7 Working days for most tests.
Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

Job Specific Rush TAT (if applies to entire submission)
Date Required: Time Required: ☐
Rush Confirmation Number: *(call lab for #)*

15-Nov-16 15:18
Augustyna Dobosz
B6O8574
RK6 ENV-1072

	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Field Filtered (please circle): Metals / Hg / Cr VI	ANALYSIS REQUESTED (PLEASE BE SPECIFIC): O. Reg 153 VOCs & F1-F4 (Soil)	O. Reg 153 Metals & Inorganics Pkg (Soil)	O. Reg 153 PAHs (Soil)	Hold	# of Bottles	Comments
1		TP 1-1	Nov 11/16	9:00	SOIL	nA				X	5	Hold
2		TP 1-2		9:15	SOIL		X	X	X		5	
3		TP1-3		9:30	SOIL					X	5	Hold
4		TP 2-1		12:30	SOIL					X	5	Hold
5		TP 2-2		12:40	SOIL		X	X	X		5	
6		TP 2-3		13:15	SOIL					X	5	Hold
7		TP 3-1		11:50	SOIL					X	5	Hold
8		TP 3-2		12:00	SOIL					X	5	Hold
9		TP 3-3		13:35	SOIL		X	X	X		5	
10		TP 3-4		13:40	SOIL					X	5	Hold

* RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# jars used and not submitted
M. Stevelis	16/11/15	9 AM	ASTO BHATOU	2016/11/15	15:18	

Laboratory Use Only				
Time Sensitive	Temperature (°C) on Receipt	Custody Seal	Yes	No
	1/1/0	Present	✓	
		Intact	✓	

* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS

SAMPLES MUST BE KEPT COOL (< 10° C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

White: Maxxam Yellow: Client

Maxxam Analytics International Corporation o/a Maxxam Analytics

Maxxam Analytics International Corporation o/a Maxxam Analytics
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STANTEC CHAIN OF CUSTODY RECORD

Page 2 of 2

INVOICE INFORMATION:

Company Name: #50575 Stantec Consulting Ltd
Contact Name: Accounts Payable
Address: 835 Paramount Drive, Suite 200, Stoney Creek ON L8J 0B4
Phone: (905) 381-3211 x Fax: (905) 631-8960
Email: accounts.payable.invoices@stantec.com

REPORT INFORMATION(if differs from invoice):

Company Name: Stantec
Contact Name: Erika Ryter
Address:
Phone: (519) 780-8189 x Fax:
Email: Erika.Ryter@stantec.com

PROJECT INFORMATION:

Quotation #: B52646
Task #:
Project #: 161413338 , 101
Profit Centre: 1614
Site #: Arkell Road
Sampled By: L. Sills

Laboratory Use Only:

Maxxam Job #:
Bottle Order #: 586927
COC #: C#586927-01-01
Project Manager: Augustyna Dobosz

MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE MAXXAM DRINKING WATER CHAIN OF CUSTODY

Regulation 153 (2011): ☐ Table 1 ☒ Res/Park ☐ Medium/Fine ☒ Table 2 ☐ Ind/Comm ☐ Coarse ☐ Table 3 ☐ Agri/Other ☐ For RSC ☐ Table ___

Other Regulations: ☐ CCME ☐ Sanitary Sewer Bylaw ☐ Reg 558 ☐ Storm Sewer Bylaw ☐ MISA Municipality ☐ PWQO ☐ Other

Special Instructions

Include Criteria on Certificate of Analysis (Y/N)? N

Turnaround Time (TAT) Required:

Please provide advance notice for rush projects

Regular (Standard) TAT: ☒
(will be applied if Rush TAT is not specified)
Standard TAT = 5-7 Working days for most tests.
Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

Job Specific Rush TAT (if applies to entire submission)
Date Required: Time Required: ☐
Rush Confirmation Number: *(call lab for #)*

	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Field Filtered (please circle): Metals / Hg / Cr VI	O Reg 153 VOCs & F1-F4 (Soil)	O Reg 153 Metals & Inorganics Pkg (Soil)	O Reg 153 PAHs (Soil)	Mold							# of Bottles	Comments
1		TP 4-1	Nov 11/16	10:30	SOIL	NA				X							5	Mold
2		TP 4-2		10:35	SOIL		X	X	X								5	
3		TP4-3		11:15	SOIL					X							5	Mold
4		TP6-1		10:00	SOIL		X	X	X								5	
5		TP6-2		10:10	SOIL					X							5	Mold
6					SOIL													
7					SOIL													
8					SOIL													
9					SOIL													
10					SOIL													

* RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# jars used and not submitted
M. Sterling	16/11/15	9 AM	[illegible] AMO BYATOU	2016/11/15	15:18	

Laboratory Use Only

Time Sensitive	Temperature (°C) on Receipt	Custody Seal	Yes	No
	1/1/0	Present	✓	
		Intact	✓	

* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

SAMPLES MUST BE KEPT COOL (< 10° C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

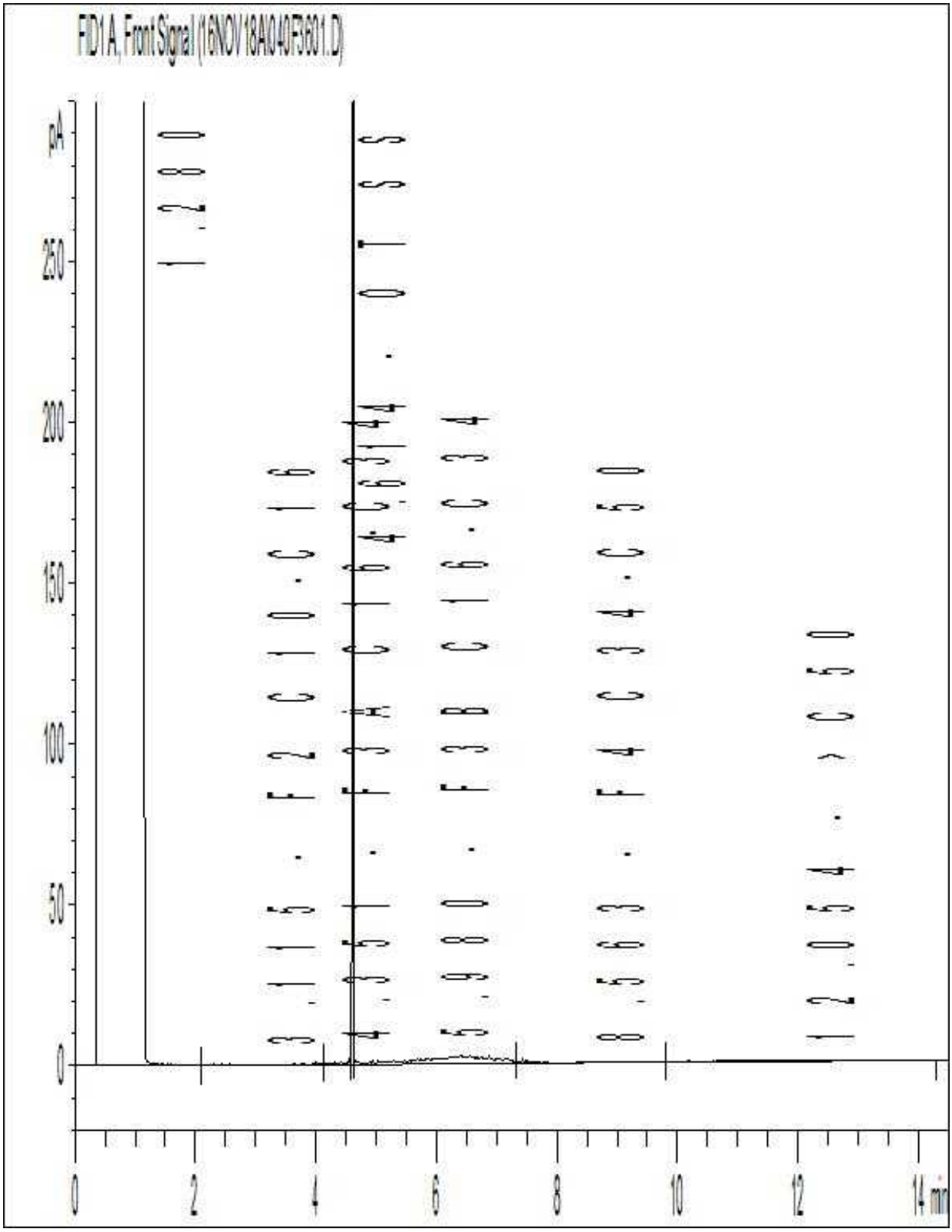
White: Maxxam Yellow: Client

Maxxam Analytics International Corporation o/a Maxxam Analytics

Maxxam Job #: B6O8574
Report Date: 2016/11/30
Maxxam Sample: DLM682

Stantec Consulting Ltd
Client Project #: 161413338.101
Project name: ARKELL ROAD
Client ID: TP 1-2

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram

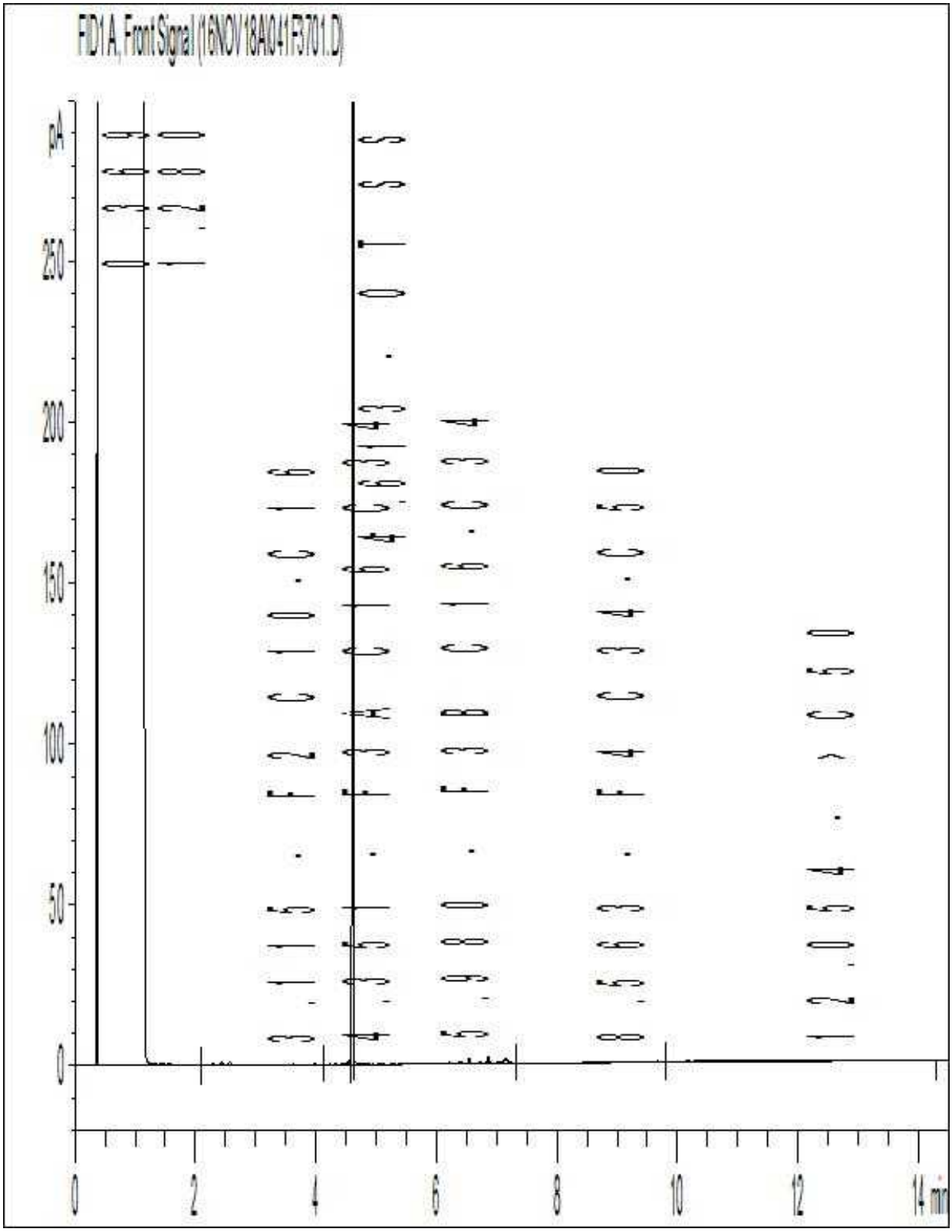


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Maxxam Job #: B6O8574
Report Date: 2016/11/30
Maxxam Sample: DLM685

Stantec Consulting Ltd
Client Project #: 161413338.101
Project name: ARKELL ROAD
Client ID: TP 2-2

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram

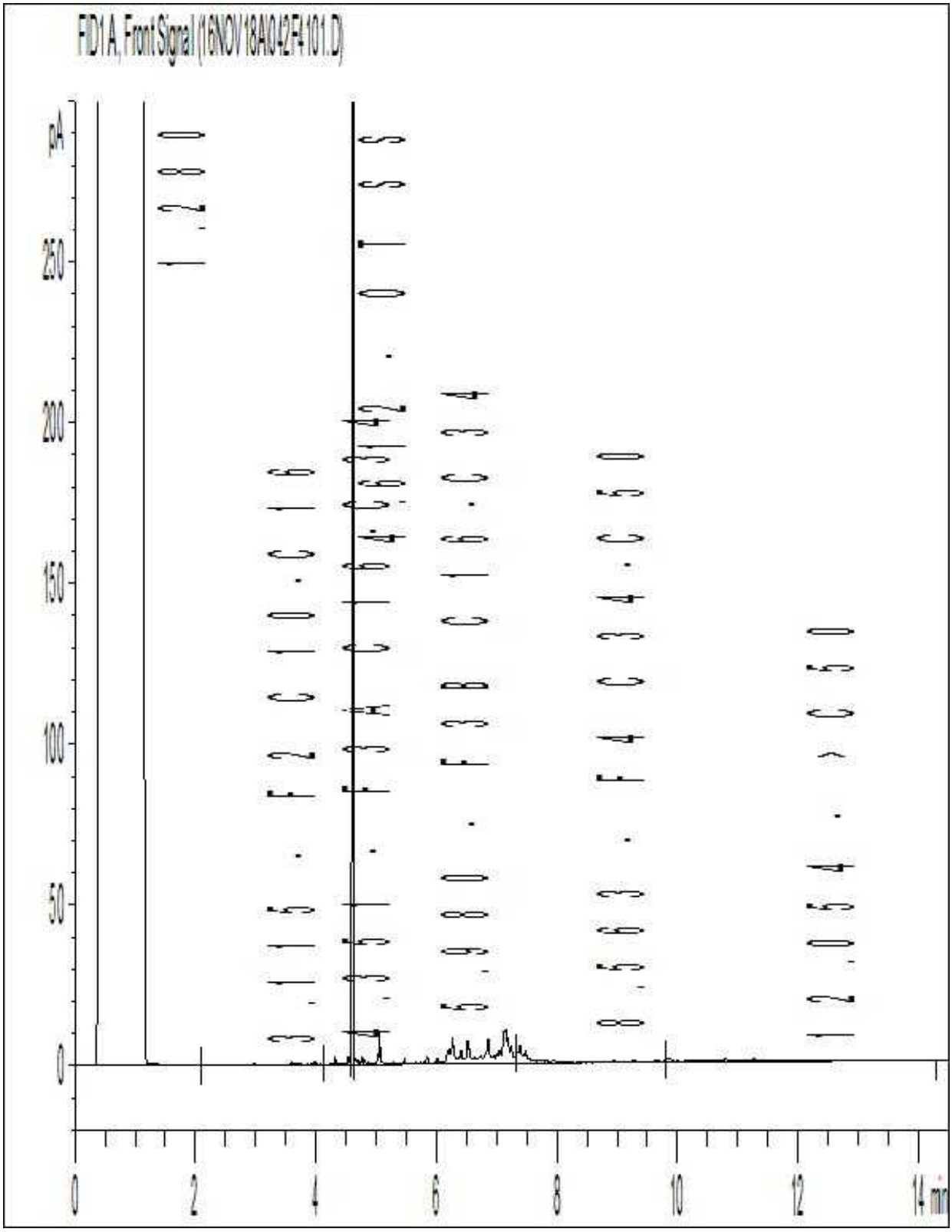


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Maxxam Job #: B6O8574
Report Date: 2016/11/30
Maxxam Sample: DLM689

Stantec Consulting Ltd
Client Project #: 161413338.101
Project name: ARKELL ROAD
Client ID: TP 3-3

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram

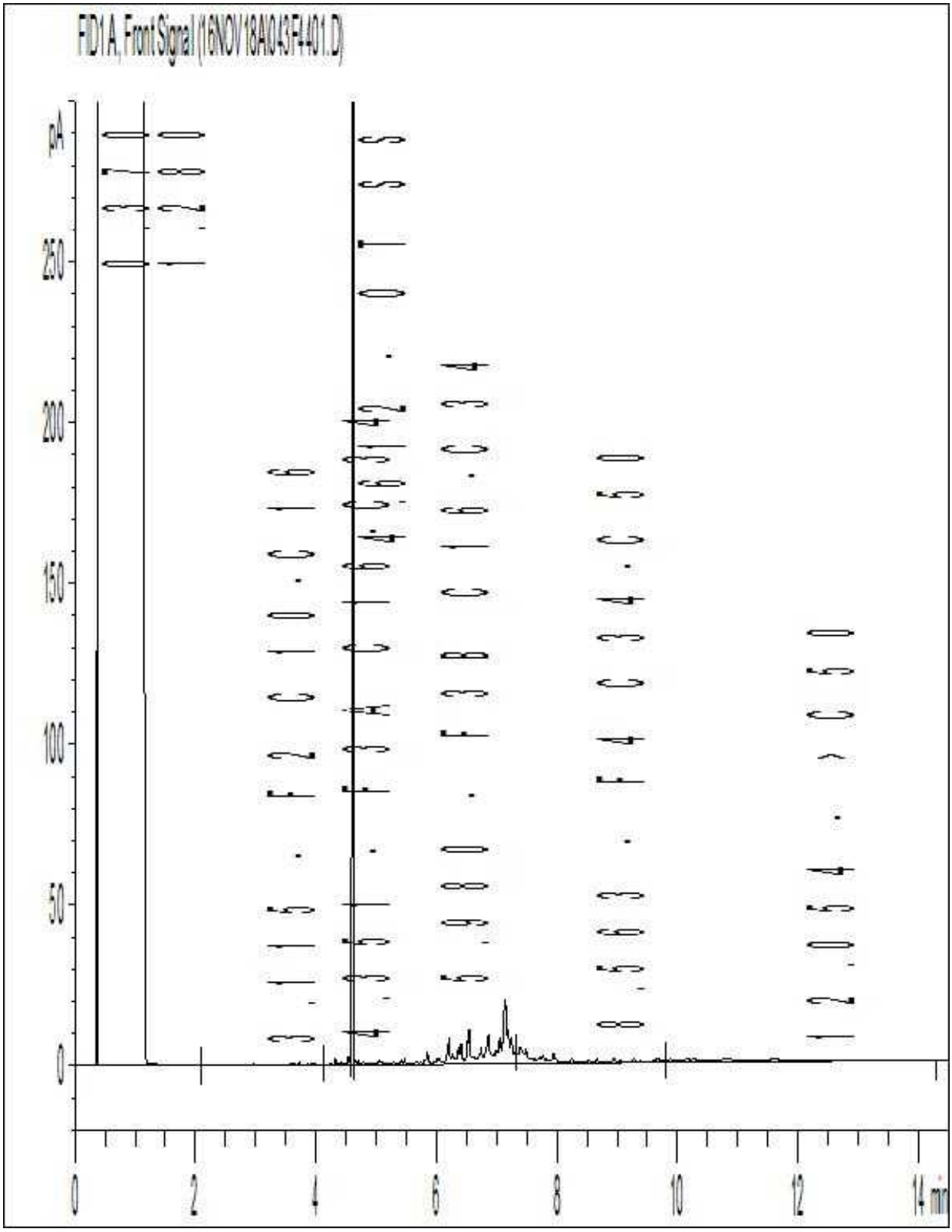


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Maxxam Job #: B6O8574
Report Date: 2016/11/30
Maxxam Sample: DLM692

Stantec Consulting Ltd
Client Project #: 161413338.101
Project name: ARKELL ROAD
Client ID: TP 4-2

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram

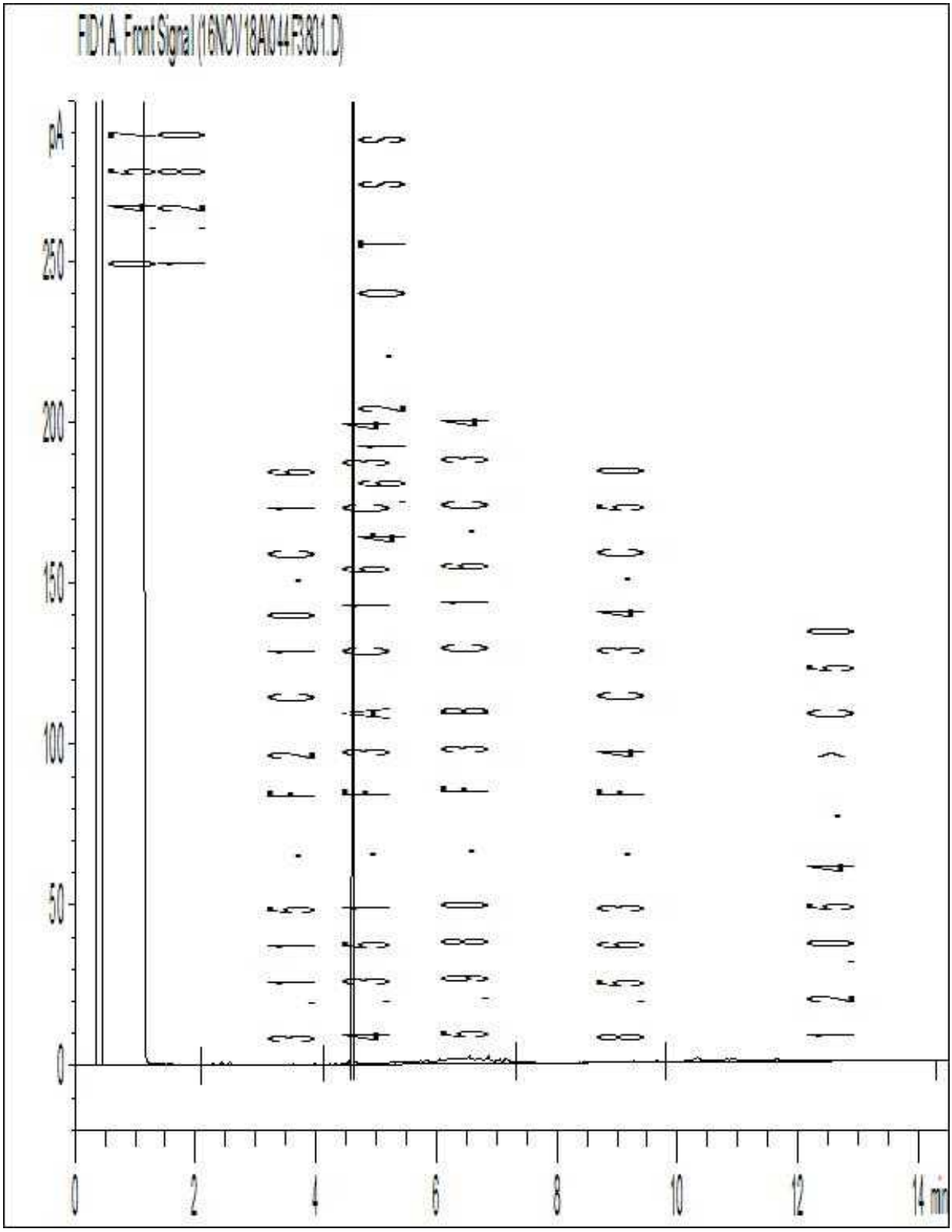


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Maxxam Job #: B6O8574
Report Date: 2016/11/30
Maxxam Sample: DLM694

Stantec Consulting Ltd
Client Project #: 161413338.101
Project name: ARKELL ROAD
Client ID: TP 6-1

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.