FINAL

Phase II Environmental Site Assessment

320 McRae Avenue, 1976 Scott Street,
311 and 315 Tweedsmuir Avenue
Ottawa, Ontario

Prepared for:

The Great-West Life Assurance Company
33 Yonge Street, Suite 1000
Toronto, ON M5E 1G4

Attn: Mr. Andrew Hanna

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MEMBER OF THE PINCHIN GROUP

Issued To:	**The Great-West Life Assurance Company**
Contact:	**Mr. Andrew Hanna**
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Issuing Office:	**Kanata, ON**
Primary Pinchin Contact:	**Matthew Ryan, B.A., CET., EP** **Operations Manager** **613.592.3387 ext. 1810** **mryan@pinchin.com**

Author: Michael Kosiw, B.Sc. Hons., EP
Project Manager
613.592.3387 ext. 1816
mkosiw@pinchin.com

Reviewer: Scott Mather, B.Sc., QP$_{ESA}$
Director, Eastern Ontario
613.592.3387 ext. 1802
smather@pinchin.com

Reviewer: Rob Daciw, B.Sc., P.Geo.
Director, Real Estate Due Diligence
905.969.1460
rdaciw@pinchin.com

EXECUTIVE SUMMARY

Pinchin Ltd. (Pinchin) was retained by The Great-West Life Assurance Company (Client) to conduct a Phase II Environmental Site Assessment (ESA) of the property located at 320 McRae Avenue, 1976 Scott Street, 311 and 315 Tweedsmuir Avenue in Ottawa, Ontario (hereafter referred to as the Site).

The Site consists of a 1.6 acre parcel of land, which is developed with two, two-storey residential dwellings and a single-storey commercial/light industrial building. The Client provided proposed future development plans for the Site, which include a 25-storey mixed-use commercial and residential building which will be complete with a five level underground parking garage (UPG), and a four-storey commercial and residential building which will be complete with a single level UPG. It should be noted that based on discussions with the Client, it is Pinchin's understanding that the Phase II ESA is not required for the purposes of filing a Record of Site Condition (RSC) under Ontario Regulation 153/04 (as amended), and that this would be completed a later date. Some portions of this project will assist in preparing documentation for the preparation of an RSC.

The purpose of this Phase II ESA was to assess potential issues of environmental concern in relation to the potential acquisition of the Site.

The results of the Phase I ESA completed by Pinchin identified the following potential issues of environmental concern:

- A retail fuel outlet (RFO) was present on the north portion of the Site from at least 1965 until 2002. The RFO was reportedly decommissioned by SEACOR Environmental Inc. in 2002/2003; however, previous subsurface environmental work completed at the Site identified the presence of petroleum hydrocarbon (PHC)-impacted soil and groundwater on the north portion of the Site;
- Automotive repair/servicing operations have been present within the on-Site multi-tenant commercial building since at least 1954. Two oil/water separators are inferred to be present within this building, and are inferred to have been present for at least 40 years. In addition, an area of depressed concrete, indicative of a potential underground storage tank (UST), was evident adjacent to the south elevation of Site Building A. Previous subsurface investigations completed at the Site identified the presence of soil impacted by PHCs, metals and arsenic beneath and in the vicinity of Site Building A. In addition, groundwater impacted with PHCs and benzene, toluene, ethylbenzene and xylenes were identified north of Site Building A;

- Based on Pinchin's review of a 1928 aerial photograph covering the Site and surrounding area, the Site consisted of various fill piles and appeared to be utilized as a waste disposal site. In addition, previous subsurface investigations completed at the Site identified the presence of fill material with elevated concentrations of metals, arsenic and polycyclic aromatic hydrocarbons located throughout the Site;
- Based on Pinchin's review of aerial photographs for the Site and surrounding area, surrounding properties located approximately 15 metres (m) east-northeast of the Site appeared to have been utilized for industrial operations with exterior storage areas from approximately 1958 until 1976. In addition, one of these surrounding properties was occupied by Gervais Motors Ltd., an automotive repair/servicing operation, from at least 1984 until 1998. Furthermore, an RSC was filed for these properties, which included remedial work within 3 m of the property boundaries. Based on the above-noted information and close proximity of these properties to the Site, it is Pinchin's opinion that these properties could result in potential subsurface impacts at the Site; and
- The 1948 Fire Insurance Plan reviewed by Pinchin indicated that a UST was located approximately 20 m south of the Site. Based on the close proximity of this UST to the Site, it is Pinchin's opinion that this UST could result in potential subsurface impacts at the Site.

Based on the above-mentioned findings, Pinchin recommended that a Phase II ESA be conducted at the Site in order to assess for the presence of environmental impacts.

The Phase II ESA was completed at the Site by Pinchin between November 1, 2018 and November 14, 2018 and consisted of the advancement of 11 boreholes, five of which were completed as groundwater monitoring wells into the shallow bedrock stratigraphy encountered at the Site. In addition, Pinchin sampled existing groundwater monitoring wells (EXMW-1, EXMW-2, EXMW-3, EXMW-4, and EXMW-5) at the Site.

Select "worst case" soil samples collected during the borehole drilling program were submitted for laboratory analysis of a combination of petroleum hydrocarbons (PHCs) (F1-F4), volatile organic compounds (VOCs), polycyclic aromatic hydrocarbons (PAHs) and metals. Groundwater samples collected from the newly installed monitoring wells, as well as existing monitoring wells (EXMW-1, EXMW-2, EXMW-3, EXMW-4, and EXMW-5) and were submitted for laboratory analysis of a combination of PHCs (F1-F4), VOCs, PAHs and metals.

Based on Site-specific information, the soil and groundwater quality was assessed based on the Ontario Ministry of the Environment, Conservation and Parks *Table 7 Standards* for residential/parkland/ institutional land use and coarse-textured soil.

Reported concentrations in the soil samples submitted for analysis of PHCs (F1-F4), VOCs, PAHs and metals satisfied the *Table 7 Standards* with the following exceptions:

- Soil sample SS-1 collected at borehole BH-7, which had concentrations of PHCs (F3) that exceeded the *Table 7 Standards*;
- Soil sample SS-1 collected at borehole BH-11, which had concentrations of PHCs (F3) and F4 Gravimetric that exceeded the *Table 7 Standards*;
- Soil sample SS-2 collected at borehole MW-4, which had concentrations of metals including antimony, arsenic, barium, boron, cadmium, lead, copper, mercury and zinc that exceeded the *Table 7 Standards*;
- Soil sample SS-1 collected at borehole BH-7, which had concentrations of boron and lead that exceeded the *Table 7 Standards*;
- Soil sample SS-1 collected at borehole BH-8, which had concentrations of metals including boron, cadmium, lead, mercury and zinc that exceeded the *Table 7 Standards*; and
- Soil sample SS-1 collected at borehole BH-10, which had a concentration of lead that exceeded the *Table 7 Standards*.

Reported concentrations in groundwater samples submitted for analysis of PHCs (F1-F4), VOCs, PAHs and metals satisfied the *Table 7 Standards* with the exception of groundwater sample MW-1, which exceeded the *Table 7 Standards* for PHCs (F1 and F2), benzene, xylene, and naphthalene, and EXMW-1 which exceeded the *Table 7 Standards* for mercury.

Based on the findings of this Phase II ESA, it is Pinchin's opinion that the soil impacts identified at the Site are potentially representative of the shallow fill material encountered across the Site. Furthermore, the groundwater impacts identified at MW-1 and EXMW-1, located on the north portion of the Site, are likely a result of the former operation of an RFO on this portion of the Site. It is Pinchin's recommendation that the soil and groundwater impacts identified can be addressed upon redevelopment of the Site either by excavating the impacted soil or implementing a management plan.

This Executive Summary is subject to the same standard limitations as contained in the report and must be read in conjunction with the entire report.

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1.0 INTRODUCTION

Pinchin Ltd. (Pinchin) was retained by The Great-West Life Assurance Company (Client) to conduct a Phase II Environmental Site Assessment (ESA) of the property located at 320 McRae Avenue, 1976 Scott Street, 311 and 315 Tweedsmuir Avenue in Ottawa, Ontario (hereafter referred to as the Site).

The Site consists of a 1.6 acre parcel of land, which is developed with two, two-storey residential dwellings and a single-storey commercial/light industrial building. The Client provided proposed future development plans for the Site, which include a 25-storey mixed-use commercial and residential building which will be complete with a five level underground parking garage (UPG), and a four-storey commercial and residential building which will be complete with a single level UPG. It should be noted that based on discussions with the Client, it is Pinchin's understanding that the Phase II ESA is not required for the purposes of filing a Record of Site Condition (RSC) under Ontario Regulation 153/04 (as amended), and that this would be completed a later date. Some portions of this project will assist in preparing documentation for the preparation of an RSC.

The purpose of this Phase II ESA was to assess potential issues of environmental concern in relation to the potential acquisition of the Site.

This Phase II ESA was completed in general accordance with the Canadian Standards Association document entitled "*Phase II Environmental Site Assessment, CSA Standard Z769-00 (R2013)*", dated 2000 and reaffirmed in 2013.

1.1 Background

Pinchin completed a Phase I ESA of the Site for the Client, the findings of which were provided in the report entitled "*Phase I Environmental Site Assessment, 320 McRae Avenue, 1976 Scott Street and 311 and 315 Tweedsmuir Avenue, Ottawa, Ontario*", dated November 14, 2018. The results of the Phase I ESA completed by Pinchin identified the following areas of potential environmental concern (APECs) that could give rise to potential subsurface impacts in connection with the Site:

- A retail fuel outlet (RFO) was present on the north portion of the Site from at least 1965 until 2002. The RFO was reportedly decommissioned by SEACOR Environmental Inc. in 2002/2003; however, previous subsurface environmental work completed at the Site identified the presence of petroleum hydrocarbon (PHC)-impacted soil and groundwater on the north portion of the Site;

- Automotive repair/servicing operations have been present within the on-Site multi-tenant commercial building since at least 1954. Two oil/water separators are inferred to be present within this building, and are inferred to have been present for at least 40 years. In addition, an area of depressed concrete, indicative of a potential underground storage tank (UST), was evident adjacent to the south elevation of Site Building A. Previous subsurface investigations completed at the Site identified the presence of soil impacted by PHCs, metals and arsenic beneath and in the vicinity of Site Building A. In addition, groundwater impacted with PHCs and benzene, toluene, ethylbenzene and xylenes (BTEX) were identified north of Site Building A;
- Based on Pinchin's review of a 1928 aerial photograph covering the Site and surrounding area, the Site consisted of various fill piles and appeared to be utilized as a waste disposal site. In addition, previous subsurface investigations completed at the Site identified the presence of fill material with elevated concentrations of metals, arsenic and polycyclic aromatic hydrocarbons (PAHs) located throughout the Site;
- Based on Pinchin's review of aerial photographs for the Site and surrounding area, surrounding properties located approximately 15 metres (m) east-northeast of the Site appeared to have been utilized for industrial operations with exterior storage areas from approximately 1958 until 1976. In addition, one of these surrounding properties was occupied by Gervais Motors Ltd., an automotive repair/servicing operation, from at least 1984 until 1998. Furthermore, an RSC was filed for these properties, which included remedial work within 3 m of the property boundaries. Based on the above-noted information and close proximity of these properties to the Site, it is Pinchin's opinion that these properties could result in potential subsurface impacts at the Site; and
- The 1948 Fire Insurance Plan reviewed by Pinchin indicated that a UST was located approximately 20 m south of the Site. Based on the close proximity of this UST to the Site, it is Pinchin's opinion that this UST could result in potential subsurface impacts at the Site.

In addition, Pinchin reviewed the following documents that were provided to Pinchin for review by the Client:

- "*Geotechnical Investigation, Proposed Mixed-Use Development, 320 McRae Avenue and 1976 Scott Street, Ottawa, Ontario*", prepared by Paterson Group Inc. (Paterson), prepared for The Estate of Carson Unsworth c/o Fotenn Planning and Urban Design, and dated December 22, 2015 (2015 Paterson Geotechnical Report);

- *"Phase I – Environmental Site Assessment, Commercial and Residential Properties, 320 McRae Avenue, 1976 Scott Street, 311 and 315 Tweedsmuir Avenue, Ottawa, Ontario"*, prepared by Paterson, prepared for The Estate of Carson Unsworth, and dated January 28, 2016 (2016 Paterson Phase I ESA Report);
- *"Phase II – Environmental Site Assessment, Commercial and Residential Properties, 320 McRae Avenue, 1976 Scott Street, 311 and 315 Tweedsmuir Avenue, Ottawa, Ontario"*, prepared by Paterson prepared for The Estate of Carson Unsworth, and dated April 21, 2017 (2017 Paterson Phase II ESA Report); and
- "*Assessment of Adequacy of Public Services*", prepared by David Schaeffer Engineering Ltd. (DSEL), prepared for 914168 Ontario Inc., and dated September 2017 (2017 DSEL Assessment Letter).

Based on our review of the the above-referenced reports, the following areas of potential environmental concern (APECs) were identified that could give rise to potential subsurface impacts in connection with the Site:

- Soil and/or groundwater impacts have been identified in the northeast portion of the Site as a result of a former retail fuel outlet having been operated in this area of the Site; and
- Soil impacts have been identified in several previously investigated areas in the south half of the Site.

Based on the above-mentioned findings related to Pinchin's Phase I ESA and previous work completed at the Site, it was Pinchin's recommendation that a Phase II ESA be conducted at the Site in order to assess the above-noted APECs for the presence of environmental impacts.

1.2 Scope of Work

The scope of work completed by Pinchin, as outlined in the Pinchin proposal entitled "*Proposal for Phase I and II Environmental Site Assessments, Geotechnical Investigation and Hazardous Building Materials Assessment*" submitted to the Client on September 24, 2018, included the following:

- Advancement of up to 11 boreholes following the clearance of underground services, five of which were instrumented with a groundwater monitoring well;
- Submission of select "worst case" soil samples for laboratory analysis of PHCs (F1-F4), volatile organic compounds (VOCs), PAHs and metals;
- Collection of groundwater samples from each of the newly installed monitoring wells, and existing groundwater monitoring wells following well development and purging, for laboratory analysis of PHCs (F1-F4), VOCs, PAHs and metals;

- Completion of an elevation survey and depth to groundwater measurements for the newly installed monitoring wells;
- Comparison of the soil and groundwater laboratory analytical results to the applicable regulatory criteria; and
- Preparation of a factual report detailing the findings of the Phase II ESA and recommendations.

The scope of work described in the Pinchin proposal included groundwater sampling at each of the newly installed monitoring wells. However, MW-3 was submerged and subsequently frozen at the time of the Phase II ESA, which did not permit groundwater sampling. Furthermore, due to numerous cars parked on the Site, in addition to snow piles and general snow cover, only five monitoring wells were surveyed on November 23, 2018.

Furthermore, this Phase II ESA was performed in general compliance with currently acceptable practices for environmental site investigations, and specific Client requests, as applicable to this Site. The scope of work completed by Pinchin, as part of this Phase II ESA, is not sufficient (in and of itself) to meet the requirements for the submission of a Record of Site Condition (RSC) in accordance with Ontario Regulation 153/04 (as amended). If an RSC is an intended end product of work conducted at the Site, further consultation and/or work will be required.

2.0 METHODOLOGY

The investigation methodology was conducted in general accordance with the Ontario Ministry of the Environment, Conservation and Parks (MECP) document entitled *"Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario"* dated December 1996 (*MECP Sampling Guideline*), the Association of Professional Geoscientists of Ontario document entitled *"Guidance for Environmental Site Assessments under Ontario Regulation 153/04 (as amended)"*, dated April 2011 (*APGO Guideline*) and Pinchin's standard operating procedures (SOPs).

2.1 Borehole Investigation

Pinchin retained Strata Drilling Group (Strata) to complete the borehole drilling program at the Site on November 1 and 2, 2018, following the clearance of underground services in the vicinity of the work area by public utility locators and a private utility locator retained by Pinchin. Strata is licensed by the MECP in accordance with Ontario Regulation 903 (as amended) to undertake borehole drilling/well installation activities.

The boreholes were advanced to a maximum depth of 7.6 metres below ground surface (mbgs) using a Geomachine GM 100 direct push drill rig equipped with air-rotary hammer and Geoprobe 7822DT direct push drill with split spoons. Boreholes MW-1 through MW-5 were advanced into the shallow bedrock stratigraphy encountered at the Site. Soil samples were collected at continuous intervals using 3.8 centimetre (cm) inner diameter (ID) direct push soil samplers with dedicated single-use sample liners and 5.1 cm outer diameter split-spoon samplers. Discrete soil samples were collected from the single-use liners and containerized in laboratory-supplied glass sampling jars.

Subsurface soil conditions were logged on-Site by Pinchin personnel at the time of drilling. Soil samples were examined for visual and olfactory evidence of impacts and a portion of each sample was analyzed in the field for petroleum-derived vapour concentrations in soil headspace using a photoionization detector (PID).

The locations of the boreholes are shown on Figure 2 and a description of the subsurface stratigraphy encountered during the drilling program is documented in the borehole logs included in Appendix II.

2.2 Monitoring Well Installation

Groundwater monitoring wells were installed in all boreholes MW-1 through MW-5 to enable groundwater monitoring and sampling. The monitoring wells were constructed with 5.1 cm inner diameter (ID) flush-threaded Schedule 40 polyvinyl chloride (PVC) risers, followed by a length of 5.1 cm ID No. 10 slot PVC screen that intersected the water table.

Each well screen was sealed at the bottom using a threaded cap and each riser was sealed at the top with a lockable J-plug cap. Silica sand was placed around and above the screened interval to form a filter pack around the well screen. A layer of bentonite was placed above the silica sand and was extended to just below the ground surface. An 8.0 cm ID Schedule 40 PVC outer casing, approximately 15 cm in length, was installed in each well around the top of the riser and into the top of the bentonite seal. A bentonite seal was then placed between the riser and outer casing. A protective flush-mount cover was installed at the ground surface over each riser pipe and outer casing and cemented in place.

The location of the monitoring wells are shown on Figures 2, 3 and 4. The monitoring well construction details are shown on the borehole logs included in Appendix II and in Table 1.

2.3 Groundwater Monitoring and Elevation Survey

The water levels within the monitoring wells were measured on November 2, 5, 13 and 14, 2018 using an interface probe. The presence/absence of non-aqueous phase liquid (NAPL) was also assessed during groundwater monitoring using the interface probe.

Pinchin completed a relative elevation survey of the newly installed groundwater monitoring wells on November 23, 2018 using a Leica rotating laser level and laser sensor. A temporary benchmark was used to determine the relative elevation of the top of the monitoring well casings and the ground surface at each well location. The temporary benchmark used was a fire hydrant east of EXMW-1, which was arbitrarily assigned the elevation of 100.00 metres. These elevation measurements represent a relative (not a geodetic) elevation. A summary of the elevation data is presented in Table 1 and Table 4.

2.4 Sampling and Laboratory Analysis

2.4.1 Soil

One most apparent "worst case" soil sample, based on vapour concentrations as well as visual and/or olfactory considerations recovered from each borehole was submitted for laboratory analysis of PHCs (F1-F4), VOCs, PAHs and metals.

In addition, representative soil samples were submitted for pH analysis and grain size distribution analysis to confirm the Site Condition Standards applicable to the Site as provided in the MECP document entitled "*Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act*", dated April 15, 2011 (*MECP Standards*).

The borehole locations are shown on Figures 2, 3 and 4. Table 2 provides a summary of the soil samples submitted for laboratory analysis.

2.4.2 Groundwater

On November 2 and 5, 2018, all newly installed groundwater monitoring wells (MW-1, MW-2, MW-3, MW-4, and MW-5) and viable existing monitoring wells (EXMW-1, EXMW-2, EXMW-3, EXMW-4, and EXMW-5) were developed by removing three to five well casing volumes, in accordance with Pinchin's SOPs.

On November 13 and 14, 2018, newly installed groundwater monitoring wells, as well as existing monitoring wells (EXMW-1, EXMW-2, EXMW-3, EXMW-4, and EXMW-5) were purged and sampled using Pinchin's SOPs. The groundwater samples collected from these monitoring wells were submitted for laboratory analysis of VOCs, PHCs (F1-F4), PAHs and metals.

All monitoring well development activities were conducted using dedicated inertial pumps comprised of Waterra polyethylene tubing and foot valves. Following pre-sampling purging with dedicated inertial pumps, sampling for PHCs (F2-F4) and PAHs was conducted using a peristaltic pump and dedicated polyethylene tubing. Sampling for VOCs and PHCs (F1) was then conducted using dedicated inertial pumps. Furthermore, samples collected for metals analysis were filtered in the field using dedicated 0.45-micron in-line filters prior to preservation.

The monitoring well locations are shown on Figures 2, 3 and 4. Table 2 provides a summary of the groundwater samples submitted for laboratory analysis.

2.4.3 Analytical Laboratory

Selected soil and groundwater samples were delivered to Maxxam Analytics Inc. (Maxxam) in Ottawa, Ontario for analysis. Maxxam is an independent laboratory accredited by the Standards Council of Canada and the Canadian Association for Laboratory Accreditation. Formal chain of custody records of the sample submissions were maintained between Pinchin and the staff at Maxxam.

2.5 QA/QC Protocols

Various quality assurance/quality control (QA/QC) protocols were followed during the Phase II ESA to ensure that representative samples were obtained and that representative analytical data were reported by the laboratory.

Field QA/QC protocols that were employed by Pinchin included the following:

- Soil samples were extracted from the interior of the sampling device (where possible), rather than from areas in contact with the sampler walls to minimize the potential for cross-contamination;
- Soil and groundwater samples were placed in laboratory-supplied glass sample jars;
- The monitoring wells were developed following installation and were purged to remove stagnant water prior to sample collection so that representative groundwater samples could be obtained. Dedicated purging and sampling equipment was used for monitoring well development, purging and sampling to minimize the potential for cross-contamination;
- Soil and groundwater samples were placed in coolers on ice immediately upon collection, with appropriate sample temperatures maintained prior to submission to the laboratory;
- Dedicated and disposable nitrile gloves were used for sample handling;
- Non-dedicated monitoring and sampling equipment (e.g., interface probe) was cleaned before initial use and between uses to minimize the potential for cross-contamination by washing with an Alconox™/potable water mixture followed by a deionized water rinse; and
- Sample collection and handling procedures were performed in general accordance with the *MECP Sampling Guideline*, the *APGO Guideline* and Pinchin's SOPs for Phase II ESAs.

Maxxam's internal laboratory QA/QC consisted of the analysis of laboratory duplicate, method blank, matrix spike and spiked blank samples, an evaluation of relative percent difference (RPD) calculations for laboratory duplicate samples, and an evaluation of surrogate recoveries.

2.5.1 Field Duplicate Samples

In addition to the above QA/QC measures, Pinchin also collected a total of one field duplicate soil sample and one field duplicate groundwater sample during the Phase II ESA for analysis to assess the suitability of field sampling methods and laboratory performance. The field duplicate samples were collected immediately following collection of the regular samples. The frequency of field duplicate soil and groundwater sample analysis complied with the requirement that one field duplicate soil and groundwater sample is analyzed for every ten regular soil and/or groundwater samples submitted for analysis. The field duplicate pairings and corresponding analytical parameters are summarized as follows:

- Soil sample BH-11-SS-1 and its corresponding field duplicate DUP-1 were submitted for laboratory analysis of VOCs, PHCs, PAHs and metals; and
- Groundwater sample MW-1 and its corresponding field duplicate DUP-2 were submitted for laboratory analysis of VOCs, PHCs, PAHs and metals.

The quality of the analytical results was evaluated by calculating the RPD for the original and field duplicate samples. The RPDs were calculated using the following equation:

$$\text{RPD} = \frac{(\text{Original Concentration} - \text{Duplicate Concentration}) \times 100}{(\text{Original Concentration} + \text{Duplicate Concentration})/2}$$

RPDs were not calculated unless the parameter concentration in both the original and duplicate sample had detectable concentrations above the corresponding practical quantitation limit (PQL) for the parameter, which is equal to five times the lowest laboratory RDL.

The calculated RPDs for the original and field duplicate soil and groundwater samples have been compared to performance standards provided in the MECP document entitled *"Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act"* dated March 9, 2004 and revised on July 1, 2011 (*Analytical Protocol*). Pinchin notes that although these performance standards only strictly apply to laboratory duplicate samples, they have been considered suitable for comparison to the field duplicate soil and groundwater sample results as well. If calculated RPD values are greater than the performance standards, further assessment is required of the apparent lack of precision of the analytical results and the effect, if any, on the interpretation of the analytical results. This assessment may include a review of analytical laboratory quality control, reporting errors, and field sampling methods.

2.5.2 Blank Samples

One trip blank, consisting of VOC-free water contained within a set of VOC sample vials, was prepared by Maxxam. The trip blank accompanied the VOC sample containers during transportation to and from the Site and was stored in a cooler with the VOC groundwater samples in the field. The trip blank was submitted for VOC analysis to assess whether ambient conditions during transport of the groundwater sample containers from the analytical laboratory to the Site and back to the analytical laboratory and in the field may have biased the groundwater sample results with respect to volatile constituents.

2.6 Ontario Water Well Records

Ontario Regulation 903 (as amended) requires that all wells installed to depths greater than 3.0 mbgs have a water well record completed by a licensed well technician. The owner of the monitoring well must keep the water well record on file for a period of two years and the monitoring wells must be decommissioned as per Ontario Regulation 903 (as amended) if monitoring wells are no longer in use. Strata is a licensed well driller under Ontario Regulation 903 (as amended), and submitted a water well record to the MECP and the Client to fulfill the requirements of Ontario Regulation 903 (as amended).

2.7 Site Condition Standards

The Site is a mixed commercial and residential property located within the City of Ottawa. It is Pinchin's understanding that potable water for the Site and surrounding area is supplied by the City of Ottawa, with the Ottawa River serving as the water source.

Ontario Regulation 153/04 (as amended) states that a site is classified as an "environmentally sensitive area" if the pH of the surface soil (less than 1.5 mbgs) is less than 5 or greater than 9, the pH of the subsurface soil (greater than 1.5 mbgs) is less than 5 or greater than 11, or if the site is an area of natural significance or is adjacent to or contains land within 30 metres of an area of natural significance. Six representative soil samples collected from the boreholes advanced at the Site were submitted for pH analysis. The pH values measured in the submitted soil samples were within the limits for non-sensitive sites. The Site is also not an area of natural significance and it is not adjacent to, nor does it contain land within 30 metres of, an area of natural significance. As such, the Site is not an environmentally sensitive area.

Two representative soil samples collected from the boreholes advanced at the Site were submitted for 75 micron single-sieve grain size analysis. Based on the results of this analysis, the soil at the Site is interpreted to be coarse-textured for the purpose of selecting the appropriate *MECP Standards.*

The pH and grain size analytical results are summarized in Table 3.

The results of the borehole drilling program indicated that the overburden was less than two metres thick over more than one-third of the Site area, classifying the Site as a "shallow soil property" as per Ontario Regulation 153/04 (as amended).

Based on the above, the appropriate Site Condition Standards for the Site are:

- "Table 7: Generic Site Condition Standards for Shallow Soils in a Non-Potable Ground Water Condition", provided in the *MECP Standards* (*Table 7 Standards*) for:
  - Coarse-textured soils; and
  - Residential/parkland/institutional property use.

As such, the analytical results have been compared to these *Table 7 Standards*.

3.0 RESULTS

3.1 Site Geology and Hydrogeology

Based on the soil samples recovered during the borehole drilling program, the soil stratigraphy at the drilling locations below the gravel and asphalt surfaces generally consists of fill material comprised of sand and gravel to a depth between 0.1 mbgs to a depth of 3.2 mbgs at BH-9. Shallow bedrock was encountered at depths between 0.8 and 3.2 mbgs. Boreholes MW-1 through MW-5 were advanced into the limestone bedrock to a maximum borehole depth of 7.6 mbgs.

A detailed description of the subsurface stratigraphy encountered during borehole advancement is documented in the borehole logs located in Appendix II.

The water level information obtained during groundwater monitoring is presented in Table 4 and on the borehole logs in Appendix II. The depth to groundwater measured within the monitoring wells ranged from 4.37 mbgs at monitoring well MW-4 to 6.43 mbgs at monitoring well EXMW-5 on November 13, 2018.

The water table elevations calculated using the water level measurements made on November 23, 2018 show that groundwater flow at the Site is inferred to be towards the north-northwest; however, Pinchin notes that groundwater conditions may not have been at equilibrium at the time of the water level measurements. Furthermore, a large excavation east of the Site was on-going at the time of groundwater monitoring and sampling, which could affect groundwater levels and flow direction.

3.2 Soil Headspace Vapour Concentrations

Vapour concentrations measured in the headspace of soil samples collected during the drilling investigation are presented on the borehole logs in Appendix II and ranged from 0.1 parts per million by volume (ppm_v) to a maximum of 0.3 ppm_v at soil samples within boreholes BH-7 and MW-5.

3.3 Field Observations

No odours or staining were observed in the soil samples collected during the borehole drilling program, with the exception of fill materials noted within the boreholes advanced across the Site.

No odours or evidence of NAPL were observed during groundwater monitoring and sampling, with the exception of the groundwater at monitoring well MW-1 which exhibited a slight PHC-like odour.

3.4 Analytical

3.4.1 Soil

As indicated in Tables 5 through 8 and Figure 3, reported concentrations of PHCs (F1-F4), VOCs, PAHs and metals in the soil samples submitted for analysis met the *Table 7 Standards*, with the following exceptions:

- Soil sample SS-1 collected at borehole BH-7, which had concentrations of PHCs (F3) that exceeded the *Table 7 Standards*;
- Soil sample SS-1 collected at borehole BH-11, which had concentrations of PHCs (F3) and F4 Gravimetric that exceeded the *Table 7 Standards*;
- Soil sample SS-2 collected at borehole MW-4, which had concentrations of metals including antimony, arsenic, barium, boron, cadmium, lead, copper, mercury and zinc that exceeded the *Table 7 Standards*;
- Soil sample SS-1 collected at borehole BH-7, which had concentrations of boron and lead that exceeded the *Table 7 Standards*;
- Soil sample SS-1 collected at borehole BH-8, which had concentrations of metals including boron, cadmium, lead, mercury and zinc that exceeded the *Table 7 Standards*; and
- Soil sample SS-1 collected at borehole BH-10, which had a concentration of lead that exceeded the *Table 7 Standards*.

The laboratory Certificates of Analysis for the soil samples are provided in Appendix IV.

3.4.2 Groundwater

As indicated in Tables 9 through 12, reported concentrations in the groundwater samples submitted for analysis of PHCs (F1-F4), VOCs, PAHs and metals satisfied the *Table 7 Standards* with the exception of groundwater sample MW-1, which exceeded the *Table 7 Standards* for PHCs (F1 and F2), benzene, xylene, and naphthalene, and EXMW-1 which exceeded the *Table 7 Standards* for mercury.

The laboratory Certificates of Analysis for the groundwater samples are provided in Appendix IV.

3.4.3 Field Duplicate Soil Samples

The calculated RPDs for the original and field duplicate soil sample have been compared to the performance standards provided in the *Analytical Protocol.* Each of the calculated RPDs met the corresponding performance standard.

3.4.4 Field Duplicate Groundwater Samples

The calculated RPDs for the original and field duplicate groundwater sample have been compared to the performance standards provided in the *Analytical Protocol.* Each of the calculated RPDs met the corresponding performance standard.

3.4.5 Trip Blank Results

As indicated in Table 10, the concentrations of the VOC parameters in the trip blank were below the laboratory RDLs. These findings indicate that ambient conditions during the transportation of the sample containers to and from the Site and in the field during groundwater sampling did not positively bias the VOC parameter analytical results for the groundwater samples collected during the Phase II ESA.

4.0 FINDINGS AND CONCLUSIONS

Based on the work completed, the following is a summary of the activities and findings of this Phase II ESA:

- Pinchin retained Strata to advance 11 boreholes at the Site on November 1 and 2, 2018. The boreholes were advanced to a maximum depth of 7.6 mbgs using a Geomachine GM100 direct push drill rig equipped with air-rotary hammer and Geoprobe 7822 DT direct push drill rig with split spoon samplers. Five boreholes were instrumented with monitoring wells into the bedrock stratigraphy at the Site to enable groundwater monitoring and sampling;

- The soil stratigraphy at the drilling locations below the gravel and asphalt surfaces generally consists of fill material comprised of sand and gravel to a depth between 0.1 mbgs to a depth of 3.2 mbgs at BH-9. Shallow bedrock was encountered at depths between 0.8 and 3.2 mbgs. Boreholes MW-1 through MW-5 were advanced into the limestone bedrock to a maximum borehole depth of 7.6 mbgs;
- Groundwater levels at the Site measured on November 13, and 14, 2018 varied between 4.37 mbgs at monitoring well MW-4 to 6.43 mbgs at monitoring well EXMW-5. Inferred groundwater flow is expected to be north-northwest; however, Pinchin notes that groundwater conditions may not have been at equilibrium at the time of the water level measurements. Furthermore, a large excavation east of the Site was on-going at the time of groundwater monitoring and sampling, which could affect groundwater levels and flow direction;
- Based on Site-specific information, the soil and groundwater quality was assessed based on the *Table 7 Standards* for residential/parkland/institutional property use and coarse-textured soil;
- A total of 11 “worst case” soil samples based on the results of field screening were submitted for laboratory analysis of PHCs (F1-F4), VOCs, PAHs and metals;
- Groundwater samples collected from the newly installed monitoring wells, as well as existing monitoring wells (EXMW-1, EXMW-2, EXMW-3, EXMW-4, and EXMW-5) and were submitted for laboratory analysis of a combination of PHCs (F1-F4), VOCs, PAHs and metals. by Pinchin on November 13 and 14, 2018 and were submitted for laboratory analysis of PHCs (F1-F4), VOCs, PAHs and metals;
- Reported concentrations in the soil samples submitted for analysis of PHCs (F1-F4), VOCs, PAHs and metals satisfied the *Table 7 Standards* with the following exceptions:
    - Soil sample SS-1 collected at borehole BH-7, which had concentrations of PHCs (F3) that exceeded the *Table 7 Standards*;
    - Soil sample SS-1 collected at borehole BH-11, which had concentrations of PHCs (F3) and F4 Gravimetric that exceeded the *Table 7 Standards*;
    - Soil sample SS-2 collected at borehole MW-4, which had concentrations of metals including antimony, arsenic, barium, boron, cadmium, lead, copper, mercury and zinc that exceeded the *Table 7 Standards*;
    - Soil sample SS-1 collected at borehole BH-7, which had concentrations of boron and lead that exceeded the *Table 7 Standards*;

- Soil sample SS-1 collected at borehole BH-8, which had concentrations of metals including boron, cadmium, lead, mercury and zinc that exceeded the *Table 7 Standards*; and
- Soil sample SS-1 collected at borehole BH-10, which had a concentration of lead that exceeded the *Table 7 Standards*.

- Reported concentrations in groundwater samples submitted for analysis of PHCs (F1-F4), VOCs, PAHs and metals satisfied the *Table 7 Standards* with the exception of groundwater sample MW-1, which exceeded the *Table 7 Standards* for PHCs (F1 and F2), benzene, xylene, and naphthalene, and EXMW-1 which exceeded the *Table 7 Standards* for mercury.

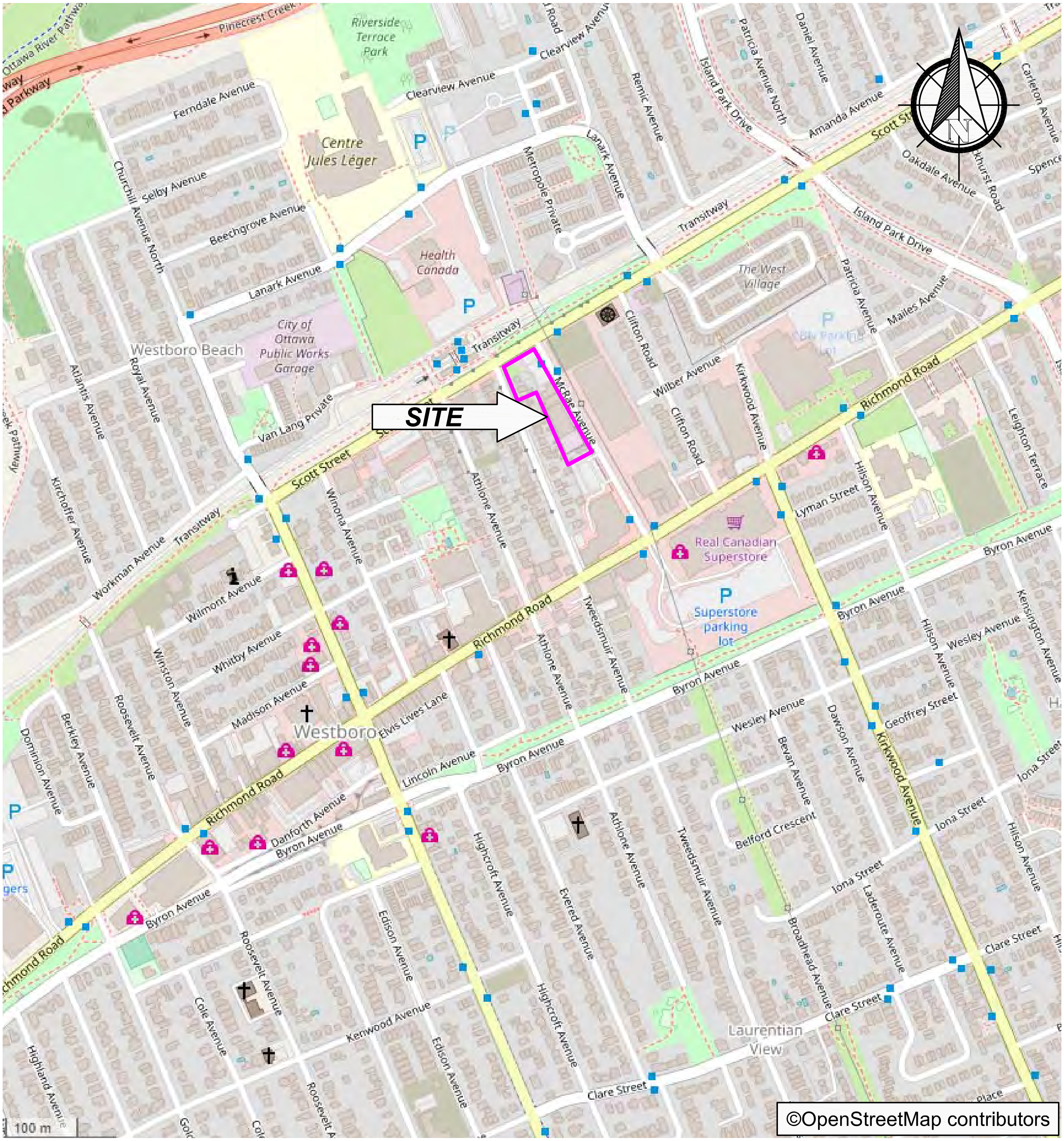
Based on the findings of this Phase II ESA, it is Pinchin's opinion that the soil impacts identified at the Site are potentially representative of the shallow fill material encountered across the Site. Furthermore, the groundwater impacts identified at MW-1 and EXMW-1, located on the north portion of the Site, are likely a result of the former operation of an RFO on this portion of the Site. It is Pinchin's recommendation that the soil and groundwater impacts identified can be addressed upon redevelopment of the Site either by excavating the impacted soil or implementing a management plan.

5.0 TERMS AND LIMITATIONS

This report was prepared pursuant to and in accordance with the master services agreement (the "MSA") dated July 16, 2007 between The Pinchin Group of Companies ("Consultant") and the other parties listed thereto, and the project specific agreement dated October 2, 2018 between Consultant and The Great West Life Assurance Company. The report was prepared by Consultant for the use of Owner and Manager (as those terms are defined under the MSA). In addition to the use of and reliance on this report by Owner and Manager, any person who has received a reliance letter for this report may use and rely on this report as if it was prepared for such persons. Any use of or reliance on this report by any other person (i.e., a person other than any Owner, Manager or otherwise permitted person) is the sole and exclusive responsibility of such other person. Consultant accepts no responsibility for damages, if any, suffered by such other person as a result of the use of or reliance on this report.

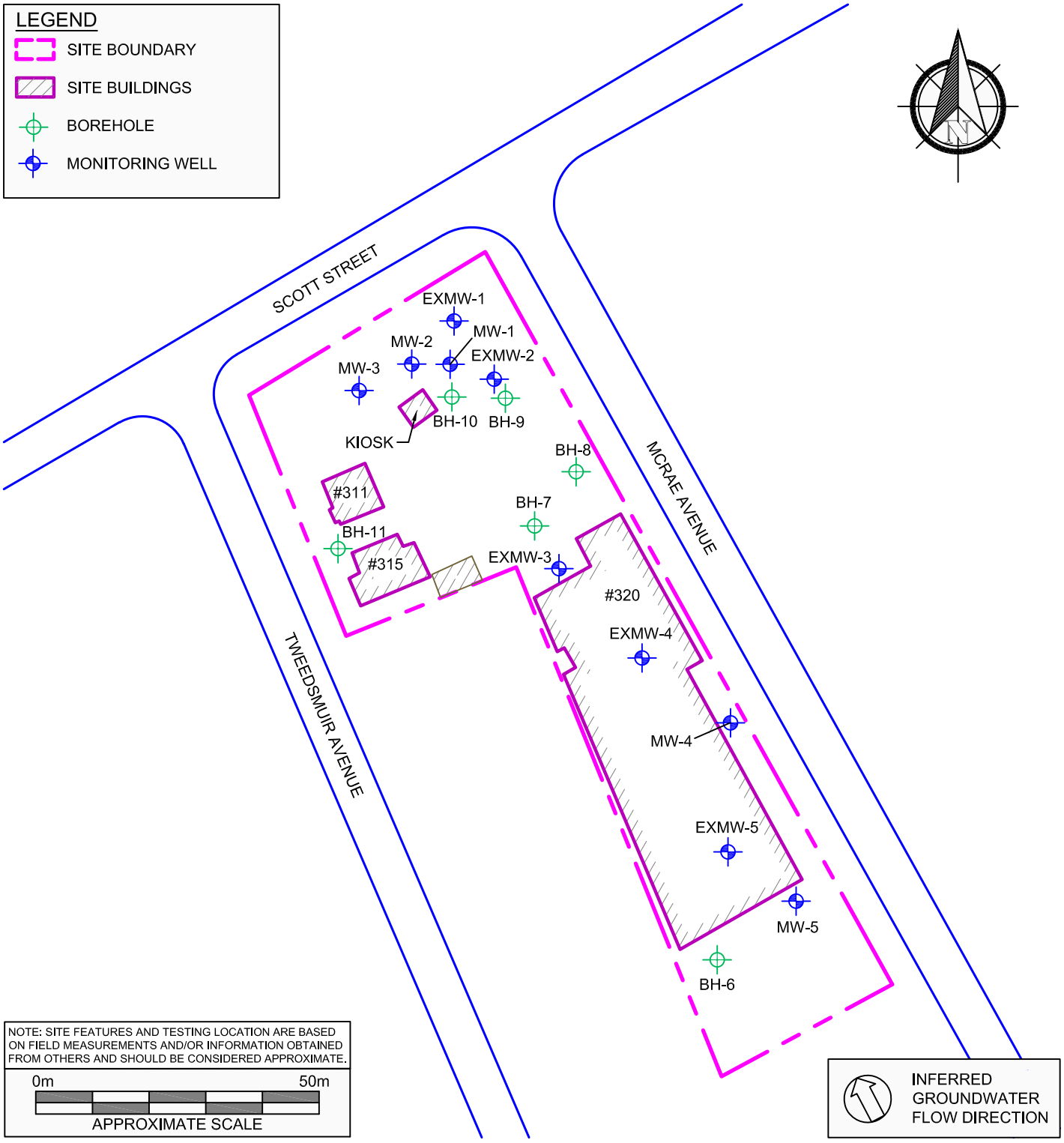
This report is based on the best information available to Consultant at the time of preparing this report after Consultant has used best industry practices, in the circumstances, to obtain information. To the extent that Consultant was required to rely on information from other persons, Consultant has verified such information to the extent reasonably possible in the circumstances. The material provided in this report reflects best industry judgment in light of the information available at the time of preparation of this report.

APPENDIX I
Figures



PROJECT NAME	PHASE II ENVIRONMENTAL SITE ASSESSMENT	
CLIENT NAME	THE GREAT-WEST LIFE ASSURANCE COMPANY	
PROJECT LOCATION	320 MCRAE AVENUE, 1976 SCOTT STREET, 311 AND 315 TWEEDSMUIR AVENUE, OTTAWA, ONTARIO	
FIGURE NAME	KEY MAP	FIGURE NO. 1

APPROXIMATE SCALE	PROJECT NO.	DATE
AS SHOWN	230236.002	NOV. 2018



PINCHIN

PROJECT NAME: PHASE II ENVIRONMENTAL SITE ASSESSMENT			
CLIENT NAME: THE GREAT-WEST LIFE ASSURANCE COMPANY			
PROJECT LOCATION: 320 MCRAE AVENUE, 1976 SCOTT STREET, 311 AND 315 TWEEDSMUIR AVENUE, OTTAWA, ONTARIO			
FIGURE NAME: BOREHOLE AND MONITORING WELL LOCATION PLAN			FIGURE NO.: 2
APPROXIMATE SCALE: AS SHOWN	PROJECT NO.: 230236.002	DATE: NOV. 2018	

SCOTT STREET

MCRAE AVENUE

TWEEDSMUIR AVENUE

EXMW-1
BH11
BH9
BH4
MW-1
MW-2
EXMW-2
BH10
BH3
MW-3
BH-10
BH-9
KIOSK
BH16
BH-8
#311
BH-7
BH-11
#315
EXMW-3
BH6
#320
BH12
EXMW-4
BH2
BH8
MW-4
EXMW-5
BH1
MW-5
BH7
BH14
BH-6
BH15

BH-3		
SOIL PARAMETER	STANDARDS [µg/g]	BH-3 SS-6 09/09/2014
PHC F1	55	73

BH16		
SOIL PARAMETER	STANDARDS [µg/g]	BH-16 SS-2 03/29/2017
BARIUM	390	757
LEAD	120	380
MERCURY	0.27	0.6
ZINC	340	683
BENZO(A)PYRENE	0.3	0.35

BH-8			
SOIL PARAMETER	STANDARDS [µg/g]	BH-8 SS-1 02/11/2018	BH-8 SS-1 DUP 1 02/11/2018
BORON	1.5	3.9	-
CADMIUM	1.2	1.7	1.6
LEAD	120	870	990
MERCURY	0.27	0.47	0.48
ZINC	340	590	580

BH-10		
SOIL PARAMETER	STANDARDS [µg/g]	BH-10 SS-1 02/11/2018
LEAD	120	180

BH-7		
SOIL PARAMETER	STANDARDS [µg/g]	BH-7 SS-1 02/11/2018
BORON	1.5	1.7
LEAD	120	190
F3 (C16-C34)	300	400

BH8		
SOIL PARAMETER	STANDARDS [µg/g]	BH-8 SS-2 09/28/2008
BORON	1.5	720
CADMIUM	1.2	4.8
LEAD	120	515
MERCURY	0.27	0.3
ZINC	340	2720
PHC F3	300	409

BH-11		
SOIL PARAMETER	STANDARDS [µg/g]	BH-11 SS-1 02/11/2018
F3 (C16-C34)	300	400
F4 GRAVIMETRIC	2800	3400

MW-4		
SOIL PARAMETER	STANDARDS [µg/g]	MW-4 SS-1 02/11/2018
ANTIMONY	7.5	43
ARSENIC	18	64
BARIUM	390	460
BORON	1.5	1.8
CADMIUM	1.2	8.7
COPPER	140	310
LEAD	124	15000
MERCURY	0.27	1
ZINC	340	4200

BH1		
SOIL PARAMETER	STANDARDS [µg/g]	BH-1 SS-3 09/08/2014
ARSENIC	18	113

BH15		
SOIL PARAMETER	STANDARDS [µg/g]	BH15 AU1 03/29/2017
BARIUM	390	432

0m 25m
APPROXIMATE SCALE

INFERRED GROUNDWATER FLOW DIRECTION

PINCHIN

LEGEND
- SITE BOUNDARY
- SITE BUILDINGS
- BOREHOLE
- MONITORING WELL
- BOREHOLE/MONITORING WELL (PATERSON)
- CONCENTRATION EXCEEDS SITE STANDARDS
- CONCENTRATION EXCEEDS SITE STANDARDS (2018)
- CONCENTRATION MEETS SITE STANDARDS (2018)

PROJECT NAME: PHASE II ENVIRONMENTAL SITE ASSESSMENT

CLIENT NAME: THE GREAT-WEST LIFE ASSURANCE COMPANY

PROJECT LOCATION: 320 MCRAE AVENUE, 1976 SCOTT STREET, 311 AND 315 TWEEDSMUIR AVENUE, OTTAWA, ONTARIO

FIGURE NAME: SOIL EXCEEDANCES LOCATION PLAN

FIGURE NO.: 3

APPROXIMATE SCALE	PROJECT NO.	DATE
AS SHOWN	230236.002	NOV. 2018

EXMW-1		
SOIL PARAMETER	STANDARDS [µg/g]	EXMW-1 13/11/2018
MERCURY	0.1	0.2

MW-1		
SOIL PARAMETER	STANDARDS [µg/g]	MW-1 13/11/2018
BENZENE	0.5	78
TOTAL XYLENES	72	89
F1(C6-C10)	420	680
F1(C6-C10)-BTEX	420	460
F2(C10-C16)	150	380
NAPHTHALENE	7	11

	A	B	C
1	BH9		
2	SOIL PARAMETER	STANDARDS [µg/g]	BH9 05/04/2017
3			
4			
5	F1(C6-C10)	420	4820
6	BENZENE	0.5	109
7	ETHYLBENZENE	54	628

SCOTT STREET

MCRAE AVENUE

TWEEDSMUIR AVENUE

EXMW-1
BH11
BH9
BH4
MW-1
MW-2
EXMW-2
BH10
BH3
MW-3
BH-10
BH-9
KIOSK
BH16
BH-8
#311
BH-7
BH-11
#315
EXMW-3
BH6
#320
BH12
EXMW-4
BH2
BH8
MW-4
EXMW-5
BH1
MW-5
BH7
BH14
BH-6
BH15

0m 25m
APPROXIMATE SCALE

INFERRED GROUNDWATER FLOW DIRECTION

PINCHIN

LEGEND
- SITE BOUNDARY
- SITE BUILDINGS
- BOREHOLE
- MONITORING WELL
- BOREHOLE/MONITORING WELL (PATERSON)
- CONCENTRATION EXCEEDS SITE STANDARDS
- CONCENTRATION EXCEEDS SITE STANDARDS (2018)
- CONCENTRATION MEETS SITE STANDARDS (2018)

PROJECT NAME	PHASE II ENVIRONMENTAL SITE ASSESSMENT		
CLIENT NAME	THE GREAT-WEST LIFE ASSURANCE COMPANY		
PROJECT LOCATION	320 MCRAE AVENUE, 1976 SCOTT STREET, 311 AND 315 TWEEDSMUIR AVENUE, OTTAWA, ONTARIO		
FIGURE NAME	GROUNDWATER EXCEEDANCES LOCATION PLAN		FIGURE NO. 4
APPROXIMATE SCALE	AS SHOWN	PROJECT NO. 230236.002	DATE NOV. 2018

APPENDIX II

Borehole Logs

Log of Borehole: MW-1

Project #: 230236.002 **Logged By:** MK

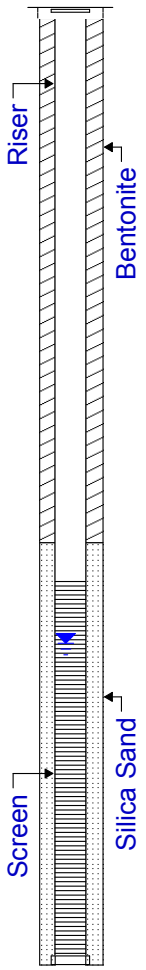
Project: Phase II Environmental Site Assessment

Client: The Great-West Life Assurance Company

Location: 320 McRae Avenue, 1976 Scott Street, 311 and 316 Tweedsmuir Avenue, Ottawa, Ontario

Drill Date: November 1, 2018

SUBSURFACE PROFILE					SAMPLE			
Depth (ft / m)	Symbol	Description	Measured Depth (m)	Monitoring Well Details	Recovery (%)	Sample ID	Soil Vapour Concentration (ppm)(HEX/IBL)	Laboratory Analysis
0 / 0		Ground Surface	0.00					
		Asphalt			30	SS1	0/0	
		Sand and Gravel - Fill Brown, damp.			30	SS2	0/1	Metals, PHCs, PAHs, VOCs, pH
			1.52					
		Limestone						
			7.62					
		End of Borehole						



Water level measured at 5.07 mbgs on November 13, 2018.

Contractor: Strata Drilling Group

Drilling Method: Direct Push / Air Rotary

Well Casing Size: 5.08 cm

Note:
Soil vapour concentrations measured using a RKI Eagle 2 equipped with a photoionization detector (PID) and a combustible gas indicator (CGI).

Grade Elevation: 100.29

Top of Casing Elevation: 100.19

Sheet: 1 of 1

Log of Borehole: MW-2

Project #: 230236.002 **Logged By:** MK

Project: Phase II Environmental Site Assessment

Client: The Great-West Life Assurance Company

Location: 320 McRae Avenue, 1976 Scott Street, 311 and 316 Tweedsmuir Avenue, Ottawa, Ontario

Drill Date: November 1, 2018

SUBSURFACE PROFILE					SAMPLE			
Depth (ft / m)	Symbol	Description	Measured Depth (m)	Monitoring Well Details	Recovery (%)	Sample ID	Soil Vapour Concentration (ppm)(HEX/IBL)	Laboratory Analysis
0 / 0		Ground Surface	0.00					
0–4 / 0–1		***Sand and Gravel*** Grey/brown, damp.			30	SS1	0/1	
4–5 / 1			1.52		30	SS2	0/1	Metals, PHCs, PAHs, VOCs
5–25 / 2–7		***Limestone***						
25 / 8			7.62					
		End of Borehole						

Riser, Bentonite, Screen, Silica Sand

Water level measured at 6.13 mbgs on November 13, 2018.

Contractor: Strata Drilling Group

Drilling Method: Direct Push / Air Rotary

Well Casing Size: 5.08 cm

Note:
Soil vapour concentrations measured using a RKI Eagle 2 equipped with a photoionization detector (PID) and a combustible gas indicator (CGI).

Grade Elevation: 100.17

Top of Casing Elevation: 100.28

Sheet: 1 of 1

Log of Borehole: MW-3

Project #: 230236.002 **Logged By:** MK

Project: Phase II Environmental Site Assessment

Client: The Great-West Life Assurance Company

Location: 320 McRae Avenue, 1976 Scott Street, 311 and 316 Tweedsmuir Avenue, Ottawa, Ontario

Drill Date: November 1, 2018

SUBSURFACE PROFILE					SAMPLE			
Depth (ft / m)	Symbol	Description	Measured Depth (m)	Monitoring Well Details	Recovery (%)	Sample ID	Soil Vapour Concentration (ppm)(HEX/IBL)	Laboratory Analysis
0 / 0		Ground Surface	0.00					
0–3 / 0–1		***Sand and Gravel*** Grey/brown, damp. Limestone fragments @ 0.75 mbgs	0.28	Riser; Bentonite	30	SS1	0/1	PHCs, VOCs, PAHs
3–25 / 1–7		***Limestone***		Screen; Silica Sand				
25 / 7		End of Borehole	7.62	Well was submerged and frozen on November 13, 2018.				

Contractor: Strata Drilling Group

Drilling Method: Direct Push / Air Rotary

Well Casing Size: 5.08 cm

Note:
Soil vapour concentrations measured using a RKI Eagle 2 equipped with a photoionization detector (PID) and a combustible gas indicator (CGI).

Grade Elevation: NM

Top of Casing Elevation: NM

Sheet: 1 of 1

Log of Borehole: MW-4

Project #: 230236.002 **Logged By:** MK

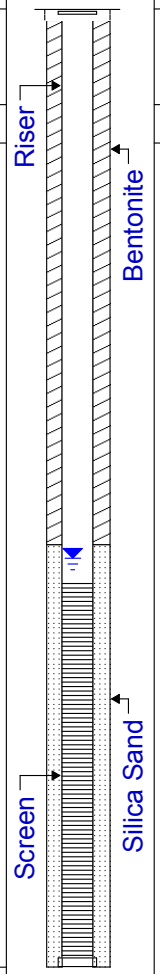
Project: Phase II Environmental Site Assessment

Client: The Great-West Life Assurance Company

Location: 320 McRae Avenue, 1976 Scott Street, 311 and 316 Tweedsmuir Avenue, Ottawa, Ontario

Drill Date: November 2, 2018

SUBSURFACE PROFILE					SAMPLE			
Depth (ft / m)	Symbol	Description	Measured Depth (m)	Monitoring Well Details	Recovery (%)	Sample ID	Soil Vapour Concentration (ppm)(HEX/IBL)	Laboratory Analysis
0 / 0		Ground Surface	0.00					PHCs, VOCs, PAHs, Metals
1		***Sand and Gravel*** With brick fragments, damp.	0.76		50	SS1	0/2	
2 / 1		***Fill*** Sand, brick and glass.	1.07		20	SS2	0/1	
3		***Limestone***						
4 / 2								
5								
6 / 3								
7								
8 / 4								
9								
10 / 5								
11								
12 / 6								
13								
14 / 7								
15								
16 / 8								
17								
18 / 9								
19								
20 / 10								
21								
22 / 11								
23								
24 / 12								
25			7.62					
26 / 13		End of Borehole						
27								
28 / 14								
29								



Water level measured at 4.37 mbgs on November 13, 2018.

Contractor: Strata Drilling Group

Drilling Method: Direct Push / Split Spoon / Air Rotary

Well Casing Size: 5.08 cm

Note:
Soil vapour concentrations measured using a RKI Eagle 2 equipped with a photoionization detector (PID) and a combustible gas indicator (CGI).

Grade Elevation: 100.81

Top of Casing Elevation: 100.70

Sheet: 1 of 1

Log of Borehole: MW-5

Project #: 230236.002 **Logged By:** MK

Project: Phase II Environmental Site Assessment

Client: The Great-West Life Assurance Company

Location: 320 McRae Avenue, 1976 Scott Street, 311 and 316 Tweedsmuir Avenue, Ottawa, Ontario

Drill Date: November 2, 2018

SUBSURFACE PROFILE					SAMPLE			
Depth (ft / m)	Symbol	Description	Measured Depth (m)	Monitoring Well Details	Recovery (%)	Sample ID	Soil Vapour Concentration (ppm)(HEX/IBL)	Laboratory Analysis
0 / 0		Ground Surface	0.00					
0 / 0		***Asphalt***			50	SS1	0/2	PHCs, VOCs, PAHs, Metals, Grain Size
3 / 1		***Sand and Gravel*** Grey/brown.	1.52		50	SS2	0/3	
5 / 2		***Limestone***						
25 / 7			7.62					
26 / 8		End of Borehole						

Riser, Bentonite, Screen, Silica Sand

Water level measured at 5.95 mbgs on November 13, 2018.

Contractor: Strata Drilling Group

Drilling Method: Direct Push / Split Spoon / Air Rotary

Well Casing Size: 5.08 cm

Note:
Soil vapour concentrations measured using a RKI Eagle 2 equipped with a photoionization detector (PID) and a combustible gas indicator (CGI).

Grade Elevation: 100.46

Top of Casing Elevation: 100.56

Sheet: 1 of 1

Log of Borehole: BH-8

Project #: 230236.002 **Logged By:** MK

Project: Phase II Environmental Site Assessment

Client: The Great-West Life Assurance Company

Location: 320 McRae Avenue, 1976 Scott Street, 311 and 316 Tweedsmuir Avenue, Ottawa, Ontario

Drill Date: November 2, 2018

SUBSURFACE PROFILE					SAMPLE			
Depth (ft / m)	Symbol	Description	Measured Depth (m)	Monitoring Well Details	Recovery (%)	Sample ID	Soil Vapour Concentration (ppm)(HEX/IBL)	Laboratory Analysis
0 / 0		Ground Surface	0.00					
		Asphalt	0.10	No Monitoring Well Installed	50	SS1	0/1	PHCs, VOCs, PAHs, Metals
1		***Sand and Gravel*** Brown, with some silt and organics, damp.						
2			0.84					
3 / 1		End of Borehole Due to refusal on Bedrock.						
4								
5								

Contractor: Strata Drilling Group

Drilling Method: Direct Push / Split Spoon

Well Casing Size: 5.08 cm

Note:
Soil vapour concentrations measured using a RKI Eagle 2 equipped with a photoionization detector (PID) and a combustible gas indicator (CGI).

Grade Elevation: NA

Top of Casing Elevation: NA

Sheet: 1 of 1

Log of Borehole: BH-6

Project #: 230236.002 **Logged By:** MK

Project: Phase II Environmental Site Assessment

Client: The Great-West Life Assurance Company

Location: 320 McRae Avenue, 1976 Scott Street, 311 and 316 Tweedsmuir Avenue, Ottawa, Ontario

Drill Date: November 2, 2018

SUBSURFACE PROFILE					SAMPLE			
Depth (ft / m)	Symbol	Description	Measured Depth (m)	Monitoring Well Details	Recovery (%)	Sample ID	Soil Vapour Concentration (ppm)(HEX/IBL)	Laboratory Analysis
0 / 0		Ground Surface	0.00	No Monitoring Well Installed				
		Asphalt	0.15		50	SS1	0/1	
1		***Sand and Gravel*** Grey/brown, damp.						
2								
3 / 1					80	SS2	0/3	PHCs, VOCs, PAHs, Metals, pH
4								
5			1.52					
		End of Borehole Due to refusal on Bedrock.						
6								
7 / 2								
8								
9								
10 / 3								

Contractor: Strata Drilling Group

Drilling Method: Direct Push / Split Spoon

Well Casing Size: 5.08 cm

Note:
Soil vapour concentrations measured using a RKI Eagle 2 equipped with a photoionization detector (PID) and a combustible gas indicator (CGI).

Grade Elevation: NM

Top of Casing Elevation: NM

Sheet: 1 of 1

Log of Borehole: BH-7

Project #: 230236.002 **Logged By:** MK

Project: Phase II Environmental Site Assessment

Client: The Great-West Life Assurance Company

Location: 320 McRae Avenue, 1976 Scott Street, 311 and 316 Tweedsmuir Avenue, Ottawa, Ontario

Drill Date: November 2, 2018

SUBSURFACE PROFILE					SAMPLE			
Depth (ft / m)	Symbol	Description	Measured Depth (m)	Monitoring Well Details	Recovery (%)	Sample ID	Soil Vapour Concentration (ppm)(HEX/IBL)	Laboratory Analysis
0 / 0		Ground Surface	0.00	No Monitoring Well Installed				
		Asphalt	0.10		50	SS1	0/3	PHCs, VOCs, PAHs, Metals, pH
1		***Sand and Gravel*** With wood fragments, damp, black staining, no odours.	0.76					
2								
3 / 1		***Sand and Gravel*** Brown/grey, with silt, damp.	1.52		50	SS2	0/1	
4								
5		End of Borehole Due to refusal on Bedrock.						
6 / 2								
7								
8								
9								
10 / 3								

Contractor: Strata Drilling Group

Drilling Method: Direct Push / Split Spoon

Well Casing Size: 5.08 cm

Note:
Soil vapour concentrations measured using a RKI Eagle 2 equipped with a photoionization detector (PID) and a combustible gas indicator (CGI).

Grade Elevation: NM

Top of Casing Elevation: NM

Sheet: 1 of 1

Log of Borehole: BH-9

Project #: 230236.002 **Logged By:** MK

Project: Phase II Environmental Site Assessment

Client: The Great-West Life Assurance Company

Location: 320 McRae Avenue, 1976 Scott Street, 311 and 316 Tweedsmuir Avenue, Ottawa, Ontario

Drill Date: November 2, 2018

SUBSURFACE PROFILE					SAMPLE			
Depth (ft / m)	Symbol	Description	Measured Depth (m)	Monitoring Well Details	Recovery (%)	Sample ID	Soil Vapour Concentration (ppm)(HEX/IBL)	Laboratory Analysis
0 / 0		Ground Surface	0.00					
0–10 / 0–3		***Sand and Gravel*** Brown, damp.		No Monitoring Well Installed	50	SS1	0/2	
					50	SS2	0/1	
					50	SS3	0/2	PHCs, VOCs, PAHs, Metals, pH, Grain Size
					50	SS4	0/2	
10 / 3			3.29					
11 / 3		End of Borehole						
13 / 4		Due to refusal on Bedrock.						

Contractor: Strata Drilling Group

Drilling Method: Direct Push / Split Spoon

Well Casing Size: 5.08 cm

Note:
Soil vapour concentrations measured using a RKI Eagle 2 equipped with a photoionization detector (PID) and a combustible gas indicator (CGI).

Grade Elevation: NM

Top of Casing Elevation: NM

Sheet: 1 of 1

Log of Borehole: BH-10

Project #: 230236.002 **Logged By:** MK

Project: Phase II Environmental Site Assessment

Client: The Great-West Life Assurance Company

Location: 320 McRae Avenue, 1976 Scott Street, 311 and 316 Tweedsmuir Avenue, Ottawa, Ontario

Drill Date: November 2, 2018

SUBSURFACE PROFILE					SAMPLE			
Depth (ft / m)	Symbol	Description	Measured Depth (m)	Monitoring Well Details	Recovery (%)	Sample ID	Soil Vapour Concentration (ppm)(HEX/IBL)	Laboratory Analysis
0 / 0		Ground Surface	0.00					
		Asphalt	0.10	No Monitoring Well Installed	45	SS1	0/2	PHCs, VOCs, PAHs, Metals, pH
2			0.76					
3 / 1		***Sand and Gravel*** Brown/black, with limestone fragments thoughout, damp.			85	SS2	0/1	
5			1.68					
6 / 2		End of Borehole Due to refusal on Bedrock.						
10 / 3								

Contractor: Strata Drilling Group

Drilling Method: Direct Push / Split Spoon

Well Casing Size: 5.08 cm

Note:
Soil vapour concentrations measured using a RKI Eagle 2 equipped with a photoionization detector (PID) and a combustible gas indicator (CGI).

Grade Elevation: NM

Top of Casing Elevation: NM

Sheet: 1 of 1

Log of Borehole: BH-11

Project #: 230236.002 **Logged By:** MK

Project: Phase II Environmental Site Assessment

Client: The Great-West Life Assurance Company

Location: 320 McRae Avenue, 1976 Scott Street, 311 and 316 Tweedsmuir Avenue, Ottawa, Ontario

Drill Date: November 2, 2018

SUBSURFACE PROFILE					SAMPLE			
Depth (ft / m)	Symbol	Description	Measured Depth (m)	Monitoring Well Details	Recovery (%)	Sample ID	Soil Vapour Concentration (ppm)(HEX/IBL)	Laboratory Analysis
0 / 0		Ground Surface	0.00					
		Asphalt	0.05	No Monitoring Well Installed	75	SS1	0/2	PHCs, VOCs, PAHs, Metals
1		***Sand and Gravel*** Brown, with large stones, damp.						
2			0.76					
		End of Borehole						
3		Due to refusal on Bedrock.						
1								
4								
5								

Contractor: Strata Drilling Group

Drilling Method: Direct Push / Split Spoon

Well Casing Size: 5.08 cm

Note:
Soil vapour concentrations measured using a RKI Eagle 2 equipped with a photoionization detector (PID) and a combustible gas indicator (CGI).

Grade Elevation: NM

Top of Casing Elevation: NM

Sheet: 1 of 1

APPENDIX III
Summary Tables

TABLE 1
MONITORING WELL CONSTRUCTION DETAILS
The Great-West Life Assurance Company
320 McRae Avenue, 1976 Scott Street, 311 and 315 Tweedsmuir Avenue, Ottawa, Ontario

Well Number	*Surveyed TOC Elevation (mREL)*	*Surveyed Ground Elevation (mREL)*	*Calculated Difference Between Ground and TOC (m)*	*Length of Screen (m)*
MW-1	100.19	100.29	-0.10	3.05
MW-2	100.17	100.28	-0.11	3.05
MW-3	NM	NM	NM	3.05
MW-4	100.70	100.81	-0.11	3.05
MW-5	100.46	100.56	-0.10	3.05
EXMW-1	NM	NM	NM	NM
EXMW-2	100.17	100.33	-0.16	NM
EXMW-3	NM	NM	NM	NM
EXMW-4	NM	NM	NM	NM
EXMW-5	NM	NM	NM	NM

Notes:

mREL	Indicates Groundwater Elevation (metres) Relative to Site Benchmark with Assumed Elevation of 100.00 Metres
TOC	Indicates Top of Casing
NM	Not Measured
m	Metres

Pinchin File: 230236.002

TABLE 2
SAMPLES SUBMITTED FOR LABORATORY ANALYSIS
The Great-West Life Assurance Company
320 McRae Avenue, 1976 Scott Street, 311 and 315 Tweedsmuir Avenue, Ottawa, Ontario

Samples		Parameters															
Borehole / Monitoring Well ID	Sample ID	SOIL SAMPLES	PHCs (F1-F4) & BTEX	VOCs	PAHs	Metals	pH	Grain Size Analysis	TCLP	GROUNDWATER SAMPLES	PHCs (F1-F4)	PHCs (F1-F4) & BTEX	VOCs	PAHs	Metals	Rationale/Notes
MW-1	SS-2		●	●	●	●	●									Assess soil and groundwater quality at former on-Site underground storage tanks (USTs) and pump island location. Confirm applicable MECP standards.
	MW-1										●	●	●	●	●	
MW-2	SS-2		●	●	●	●										Assess soil and groundwater quality at former on-Site pump island location.
	BH-702-S										●	●	●	●	●	
MW-3	SS-1		●	●	●											Assess soil quality at former on-Site pump island location. MW-3 submerged and frozen at time of groundwater sampling.
MW-4	SS-2		●	●	●	●										Assess soil and groundwater quality at in vincity of automotive repair facility and verify previous analytical results.
	MW-4										●	●	●	●	●	
MW-5	SS-2		●	●	●	●		●								Assess soil and groundwater quality in vincity of automotive repair facility and verify previous analytical results. Confirm applicable MECP standards.
	MW-5										●	●	●	●	●	
BH-6	SS-1		●	●	●	●										Assess soil quality in vincity of automotive repair facility and verify previous analytical results. Confirm applicable MECP standards.
BH-7	SS-1		●	●	●	●	●									Assess soil quality in vincity of automotive repair facility and verify previous analytical results. Confirm applicable MECP standards.
BH-8	SS-1		●	●	●	●										Assess soil quality in vincity of automotive repair facility and verify previous analytical results.
BH-9	SS-4		●	●	●	●		●								Assess soil quality at former on-Site USTs. Confirm applicable MECP standards.
BH-10	SS-1		●	●	●	●	●									Assess soil quality at former on-Site USTs. Confirm applicable MECP standards.
BH-11	SS-1		●	●	●	●										Assess soil quality to verify previous analytical results.
EXMW-1	EXMW-1										●	●	●	●	●	Assess groundwater quality at former on-Site USTs and pump island and to verify previos analytical results.
EXMW-2	EXMW-2										●	●	●	●	●	Assess groundwater quality at former on-Site USTs.
EXMW-3	EXMW-3										●	●	●	●	●	Assess groundwater quality in vincity of automotive repair facility and verify previous analytical results.
EXMW-4	EXMW-4										●	●	●	●	●	Assess groundwater quality within the on-Site automotive repair facility and verify previous analytical results.
EXMW-5	EXMW-5										●	●	●	●	●	Assess groundwater quality within the on-Site automotive repair facility and verify previous analytical results.

Notes:

PHCs (F1-F4)	Petroleum Hydrocarbons (Fraction 1 to Fraction 4)
BTEX	Benzene, Toluene, Ethylbenzene, and Xylenes
PCBs	Polychlorinated Biphenyls
VOCs	Volatile Organic Compounds
FOC	Fraction of Organic Carbon
PAHs	Polycyclic Aromatic Hydrocarbons
TCLP	Toxicity Characteristic Leaching Procedure
mbgs	Metres Below Ground Surface
MECP	Ontario Ministry of the Environment, Conservation and Parks

TABLE 3
pH AND GRAIN SIZE ANALYSIS FOR SOIL
The Great-West Life Assurance Company
320 McRae Avenue, 1976 Scott Street, 311 and 315 Tweedsmuir Avenue, Ottawa, Ontario

Parameter	*Units*	*MECP Site Condition Standard Selection Criteria*	*Sample Designation*						
			Sample Collection Date (dd/mm/yyyy)						
			Sample Depth (mbgs)						
			MW-1 SS-2	*MW-3 SS-1*	*BH-6 SS-2*	*BH-7 SS-1*	*BH-10 SS-1*	*BH-9 SS-4*	*MW-5 SS-2*
			01/11/2018	*01/11/2018*	*02/11/2018*	*02/11/2018*	*02/11/2018*	*02/11/2018*	*02/11/2018*
			0.8 - 1.5	*0.0 - 0.8*	*0.8 - 1.5*	*0.0 - 0.8*	*0.0 - 0.8*	*2.3 - 3.1*	*2.0 - 2.4*
			Surface	*Surface*	*Surface*	*Surface*	*Surface*	*Sub-surface*	*NA*
pH		Surface: 5 < pH < 9 Subsurface: 5 < pH < 11	7.8	7.7	7.9	7.6	7.7	7.9	NA
Sieve #200 <0.075 mm	%	50%	NA	NA	NA	NA	NA	15	53
Sieve #200 >0.075 mm	%	50%	NA	NA	NA	NA	NA	85	47
		Grain Size Classification	NA	NA	NA	NA	NA	COARSE	MEDIUM/FINE

Notes:

BOLD	Environmentally Sensitive Area (Based Upon pH of Surface Soil)
BOLD	Environmentally Sensitive Area (Based Upon pH of Sub-Surface Soil)
NA	Not Analysed
mbgs	Metres Below Ground Surface

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TABLE 4
GROUNDWATER ELEVATION DATA
The Great-West Life Assurance Company
320 McRae Avenue, 1976 Scott Street, 311 and 315 Tweedsmuir Avenue, Ottawa, Ontario

Well Number	*Date (dd/mm/yyyy)*	*NAPL Level Measurement from TOC (m)*	*Water Level Measurement from TOC (m)*	*Water Level Measurement from Ground (mbgs)*	*Product Thickness (m)*	*Calculated Water Level Elevation (mREL)*
MW-1	13/11/2018	ND	4.97	5.07	ND	95.22
MW-2	13/11/2018	ND	6.02	6.13	ND	94.15
MW-3	13/11/2018	ND	Submerged/Frozen	Submerged/Frozen	ND	NA
MW-4	13/11/2018	ND	4.26	4.37	ND	96.44
MW-5	13/11/2018	ND	5.85	5.95	ND	94.61
EXMW-1	14/11/2018	ND	5.34	5.41	ND	NA
EXMW-2	13/11/2018	ND	4.80	4.96	ND	95.37
EXMW-3	13/11/2018	ND	5.14	5.21	ND	NA
EXMW-4	13/11/2018	ND	4.75	4.79	ND	NA
EXMW-5	13/11/2018	ND	6.36	6.43	ND	NA

Notes:

mREL	Indicates Groundwater Elevation (metres) Relative To Site Benchmark with Assumed Elevation of 100.00 Metres
NAPL	Non-Aqueous Phase Liquid
ND	Not Detected
TOC	Indicates Top of Casing
m	Metres
mbgs	Metres Below Ground Surface

TABLE 5

PETROLEUM HYDROCARBON AND BTEX ANALYSIS FOR SOIL

The Great-West Life Assurance Company

320 McRae Avenue, 1976 Scott Street, 311 and 315 Tweedsmuir Avenue, Ottawa, Ontario

Parameter	*MECP Table 7 Standards**	*Sample Designation*											
		Sample Collection Date (dd/mm/yyyy)											
		Sample Depth (mbgs)											
		MW-1 SS-2	*MW-2 SS-2*	*MW-3 SS-1*	*MW-4 SS-2*	*MW-5 SS-2*	*BH-6 SS-2*	*BH-7 SS-1*	*BH-8 SS-1*	*BH-9 SS-4*	*BH-10 SS-1*	*BH-11 SS-1*	*DUP-1*
		01/11/2018	*01/11/2018*	*01/11/2018*	*02/11/2018*	*02/11/2018*	*02/11/2018*	*02/11/2018*	*02/11/2018*	*02/11/2018*	*02/11/2018*	*02/11/2018*	*02/11/2018*
		0.8 - 1.5	*0.8 - 1.5*	*0.0 - 0.8*	*0.8 - 1.5*	*0.8 - 1.5*	*0.8 - 1.5*	*0.0 - 0.8*	*0.0 - 0.8*	*2.3 - 3.1*	*0.0 - 0.8*	*0.0 - 0.8*	*0.0 - 0.8*
Benzene	0.21	-	-	-	-	-	-	-	-	-	-	-	-
Toluene	2.3	-	-	-	-	-	-	-	-	-	-	-	-
Ethylbenzene	2	-	-	-	-	-	-	-	-	-	-	-	-
Xylenes (Total)	3.1	-	-	-	-	-	-	-	-	-	-	-	-
Petroleum Hydrocarbons F1 (C_6 - C_{10})	55	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Petroleum Hydrocarbons F2 (>C_{10} - C_{16})	98	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Petroleum Hydrocarbons F3 (>C_{16} - C_{34})	300	<50	<50	<50	110	<50	<50	**400**	200	<50	75	**580**	**470**
Petroleum Hydrocarbons F4 (>C_{34} - C_{50})	2800	<50	<50	68	81	<50	<50	390	190	<50	290	1100	920
Petroleum Hydrocarbons F4 Gravimetric	2800	-	-	-	-	-	-	2500	830	-	2200	**3400**	**2900**

Notes:

MECP Table 7 Standards — Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011, Table 7 Standards, Coarse-Textured Soils, Non-Potable Groundwater Condition, for Residential/Parkland/Institutional Property Use.

BOLD — Exceeds Site Condition Standard

BOLD — Reportable Detection Limit Exceeds Site Condition Standard

Units — All Units in µg/g

mbgs — Metres Below Ground Surface

BTEX — Benzene, Toluene, Ethylbenzene and Xylenes

TABLE 6

VOLATILE ORGANIC COMPOUND ANALYSIS FOR SOIL

The Great-West Life Assurance Company

320 McRae Avenue, 1976 Scott Street, 311 and 315 Tweedsmuir Avenue, Ottawa, Ontario

Parameter	*MECP Table 7 Standards**	*Sample Designation*											
		Sample Collection Date (dd/mm/yyyy)											
		Sample Depth (mbgs)											
		MW-1 SS-2	*MW-2 SS-2*	*MW-3 SS-1*	*MW-4 SS-2*	*MW-5 SS-2*	*BH-6 SS-2*	*BH-7 SS-1*	*BH-8 SS-1*	*BH-9 SS-4*	*BH-10 SS-1*	*BH-11 SS-1*	*DUP-1*
		01/11/2018	*01/11/2018*	*01/11/2018*	*02/11/2018*	*02/11/2018*	*02/11/2018*	*02/11/2018*	*02/11/2018*	*02/11/2018*	*02/11/2018*	*02/11/2018*	*02/11/2018*
		0.8 - 1.5	*0.8 - 1.5*	*0.0 - 0.8*	*0.8 - 1.5*	*0.8 - 1.5*	*0.8 - 1.5*	*0.0 - 0.8*	*0.0 - 0.8*	*2.3 - 3.1*	*0.0 - 0.8*	*0.0 - 0.8*	*0.0 - 0.8*
Acetone	16	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Benzene	0.21	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Bromodichloromethane	13	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Bromoform	0.27	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Bromomethane	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Carbon Tetrachloride	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chlorobenzene	2.4	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chloroform	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Dibromochloromethane	9.4	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,2-Dichlorobenzene	3.4	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,3-Dichlorobenzene	4.8	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,4-Dichlorobenzene	0.083	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,1-Dichloroethane	3.5	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,2-Dichloroethane	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,1-Dichloroethylene	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Cis-1,2-Dichloroethylene	3.4	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Trans-1,2-Dichloroethylene	0.084	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,2-Dichloropropane	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Cis-1,3-Dichloropropylene	NV	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030
Trans-1,3-Dichloropropylene	NV	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Ethylbenzene	2	<0.020	<0.020	0.046	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Ethylene Dibromide	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Methyl Ethyl Ketone	16	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Methylene Chloride	0.1	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Methyl Isobutyl Ketone	1.7	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Methyl-t-Butyl Ether	0.75	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Styrene	0.7	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,1,1,2-Tetrachloroethane	0.058	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,1,2,2-Tetrachloroethane	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Toluene	2.3	<0.020	0.05	0.053	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Tetrachloroethylene	0.28	<0.050	<0.050	<0.050	<0.050	0.22	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,1,1-Trichloroethane	0.38	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,1,2-Trichloroethane	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Trichloroethylene	0.061	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Vinyl Chloride	0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
m-Xylene & p-Xylene	NV	<0.020	0.047	0.22	<0.020	<0.020	<0.020	<0.020	0.027	<0.020	<0.020	<0.020	<0.020
o-Xylene	NV	<0.020	<0.020	0.074	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Total Xylenes	3.1	<0.020	0.047	0.29	<0.020	<0.020	<0.020	<0.020	0.027	<0.020	<0.020	<0.020	<0.020
Dichlorodifluoromethane	16	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Dioxane, 1,4-	1.8	-	-	-	-	-	-	-	-	-	-	-	-
Hexane(n)	2.8	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Trichlorofluoromethane	4	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,3-Dichloropropene (cis + trans)	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050

Notes:

MECP Table 7 Standards — Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011, Table 7 Standards, Coarse-Textured Soils, Non-Potable Groundwater Condition, for Residential/Parkland/Institutional Property Use.

BOLD — Exceeds Site Condition Standard

BOLD — Reportable Detection Limit Exceeds Site Condition Standard

Units — All Units in µg/g

mbgs — Metres Below Ground Surface

Pinchin File: 230236.002

TABLE 7

POLYCYCLIC AROMATIC HYDROCARBON ANALYSIS FOR SOIL

The Great-West Life Assurance Company

320 McRae Avenue, 1976 Scott Street, 311 and 315 Tweedsmuir Avenue, Ottawa, Ontario

Parameter	*MECP Table 7 Standards**	*Sample Designation*											
		Sample Collection Date (dd/mm/yyyy)											
		Sample Depth (mbgs)											
		MW-1 SS-2	*MW-2 SS-2*	*MW-3 SS-1*	*MW-4 SS-2*	*MW-5 SS-2*	*BH-6 SS-2*	*BH-7 SS-1*	*BH-8 SS-1*	*BH-9 SS-4*	*BH-10 SS-1*	*BH-11 SS-1*	*DUP-1*
		01/11/2018	*01/11/2018*	*01/11/2018*	*02/11/2018*	*02/11/2018*	*02/11/2018*	*02/11/2018*	*02/11/2018*	*02/11/2018*	*02/11/2018*	*02/11/2018*	*02/11/2018*
		0.8 - 1.5	*0.8 - 1.5*	*0.0 - 0.8*	*0.8 - 1.5*	*0.8 - 1.5*	*0.8 - 1.5*	*0.0 - 0.8*	*0.0 - 0.8*	*2.3 - 3.1*	*0.0 - 0.8*	*0.0 - 0.8*	*0.0 - 0.8*
Acenaphthene	7.9	<0.0050	<0.0050	<0.0050	0.026	0.01	<0.0050	0.014	0.0082	<0.0050	0.0076	0.028	0.01
Acenaphthylene	0.15	<0.0050	<0.0050	0.0062	0.022	0.018	<0.0050	0.01	0.02	<0.0050	0.0075	<0.0050	<0.0050
Anthracene	0.67	<0.0050	<0.0050	<0.0050	0.046	0.033	<0.0050	0.021	0.027	<0.0050	0.015	0.053	0.019
Benzo(a)anthracene	0.5	0.01	<0.0050	0.026	0.28	0.093	<0.0050	0.16	0.29	<0.0050	0.1	0.2	0.085
Benzo(a)pyrene	0.3	0.015	<0.0050	0.03	0.28	0.11	<0.0050	0.15	0.28	<0.0050	0.093	0.15	0.073
Benzo(b)fluoranthene	0.78	0.024	0.01	0.044	0.33	0.15	<0.0050	0.18	0.32	<0.0050	0.12	0.19	0.094
Benzo(ghi)perylene	6.6	0.018	0.0081	0.028	0.25	0.1	<0.0050	0.12	0.17	<0.0050	0.074	0.11	0.068
Benzo(k)fluoranthene	0.78	0.0076	<0.0050	0.016	0.12	0.053	<0.0050	0.07	0.12	<0.0050	0.045	0.072	0.036
Chrysene	7	0.016	0.0076	0.035	0.3	0.1	<0.0050	0.17	0.24	<0.0050	0.1	0.21	0.099
Dibenzo(a,h)anthracene	0.1	0.0057	<0.0050	0.0071	0.076	0.028	<0.0050	0.041	0.065	<0.0050	0.027	0.031	0.02
Fluoranthene	0.69	0.019	0.0065	0.055	0.52	0.19	<0.0050	0.45	0.53	<0.0050	0.22	0.58	0.25
Fluorene	62	<0.0050	<0.0050	<0.0050	0.034	0.016	<0.0050	0.03	0.029	<0.0050	0.023	0.041	0.03
Indeno(1,2,3-cd)pyrene	0.38	0.013	<0.0050	0.025	0.23	0.093	<0.0050	0.12	0.19	<0.0050	0.079	0.11	0.063
Methylnaphthalene 2-(1-)	0.99	<0.014	<0.014	<0.014	0.049	<0.014	<0.014	0.039	0.035	<0.014	0.034	0.032	0.033
Naphthalene	0.6	<0.0050	<0.0050	<0.0050	0.013	<0.0050	<0.0050	0.012	0.011	<0.0050	0.0086	0.0065	0.0078
Phenanthrene	6.2	0.015	0.0084	0.02	0.2	0.11	<0.0050	0.17	0.12	<0.0050	0.096	0.31	0.14
Pyrene	78	0.018	0.0055	0.048	0.45	0.15	<0.0050	0.33	0.47	<0.0050	0.18	0.41	0.18

Notes:

MECP Table 7 Standards — Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011, Table 7 Standards, Coarse-Textured Soils, Non-Potable Groundwater Condition, for Residential/Parkland/Institutional Property Use.

BOLD — Exceeds Site Condition Standard

BOLD — Reportable Detection Limit Exceeds Site Condition Standard

Units — All Units in µg/g

mbgs — Metres Below Ground Surface

TABLE 8
METALS ANALYSIS FOR SOIL
The Great-West Life Assurance Company
320 McRae Avenue, 1976 Scott Street, 311 and 315 Tweedsmuir Avenue, Ottawa, Ontario

Parameter	*MECP Table 7 Standards**	*Sample Designation*											
		Sample Collection Date (dd/mm/yyyy)											
		Sample Depth (mbgs)											
		MW-1 SS-2	*MW-2 SS-2*	*MW-3 SS-1*	*MW-4 SS-2*	*MW-5 SS-2*	*BH-6 SS-2*	*BH-7 SS-1*	*BH-8 SS-1*	*BH-9 SS-4*	*BH-10 SS-1*	*BH-11 SS-1*	*DUP-1*
		01/11/2018	*01/11/2018*	*01/11/2018*	*02/11/2018*	*02/11/2018*	*02/11/2018*	*02/11/2018*	*02/11/2018*	*02/11/2018*	*02/11/2018*	*02/11/2018*	*02/11/2018*
		0.8 - 1.5	*0.8 - 1.5*	*0.0 - 0.8*	*0.8 - 1.5*	*0.8 - 1.5*	*0.8 - 1.5*	*0.0 - 0.8*	*0.0 - 0.8*	*2.3 - 3.1*	*0.0 - 0.8*	*0.0 - 0.8*	*0.0 - 0.8*
Antimony	7.5	<0.20	<0.20	-	**43**	0.41	<0.20	3.1	6.4	<0.20	2.6	<0.20	<0.20
Arsenic	18	1.5	4.3	-	**64**	2.9	<1.0	4.5	11	<1.0	9	1.7	1.5
Barium	390	260	190	-	**460**	140	86	390	260	36	280	290	280
Beryllium	4	0.32	0.33	-	0.75	0.54	0.24	0.4	0.46	<0.20	0.78	0.36	0.36
Boron (Hot Water Soluble)	1.5	0.55	0.22	-	**1.8**	0.93	0.19	**1.7**	**3.9**	0.071	0.77	0.25	0.23
Cadmium	1.2	<0.10	<0.10	-	**8.7**	0.17	<0.10	0.71	**1.7**	<0.10	0.58	0.11	<0.10
Chromium	160	17	12	-	45	21	13	15	25	9.5	19	13	18
Chromium VI	8	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Cobalt	22	4.5	8	-	20	8.7	4.4	6.2	8.4	4.3	8	6	7.7
Copper	140	11	16	-	**310**	16	8.4	28	60	10	37	9.4	12
Lead	120	16	15	-	**15000**	40	6.8	**190**	**870**	4.4	**180**	17	17
Mercury	0.27	<0.050	<0.050	-	**1**	0.088	<0.050	0.13	**0.47**	<0.050	0.097	<0.050	<0.050
Molybdenum	6.9	1.2	2.6	-	3.9	0.9	<0.50	0.83	1.9	<0.50	1.3	0.88	0.8
Nickel	100	10	14	-	77	16	7.9	16	22	7	14	12	16
Selenium	2.4	<0.50	<0.50	-	1.1	<0.50	<0.50	<0.50	1.1	<0.50	1.5	<0.50	<0.50
Silver	20	<0.20	<0.20	-	1.6	0.21	<0.20	<0.20	1.3	<0.20	0.34	<0.20	<0.20
Thallium	1	0.11	0.22	-	0.64	0.2	0.083	0.18	0.21	<0.050	0.18	0.21	0.23
Vanadium	86	22	16	-	37	31	24	21	27	23	28	18	20
Zinc	340	25	24	-	**4200**	51	19	140	**590**	20	250	23	24
pH (pH Units)	NV	7.85	-	7.73	-	-	7.91	7.58	-	7.92	7.72	-	-
Conductivity (ms/cm)	0.7	-	-	-	-	-	-	-	-	-	-	-	-
Sodium Adsorption Ratio	5	-	-	-	-	-	-	-	-	-	-	-	-
Cyanide, Free	0.051	-	-	-	-	-	-	-	-	-	-	-	-
Chloride	NV	-	-	-	-	-	-	-	-	-	-	-	-
Boron (Total)	120	13	9.5	-	20	11	5.2	13	19	<5.0	10	8.7	9.6
Uranium	23	0.42	0.58	-	1.7	0.59	0.47	0.49	1.3	0.55	0.62	0.39	0.39

Notes:

MECP Table 7 Standards — Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011, Table 7 Standards, Coarse-Textured Soils, Non-Potable Groundwater Condition, for Residential/Parkland/Institutional Property Use.

BOLD — Exceeds Site Condition Standard
BOLD — Reportable Detection Limit Exceeds Site Condition Standard
Units — All Units in µg/g
mbgs — Metres Below Ground Surface
NA — Not Applicable

Pinchin File: 230236.002

TABLE 9

PETROLEUM HYDROCARBON AND BTEX ANALYSIS FOR GROUNDWATER

The Great-West Life Assurance Company

320 McRae Avenue, 1976 Scott Street, 311 and 315 Tweedsmuir Avenue, Ottawa, Ontario

Parameter	*MECP Table 7 Standards**	*EXMW-1*	*MW-1*	*EXMW-2*	*MW-2*	*EXMW-3*	*MW-4*	*EXMW-4*	*MW-5*	*EXMW-5*	*DUP-2*
		14/11/2018	*13/11/2018*	*13/11/2018*	*13/11/2018*	*13/11/2018*	*13/11/2018*	*13/11/2018*	*13/11/2018*	*13/11/2018*	*13/11/2018*
Benzene	0.5	-	-	-	-	-	-	-	-	-	
Toluene	320	-	-	-	-	-	-	-	-	-	
Ethylbenzene	54	-	-	-	-	-	-	-	-	-	
Xylenes (Total)	72	-	-	-	-	-	-	-	-	-	
Petroleum Hydrocarbons F1 (C_6 - C_{10})	420	<25	**460**	<25	<25	<25	<25	<25	<25	<25	390
Petroleum Hydrocarbons F2 (>C_{10} - C_{16})	150	<100	**380**	<100	<100	<100	<100	<100	<100	<100	**470**
Petroleum Hydrocarbons F3 (>C_{16} - C_{34})	500	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200
Petroleum Hydrocarbons F4 (>C_{34} - C_{50})	500	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200

Notes:

MECP Table 7 Standards — Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011, Table 7 Standards, Coarse-Textured Soils, Non-Potable Groundwater Condition, for All Types of Property Use.

BOLD — Exceeds Site Condition Standard

BOLD — Reportable Detection Limit Exceeds Site Condition Standard

Units — All Units in µg/L

BTEX — Benzene, Toluene, Ethylbenzene and Xylenes

TABLE 10

VOLATILE ORGANIC COMPOUND ANALYSIS FOR GROUNDWATER

The Great-West Life Assurance Company

320 McRae Avenue, 1976 Scott Street, 311 and 315 Tweedsmuir Avenue, Ottawa, Ontario

Parameter	*MECP Table 7 Standards**	*Sample Designation*										
		Sample Collection Date (dd/mm/yyyy)										
		Trip Blank	*EXMW-1*	*MW-1*	*EXMW-2*	*MW-2*	*EXMW-3*	*MW-4*	*EXMW-4*	*MW-5*	*EXMW-5*	*DUP-2*
		13/11/2018	*13/11/2018*	*13/11/2018*	*13/11/2018*	*13/11/2018*	*13/11/2018*	*13/11/2018*	*13/11/2018*	*13/11/2018*	*13/11/2018*	*13/11/2018*
Acetone	100000	<10	<10	<10	<10	12	75	<10	40	<10	34	<10
Benzene	0.5	<0.20	<0.20	**78**	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	**68**
Bromodichloromethane	67000	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Bromoform	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromomethane	0.89	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Carbon Tetrachloride	0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Chlorobenzene	140	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Chloroform	2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.28	<0.20	<0.20	<0.20	<0.20
Dibromochloromethane	65000	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,2-Dichlorobenzene	150	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,3-Dichlorobenzene	7600	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,4-Dichlorobenzene	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1-Dichloroethane	11	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,2-Dichloroethane	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1-Dichloroethylene	0.5	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Cis-1,2-Dichloroethylene	1.6	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Trans-1,2-Dichloroethylene	1.6	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,2-Dichloropropane	0.58	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Cis-1,3-Dichloropropylene	NV	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Trans-1,3-Dichloropropylene	NV	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
Ethylbenzene	54	<0.20	<0.20	37	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	30
Ethylene Dibromide	0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Methyl Ethyl Ketone	21000	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Methylene Chloride	26	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Methyl Isobutyl Ketone	5200	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Methyl-t-Butyl Ether	15	<0.50	<0.50	1.2	<0.50	1.3	<0.50	<0.50	<0.50	<0.50	<0.50	1.2
Styrene	43	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,1,2-Tetrachloroethane	1.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,2,2-Tetrachloroethane	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Toluene	320	<0.20	<0.20	16	<0.20	<0.20	<0.20	<0.20	0.31	<0.20	0.3	14
Tetrachloroethylene	0.5	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,1,1-Trichloroethane	23	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,1,2-Trichloroethane	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Trichloroethylene	0.5	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Vinyl Chloride	0.5	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
m-Xylene & p-Xylene	NV	<0.20	<0.20	68	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	58
o-Xylene	NV	<0.20	<0.20	20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	18
Total Xylenes	72	<0.20	<0.20	**89**	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	**75**
Dichlorodifluoromethane	3500	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dioxane, 1,4-	190000	-	-	-	-	-	-	-	-	-	-	-
Hexane(n)	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Trichlorofluoromethane	2000	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,3-Dichloropropene (cis + trans)	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50

Notes:

MECP Table 7 Standards — Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011, Table 7 Standards, Coarse-Textured Soils, Non-Potable Groundwater Condition, for All Types of Property Use.

BOLD	Exceeds Site Condition Standard
BOLD	Reportable Detection Limit Exceeds Site Condition Standard
Units	All Units in µg/L

Pinchin File: 230236.002

TABLE 11

POLYCYCLIC AROMATIC HYDROCARBON ANALYSIS FOR GROUNDWATER

The Great-West Life Assurance Company

320 McRae Avenue, 1976 Scott Street, 311 and 315 Tweedsmuir Avenue, Ottawa, Ontario

Parameter	*MECP Table 7 Standards**	*Sample Designation*									
		Sample Collection Date (dd/mm/yyyy)									
		EXMW-1	*MW-1*	*EXMW-2*	*MW-2*	*EXMW-3*	*MW-4*	*EXMW-4*	*MW-5*	*EXMW-5*	*DUP-2*
		13/11/2018	*13/11/2018*	*13/11/2018*	*13/11/2018*	*13/11/2018*	*13/11/2018*	*13/11/2018*	*13/11/2018*	*13/11/2018*	*13/11/2018*
Acenaphthene	17	<0.050	0.076	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.094
Acenaphthylene	1	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Anthracene	1	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(a)anthracene	1.8	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(a)pyrene	0.81	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Benzo(b)fluoranthene	0.75	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(ghi)perylene	0.2	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(k)fluoranthene	0.4	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chrysene	0.7	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Dibenzo(a,h)anthracene	0.4	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Fluoranthene	44	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Fluorene	290	<0.050	0.11	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.14
Indeno(1,2,3-cd)pyrene	0.2	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Methylnaphthalene 2-(1-)	1500	<0.071	7.6	<0.071	<0.071	<0.071	<0.071	<0.071	<0.071	<0.071	10
Naphthalene	7	<0.050	**11**	<0.050	<0.050	<0.050	<0.050	0.089	<0.050	<0.050	**15**
Phenanthrene	380	<0.030	0.043	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	0.054
Pyrene	5.7	<0.050	0.053	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.051

Notes:

MECP Table 7 Standards — Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011, Table 7 Standards, Coarse-Textured Soils, Non-Potable Groundwater Condition, for All Types of Property Use.

BOLD — Exceeds Site Condition Standard

BOLD — Reportable Detection Limit Exceeds Site Condition Standard

Units — All Units in µg/L

Pinchin File: 230236.002

TABLE 12
METALS ANALYSIS FOR GROUNDWATER
The Great-West Life Assurance Company
320 McRae Avenue, 1976 Scott Street, 311 and 315 Tweedsmuir Avenue, Ottawa, Ontario

Parameter	*MECP Table 7 Standards**	*Sample Designation*									
		Sample Collection Date (dd/mm/yyyy)									
		EXMW-1	*MW-1*	*EXMW-2*	*MW-2*	*EXMW-3*	*MW-4*	*EXMW-4*	*MW-5*	*EXMW-5*	*DUP-2*
		13/11/2018	*13/11/2018*	*13/11/2018*	*13/11/2018*	*13/11/2018*	*13/11/2018*	*13/11/2018*	*13/11/2018*	*13/11/2018*	*13/11/2018*
Antimony	16000	0.82	<0.50	<0.50	0.61	<0.50	2.7	<0.50	<0.50	0.51	<0.50
Arsenic	1500	<1.0	1.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.2
Barium	23000	120	260	130	160	200	74	230	110	160	260
Beryllium	53	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Boron	36000	140	280	260	1100	280	210	98	280	230	290
Cadmium	2.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.15	<0.10
Chromium	640	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Chromium VI	110	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Cobalt	52	<0.50	3.9	38	3.3	<0.50	1.1	<0.50	1.9	5.9	4.1
Copper	69	3.7	<1.0	5.4	1.9	<1.0	6.1	<1.0	2.4	2.3	<1.0
Lead	20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Mercury	0.1	**0.2**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Molybdenum	7300	3.5	1.2	2	4.6	<0.50	3.5	0.63	4.7	1.4	1.2
Nickel	390	3.6	8.6	6.2	12	1.2	6	<1.0	12	8.2	8.8
Sodium	1800000	570000	720000	680000	630000	230000	190000	62000	370000	170000	700000
Selenium	50	<2.0	<2.0	<2.0	<2.0	<2.0	2	<2.0	<2.0	<2.0	<2.0
Silver	1.2	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Thallium	400	0.098	<0.050	<0.050	0.23	<0.050	<0.050	<0.050	0.068	0.072	<0.050
Vanadium	200	<0.50	<0.50	<0.50	<0.50	<0.50	0.76	<0.50	<0.50	<0.50	<0.50
Zinc	890	31	<5.0	16	<5.0	<5.0	<5.0	<5.0	<5.0	26	<5.0
Cyanide, Free	52	-	-	-	-	-	-	-	-	-	-
Nitrate (mg/L) (SEE FOOTNOTE	NV	-	-	-	-	-	-	-	-	-	-
Nitrite (mg/L) (SEE FOOTNOTE	NV	-	-	-	-	-	-	-	-	-	-
Chloride (mg/L) (SEE FOOTNO	1800	-	-	-	-	-	-	-	-	-	-
Uranium	330	2.2	0.78	2.5	3.5	0.51	4	<0.10	3.6	1	0.81

Notes:

MECP Table 7 Standards — Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011, Table 7 Standards, Coarse-Textured Soils, Non-Potable Groundwater Condition, for All Types of Property Use.

BOLD — Exceeds Site Condition Standard
BOLD — Reportable Detection Limit Exceeds Site Condition Standard
Units — All Units in µg/L

APPENDIX IV
Laboratory Certificates of Analysis

Your Project #: 230236.002
Your C.O.C. #: 102884

Attention: Mike Kosiw

Pinchin Ltd
Ottawa
1 Hines Road
Suite 200
Kanata, ON
CANADA K2K 3C7

Report Date: 2018/11/13
Report #: R5482222
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B8T5024
Received: 2018/11/05, 15:30

Sample Matrix: Soil
Samples Received: 12

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Methylnaphthalene Sum	12	N/A	2018/11/09	CAM SOP-00301	EPA 8270D m
Hot Water Extractable Boron (1)	1	2018/11/07	2018/11/08	CAM SOP-00408	R153 Ana. Prot. 2011
Hot Water Extractable Boron (1)	10	2018/11/08	2018/11/08	CAM SOP-00408	R153 Ana. Prot. 2011
1,3-Dichloropropene Sum	12	N/A	2018/11/08	OTT SOP-00002	EPA 8260C m
Hexavalent Chromium in Soil by IC (1, 2)	11	2018/11/07	2018/11/08	CAM SOP-00436	EPA 3060/7199 m
Petroleum Hydrocarbons F2-F4 in Soil (3)	12	2018/11/06	2018/11/09	OTT SOP-00001	CCME CWS
F4G (CCME Hydrocarbons Gravimetric)	5	2018/11/12	2018/11/13	OTT SOP-00001	CCME CWS
Strong Acid Leachable Metals by ICPMS (1)	11	2018/11/09	2018/11/09	CAM SOP-00447	EPA 6020B m
Moisture	12	N/A	2018/11/07	CAM SOP-00445	McKeague 2nd ed 1978
PAH Compounds in Soil by GC/MS (SIM)	6	2018/11/06	2018/11/06	OTT SOP-00011	EPA 8270D m
PAH Compounds in Soil by GC/MS (SIM)	1	2018/11/06	2018/11/07	OTT SOP-00011	EPA 8270D m
PAH Compounds in Soil by GC/MS (SIM)	5	2018/11/06	2018/11/08	OTT SOP-00011	EPA 8270D m
pH CaCl2 EXTRACT (1)	6	2018/11/08	2018/11/08	CAM SOP-00413	EPA 9045 D m
Sieve, 75um (1)	2	N/A	2018/11/09	CAM SOP-00467	Carter 2nd ed m
Volatile Organic Compounds and F1 PHCs	12	N/A	2018/11/07	OTT SOP-00002	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 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.

Your Project #: 230236.002
Your C.O.C. #: 102884

Attention: Mike Kosiw

Pinchin Ltd
Ottawa
1 Hines Road
Suite 200
Kanata, ON
CANADA K2K 3C7

Report Date: 2018/11/13
Report #: R5482222
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B8T5024
Received: 2018/11/05, 15:30

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) This test was performed by Maxxam Analytics Mississauga
(2) Soils are reported on a dry weight basis unless otherwise specified.
(3) 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.
Alisha Williamson, Project Manager
Email: AWilliamson@maxxam.ca
Phone# (613) 274-0573

==========

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 #: B8T5024
Report Date: 2018/11/13

Pinchin Ltd
Client Project #: 230236.002
Sampler Initials: MK

O.REG 153 METALS PACKAGE (SOIL)

Maxxam ID		IFH143	IFH144		IFH146		IFH147	IFH148		
Sampling Date		2018/11/01	2018/11/01		2018/11/02		2018/11/02	2018/11/02		
COC Number		102884	102884		102884		102884	102884		
	UNITS	MW-1 SS-2	MW-2 SS-2	RDL	MW-4 SS-2	RDL	MW-5 SS-2	BH-6 SS-2	RDL	QC Batch
Inorganics										
Chromium (VI)	ug/g	<0.2	<0.2	0.2	<0.2	0.2	<0.2	<0.2	0.2	5825517
Metals										
Hot Water Ext. Boron (B)	ug/g	0.55	0.22	0.050	1.8	0.050	0.93	0.19	0.050	5827292
Acid Extractable Antimony (Sb)	ug/g	<0.20	<0.20	0.20	43	0.20	0.41	<0.20	0.20	5829447
Acid Extractable Arsenic (As)	ug/g	1.5	4.3	1.0	64	1.0	2.9	<1.0	1.0	5829447
Acid Extractable Barium (Ba)	ug/g	260	190	0.50	460	0.50	140	86	0.50	5829447
Acid Extractable Beryllium (Be)	ug/g	0.32	0.33	0.20	0.75	0.20	0.54	0.24	0.20	5829447
Acid Extractable Boron (B)	ug/g	13	9.5	5.0	20	5.0	11	5.2	5.0	5829447
Acid Extractable Cadmium (Cd)	ug/g	<0.10	<0.10	0.10	8.7	0.10	0.17	<0.10	0.10	5829447
Acid Extractable Chromium (Cr)	ug/g	17	12	1.0	45	1.0	21	13	1.0	5829447
Acid Extractable Cobalt (Co)	ug/g	4.5	8.0	0.10	20	0.10	8.7	4.4	0.10	5829447
Acid Extractable Copper (Cu)	ug/g	11	16	0.50	310	0.50	16	8.4	0.50	5829447
Acid Extractable Lead (Pb)	ug/g	16	15	1.0	15000	5.0	40	6.8	1.0	5829447
Acid Extractable Molybdenum (Mo)	ug/g	1.2	2.6	0.50	3.9	0.50	0.90	<0.50	0.50	5829447
Acid Extractable Nickel (Ni)	ug/g	10	14	0.50	77	0.50	16	7.9	0.50	5829447
Acid Extractable Selenium (Se)	ug/g	<0.50	<0.50	0.50	1.1	0.50	<0.50	<0.50	0.50	5829447
Acid Extractable Silver (Ag)	ug/g	<0.20	<0.20	0.20	1.6	0.20	0.21	<0.20	0.20	5829447
Acid Extractable Thallium (Tl)	ug/g	0.11	0.22	0.050	0.64	0.050	0.20	0.083	0.050	5829447
Acid Extractable Uranium (U)	ug/g	0.42	0.58	0.050	1.7	0.050	0.59	0.47	0.050	5829447
Acid Extractable Vanadium (V)	ug/g	22	16	5.0	37	5.0	31	24	5.0	5829447
Acid Extractable Zinc (Zn)	ug/g	25	24	5.0	4200	25	51	19	5.0	5829447
Acid Extractable Mercury (Hg)	ug/g	<0.050	<0.050	0.050	1.0	0.050	0.088	<0.050	0.050	5829447

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 32 Colonnade Rd, Unit #1000, Nepean, ON K2E 7J6 Phone: 613 274-0573 Fax: 613 274-0574 Website: www.maxxam.ca

Maxxam Job #: B8T5024
Report Date: 2018/11/13

Pinchin Ltd
Client Project #: 230236.002
Sampler Initials: MK

O.REG 153 METALS PACKAGE (SOIL)

Maxxam ID		IFH149	IFH150			IFH150			IFH151		
Sampling Date		2018/11/02	2018/11/02			2018/11/02			2018/11/02		
COC Number		102884	102884			102884			102884		
	UNITS	BH-7 SS-1	BH-8 SS-1	RDL	QC Batch	BH-8 SS-1 Lab-Dup	RDL	QC Batch	BH-9 SS-4	RDL	QC Batch
Inorganics											
Chromium (VI)	ug/g	<0.2	<0.2	0.2	5825517				<0.2	0.2	5825517
Metals											
Hot Water Ext. Boron (B)	ug/g	1.7	3.9	0.050	5827292				0.071	0.050	5827292
Acid Extractable Antimony (Sb)	ug/g	3.1	6.4	0.20	5829447	7.4	0.20	5829447	<0.20	0.20	5829447
Acid Extractable Arsenic (As)	ug/g	4.5	11	1.0	5829447	10	1.0	5829447	<1.0	1.0	5829447
Acid Extractable Barium (Ba)	ug/g	390	260	0.50	5829447	270	0.50	5829447	36	0.50	5829447
Acid Extractable Beryllium (Be)	ug/g	0.40	0.46	0.20	5829447	0.46	0.20	5829447	<0.20	0.20	5829447
Acid Extractable Boron (B)	ug/g	13	19	5.0	5829447	19	5.0	5829447	<5.0	5.0	5829447
Acid Extractable Cadmium (Cd)	ug/g	0.71	1.7	0.10	5829447	1.6	0.10	5829447	<0.10	0.10	5829447
Acid Extractable Chromium (Cr)	ug/g	15	25	1.0	5829447	26	1.0	5829447	9.5	1.0	5829447
Acid Extractable Cobalt (Co)	ug/g	6.2	8.4	0.10	5829447	8.5	0.10	5829447	4.3	0.10	5829447
Acid Extractable Copper (Cu)	ug/g	28	60	0.50	5829447	65	0.50	5829447	10	0.50	5829447
Acid Extractable Lead (Pb)	ug/g	190	870	1.0	5829447	990	1.0	5829447	4.4	1.0	5829447
Acid Extractable Molybdenum (Mo)	ug/g	0.83	1.9	0.50	5829447	1.8	0.50	5829447	<0.50	0.50	5829447
Acid Extractable Nickel (Ni)	ug/g	16	22	0.50	5829447	22	0.50	5829447	7.0	0.50	5829447
Acid Extractable Selenium (Se)	ug/g	<0.50	1.1	0.50	5829447	1.1	0.50	5829447	<0.50	0.50	5829447
Acid Extractable Silver (Ag)	ug/g	<0.20	1.3	0.20	5829447	1.5	0.20	5829447	<0.20	0.20	5829447
Acid Extractable Thallium (Tl)	ug/g	0.18	0.21	0.050	5829447	0.20	0.050	5829447	<0.050	0.050	5829447
Acid Extractable Uranium (U)	ug/g	0.49	1.3	0.050	5829447	1.4	0.050	5829447	0.55	0.050	5829447
Acid Extractable Vanadium (V)	ug/g	21	27	5.0	5829447	28	5.0	5829447	23	5.0	5829447
Acid Extractable Zinc (Zn)	ug/g	140	590	5.0	5829447	580	5.0	5829447	20	5.0	5829447
Acid Extractable Mercury (Hg)	ug/g	0.13	0.47	0.050	5829447	0.48	0.050	5829447	<0.050	0.050	5829447

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

Maxxam Analytics International Corporation o/a Maxxam Analytics 32 Colonnade Rd, Unit #1000, Nepean, ON K2E 7J6 Phone: 613 274-0573 Fax: 613 274-0574 Website: www.maxxam.ca

Maxxam Job #: B8T5024
Report Date: 2018/11/13

Pinchin Ltd
Client Project #: 230236.002
Sampler Initials: MK

O.REG 153 METALS PACKAGE (SOIL)

Maxxam ID		IFH151			IFH152	IFH153	IFH154		
Sampling Date		2018/11/02			2018/11/02	2018/11/02	2018/11/02		
COC Number		102884			102884	102884	102884		
	UNITS	BH-9 SS-4 Lab-Dup	RDL	QC Batch	BH-10 SS-1	BH-11 SS-1	DUP-1	RDL	QC Batch
Inorganics									
Chromium (VI)	ug/g	<0.2	0.2	5825517	<0.2	<0.2	<0.2	0.2	5825517
Metals									
Hot Water Ext. Boron (B)	ug/g				0.77	0.25	0.23	0.050	5827292
Acid Extractable Antimony (Sb)	ug/g				2.6	<0.20	<0.20	0.20	5829447
Acid Extractable Arsenic (As)	ug/g				9.0	1.7	1.5	1.0	5829447
Acid Extractable Barium (Ba)	ug/g				280	290	280	0.50	5829447
Acid Extractable Beryllium (Be)	ug/g				0.78	0.36	0.36	0.20	5829447
Acid Extractable Boron (B)	ug/g				10	8.7	9.6	5.0	5829447
Acid Extractable Cadmium (Cd)	ug/g				0.58	0.11	<0.10	0.10	5829447
Acid Extractable Chromium (Cr)	ug/g				19	13	18	1.0	5829447
Acid Extractable Cobalt (Co)	ug/g				8.0	6.0	7.7	0.10	5829447
Acid Extractable Copper (Cu)	ug/g				37	9.4	12	0.50	5829447
Acid Extractable Lead (Pb)	ug/g				180	17	17	1.0	5829447
Acid Extractable Molybdenum (Mo)	ug/g				1.3	0.88	0.80	0.50	5829447
Acid Extractable Nickel (Ni)	ug/g				14	12	16	0.50	5829447
Acid Extractable Selenium (Se)	ug/g				1.5	<0.50	<0.50	0.50	5829447
Acid Extractable Silver (Ag)	ug/g				0.34	<0.20	<0.20	0.20	5829447
Acid Extractable Thallium (Tl)	ug/g				0.18	0.21	0.23	0.050	5829447
Acid Extractable Uranium (U)	ug/g				0.62	0.39	0.39	0.050	5829447
Acid Extractable Vanadium (V)	ug/g				28	18	20	5.0	5829447
Acid Extractable Zinc (Zn)	ug/g				250	23	24	5.0	5829447
Acid Extractable Mercury (Hg)	ug/g				0.097	<0.050	<0.050	0.050	5829447

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

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Maxxam Job #: B8T5024
Report Date: 2018/11/13

Pinchin Ltd
Client Project #: 230236.002
Sampler Initials: MK

O.REG 153 PAHS (SOIL)

Maxxam ID		IFH143	IFH144	IFH145	IFH146	IFH147	IFH148		
Sampling Date		2018/11/01	2018/11/01	2018/11/01	2018/11/02	2018/11/02	2018/11/02		
COC Number		102884	102884	102884	102884	102884	102884		
	UNITS	MW-1 SS-2	MW-2 SS-2	MW-3 SS-1	MW-4 SS-2	MW-5 SS-2	BH-6 SS-2	RDL	QC Batch
Calculated Parameters									
Methylnaphthalene, 2-(1-)	ug/g	<0.014	<0.014	<0.014	0.049	<0.014	<0.014	0.014	5822328
Polyaromatic Hydrocarbons									
Acenaphthene	ug/g	<0.0050	<0.0050	<0.0050	0.026	0.010	<0.0050	0.0050	5822450
Acenaphthylene	ug/g	<0.0050	<0.0050	0.0062	0.022	0.018	<0.0050	0.0050	5822450
Anthracene	ug/g	<0.0050	<0.0050	<0.0050	0.046	0.033	<0.0050	0.0050	5822450
Benzo(a)anthracene	ug/g	0.010	<0.0050	0.026	0.28	0.093	<0.0050	0.0050	5822450
Benzo(a)pyrene	ug/g	0.015	<0.0050	0.030	0.28	0.11	<0.0050	0.0050	5822450
Benzo(b/j)fluoranthene	ug/g	0.024	0.010	0.044	0.33	0.15	<0.0050	0.0050	5822450
Benzo(g,h,i)perylene	ug/g	0.018	0.0081	0.028	0.25	0.10	<0.0050	0.0050	5822450
Benzo(k)fluoranthene	ug/g	0.0076	<0.0050	0.016	0.12	0.053	<0.0050	0.0050	5822450
Chrysene	ug/g	0.016	0.0076	0.035	0.30	0.10	<0.0050	0.0050	5822450
Dibenz(a,h)anthracene	ug/g	0.0057	<0.0050	0.0071	0.076	0.028	<0.0050	0.0050	5822450
Fluoranthene	ug/g	0.019	0.0065	0.055	0.52	0.19	<0.0050	0.0050	5822450
Fluorene	ug/g	<0.0050	<0.0050	<0.0050	0.034	0.016	<0.0050	0.0050	5822450
Indeno(1,2,3-cd)pyrene	ug/g	0.013	<0.0050	0.025	0.23	0.093	<0.0050	0.0050	5822450
1-Methylnaphthalene	ug/g	<0.0050	<0.0050	<0.0050	0.016	<0.0050	<0.0050	0.0050	5822450
2-Methylnaphthalene	ug/g	<0.0050	<0.0050	<0.0050	0.033	<0.0050	<0.0050	0.0050	5822450
Naphthalene	ug/g	<0.0050	<0.0050	<0.0050	0.013	<0.0050	<0.0050	0.0050	5822450
Phenanthrene	ug/g	0.015	0.0084	0.020	0.20	0.11	<0.0050	0.0050	5822450
Pyrene	ug/g	0.018	0.0055	0.048	0.45	0.15	<0.0050	0.0050	5822450
Surrogate Recovery (%)									
D10-Anthracene	%	73	75	71	73	70	80		5822450
D14-Terphenyl (FS)	%	74	65	64	76	71	71		5822450
D8-Acenaphthylene	%	69	73	71	68	74	77		5822450

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 32 Colonnade Rd, Unit #1000, Nepean, ON K2E 7J6 Phone: 613 274-0573 Fax: 613 274-0574 Website: www.maxxam.ca

Maxxam Job #: B8T5024
Report Date: 2018/11/13

Pinchin Ltd
Client Project #: 230236.002
Sampler Initials: MK

O.REG 153 PAHS (SOIL)

Maxxam ID		IFH149	IFH150	IFH151	IFH152	IFH153	IFH154		
Sampling Date		2018/11/02	2018/11/02	2018/11/02	2018/11/02	2018/11/02	2018/11/02		
COC Number		102884	102884	102884	102884	102884	102884		
	UNITS	BH-7 SS-1	BH-8 SS-1	BH-9 SS-4	BH-10 SS-1	BH-11 SS-1	DUP-1	RDL	QC Batch
Calculated Parameters									
Methylnaphthalene, 2-(1-)	ug/g	0.039	0.035	<0.014	0.034	0.032	0.033	0.014	5822328
Polyaromatic Hydrocarbons									
Acenaphthene	ug/g	0.014	0.0082	<0.0050	0.0076	0.028	0.010	0.0050	5822450
Acenaphthylene	ug/g	0.010	0.020	<0.0050	0.0075	<0.0050	<0.0050	0.0050	5822450
Anthracene	ug/g	0.021	0.027	<0.0050	0.015	0.053	0.019	0.0050	5822450
Benzo(a)anthracene	ug/g	0.16	0.29	<0.0050	0.10	0.20	0.085	0.0050	5822450
Benzo(a)pyrene	ug/g	0.15	0.28	<0.0050	0.093	0.15	0.073	0.0050	5822450
Benzo(b/j)fluoranthene	ug/g	0.18	0.32	<0.0050	0.12	0.19	0.094	0.0050	5822450
Benzo(g,h,i)perylene	ug/g	0.12	0.17	<0.0050	0.074	0.11	0.068	0.0050	5822450
Benzo(k)fluoranthene	ug/g	0.070	0.12	<0.0050	0.045	0.072	0.036	0.0050	5822450
Chrysene	ug/g	0.17	0.24	<0.0050	0.10	0.21	0.099	0.0050	5822450
Dibenz(a,h)anthracene	ug/g	0.041	0.065	<0.0050	0.027	0.031	0.020	0.0050	5822450
Fluoranthene	ug/g	0.45	0.53	<0.0050	0.22	0.58	0.25	0.0050	5822450
Fluorene	ug/g	0.030	0.029	<0.0050	0.023	0.041	0.030	0.0050	5822450
Indeno(1,2,3-cd)pyrene	ug/g	0.12	0.19	<0.0050	0.079	0.11	0.063	0.0050	5822450
1-Methylnaphthalene	ug/g	0.013	0.011	<0.0050	0.011	0.012	0.012	0.0050	5822450
2-Methylnaphthalene	ug/g	0.026	0.024	<0.0050	0.023	0.021	0.021	0.0050	5822450
Naphthalene	ug/g	0.012	0.011	<0.0050	0.0086	0.0065	0.0078	0.0050	5822450
Phenanthrene	ug/g	0.17	0.12	<0.0050	0.096	0.31	0.14	0.0050	5822450
Pyrene	ug/g	0.33	0.47	<0.0050	0.18	0.41	0.18	0.0050	5822450
Surrogate Recovery (%)									
D10-Anthracene	%	82	77	76	72	69	88		5822450
D14-Terphenyl (FS)	%	78	78	67	76	86	96		5822450
D8-Acenaphthylene	%	72	70	74	69	65	79		5822450

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Report Date: 2018/11/13

Pinchin Ltd
Client Project #: 230236.002
Sampler Initials: MK

O.REG 153 PAHS (SOIL)

Maxxam ID		IFH154		
Sampling Date		2018/11/02		
COC Number		102884		
	UNITS	DUP-1 Lab-Dup	RDL	QC Batch
Polyaromatic Hydrocarbons				
Acenaphthene	ug/g	0.015	0.0050	5822450
Acenaphthylene	ug/g	<0.0050	0.0050	5822450
Anthracene	ug/g	0.024	0.0050	5822450
Benzo(a)anthracene	ug/g	0.091	0.0050	5822450
Benzo(a)pyrene	ug/g	0.075	0.0050	5822450
Benzo(b/j)fluoranthene	ug/g	0.096	0.0050	5822450
Benzo(g,h,i)perylene	ug/g	0.069	0.0050	5822450
Benzo(k)fluoranthene	ug/g	0.037	0.0050	5822450
Chrysene	ug/g	0.099	0.0050	5822450
Dibenz(a,h)anthracene	ug/g	0.021	0.0050	5822450
Fluoranthene	ug/g	0.26	0.0050	5822450
Fluorene	ug/g	0.027	0.0050	5822450
Indeno(1,2,3-cd)pyrene	ug/g	0.067	0.0050	5822450
1-Methylnaphthalene	ug/g	0.0080	0.0050	5822450
2-Methylnaphthalene	ug/g	0.012	0.0050	5822450
Naphthalene	ug/g	0.0062	0.0050	5822450
Phenanthrene	ug/g	0.15	0.0050	5822450
Pyrene	ug/g	0.20	0.0050	5822450
Surrogate Recovery (%)				
D10-Anthracene	%	84		5822450
D14-Terphenyl (FS)	%	97		5822450
D8-Acenaphthylene	%	77		5822450

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QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

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Report Date: 2018/11/13

Pinchin Ltd
Client Project #: 230236.002
Sampler Initials: MK

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

Maxxam ID		IFH143	IFH144	IFH145	IFH146	IFH147	IFH148		
Sampling Date		2018/11/01	2018/11/01	2018/11/01	2018/11/02	2018/11/02	2018/11/02		
COC Number		102884	102884	102884	102884	102884	102884		
	UNITS	MW-1 SS-2	MW-2 SS-2	MW-3 SS-1	MW-4 SS-2	MW-5 SS-2	BH-6 SS-2	RDL	QC Batch
Inorganics									
Moisture	%	15	3.3	13	20	16	10	0.2	5822472
Calculated Parameters									
1,3-Dichloropropene (cis+trans)	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5822329
Volatile Organics									
Acetone (2-Propanone)	ug/g	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	5825431
Benzene	ug/g	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	5825431
Bromodichloromethane	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5825431
Bromoform	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5825431
Bromomethane	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5825431
Carbon Tetrachloride	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5825431
Chlorobenzene	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5825431
Chloroform	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5825431
Dibromochloromethane	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5825431
1,2-Dichlorobenzene	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5825431
1,3-Dichlorobenzene	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5825431
1,4-Dichlorobenzene	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5825431
Dichlorodifluoromethane (FREON 12)	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5825431
1,1-Dichloroethane	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5825431
1,2-Dichloroethane	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5825431
1,1-Dichloroethylene	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5825431
cis-1,2-Dichloroethylene	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5825431
trans-1,2-Dichloroethylene	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5825431
1,2-Dichloropropane	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5825431
cis-1,3-Dichloropropene	ug/g	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	0.030	5825431
trans-1,3-Dichloropropene	ug/g	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	5825431
Ethylbenzene	ug/g	<0.020	<0.020	0.046	<0.020	<0.020	<0.020	0.020	5825431
Ethylene Dibromide	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5825431
Hexane	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5825431
Methylene Chloride(Dichloromethane)	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5825431
Methyl Ethyl Ketone (2-Butanone)	ug/g	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	5825431
Methyl Isobutyl Ketone	ug/g	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	5825431
Methyl t-butyl ether (MTBE)	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5825431
Styrene	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5825431
1,1,1,2-Tetrachloroethane	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5825431
1,1,2,2-Tetrachloroethane	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5825431
Tetrachloroethylene	ug/g	<0.050	<0.050	<0.050	<0.050	0.22	<0.050	0.050	5825431

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Report Date: 2018/11/13

Pinchin Ltd
Client Project #: 230236.002
Sampler Initials: MK

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

Maxxam ID		IFH143	IFH144	IFH145	IFH146	IFH147	IFH148		
Sampling Date		2018/11/01	2018/11/01	2018/11/01	2018/11/02	2018/11/02	2018/11/02		
COC Number		102884	102884	102884	102884	102884	102884		
	UNITS	MW-1 SS-2	MW-2 SS-2	MW-3 SS-1	MW-4 SS-2	MW-5 SS-2	BH-6 SS-2	RDL	QC Batch
Toluene	ug/g	<0.020	0.050	0.053	<0.020	<0.020	<0.020	0.020	5825431
1,1,1-Trichloroethane	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5825431
1,1,2-Trichloroethane	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5825431
Trichloroethylene	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5825431
Trichlorofluoromethane (FREON 11)	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5825431
Vinyl Chloride	ug/g	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	5825431
p+m-Xylene	ug/g	<0.020	0.047	0.22	<0.020	<0.020	<0.020	0.020	5825431
o-Xylene	ug/g	<0.020	<0.020	0.074	<0.020	<0.020	<0.020	0.020	5825431
Total Xylenes	ug/g	<0.020	0.047	0.29	<0.020	<0.020	<0.020	0.020	5825431
F1 (C6-C10)	ug/g	<10	<10	<10	<10	<10	<10	10	5825431
F1 (C6-C10) - BTEX	ug/g	<10	<10	<10	<10	<10	<10	10	5825431
F2-F4 Hydrocarbons									
F2 (C10-C16 Hydrocarbons)	ug/g	<10	<10	<10	<10	<10	<10	10	5822443
F3 (C16-C34 Hydrocarbons)	ug/g	<50	<50	<50	110	<50	<50	50	5822443
F4 (C34-C50 Hydrocarbons)	ug/g	<50	<50	68	81	<50	<50	50	5822443
Reached Baseline at C50	ug/g	Yes	Yes	Yes	Yes	Yes	Yes		5822443
Surrogate Recovery (%)									
o-Terphenyl	%	100	97	102	103	94	101		5822443
4-Bromofluorobenzene	%	88	88	89	88	88	88		5825431
D10-o-Xylene	%	98	115	103	104	99	92		5825431
D4-1,2-Dichloroethane	%	108	102	107	111	104	108		5825431
D8-Toluene	%	103	104	101	102	104	103		5825431

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Pinchin Ltd
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Sampler Initials: MK

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

Maxxam ID		IFH149	IFH150	IFH151	IFH152	IFH153	IFH154		
Sampling Date		2018/11/02	2018/11/02	2018/11/02	2018/11/02	2018/11/02	2018/11/02		
COC Number		102884	102884	102884	102884	102884	102884		
	UNITS	BH-7 SS-1	BH-8 SS-1	BH-9 SS-4	BH-10 SS-1	BH-11 SS-1	DUP-1	RDL	QC Batch
Inorganics									
Moisture	%	25	14	6.8	12	3.3	3.3	0.2	5822472
Calculated Parameters									
1,3-Dichloropropene (cis+trans)	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5822329
Volatile Organics									
Acetone (2-Propanone)	ug/g	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	5825431
Benzene	ug/g	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	5825431
Bromodichloromethane	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5825431
Bromoform	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5825431
Bromomethane	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5825431
Carbon Tetrachloride	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5825431
Chlorobenzene	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5825431
Chloroform	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5825431
Dibromochloromethane	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5825431
1,2-Dichlorobenzene	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5825431
1,3-Dichlorobenzene	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5825431
1,4-Dichlorobenzene	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5825431
Dichlorodifluoromethane (FREON 12)	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5825431
1,1-Dichloroethane	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5825431
1,2-Dichloroethane	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5825431
1,1-Dichloroethylene	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5825431
cis-1,2-Dichloroethylene	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5825431
trans-1,2-Dichloroethylene	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5825431
1,2-Dichloropropane	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5825431
cis-1,3-Dichloropropene	ug/g	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	0.030	5825431
trans-1,3-Dichloropropene	ug/g	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	5825431
Ethylbenzene	ug/g	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	5825431
Ethylene Dibromide	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5825431
Hexane	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5825431
Methylene Chloride(Dichloromethane)	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5825431
Methyl Ethyl Ketone (2-Butanone)	ug/g	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	5825431
Methyl Isobutyl Ketone	ug/g	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	5825431
Methyl t-butyl ether (MTBE)	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5825431
Styrene	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5825431
1,1,1,2-Tetrachloroethane	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5825431
1,1,2,2-Tetrachloroethane	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5825431
Tetrachloroethylene	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5825431

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Pinchin Ltd
Client Project #: 230236.002
Sampler Initials: MK

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

Maxxam ID		IFH149	IFH150	IFH151	IFH152	IFH153	IFH154		
Sampling Date		2018/11/02	2018/11/02	2018/11/02	2018/11/02	2018/11/02	2018/11/02		
COC Number		102884	102884	102884	102884	102884	102884		
	UNITS	BH-7 SS-1	BH-8 SS-1	BH-9 SS-4	BH-10 SS-1	BH-11 SS-1	DUP-1	RDL	QC Batch
Toluene	ug/g	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	5825431
1,1,1-Trichloroethane	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5825431
1,1,2-Trichloroethane	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5825431
Trichloroethylene	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5825431
Trichlorofluoromethane (FREON 11)	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5825431
Vinyl Chloride	ug/g	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	5825431
p+m-Xylene	ug/g	<0.020	0.027	<0.020	<0.020	<0.020	<0.020	0.020	5825431
o-Xylene	ug/g	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	5825431
Total Xylenes	ug/g	<0.020	0.027	<0.020	<0.020	<0.020	<0.020	0.020	5825431
F1 (C6-C10)	ug/g	<10	<10	<10	<10	<10	<10	10	5825431
F1 (C6-C10) - BTEX	ug/g	<10	<10	<10	<10	<10	<10	10	5825431
F2-F4 Hydrocarbons									
F2 (C10-C16 Hydrocarbons)	ug/g	<10	<10	<10	<10	<10	<10	10	5822443
F3 (C16-C34 Hydrocarbons)	ug/g	400	200	<50	75	580	470	50	5822443
F4 (C34-C50 Hydrocarbons)	ug/g	390	190	<50	290	1100	920	50	5822443
Reached Baseline at C50	ug/g	No	No	Yes	No	No	No		5822443
Surrogate Recovery (%)									
o-Terphenyl	%	96	102	101	99	103	98		5822443
4-Bromofluorobenzene	%	88	89	88	87	88	88		5825431
D10-o-Xylene	%	97	93	105	94	93	124		5825431
D4-1,2-Dichloroethane	%	118	108	106	116	106	114		5825431
D8-Toluene	%	100	104	104	99	102	100		5825431

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Report Date: 2018/11/13

Pinchin Ltd
Client Project #: 230236.002
Sampler Initials: MK

RESULTS OF ANALYSES OF SOIL

Maxxam ID		IFH143	IFH145		IFH147			IFH148	IFH149	
Sampling Date		2018/11/01	2018/11/01		2018/11/02			2018/11/02	2018/11/02	
COC Number		102884	102884		102884			102884	102884	
	UNITS	MW-1 SS-2	MW-3 SS-1	QC Batch	MW-5 SS-2	RDL	QC Batch	BH-6 SS-2	BH-7 SS-1	QC Batch
Inorganics										
Available (CaCl2) pH	pH	7.85	7.73	5827206				7.91	7.58	5827206
Miscellaneous Parameters										
Grain Size	%				FINE	N/A	5827884			
Sieve - #200 (<0.075mm)	%				53	1	5827884			
Sieve - #200 (>0.075mm)	%				47	1	5827884			

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

Maxxam ID		IFH151			IFH152	
Sampling Date		2018/11/02			2018/11/02	
COC Number		102884			102884	
	UNITS	BH-9 SS-4	RDL	QC Batch	BH-10 SS-1	QC Batch
Inorganics						
Available (CaCl2) pH	pH	7.92		5827206	7.72	5827206
Miscellaneous Parameters						
Grain Size	%	COARSE	N/A	5827884		
Sieve - #200 (<0.075mm)	%	15	1	5827884		
Sieve - #200 (>0.075mm)	%	85	1	5827884		

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		IFH149	IFH150	IFH152	IFH153	IFH154		
Sampling Date		2018/11/02	2018/11/02	2018/11/02	2018/11/02	2018/11/02		
COC Number		102884	102884	102884	102884	102884		
	UNITS	BH-7 SS-1	BH-8 SS-1	BH-10 SS-1	BH-11 SS-1	DUP-1	RDL	QC Batch
F2-F4 Hydrocarbons								
F4G-sg (Grav. Heavy Hydrocarbons)	ug/g	2500	830	2200	3400	2900	100	5830138

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Report Date: 2018/11/13

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TEST SUMMARY

Maxxam ID: IFH143
Sample ID: MW-1 SS-2
Matrix: Soil

Collected: 2018/11/01
Shipped:
Received: 2018/11/05

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	5822328	N/A	2018/11/09	Liliana Gaburici
Hot Water Extractable Boron	ICP	5827292	2018/11/08	2018/11/08	Suban Kanapathippllai
1,3-Dichloropropene Sum	CALC	5822329	N/A	2018/11/08	Automated Statchk
Hexavalent Chromium in Soil by IC	IC/SPEC	5825517	2018/11/07	2018/11/08	Sally Norouz
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	5822443	2018/11/06	2018/11/09	Mariana Vascan
Strong Acid Leachable Metals by ICPMS	ICP/MS	5829447	2018/11/09	2018/11/09	Viviana Canzonieri
Moisture	BAL	5822472	N/A	2018/11/07	Fatemeh Habibagahi
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	5822450	2018/11/06	2018/11/06	Liliana Gaburici
pH CaCl2 EXTRACT	AT	5827206	2018/11/08	2018/11/08	Gnana Thomas
Volatile Organic Compounds and F1 PHCs	GC/MSFD	5825431	N/A	2018/11/07	Liliana Gaburici

Maxxam ID: IFH144
Sample ID: MW-2 SS-2
Matrix: Soil

Collected: 2018/11/01
Shipped:
Received: 2018/11/05

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	5822328	N/A	2018/11/09	Liliana Gaburici
Hot Water Extractable Boron	ICP	5827292	2018/11/08	2018/11/08	Suban Kanapathippllai
1,3-Dichloropropene Sum	CALC	5822329	N/A	2018/11/08	Automated Statchk
Hexavalent Chromium in Soil by IC	IC/SPEC	5825517	2018/11/07	2018/11/08	Sally Norouz
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	5822443	2018/11/06	2018/11/09	Mariana Vascan
Strong Acid Leachable Metals by ICPMS	ICP/MS	5829447	2018/11/09	2018/11/09	Viviana Canzonieri
Moisture	BAL	5822472	N/A	2018/11/07	Fatemeh Habibagahi
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	5822450	2018/11/06	2018/11/06	Liliana Gaburici
Volatile Organic Compounds and F1 PHCs	GC/MSFD	5825431	N/A	2018/11/07	Liliana Gaburici

Maxxam ID: IFH145
Sample ID: MW-3 SS-1
Matrix: Soil

Collected: 2018/11/01
Shipped:
Received: 2018/11/05

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	5822328	N/A	2018/11/09	Liliana Gaburici
1,3-Dichloropropene Sum	CALC	5822329	N/A	2018/11/08	Automated Statchk
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	5822443	2018/11/06	2018/11/09	Mariana Vascan
Moisture	BAL	5822472	N/A	2018/11/07	Fatemeh Habibagahi
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	5822450	2018/11/06	2018/11/06	Liliana Gaburici
pH CaCl2 EXTRACT	AT	5827206	2018/11/08	2018/11/08	Gnana Thomas
Volatile Organic Compounds and F1 PHCs	GC/MSFD	5825431	N/A	2018/11/07	Liliana Gaburici

Maxxam ID: IFH146
Sample ID: MW-4 SS-2
Matrix: Soil

Collected: 2018/11/02
Shipped:
Received: 2018/11/05

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	5822328	N/A	2018/11/09	Liliana Gaburici
Hot Water Extractable Boron	ICP	5827292	2018/11/08	2018/11/08	Suban Kanapathippllai

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Sampler Initials: MK

TEST SUMMARY

Maxxam ID: IFH146
Sample ID: MW-4 SS-2
Matrix: Soil

Collected: 2018/11/02
Shipped:
Received: 2018/11/05

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
1,3-Dichloropropene Sum	CALC	5822329	N/A	2018/11/08	Automated Statchk
Hexavalent Chromium in Soil by IC	IC/SPEC	5825517	2018/11/07	2018/11/08	Sally Norouz
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	5822443	2018/11/06	2018/11/09	Mariana Vascan
Strong Acid Leachable Metals by ICPMS	ICP/MS	5829447	2018/11/09	2018/11/09	Viviana Canzonieri
Moisture	BAL	5822472	N/A	2018/11/07	Fatemeh Habibagahi
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	5822450	2018/11/06	2018/11/07	Liliana Gaburici
Volatile Organic Compounds and F1 PHCs	GC/MSFD	5825431	N/A	2018/11/07	Liliana Gaburici

Maxxam ID: IFH147
Sample ID: MW-5 SS-2
Matrix: Soil

Collected: 2018/11/02
Shipped:
Received: 2018/11/05

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	5822328	N/A	2018/11/09	Liliana Gaburici
Hot Water Extractable Boron	ICP	5827292	2018/11/08	2018/11/08	Suban Kanapathippllai
1,3-Dichloropropene Sum	CALC	5822329	N/A	2018/11/08	Automated Statchk
Hexavalent Chromium in Soil by IC	IC/SPEC	5825517	2018/11/07	2018/11/08	Sally Norouz
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	5822443	2018/11/06	2018/11/09	Mariana Vascan
Strong Acid Leachable Metals by ICPMS	ICP/MS	5829447	2018/11/09	2018/11/09	Viviana Canzonieri
Moisture	BAL	5822472	N/A	2018/11/07	Fatemeh Habibagahi
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	5822450	2018/11/06	2018/11/06	Liliana Gaburici
Sieve, 75um	SIEV	5827884	N/A	2018/11/09	Min Yang
Volatile Organic Compounds and F1 PHCs	GC/MSFD	5825431	N/A	2018/11/07	Liliana Gaburici

Maxxam ID: IFH148
Sample ID: BH-6 SS-2
Matrix: Soil

Collected: 2018/11/02
Shipped:
Received: 2018/11/05

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	5822328	N/A	2018/11/09	Liliana Gaburici
Hot Water Extractable Boron	ICP	5827292	2018/11/08	2018/11/08	Suban Kanapathippllai
1,3-Dichloropropene Sum	CALC	5822329	N/A	2018/11/08	Automated Statchk
Hexavalent Chromium in Soil by IC	IC/SPEC	5825517	2018/11/07	2018/11/08	Sally Norouz
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	5822443	2018/11/06	2018/11/09	Mariana Vascan
Strong Acid Leachable Metals by ICPMS	ICP/MS	5829447	2018/11/09	2018/11/09	Viviana Canzonieri
Moisture	BAL	5822472	N/A	2018/11/07	Fatemeh Habibagahi
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	5822450	2018/11/06	2018/11/06	Liliana Gaburici
pH CaCl2 EXTRACT	AT	5827206	2018/11/08	2018/11/08	Gnana Thomas
Volatile Organic Compounds and F1 PHCs	GC/MSFD	5825431	N/A	2018/11/07	Liliana Gaburici

Maxxam ID: IFH149
Sample ID: BH-7 SS-1
Matrix: Soil

Collected: 2018/11/02
Shipped:
Received: 2018/11/05

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	5822328	N/A	2018/11/09	Liliana Gaburici

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Report Date: 2018/11/13

Pinchin Ltd
Client Project #: 230236.002
Sampler Initials: MK

TEST SUMMARY

Maxxam ID: IFH149
Sample ID: BH-7 SS-1
Matrix: Soil

Collected: 2018/11/02
Shipped:
Received: 2018/11/05

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Hot Water Extractable Boron	ICP	5827292	2018/11/08	2018/11/08	Suban Kanapathippllai
1,3-Dichloropropene Sum	CALC	5822329	N/A	2018/11/08	Automated Statchk
Hexavalent Chromium in Soil by IC	IC/SPEC	5825517	2018/11/07	2018/11/08	Sally Norouz
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	5822443	2018/11/06	2018/11/09	Mariana Vascan
F4G (CCME Hydrocarbons Gravimetric)	BAL	5830138	2018/11/12	2018/11/13	Mariana Vascan
Strong Acid Leachable Metals by ICPMS	ICP/MS	5829447	2018/11/09	2018/11/09	Viviana Canzonieri
Moisture	BAL	5822472	N/A	2018/11/07	Fatemeh Habibagahi
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	5822450	2018/11/06	2018/11/08	Liliana Gaburici
pH CaCl2 EXTRACT	AT	5827206	2018/11/08	2018/11/08	Gnana Thomas
Volatile Organic Compounds and F1 PHCs	GC/MSFD	5825431	N/A	2018/11/07	Liliana Gaburici

Maxxam ID: IFH150
Sample ID: BH-8 SS-1
Matrix: Soil

Collected: 2018/11/02
Shipped:
Received: 2018/11/05

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	5822328	N/A	2018/11/09	Liliana Gaburici
Hot Water Extractable Boron	ICP	5827292	2018/11/08	2018/11/08	Suban Kanapathippllai
1,3-Dichloropropene Sum	CALC	5822329	N/A	2018/11/08	Automated Statchk
Hexavalent Chromium in Soil by IC	IC/SPEC	5825517	2018/11/07	2018/11/08	Sally Norouz
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	5822443	2018/11/06	2018/11/09	Mariana Vascan
F4G (CCME Hydrocarbons Gravimetric)	BAL	5830138	2018/11/12	2018/11/13	Mariana Vascan
Strong Acid Leachable Metals by ICPMS	ICP/MS	5829447	2018/11/09	2018/11/09	Viviana Canzonieri
Moisture	BAL	5822472	N/A	2018/11/07	Fatemeh Habibagahi
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	5822450	2018/11/06	2018/11/08	Liliana Gaburici
Volatile Organic Compounds and F1 PHCs	GC/MSFD	5825431	N/A	2018/11/07	Liliana Gaburici

Maxxam ID: IFH150 Dup
Sample ID: BH-8 SS-1
Matrix: Soil

Collected: 2018/11/02
Shipped:
Received: 2018/11/05

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	5829447	2018/11/09	2018/11/09	Viviana Canzonieri

Maxxam ID: IFH151
Sample ID: BH-9 SS-4
Matrix: Soil

Collected: 2018/11/02
Shipped:
Received: 2018/11/05

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	5822328	N/A	2018/11/09	Liliana Gaburici
Hot Water Extractable Boron	ICP	5827292	2018/11/08	2018/11/08	Suban Kanapathippllai
1,3-Dichloropropene Sum	CALC	5822329	N/A	2018/11/08	Automated Statchk
Hexavalent Chromium in Soil by IC	IC/SPEC	5825517	2018/11/07	2018/11/08	Sally Norouz
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	5822443	2018/11/06	2018/11/09	Mariana Vascan
Strong Acid Leachable Metals by ICPMS	ICP/MS	5829447	2018/11/09	2018/11/09	Viviana Canzonieri
Moisture	BAL	5822472	N/A	2018/11/07	Fatemeh Habibagahi

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Report Date: 2018/11/13

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TEST SUMMARY

Maxxam ID: IFH151
Sample ID: BH-9 SS-4
Matrix: Soil

Collected: 2018/11/02
Shipped:
Received: 2018/11/05

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	5822450	2018/11/06	2018/11/06	Liliana Gaburici
pH CaCl2 EXTRACT	AT	5827206	2018/11/08	2018/11/08	Gnana Thomas
Sieve, 75um	SIEV	5827884	N/A	2018/11/09	Min Yang
Volatile Organic Compounds and F1 PHCs	GC/MSFD	5825431	N/A	2018/11/07	Liliana Gaburici

Maxxam ID: IFH151 Dup
Sample ID: BH-9 SS-4
Matrix: Soil

Collected: 2018/11/02
Shipped:
Received: 2018/11/05

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Hexavalent Chromium in Soil by IC	IC/SPEC	5825517	2018/11/07	2018/11/08	Sally Norouz

Maxxam ID: IFH152
Sample ID: BH-10 SS-1
Matrix: Soil

Collected: 2018/11/02
Shipped:
Received: 2018/11/05

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	5822328	N/A	2018/11/09	Liliana Gaburici
Hot Water Extractable Boron	ICP	5827292	2018/11/08	2018/11/08	Suban Kanapathippllai
1,3-Dichloropropene Sum	CALC	5822329	N/A	2018/11/08	Automated Statchk
Hexavalent Chromium in Soil by IC	IC/SPEC	5825517	2018/11/07	2018/11/08	Sally Norouz
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	5822443	2018/11/06	2018/11/09	Mariana Vascan
F4G (CCME Hydrocarbons Gravimetric)	BAL	5830138	2018/11/12	2018/11/13	Mariana Vascan
Strong Acid Leachable Metals by ICPMS	ICP/MS	5829447	2018/11/09	2018/11/09	Viviana Canzonieri
Moisture	BAL	5822472	N/A	2018/11/07	Fatemeh Habibagahi
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	5822450	2018/11/06	2018/11/08	Liliana Gaburici
pH CaCl2 EXTRACT	AT	5827206	2018/11/08	2018/11/08	Gnana Thomas
Volatile Organic Compounds and F1 PHCs	GC/MSFD	5825431	N/A	2018/11/07	Liliana Gaburici

Maxxam ID: IFH153
Sample ID: BH-11 SS-1
Matrix: Soil

Collected: 2018/11/02
Shipped:
Received: 2018/11/05

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	5822328	N/A	2018/11/09	Liliana Gaburici
Hot Water Extractable Boron	ICP	5827292	2018/11/08	2018/11/08	Suban Kanapathippllai
1,3-Dichloropropene Sum	CALC	5822329	N/A	2018/11/08	Automated Statchk
Hexavalent Chromium in Soil by IC	IC/SPEC	5825517	2018/11/07	2018/11/08	Sally Norouz
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	5822443	2018/11/06	2018/11/09	Mariana Vascan
F4G (CCME Hydrocarbons Gravimetric)	BAL	5830138	2018/11/12	2018/11/13	Mariana Vascan
Strong Acid Leachable Metals by ICPMS	ICP/MS	5829447	2018/11/09	2018/11/09	Viviana Canzonieri
Moisture	BAL	5822472	N/A	2018/11/07	Fatemeh Habibagahi
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	5822450	2018/11/06	2018/11/08	Liliana Gaburici
Volatile Organic Compounds and F1 PHCs	GC/MSFD	5825431	N/A	2018/11/07	Liliana Gaburici

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Report Date: 2018/11/13

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TEST SUMMARY

Maxxam ID: IFH154
Sample ID: DUP-1
Matrix: Soil

Collected: 2018/11/02
Shipped:
Received: 2018/11/05

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	5822328	N/A	2018/11/09	Liliana Gaburici
Hot Water Extractable Boron	ICP	5827292	2018/11/07	2018/11/08	Suban Kanapathippllai
1,3-Dichloropropene Sum	CALC	5822329	N/A	2018/11/08	Automated Statchk
Hexavalent Chromium in Soil by IC	IC/SPEC	5825517	2018/11/07	2018/11/08	Sally Norouz
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	5822443	2018/11/06	2018/11/09	Mariana Vascan
F4G (CCME Hydrocarbons Gravimetric)	BAL	5830138	2018/11/12	2018/11/13	Mariana Vascan
Strong Acid Leachable Metals by ICPMS	ICP/MS	5829447	2018/11/09	2018/11/09	Viviana Canzonieri
Moisture	BAL	5822472	N/A	2018/11/07	Fatemeh Habibagahi
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	5822450	2018/11/06	2018/11/08	Liliana Gaburici
Volatile Organic Compounds and F1 PHCs	GC/MSFD	5825431	N/A	2018/11/07	Liliana Gaburici

Maxxam ID: IFH154 Dup
Sample ID: DUP-1
Matrix: Soil

Collected: 2018/11/02
Shipped:
Received: 2018/11/05

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	5822450	2018/11/06	2018/11/08	Liliana Gaburici

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GENERAL COMMENTS

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

Package 1	7.7°C

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
5822443	MVA	Matrix Spike	o-Terphenyl	2018/11/09		91	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2018/11/09		78	%	50 - 130
			F3 (C16-C34 Hydrocarbons)	2018/11/09		78	%	50 - 130
			F4 (C34-C50 Hydrocarbons)	2018/11/09		78	%	50 - 130
5822443	MVA	Spiked Blank	o-Terphenyl	2018/11/09		98	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2018/11/09		85	%	80 - 120
			F3 (C16-C34 Hydrocarbons)	2018/11/09		85	%	80 - 120
			F4 (C34-C50 Hydrocarbons)	2018/11/09		85	%	80 - 120
5822443	MVA	Method Blank	o-Terphenyl	2018/11/08		104	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2018/11/08	<10		ug/g	
			F3 (C16-C34 Hydrocarbons)	2018/11/08	<50		ug/g	
			F4 (C34-C50 Hydrocarbons)	2018/11/08	<50		ug/g	
5822443	MVA	RPD	F2 (C10-C16 Hydrocarbons)	2018/11/08	NC		%	50
			F3 (C16-C34 Hydrocarbons)	2018/11/08	NC		%	50
			F4 (C34-C50 Hydrocarbons)	2018/11/08	NC		%	50
5822450	LGA	Matrix Spike [IFH151-01]	D10-Anthracene	2018/11/06		74	%	50 - 130
			D14-Terphenyl (FS)	2018/11/06		65	%	50 - 130
			D8-Acenaphthylene	2018/11/06		69	%	50 - 130
			Acenaphthene	2018/11/06		71	%	50 - 130
			Acenaphthylene	2018/11/06		67	%	50 - 130
			Anthracene	2018/11/06		62	%	50 - 130
			Benzo(a)anthracene	2018/11/06		65	%	50 - 130
			Benzo(a)pyrene	2018/11/06		70	%	50 - 130
			Benzo(b/j)fluoranthene	2018/11/06		69	%	50 - 130
			Benzo(g,h,i)perylene	2018/11/06		88	%	50 - 130
			Benzo(k)fluoranthene	2018/11/06		62	%	50 - 130
			Chrysene	2018/11/06		77	%	50 - 130
			Dibenz(a,h)anthracene	2018/11/06		112	%	50 - 130
			Fluoranthene	2018/11/06		65	%	50 - 130
			Fluorene	2018/11/06		71	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2018/11/06		70	%	50 - 130
			1-Methylnaphthalene	2018/11/06		72	%	50 - 130
			2-Methylnaphthalene	2018/11/06		77	%	50 - 130
			Naphthalene	2018/11/06		63	%	50 - 130
			Phenanthrene	2018/11/06		62	%	50 - 130
			Pyrene	2018/11/06		65	%	50 - 130
5822450	LGA	Spiked Blank	D10-Anthracene	2018/11/06		79	%	50 - 130
			D14-Terphenyl (FS)	2018/11/06		75	%	50 - 130
			D8-Acenaphthylene	2018/11/06		74	%	50 - 130
			Acenaphthene	2018/11/06		82	%	50 - 130
			Acenaphthylene	2018/11/06		73	%	50 - 130
			Anthracene	2018/11/06		68	%	50 - 130
			Benzo(a)anthracene	2018/11/06		69	%	50 - 130
			Benzo(a)pyrene	2018/11/06		95	%	50 - 130
			Benzo(b/j)fluoranthene	2018/11/06		75	%	50 - 130
			Benzo(g,h,i)perylene	2018/11/06		105	%	50 - 130
			Benzo(k)fluoranthene	2018/11/06		70	%	50 - 130
			Chrysene	2018/11/06		82	%	50 - 130
			Dibenz(a,h)anthracene	2018/11/06		95	%	50 - 130
			Fluoranthene	2018/11/06		70	%	50 - 130
			Fluorene	2018/11/06		75	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2018/11/06		78	%	50 - 130
			1-Methylnaphthalene	2018/11/06		77	%	50 - 130
			2-Methylnaphthalene	2018/11/06		83	%	50 - 130

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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Naphthalene	2018/11/06		67	%	50 - 130
			Phenanthrene	2018/11/06		66	%	50 - 130
			Pyrene	2018/11/06		75	%	50 - 130
5822450	LGA	Method Blank	D10-Anthracene	2018/11/06		95	%	50 - 130
			D14-Terphenyl (FS)	2018/11/06		84	%	50 - 130
			D8-Acenaphthylene	2018/11/06		79	%	50 - 130
			Acenaphthene	2018/11/06	<0.0050		ug/g	
			Acenaphthylene	2018/11/06	<0.0050		ug/g	
			Anthracene	2018/11/06	<0.0050		ug/g	
			Benzo(a)anthracene	2018/11/06	<0.0050		ug/g	
			Benzo(a)pyrene	2018/11/06	<0.0050		ug/g	
			Benzo(b/j)fluoranthene	2018/11/06	<0.0050		ug/g	
			Benzo(g,h,i)perylene	2018/11/06	<0.0050		ug/g	
			Benzo(k)fluoranthene	2018/11/06	<0.0050		ug/g	
			Chrysene	2018/11/06	<0.0050		ug/g	
			Dibenz(a,h)anthracene	2018/11/06	<0.0050		ug/g	
			Fluoranthene	2018/11/06	<0.0050		ug/g	
			Fluorene	2018/11/06	<0.0050		ug/g	
			Indeno(1,2,3-cd)pyrene	2018/11/06	<0.0050		ug/g	
			1-Methylnaphthalene	2018/11/06	<0.0050		ug/g	
			2-Methylnaphthalene	2018/11/06	<0.0050		ug/g	
			Naphthalene	2018/11/06	<0.0050		ug/g	
			Phenanthrene	2018/11/06	<0.0050		ug/g	
			Pyrene	2018/11/06	<0.0050		ug/g	
5822450	LGA	RPD [IFH154-01]	Acenaphthene	2018/11/08	NC		%	40
			Acenaphthylene	2018/11/08	NC		%	40
			Anthracene	2018/11/08	24		%	40
			Benzo(a)anthracene	2018/11/08	7.2		%	40
			Benzo(a)pyrene	2018/11/08	2.7		%	40
			Benzo(b/j)fluoranthene	2018/11/08	2.6		%	40
			Benzo(g,h,i)perylene	2018/11/08	0.67		%	40
			Benzo(k)fluoranthene	2018/11/08	5.1		%	40
			Chrysene	2018/11/08	0.72		%	40
			Dibenz(a,h)anthracene	2018/11/08	2.6		%	40
			Fluoranthene	2018/11/08	3.8		%	40
			Fluorene	2018/11/08	12		%	40
			Indeno(1,2,3-cd)pyrene	2018/11/08	5.0		%	40
			1-Methylnaphthalene	2018/11/08	NC		%	40
			2-Methylnaphthalene	2018/11/08	NC		%	40
			Naphthalene	2018/11/08	23		%	40
			Phenanthrene	2018/11/08	1.1		%	40
			Pyrene	2018/11/08	7.6		%	40
5822472	FHB	RPD	Moisture	2018/11/07	6.3		%	50
5825431	LGA	Spiked Blank	4-Bromofluorobenzene	2018/11/07		94	%	60 - 140
			D10-o-Xylene	2018/11/07		123	%	60 - 130
			D4-1,2-Dichloroethane	2018/11/07		102	%	60 - 140
			D8-Toluene	2018/11/07		109	%	60 - 140
			Acetone (2-Propanone)	2018/11/07		82	%	60 - 140
			Benzene	2018/11/07		104	%	60 - 130
			Bromodichloromethane	2018/11/07		99	%	60 - 130
			Bromoform	2018/11/07		82	%	60 - 130
			Bromomethane	2018/11/07		89	%	60 - 140
			Carbon Tetrachloride	2018/11/07		103	%	60 - 130
			Chlorobenzene	2018/11/07		99	%	60 - 130

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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Chloroform	2018/11/07		94	%	60 - 130
			Dibromochloromethane	2018/11/07		96	%	60 - 130
			1,2-Dichlorobenzene	2018/11/07		101	%	60 - 130
			1,3-Dichlorobenzene	2018/11/07		107	%	60 - 130
			1,4-Dichlorobenzene	2018/11/07		107	%	60 - 130
			Dichlorodifluoromethane (FREON 12)	2018/11/07		104	%	60 - 140
			1,1-Dichloroethane	2018/11/07		100	%	60 - 130
			1,2-Dichloroethane	2018/11/07		93	%	60 - 130
			1,1-Dichloroethylene	2018/11/07		110	%	60 - 130
			cis-1,2-Dichloroethylene	2018/11/07		99	%	60 - 130
			trans-1,2-Dichloroethylene	2018/11/07		99	%	60 - 130
			1,2-Dichloropropane	2018/11/07		92	%	60 - 130
			cis-1,3-Dichloropropene	2018/11/07		85	%	60 - 130
			trans-1,3-Dichloropropene	2018/11/07		83	%	60 - 130
			Ethylbenzene	2018/11/07		108	%	60 - 130
			Ethylene Dibromide	2018/11/07		89	%	60 - 130
			Hexane	2018/11/07		110	%	60 - 130
			Methylene Chloride(Dichloromethane)	2018/11/07		91	%	60 - 130
			Methyl Ethyl Ketone (2-Butanone)	2018/11/07		83	%	60 - 140
			Methyl Isobutyl Ketone	2018/11/07		78	%	60 - 130
			Methyl t-butyl ether (MTBE)	2018/11/07		94	%	60 - 130
			Styrene	2018/11/07		106	%	60 - 130
			1,1,1,2-Tetrachloroethane	2018/11/07		100	%	60 - 130
			1,1,2,2-Tetrachloroethane	2018/11/07		99	%	60 - 130
			Tetrachloroethylene	2018/11/07		102	%	60 - 130
			Toluene	2018/11/07		108	%	60 - 130
			1,1,1-Trichloroethane	2018/11/07		102	%	60 - 130
			1,1,2-Trichloroethane	2018/11/07		100	%	60 - 130
			Trichloroethylene	2018/11/07		96	%	60 - 130
			Trichlorofluoromethane (FREON 11)	2018/11/07		111	%	60 - 130
			Vinyl Chloride	2018/11/07		105	%	60 - 130
			p+m-Xylene	2018/11/07		109	%	60 - 130
			o-Xylene	2018/11/07		108	%	60 - 130
			F1 (C6-C10)	2018/11/07		102	%	80 - 120
5825431	LGA	RPD	Acetone (2-Propanone)	2018/11/07	2.6		%	50
			Benzene	2018/11/07	3.4		%	50
			Bromodichloromethane	2018/11/07	3.0		%	50
			Bromoform	2018/11/07	2.2		%	50
			Bromomethane	2018/11/07	3.1		%	50
			Carbon Tetrachloride	2018/11/07	1.1		%	50
			Chlorobenzene	2018/11/07	2.5		%	50
			Chloroform	2018/11/07	0.14		%	50
			Dibromochloromethane	2018/11/07	5.7		%	50
			1,2-Dichlorobenzene	2018/11/07	1.3		%	50
			1,3-Dichlorobenzene	2018/11/07	2.4		%	50
			1,4-Dichlorobenzene	2018/11/07	2.8		%	50
			Dichlorodifluoromethane (FREON 12)	2018/11/07	2.6		%	50
			1,1-Dichloroethane	2018/11/07	3.9		%	50
			1,2-Dichloroethane	2018/11/07	4.2		%	50
			1,1-Dichloroethylene	2018/11/07	3.7		%	50
			cis-1,2-Dichloroethylene	2018/11/07	2.8		%	50
			trans-1,2-Dichloroethylene	2018/11/07	3.4		%	50
			1,2-Dichloropropane	2018/11/07	4.6		%	50
			cis-1,3-Dichloropropene	2018/11/07	4.3		%	50

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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			trans-1,3-Dichloropropene	2018/11/07	2.7		%	50
			Ethylbenzene	2018/11/07	1.1		%	50
			Ethylene Dibromide	2018/11/07	3.9		%	50
			Hexane	2018/11/07	7.1		%	50
			Methylene Chloride(Dichloromethane)	2018/11/07	3.7		%	50
			Methyl Ethyl Ketone (2-Butanone)	2018/11/07	1.5		%	50
			Methyl Isobutyl Ketone	2018/11/07	5.0		%	50
			Methyl t-butyl ether (MTBE)	2018/11/07	3.8		%	50
			Styrene	2018/11/07	3.3		%	50
			1,1,1,2-Tetrachloroethane	2018/11/07	1.1		%	50
			1,1,2,2-Tetrachloroethane	2018/11/07	4.0		%	50
			Tetrachloroethylene	2018/11/07	1.3		%	50
			Toluene	2018/11/07	2.2		%	50
			1,1,1-Trichloroethane	2018/11/07	3.5		%	50
			1,1,2-Trichloroethane	2018/11/07	1.9		%	50
			Trichloroethylene	2018/11/07	4.2		%	50
			Trichlorofluoromethane (FREON 11)	2018/11/07	2.2		%	50
			Vinyl Chloride	2018/11/07	3.3		%	50
			p+m-Xylene	2018/11/07	1.1		%	50
			o-Xylene	2018/11/07	3.2		%	50
			F1 (C6-C10)	2018/11/07	4.7		%	30
5825431	LGA	Method Blank	4-Bromofluorobenzene	2018/11/07		87	%	60 - 140
			D10-o-Xylene	2018/11/07		117	%	60 - 130
			D4-1,2-Dichloroethane	2018/11/07		100	%	60 - 140
			D8-Toluene	2018/11/07		102	%	60 - 140
			Acetone (2-Propanone)	2018/11/07	<0.50		ug/g	
			Benzene	2018/11/07	<0.020		ug/g	
			Bromodichloromethane	2018/11/07	<0.050		ug/g	
			Bromoform	2018/11/07	<0.050		ug/g	
			Bromomethane	2018/11/07	<0.050		ug/g	
			Carbon Tetrachloride	2018/11/07	<0.050		ug/g	
			Chlorobenzene	2018/11/07	<0.050		ug/g	
			Chloroform	2018/11/07	<0.050		ug/g	
			Dibromochloromethane	2018/11/07	<0.050		ug/g	
			1,2-Dichlorobenzene	2018/11/07	<0.050		ug/g	
			1,3-Dichlorobenzene	2018/11/07	<0.050		ug/g	
			1,4-Dichlorobenzene	2018/11/07	<0.050		ug/g	
			Dichlorodifluoromethane (FREON 12)	2018/11/07	<0.050		ug/g	
			1,1-Dichloroethane	2018/11/07	<0.050		ug/g	
			1,2-Dichloroethane	2018/11/07	<0.050		ug/g	
			1,1-Dichloroethylene	2018/11/07	<0.050		ug/g	
			cis-1,2-Dichloroethylene	2018/11/07	<0.050		ug/g	
			trans-1,2-Dichloroethylene	2018/11/07	<0.050		ug/g	
			1,2-Dichloropropane	2018/11/07	<0.050		ug/g	
			cis-1,3-Dichloropropene	2018/11/07	<0.030		ug/g	
			trans-1,3-Dichloropropene	2018/11/07	<0.040		ug/g	
			Ethylbenzene	2018/11/07	<0.020		ug/g	
			Ethylene Dibromide	2018/11/07	<0.050		ug/g	
			Hexane	2018/11/07	<0.050		ug/g	
			Methylene Chloride(Dichloromethane)	2018/11/07	<0.050		ug/g	
			Methyl Ethyl Ketone (2-Butanone)	2018/11/07	<0.50		ug/g	
			Methyl Isobutyl Ketone	2018/11/07	<0.50		ug/g	
			Methyl t-butyl ether (MTBE)	2018/11/07	<0.050		ug/g	
			Styrene	2018/11/07	<0.050		ug/g	

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			1,1,1,2-Tetrachloroethane	2018/11/07	<0.050		ug/g	
			1,1,2,2-Tetrachloroethane	2018/11/07	<0.050		ug/g	
			Tetrachloroethylene	2018/11/07	<0.050		ug/g	
			Toluene	2018/11/07	<0.020		ug/g	
			1,1,1-Trichloroethane	2018/11/07	<0.050		ug/g	
			1,1,2-Trichloroethane	2018/11/07	<0.050		ug/g	
			Trichloroethylene	2018/11/07	<0.050		ug/g	
			Trichlorofluoromethane (FREON 11)	2018/11/07	<0.050		ug/g	
			Vinyl Chloride	2018/11/07	<0.020		ug/g	
			p+m-Xylene	2018/11/07	<0.020		ug/g	
			o-Xylene	2018/11/07	<0.020		ug/g	
			Total Xylenes	2018/11/07	<0.020		ug/g	
			F1 (C6-C10)	2018/11/07	<10		ug/g	
			F1 (C6-C10) - BTEX	2018/11/07	<10		ug/g	
5825517	SAC	Matrix Spike [IFH151-03]	Chromium (VI)	2018/11/08		88	%	70 - 130
5825517	SAC	Spiked Blank	Chromium (VI)	2018/11/08		98	%	80 - 120
5825517	SAC	Method Blank	Chromium (VI)	2018/11/08	<0.2		ug/g	
5825517	SAC	RPD [IFH151-03]	Chromium (VI)	2018/11/08	NC		%	35
5827206	GTO	Spiked Blank	Available (CaCl2) pH	2018/11/08		100	%	97 - 103
5827206	GTO	RPD	Available (CaCl2) pH	2018/11/08	2.7		%	N/A
5827292	SUK	Matrix Spike	Hot Water Ext. Boron (B)	2018/11/08		108	%	75 - 125
5827292	SUK	Spiked Blank	Hot Water Ext. Boron (B)	2018/11/08		106	%	75 - 125
5827292	SUK	Method Blank	Hot Water Ext. Boron (B)	2018/11/08	<0.050		ug/g	
5827292	SUK	RPD	Hot Water Ext. Boron (B)	2018/11/08	14		%	40
5827884	GYA	QC Standard	Sieve - #200 (<0.075mm)	2018/11/09		56	%	53 - 58
			Sieve - #200 (>0.075mm)	2018/11/09		44	%	42 - 47
5827884	GYA	RPD	Sieve - #200 (<0.075mm)	2018/11/09	0.091		%	20
			Sieve - #200 (>0.075mm)	2018/11/09	7.7		%	20
5829447	VIV	Matrix Spike [IFH150-03]	Acid Extractable Antimony (Sb)	2018/11/09		94	%	75 - 125
			Acid Extractable Arsenic (As)	2018/11/09		104	%	75 - 125
			Acid Extractable Barium (Ba)	2018/11/09		NC	%	75 - 125
			Acid Extractable Beryllium (Be)	2018/11/09		92	%	75 - 125
			Acid Extractable Boron (B)	2018/11/09		92	%	75 - 125
			Acid Extractable Cadmium (Cd)	2018/11/09		92	%	75 - 125
			Acid Extractable Chromium (Cr)	2018/11/09		NC	%	75 - 125
			Acid Extractable Cobalt (Co)	2018/11/09		98	%	75 - 125
			Acid Extractable Copper (Cu)	2018/11/09		NC	%	75 - 125
			Acid Extractable Lead (Pb)	2018/11/09		NC	%	75 - 125
			Acid Extractable Molybdenum (Mo)	2018/11/09		95	%	75 - 125
			Acid Extractable Nickel (Ni)	2018/11/09		100	%	75 - 125
			Acid Extractable Selenium (Se)	2018/11/09		92	%	75 - 125
			Acid Extractable Silver (Ag)	2018/11/09		94	%	75 - 125
			Acid Extractable Thallium (Tl)	2018/11/09		91	%	75 - 125
			Acid Extractable Uranium (U)	2018/11/09		93	%	75 - 125
			Acid Extractable Vanadium (V)	2018/11/09		NC	%	75 - 125
			Acid Extractable Zinc (Zn)	2018/11/09		NC	%	75 - 125
			Acid Extractable Mercury (Hg)	2018/11/09		86	%	75 - 125
5829447	VIV	Spiked Blank	Acid Extractable Antimony (Sb)	2018/11/09		101	%	80 - 120
			Acid Extractable Arsenic (As)	2018/11/09		103	%	80 - 120
			Acid Extractable Barium (Ba)	2018/11/09		97	%	80 - 120
			Acid Extractable Beryllium (Be)	2018/11/09		97	%	80 - 120
			Acid Extractable Boron (B)	2018/11/09		99	%	80 - 120
			Acid Extractable Cadmium (Cd)	2018/11/09		99	%	80 - 120
			Acid Extractable Chromium (Cr)	2018/11/09		96	%	80 - 120

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			Acid Extractable Cobalt (Co)	2018/11/09		98	%	80 - 120
			Acid Extractable Copper (Cu)	2018/11/09		98	%	80 - 120
			Acid Extractable Lead (Pb)	2018/11/09		98	%	80 - 120
			Acid Extractable Molybdenum (Mo)	2018/11/09		101	%	80 - 120
			Acid Extractable Nickel (Ni)	2018/11/09		98	%	80 - 120
			Acid Extractable Selenium (Se)	2018/11/09		101	%	80 - 120
			Acid Extractable Silver (Ag)	2018/11/09		97	%	80 - 120
			Acid Extractable Thallium (Tl)	2018/11/09		98	%	80 - 120
			Acid Extractable Uranium (U)	2018/11/09		97	%	80 - 120
			Acid Extractable Vanadium (V)	2018/11/09		98	%	80 - 120
			Acid Extractable Zinc (Zn)	2018/11/09		100	%	80 - 120
			Acid Extractable Mercury (Hg)	2018/11/09		105	%	80 - 120
5829447	VIV	Method Blank	Acid Extractable Antimony (Sb)	2018/11/09	<0.20		ug/g	
			Acid Extractable Arsenic (As)	2018/11/09	<1.0		ug/g	
			Acid Extractable Barium (Ba)	2018/11/09	<0.50		ug/g	
			Acid Extractable Beryllium (Be)	2018/11/09	<0.20		ug/g	
			Acid Extractable Boron (B)	2018/11/09	<5.0		ug/g	
			Acid Extractable Cadmium (Cd)	2018/11/09	<0.10		ug/g	
			Acid Extractable Chromium (Cr)	2018/11/09	<1.0		ug/g	
			Acid Extractable Cobalt (Co)	2018/11/09	<0.10		ug/g	
			Acid Extractable Copper (Cu)	2018/11/09	<0.50		ug/g	
			Acid Extractable Lead (Pb)	2018/11/09	<1.0		ug/g	
			Acid Extractable Molybdenum (Mo)	2018/11/09	<0.50		ug/g	
			Acid Extractable Nickel (Ni)	2018/11/09	<0.50		ug/g	
			Acid Extractable Selenium (Se)	2018/11/09	<0.50		ug/g	
			Acid Extractable Silver (Ag)	2018/11/09	<0.20		ug/g	
			Acid Extractable Thallium (Tl)	2018/11/09	<0.050		ug/g	
			Acid Extractable Uranium (U)	2018/11/09	<0.050		ug/g	
			Acid Extractable Vanadium (V)	2018/11/09	<5.0		ug/g	
			Acid Extractable Zinc (Zn)	2018/11/09	<5.0		ug/g	
			Acid Extractable Mercury (Hg)	2018/11/09	<0.050		ug/g	
5829447	VIV	RPD [IFH150-03]	Acid Extractable Antimony (Sb)	2018/11/09	15		%	30
			Acid Extractable Arsenic (As)	2018/11/09	3.5		%	30
			Acid Extractable Barium (Ba)	2018/11/09	3.6		%	30
			Acid Extractable Beryllium (Be)	2018/11/09	0.86		%	30
			Acid Extractable Boron (B)	2018/11/09	1.9		%	30
			Acid Extractable Cadmium (Cd)	2018/11/09	5.8		%	30
			Acid Extractable Chromium (Cr)	2018/11/09	3.8		%	30
			Acid Extractable Cobalt (Co)	2018/11/09	1.7		%	30
			Acid Extractable Copper (Cu)	2018/11/09	7.5		%	30
			Acid Extractable Lead (Pb)	2018/11/09	13		%	30
			Acid Extractable Molybdenum (Mo)	2018/11/09	4.2		%	30
			Acid Extractable Nickel (Ni)	2018/11/09	0.044		%	30
			Acid Extractable Selenium (Se)	2018/11/09	0.59		%	30
			Acid Extractable Silver (Ag)	2018/11/09	15		%	30
			Acid Extractable Thallium (Tl)	2018/11/09	4.0		%	30
			Acid Extractable Uranium (U)	2018/11/09	3.6		%	30
			Acid Extractable Vanadium (V)	2018/11/09	1.8		%	30
			Acid Extractable Zinc (Zn)	2018/11/09	0.23		%	30
			Acid Extractable Mercury (Hg)	2018/11/09	1.9		%	30
5830138	MVA	Spiked Blank	F4G-sg (Grav. Heavy Hydrocarbons)	2018/11/13		106	%	65 - 135
5830138	MVA	RPD	F4G-sg (Grav. Heavy Hydrocarbons)	2018/11/13	0.95		%	50

Maxxam Analytics International Corporation o/a Maxxam Analytics 32 Colonnade Rd, Unit #1000, Nepean, ON K2E 7J6 Phone: 613 274-0573 Fax: 613 274-0574 Website: www.maxxam.ca

Maxxam Job #: B8T5024
Report Date: 2018/11/13

Pinchin Ltd
Client Project #: 230236.002
Sampler Initials: MK

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
5830138	MVA	Method Blank	F4G-sg (Grav. Heavy Hydrocarbons)	2018/11/13	<100		ug/g	

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.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

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).

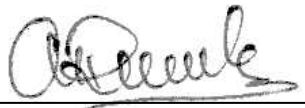
Maxxam Analytics International Corporation o/a Maxxam Analytics 32 Colonnade Rd, Unit #1000, Nepean, ON K2E 7J6 Phone: 613 274-0573 Fax: 613 274-0574 Website: www.maxxam.ca

Maxxam Job #: B8T5024
Report Date: 2018/11/13

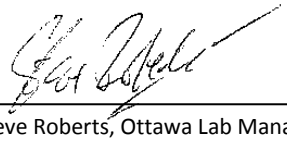
Pinchin Ltd
Client Project #: 230236.002
Sampler Initials: MK

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



Steve Roberts, Ottawa Lab Manager

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 Analytics International Corporation o/a Maxxam Analytics 32 Colonnade Rd, Unit #1000, Nepean, ON K2E 7J6 Phone: 613 274-0573 Fax: 613 274-0574 Website: www.maxxam.ca

Maxxam
A Bureau Veritas Group Company

6740 Campobello Road, Mississauga, Ontario L5N 2L8
Phone: 905-817-5700 Fax: 905-817-5779 Toll Free: 800-563-6266
CAM FCD-01191/3

CHAIN OF CUSTODY RECORD 102884 Page 1 of 1

Invoice Information	Report Information (if differs from invoice)	Project Information (where applicable)	Turnaround Time (TAT) Required
Company Name: Pinchin Ltd	Company Name:	Quotation #:	[X] Regular TAT (5-7 days) Most analyses
Contact Name: Mike Kosiw, Matt Ryan, Scott Mather	Contact Name:	P.O. #/ AFE#:	PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS
Address: 1 Hiney Rd, Kanata	Address: Same	Project #: 230236-002	Rush TAT (Surcharges will be applied)
Phone: Fax:	Phone: Fax:	Site Location:	[ ] 1 Day [ ] 2 Days [ ] 3-4 Days
Email:	Email:	Site #:	Date Required:
		Sampled By:	Rush Confirmation #:

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

Regulation 153: [ ] Table 1 [X] Res/Park [ ] Med/ Fine [ ] Table 2 [ ] Ind/Comm [X] Coarse [X] Table 3 [ ] Agri/ Other [X] Table 7
FOR RSC (PLEASE CIRCLE) Y (N)

Other Regulations: [ ] CCME [ ] Sanitary Sewer Bylaw [ ] MISA [ ] Storm Sewer Bylaw [ ] PWQO Region [ ] Other (Specify) [ ] REG 558 (MIN. 3 DAY TAT REQUIRED)

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

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

Analysis Requested

	SAMPLE IDENTIFICATION	DATE SAMPLED (YYYY/MM/DD)	TIME SAMPLED (HH:MM)	MATRIX	# OF CONTAINERS SUBMITTED	FIELD FILTERED (CIRCLE) Metals / Hg / CrVI	BTEX/ PHC F1	PHCs F2 - F4	VOCs	REG 153 METALS & INORGANICS	REG 153 ICPMS METALS	REG 153 METALS (Hg, Cr VI, ICPMS Metals, HWS - B)	PAHs	pH	Texture (75um)	HOLD- DO NOT ANALYZE
1	MW-1 SS-2	Nov 1 2018	AM	SOIL	2		X	X	X			X	X	X		
2	MW-2 SS-2		PM		2		X	X	X			X	X			
3	MW-3 SS-1		PM		2		X	X	X				X	X		
4	MW-4 SS-2	Nov 2 2018	AM		2		X	X	X			X	X			
5	MW-5 SS-2				2		X	X	X			X	X		X	
6	BH-6 SS-2				2		X	X	X			X	X	X		
7	BH-7 SS-1		PM		2		X	X	X			X	X	X		
8	BH-8 SS-1				2		X	X	X			X	X			
9	BH-9 SS-4				2		X	X	X			X	X	X		
10	BH-10 SS-1				2		X	X	X			X	X			

LABORATORY USE ONLY

CUSTODY SEAL Present	CUSTODY SEAL Intact	COOLER TEMPERATURES
X	X	7, 8, 8

COOLING MEDIA PRESENT: (Y) / N

COMMENTS

05-Nov-18 15:30
Alisha Williamson
B8T5024
KIY OTT 001

RECEIVED IN OTTAWA

on ice

RELINQUISHED BY: (Signature/Print)	DATE: (YYYY/MM/DD)	TIME: (HH:MM)	RECEIVED BY: (Signature/Print)	DATE: (YYYY/MM/DD)	TIME: (HH:MM)	MAXXAM JOB #
	Nov 5, 2018	10:20	Serge Leger	2018/11/05	15:30	
Mike Kosiw						

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. Sample container, preservation, hold time and packages information can be viewed at http://maxxam.ca/wp-content/uploads/Ontario-COC.pdf.

COC-1004 (08/17) White: Maxxam - Yellow: Client

Maxxam
A Bureau Veritas Group Company

6740 Campobello Road, Mississauga, Ontario L5N 2L8
Phone: 905-817-5700 Fax: 905-817-5779 Toll Free: 800-563-6266
CAM FCD-01191/3

CHAIN OF CUSTODY RECORD 102885 Page 1 of 1

Invoice Information	Report Information (if differs from invoice)	Project Information (where applicable)	Turnaround Time (TAT) Required
Company Name: Pinchin Ltd	Company Name:	Quotation #:	☒ Regular TAT (5-7 days) Most analyses
Contact Name: Mike Kosiw	Contact Name:	P.O. #/ AFE#:	PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS
Address: Matt + Ryan	Address: Same	Project #: 230236.002	Rush TAT (Surcharges will be applied)
		Site Location:	☐ 1 Day ☐ 2 Days ☐ 3-4 Days
Phone: (Hikes Fax:	Phone: Fax:	Site #:	
Email:	Email:	Sampled By:	Date Required:

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

Rush Confirmation #:

Regulation 153
☐ Table 1 ☐ Res/Park ☐ Med/ Fine
☐ Table 2 ☐ Ind/Comm ☐ Coarse
☐ Table 3 ☐ Agri/ Other
☒ Table 7
FOR RSC (PLEASE CIRCLE) Y / N

Other Regulations
☐ CCME ☐ Sanitary Sewer Bylaw
☐ MISA ☐ Storm Sewer Bylaw
☐ PWQO Region
☐ Other (Specify)
☐ REG 558 (MIN. 3 DAY TAT REQUIRED)

Include Criteria on Certificate of Analysis: Y / N

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

Analysis Requested

	SAMPLE IDENTIFICATION	DATE SAMPLED (YYYY/MM/DD)	TIME SAMPLED (HH:MM)	MATRIX	# OF CONTAINERS SUBMITTED	FIELD FILTERED (CIRCLE): Metals / Hg / CrVI	BTEX/ PHC F1	PHCs F2 - F4	VOCs	REG 153 METALS & INORGANICS	REG 153 ICPMS METALS	REG 153 METALS (Hg, Cr VI, ICPMS Metals, HWS - B)	PAHs	HOLD- DO NOT ANALYZE
1	BH-11 SS-1	NOVR	PM	Soil	2		X	X	X			X	X	
2	Dup-1	1	1	1	2		X	X	X			X	X	
3														
4														
5														
6														
7														
8														
9														
10														

LABORATORY USE ONLY

CUSTODY SEAL (Y) / N		COOLER TEMPERATURES
Present	Intact	
X	X	7, 8, 8

COOLING MEDIA PRESENT: (Y) / N

COMMENTS

05-Nov-18 15:30
Alisha Williamson
B8T5024
KIV OTT 001

RECEIVED IN OTTAWA

on ice

RELINQUISHED BY: (Signature/Print)	DATE: (YYYY/MM/DD)	TIME: (HH:MM)	RECEIVED BY: (Signature/Print)	DATE: (YYYY/MM/DD)	TIME: (HH:MM)	MAXXAM JOB #
	Nov 5, 2018	10:20	Serge Leger	2018/11/05	15:30	
Mike Kosiw						

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. Sample container, preservation, hold time and packages information can be viewed at http://maxxam.ca/wp-content/uploads/Ontario-COC.pdf.

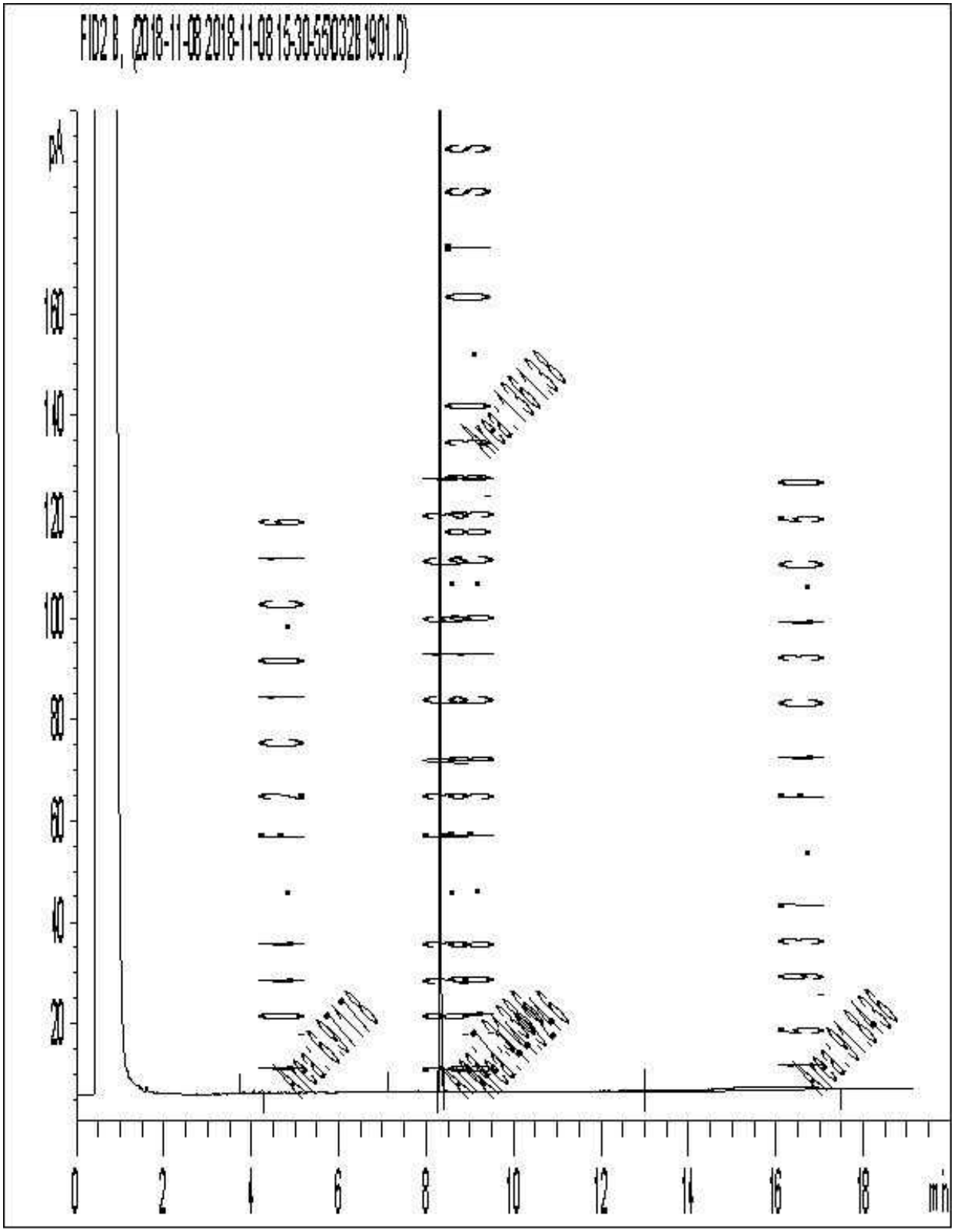
COC-1004 (03/17)

White: Maxxam ~ Yellow: Client

Maxxam Job #: B8T5024
Report Date: 2018/11/13
Maxxam Sample: IFH143

Pinchin Ltd
Client Project #: 230236.002
Client ID: MW-1 SS-2

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram

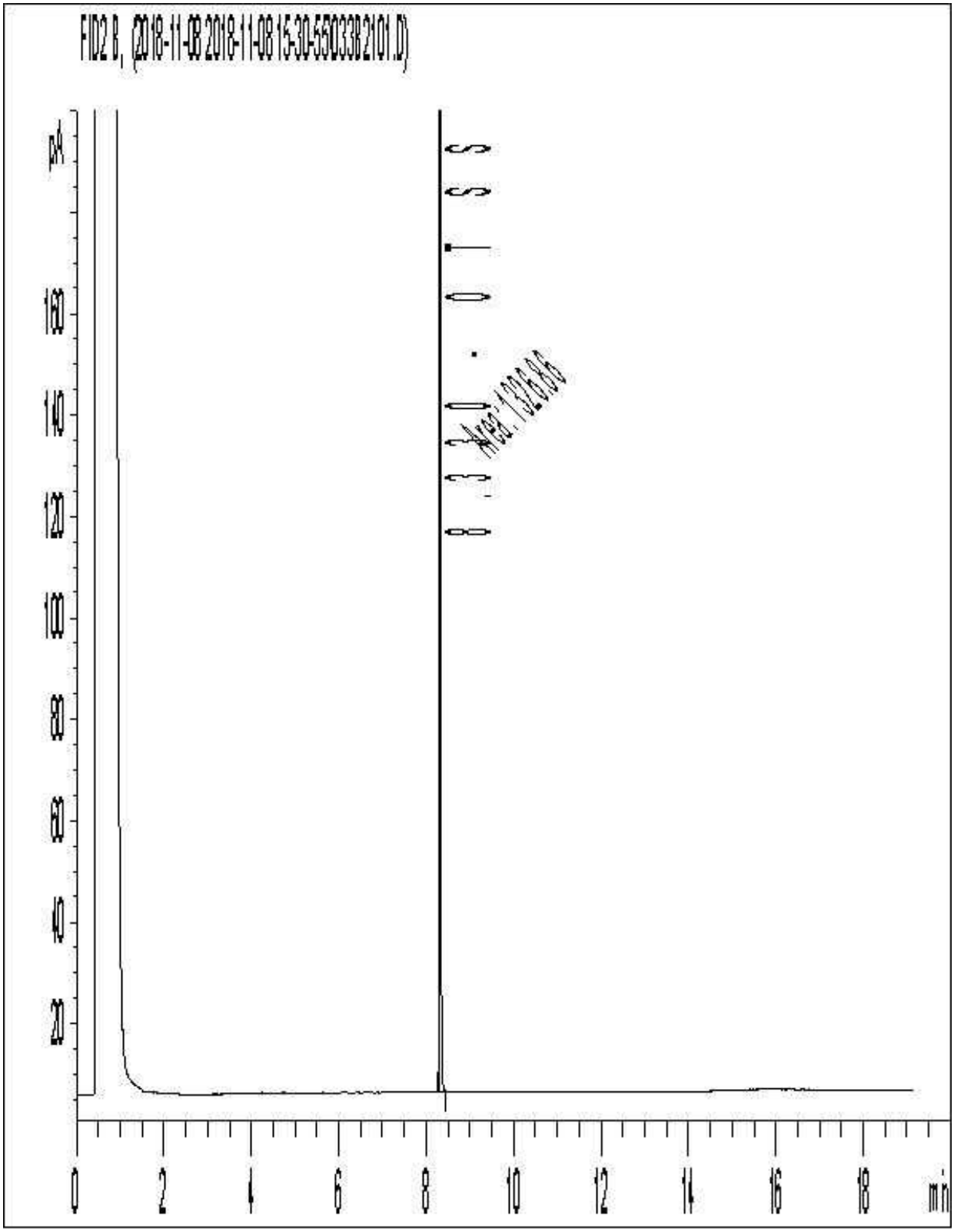


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Maxxam Job #: B8T5024
Report Date: 2018/11/13
Maxxam Sample: IFH144

Pinchin Ltd
Client Project #: 230236.002
Client ID: MW-2 SS-2

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram

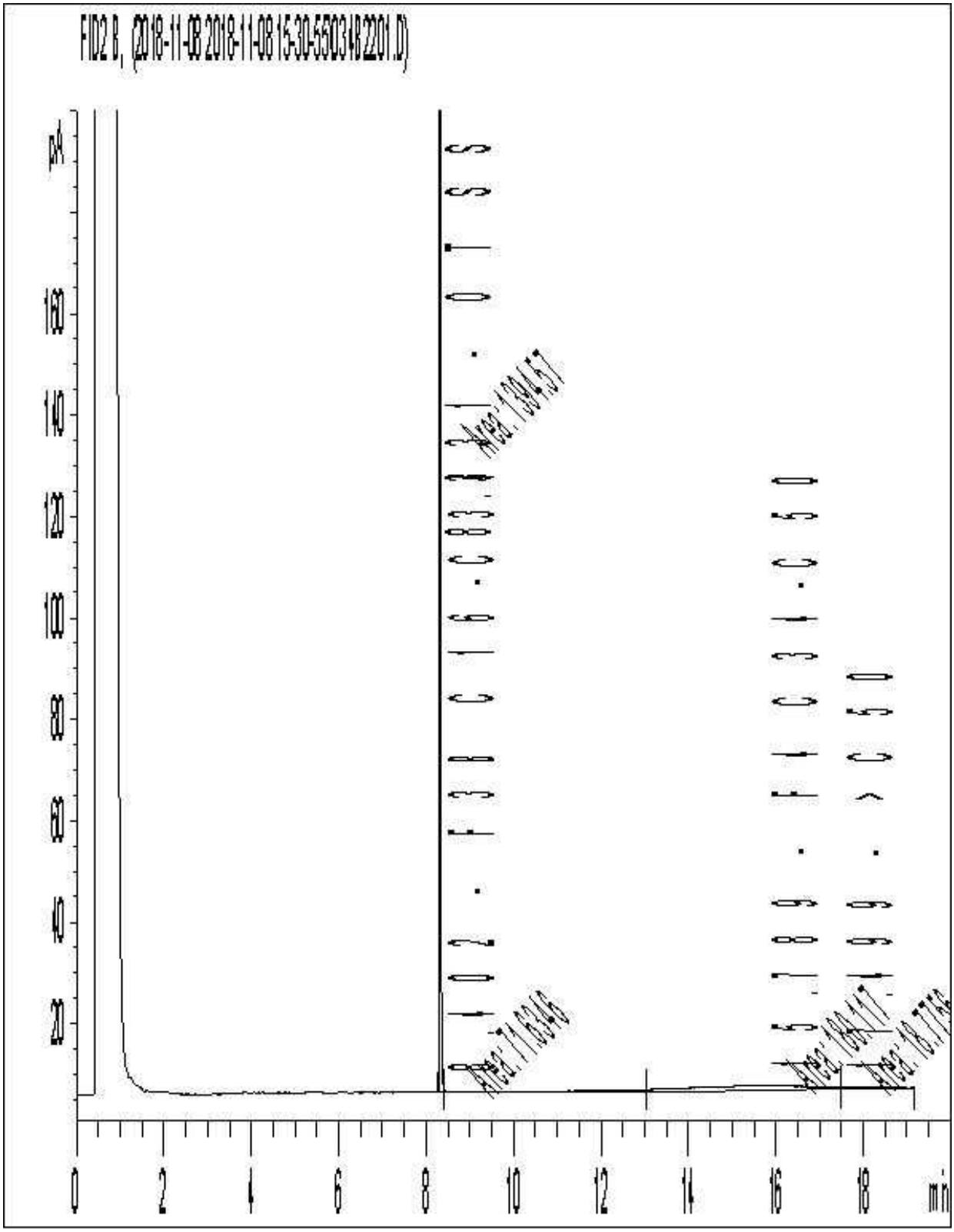


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Maxxam Job #: B8T5024
Report Date: 2018/11/13
Maxxam Sample: IFH145

Pinchin Ltd
Client Project #: 230236.002
Client ID: MW-3 SS-1

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram

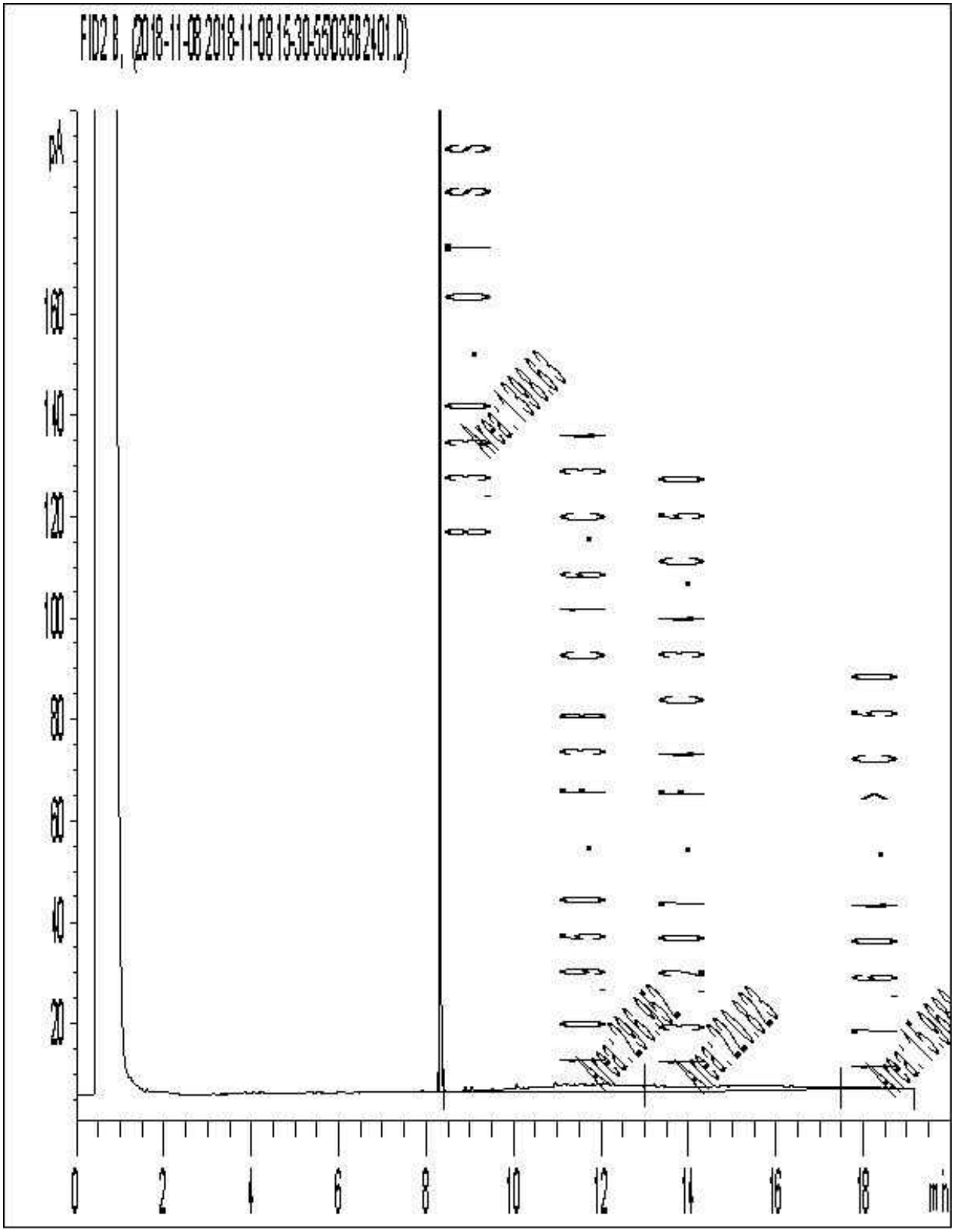


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Maxxam Job #: B8T5024
Report Date: 2018/11/13
Maxxam Sample: IFH146

Pinchin Ltd
Client Project #: 230236.002
Client ID: MW-4 SS-2

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram

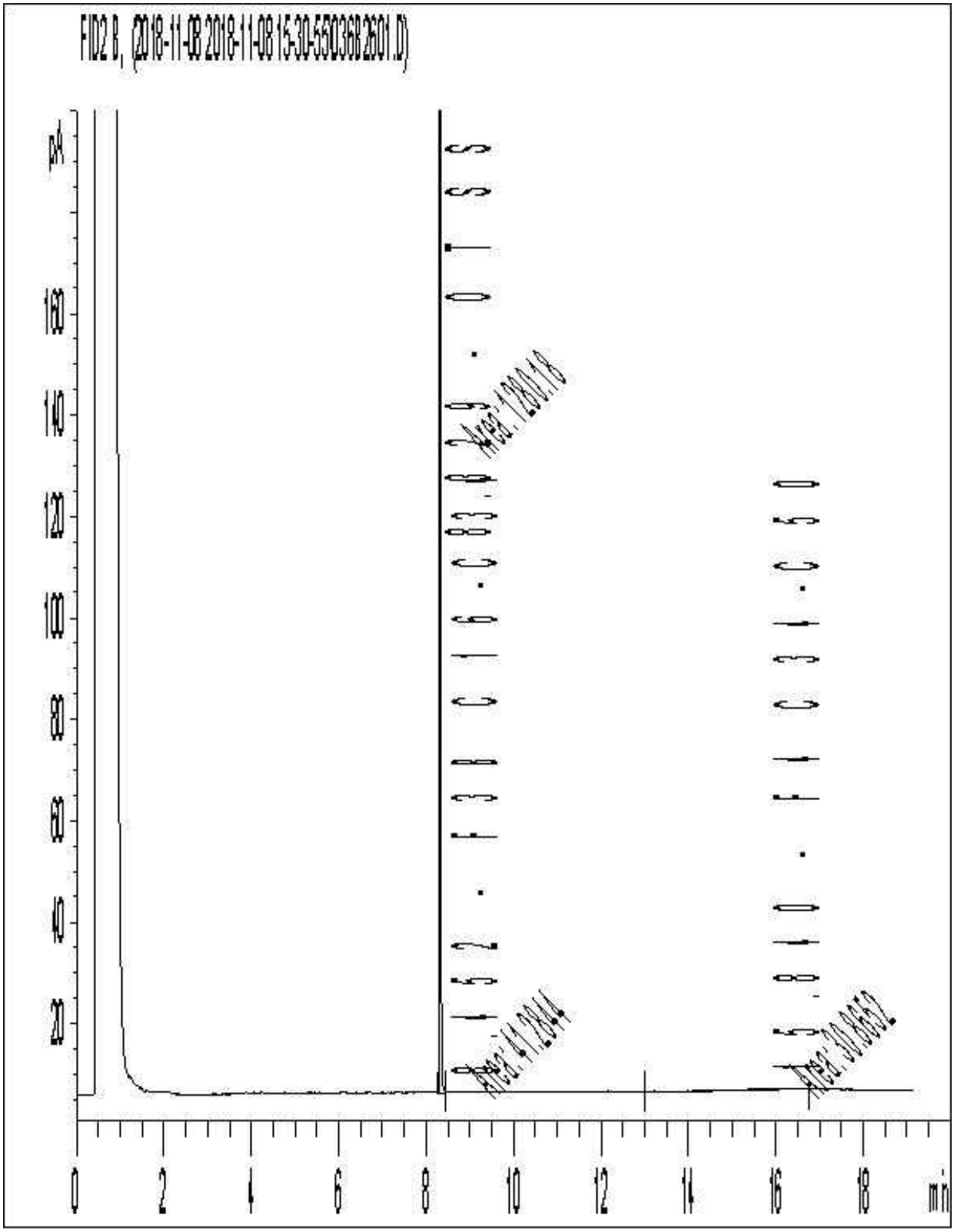


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Maxxam Job #: B8T5024
Report Date: 2018/11/13
Maxxam Sample: IFH147

Pinchin Ltd
Client Project #: 230236.002
Client ID: MW-5 SS-2

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram

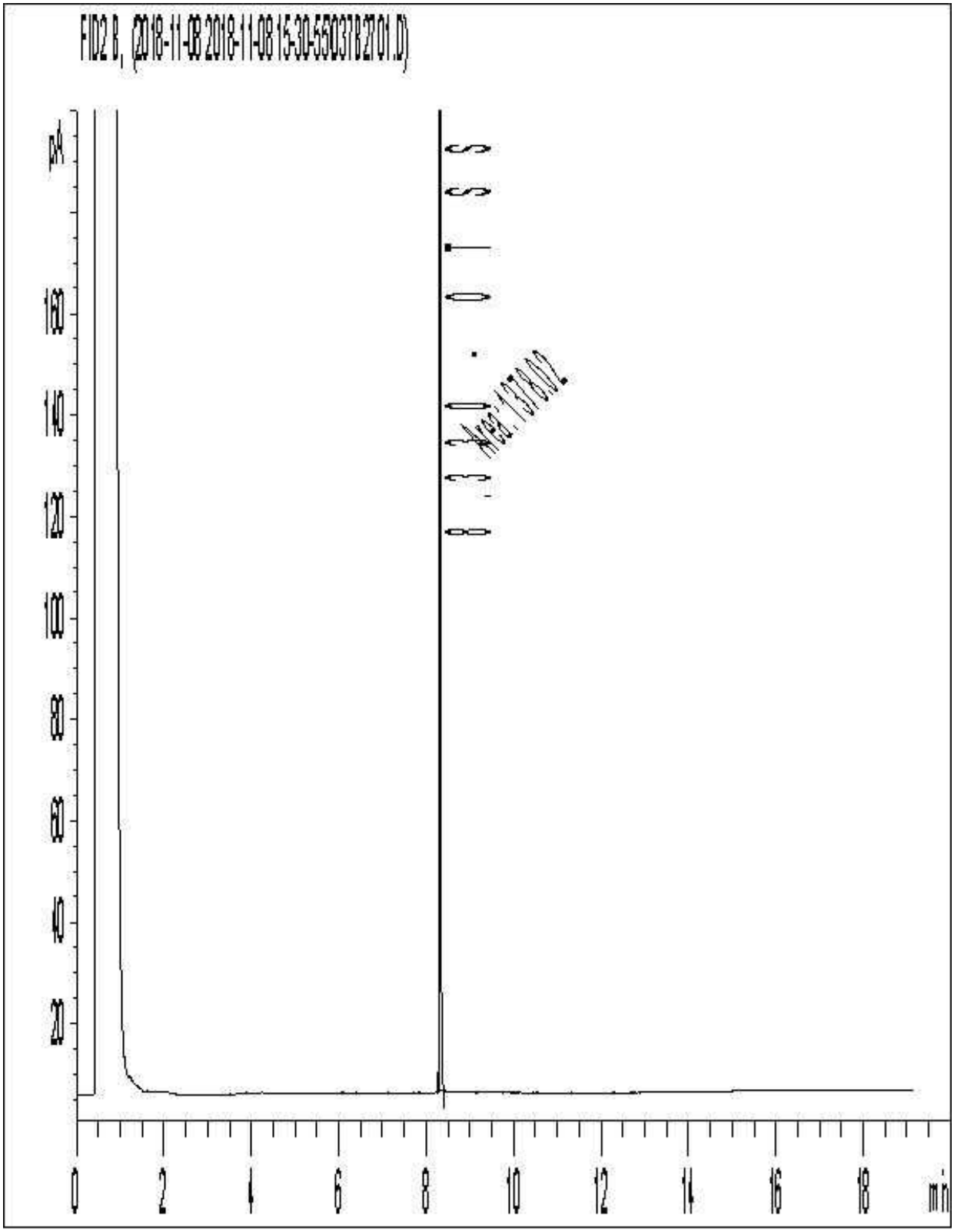


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Maxxam Job #: B8T5024
Report Date: 2018/11/13
Maxxam Sample: IFH148

Pinchin Ltd
Client Project #: 230236.002
Client ID: BH-6 SS-2

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram

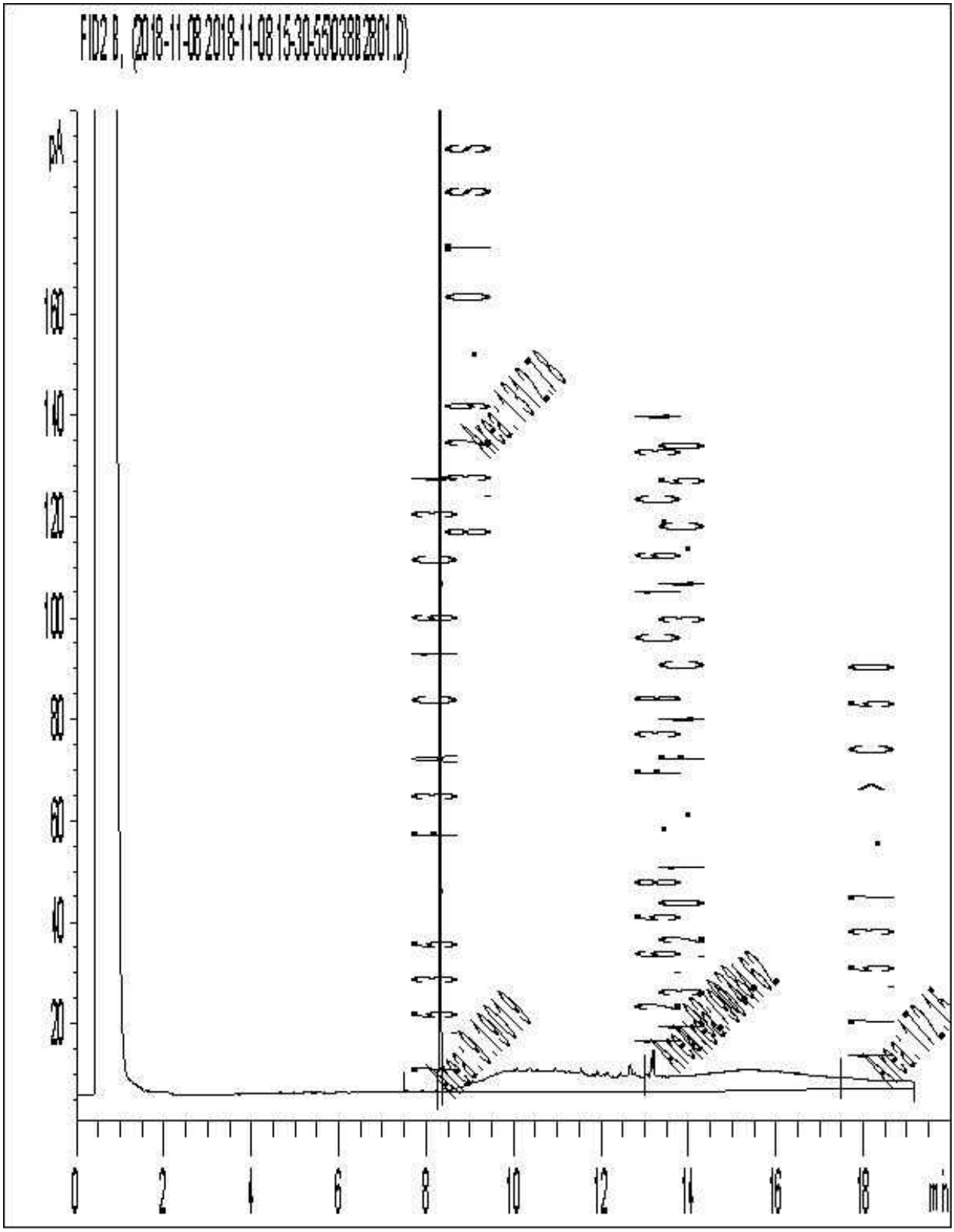


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Maxxam Job #: B8T5024
Report Date: 2018/11/13
Maxxam Sample: IFH149

Pinchin Ltd
Client Project #: 230236.002
Client ID: BH-7 SS-1

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram

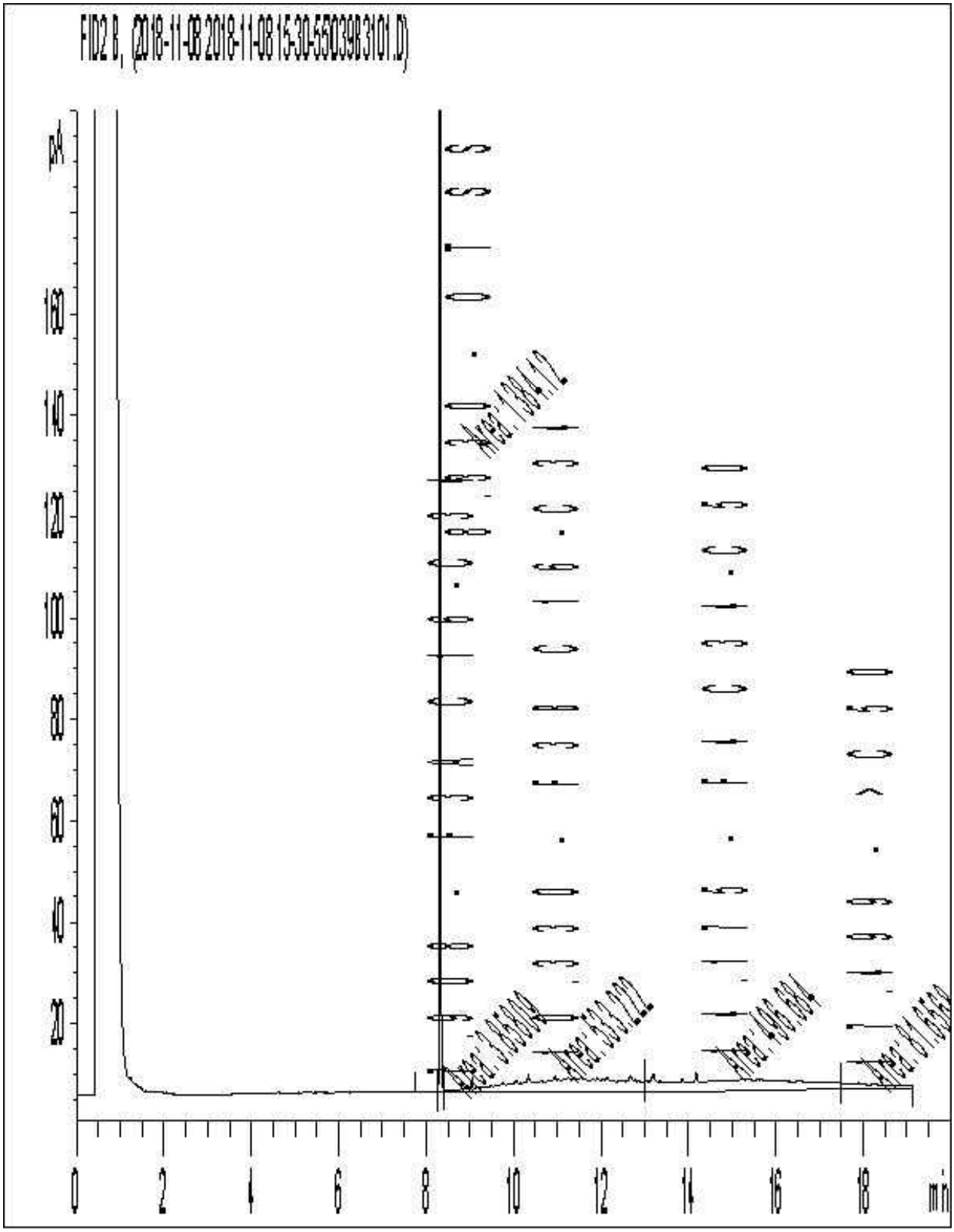


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Maxxam Job #: B8T5024
Report Date: 2018/11/13
Maxxam Sample: IFH150

Pinchin Ltd
Client Project #: 230236.002
Client ID: BH-8 SS-1

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram

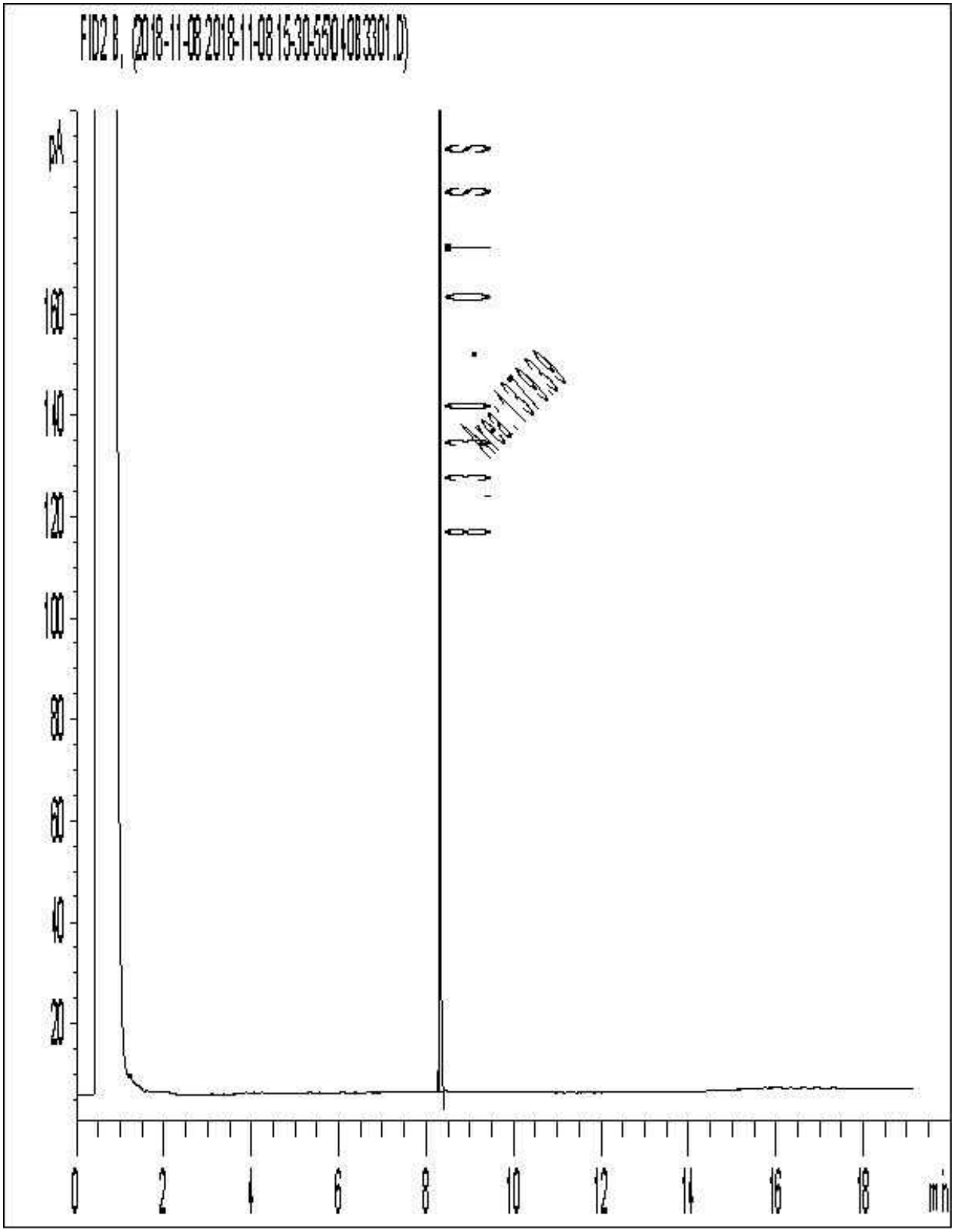


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Maxxam Job #: B8T5024
Report Date: 2018/11/13
Maxxam Sample: IFH151

Pinchin Ltd
Client Project #: 230236.002
Client ID: BH-9 SS-4

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram

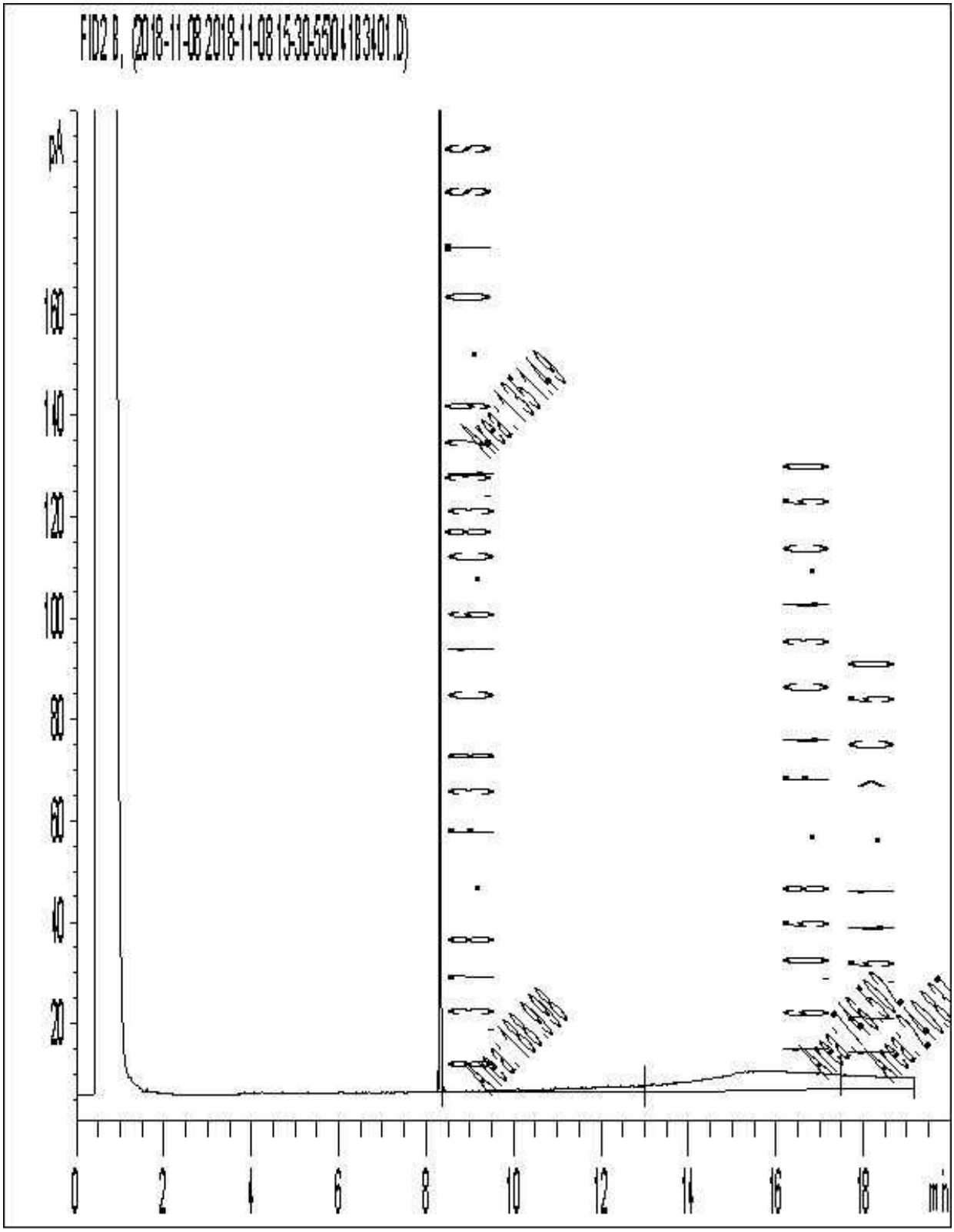


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Maxxam Job #: B8T5024
Report Date: 2018/11/13
Maxxam Sample: IFH152

Pinchin Ltd
Client Project #: 230236.002
Client ID: BH-10 SS-1

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram

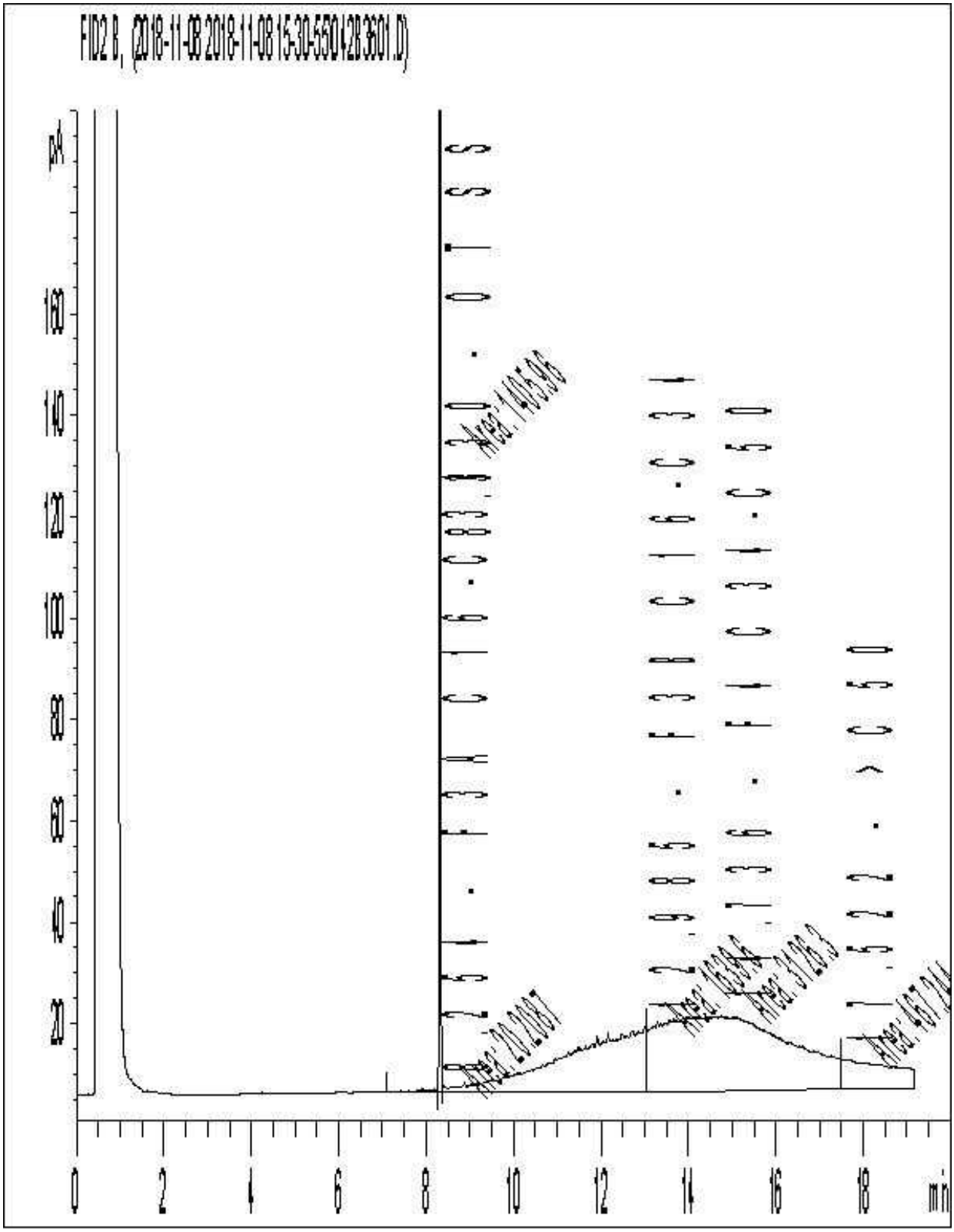


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Maxxam Job #: B8T5024
Report Date: 2018/11/13
Maxxam Sample: IFH153

Pinchin Ltd
Client Project #: 230236.002
Client ID: BH-11 SS-1

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram

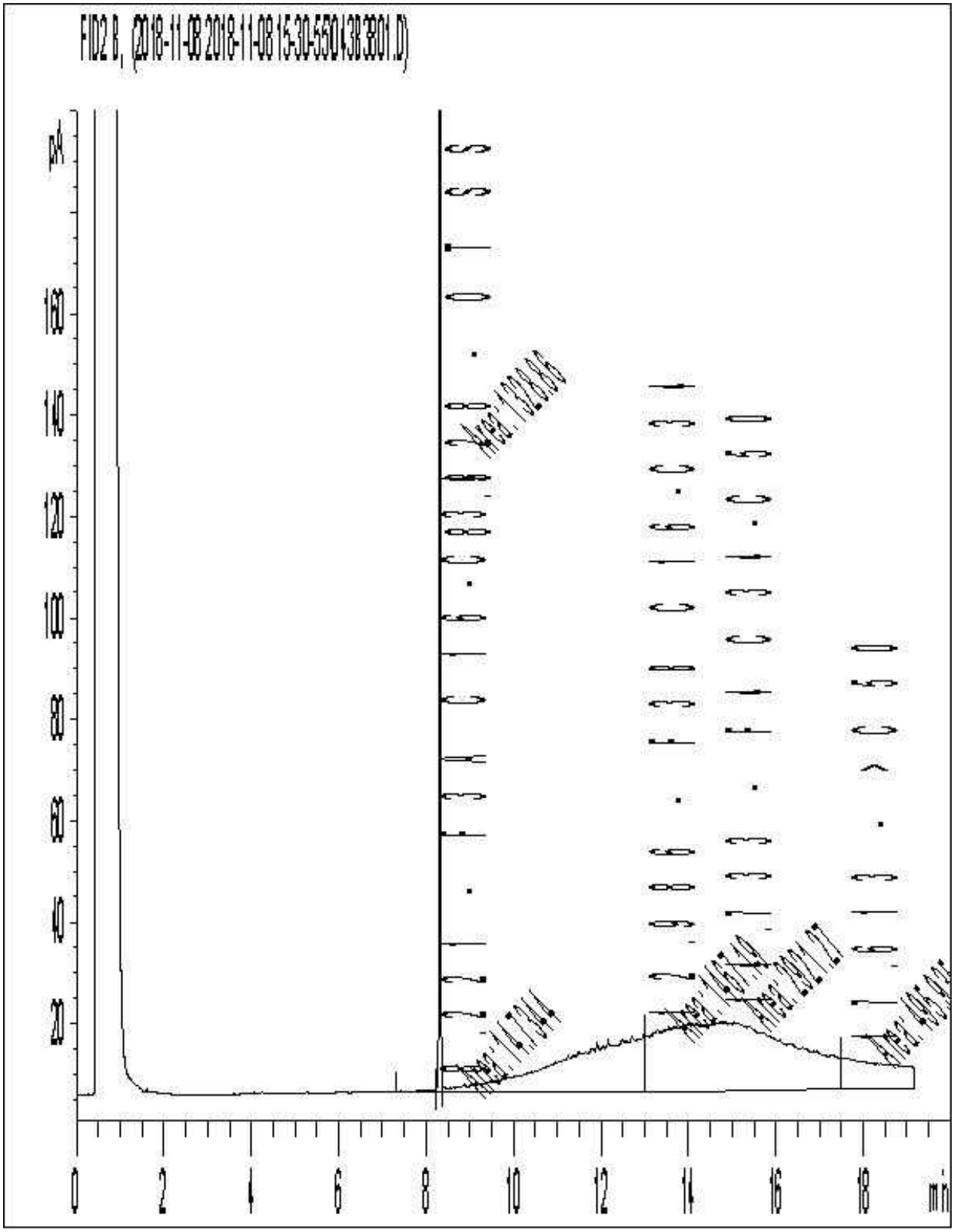


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Maxxam Job #: B8T5024
Report Date: 2018/11/13
Maxxam Sample: IFH154

Pinchin Ltd
Client Project #: 230236.002
Client ID: DUP-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.

Your Project #: 230236.002
Your C.O.C. #: 102893

Attention: Matt Ryan + Mike Kosiw

Pinchin Ltd
Ottawa
1 Hines Road
Suite 200
Kanata, ON
CANADA K2K 3C7

Report Date: 2018/11/19
Report #: R5491208
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B8U4943
Received: 2018/11/14, 16:00

Sample Matrix: Water
Samples Received: 11

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Methylnaphthalene Sum (1)	10	N/A	2018/11/19	CAM SOP-00301	EPA 8270D m
1,3-Dichloropropene Sum (1)	11	N/A	2018/11/19		EPA 8260C m
Chromium (VI) in Water (1)	10	N/A	2018/11/19	CAM SOP-00436	EPA 7199 m
Petroleum Hydrocarbons F2-F4 in Water (1, 2)	1	2018/11/16	2018/11/18	CAM SOP-00316	CCME PHC-CWS m
Petroleum Hydrocarbons F2-F4 in Water (1, 2)	9	2018/11/16	2018/11/19	CAM SOP-00316	CCME PHC-CWS m
Mercury (1)	10	2018/11/16	2018/11/16	CAM SOP-00453	EPA 7470A m
Dissolved Metals by ICPMS (1)	10	N/A	2018/11/16	CAM SOP-00447	EPA 6020B m
PAH Compounds in Water by GC/MS (SIM) (1)	10	2018/11/16	2018/11/17	CAM SOP-00318	EPA 8270D m
Volatile Organic Compounds and F1 PHCs (1)	9	N/A	2018/11/16	CAM SOP-00230	EPA 8260C m
Volatile Organic Compounds and F1 PHCs (1)	1	N/A	2018/11/19	CAM SOP-00230	EPA 8260C m
Volatile Organic Compounds in Water (1)	1	N/A	2018/11/16	CAM SOP-00228	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 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.

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Your Project #: 230236.002
Your C.O.C. #: 102893

Attention: Matt Ryan + Mike Kosiw

Pinchin Ltd
Ottawa
1 Hines Road
Suite 200
Kanata, ON
CANADA K2K 3C7

Report Date: 2018/11/19
Report #: R5491208
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B8U4943
Received: 2018/11/14, 16:00

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) This test was performed by Maxxam Analytics Mississauga
(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.
Alisha Williamson, Project Manager
Email: AWilliamson@maxxam.ca
Phone# (613) 274-0573

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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 #: B8U4943
Report Date: 2018/11/19

Pinchin Ltd
Client Project #: 230236.002
Sampler Initials: MK

O.REG 153 METALS PACKAGE (WATER)

Maxxam ID		IHM233	IHM234	IHM235	IHM236		IHM237	IHM238		
Sampling Date		2018/11/13	2018/11/13	2018/11/13	2018/11/13		2018/11/13	2018/11/13		
COC Number		102893	102893	102893	102893		102893	102893		
	UNITS	EXMW-1	MW-1	EXMW-2	MW-2	RDL	EXMW-3	MW-4	RDL	QC Batch
Metals										
Chromium (VI)	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	<0.50	<0.50	0.50	5832710
Mercury (Hg)	ug/L	0.2	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	0.1	5840721
Dissolved Antimony (Sb)	ug/L	0.82	<0.50	<0.50	0.61	0.50	<0.50	2.7	0.50	5840092
Dissolved Arsenic (As)	ug/L	<1.0	1.2	<1.0	<1.0	1.0	<1.0	<1.0	1.0	5840092
Dissolved Barium (Ba)	ug/L	120	260	130	160	2.0	200	74	2.0	5840092
Dissolved Beryllium (Be)	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	<0.50	<0.50	0.50	5840092
Dissolved Boron (B)	ug/L	140	280	260	1100	10	280	210	10	5840092
Dissolved Cadmium (Cd)	ug/L	<0.10	<0.10	<0.10	<0.10	0.10	<0.10	<0.10	0.10	5840092
Dissolved Chromium (Cr)	ug/L	<5.0	<5.0	<5.0	<5.0	5.0	<5.0	<5.0	5.0	5840092
Dissolved Cobalt (Co)	ug/L	<0.50	3.9	38	3.3	0.50	<0.50	1.1	0.50	5840092
Dissolved Copper (Cu)	ug/L	3.7	<1.0	5.4	1.9	1.0	<1.0	6.1	1.0	5840092
Dissolved Lead (Pb)	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	<0.50	<0.50	0.50	5840092
Dissolved Molybdenum (Mo)	ug/L	3.5	1.2	2.0	4.6	0.50	<0.50	3.5	0.50	5840092
Dissolved Nickel (Ni)	ug/L	3.6	8.6	6.2	12	1.0	1.2	6.0	1.0	5840092
Dissolved Selenium (Se)	ug/L	<2.0	<2.0	<2.0	<2.0	2.0	<2.0	2.0	2.0	5840092
Dissolved Silver (Ag)	ug/L	<0.10	<0.10	<0.10	<0.10	0.10	<0.10	<0.10	0.10	5840092
Dissolved Sodium (Na)	ug/L	570000	720000	680000	630000	500	230000	190000	100	5840092
Dissolved Thallium (Tl)	ug/L	0.098	<0.050	<0.050	0.23	0.050	<0.050	<0.050	0.050	5840092
Dissolved Uranium (U)	ug/L	2.2	0.78	2.5	3.5	0.10	0.51	4.0	0.10	5840092
Dissolved Vanadium (V)	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	<0.50	0.76	0.50	5840092
Dissolved Zinc (Zn)	ug/L	31	<5.0	16	<5.0	5.0	<5.0	<5.0	5.0	5840092

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B8U4943
Report Date: 2018/11/19

Pinchin Ltd
Client Project #: 230236.002
Sampler Initials: MK

O.REG 153 METALS PACKAGE (WATER)

Maxxam ID		IHM239	IHM240			IHM240			IHM241		
Sampling Date		2018/11/13	2018/11/13			2018/11/13			2018/11/13		
COC Number		102893	102893			102893			102893		
	UNITS	EXMW-4	MW-5	RDL	QC Batch	MW-5 Lab-Dup	RDL	QC Batch	EXMW-5	RDL	QC Batch
Metals											
Chromium (VI)	ug/L	<0.50	<0.50	0.50	5832710	<0.50	0.50	5832710	<0.50	0.50	5832710
Mercury (Hg)	ug/L	<0.1	<0.1	0.1	5840721				<0.1	0.1	5840721
Dissolved Antimony (Sb)	ug/L	<0.50	<0.50	0.50	5840092				0.51	0.50	5840092
Dissolved Arsenic (As)	ug/L	<1.0	<1.0	1.0	5840092				<1.0	1.0	5840092
Dissolved Barium (Ba)	ug/L	230	110	2.0	5840092				160	2.0	5840092
Dissolved Beryllium (Be)	ug/L	<0.50	<0.50	0.50	5840092				<0.50	0.50	5840092
Dissolved Boron (B)	ug/L	98	280	10	5840092				230	10	5840092
Dissolved Cadmium (Cd)	ug/L	<0.10	<0.10	0.10	5840092				0.15	0.10	5840092
Dissolved Chromium (Cr)	ug/L	<5.0	<5.0	5.0	5840092				<5.0	5.0	5840092
Dissolved Cobalt (Co)	ug/L	<0.50	1.9	0.50	5840092				5.9	0.50	5840092
Dissolved Copper (Cu)	ug/L	<1.0	2.4	1.0	5840092				2.3	1.0	5840092
Dissolved Lead (Pb)	ug/L	<0.50	<0.50	0.50	5840092				<0.50	0.50	5840092
Dissolved Molybdenum (Mo)	ug/L	0.63	4.7	0.50	5840092				1.4	0.50	5840092
Dissolved Nickel (Ni)	ug/L	<1.0	12	1.0	5840092				8.2	1.0	5840092
Dissolved Selenium (Se)	ug/L	<2.0	<2.0	2.0	5840092				<2.0	2.0	5840092
Dissolved Silver (Ag)	ug/L	<0.10	<0.10	0.10	5840092				<0.10	0.10	5840092
Dissolved Sodium (Na)	ug/L	62000	370000	100	5840092				170000	100	5840092
Dissolved Thallium (Tl)	ug/L	<0.050	0.068	0.050	5840092				0.072	0.050	5840092
Dissolved Uranium (U)	ug/L	<0.10	3.6	0.10	5840092				1.0	0.10	5840092
Dissolved Vanadium (V)	ug/L	<0.50	<0.50	0.50	5840092				<0.50	0.50	5840092
Dissolved Zinc (Zn)	ug/L	<5.0	<5.0	5.0	5840092				26	5.0	5840092

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

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Maxxam Job #: B8U4943
Report Date: 2018/11/19

Pinchin Ltd
Client Project #: 230236.002
Sampler Initials: MK

O.REG 153 METALS PACKAGE (WATER)

Maxxam ID		IHM242		
Sampling Date		2018/11/13		
COC Number		102893		
	UNITS	DUP-2	RDL	QC Batch
Metals				
Chromium (VI)	ug/L	<0.50	0.50	5832710
Mercury (Hg)	ug/L	<0.1	0.1	5840721
Dissolved Antimony (Sb)	ug/L	<0.50	0.50	5840092
Dissolved Arsenic (As)	ug/L	1.2	1.0	5840092
Dissolved Barium (Ba)	ug/L	260	2.0	5840092
Dissolved Beryllium (Be)	ug/L	<0.50	0.50	5840092
Dissolved Boron (B)	ug/L	290	10	5840092
Dissolved Cadmium (Cd)	ug/L	<0.10	0.10	5840092
Dissolved Chromium (Cr)	ug/L	<5.0	5.0	5840092
Dissolved Cobalt (Co)	ug/L	4.1	0.50	5840092
Dissolved Copper (Cu)	ug/L	<1.0	1.0	5840092
Dissolved Lead (Pb)	ug/L	<0.50	0.50	5840092
Dissolved Molybdenum (Mo)	ug/L	1.2	0.50	5840092
Dissolved Nickel (Ni)	ug/L	8.8	1.0	5840092
Dissolved Selenium (Se)	ug/L	<2.0	2.0	5840092
Dissolved Silver (Ag)	ug/L	<0.10	0.10	5840092
Dissolved Sodium (Na)	ug/L	700000	500	5840092
Dissolved Thallium (Tl)	ug/L	<0.050	0.050	5840092
Dissolved Uranium (U)	ug/L	0.81	0.10	5840092
Dissolved Vanadium (V)	ug/L	<0.50	0.50	5840092
Dissolved Zinc (Zn)	ug/L	<5.0	5.0	5840092

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B8U4943
Report Date: 2018/11/19

Pinchin Ltd
Client Project #: 230236.002
Sampler Initials: MK

O.REG 153 PAHS (WATER)

Maxxam ID		IHM233		IHM234	IHM235	IHM236	IHM237	IHM238		
Sampling Date		2018/11/13		2018/11/13	2018/11/13	2018/11/13	2018/11/13	2018/11/13		
COC Number		102893		102893	102893	102893	102893	102893		
	UNITS	EXMW-1	QC Batch	MW-1	EXMW-2	MW-2	EXMW-3	MW-4	RDL	QC Batch
Calculated Parameters										
Methylnaphthalene, 2-(1-)	ug/L	<0.071	5838815	7.6	<0.071	<0.071	<0.071	<0.071	0.071	5838815
Polyaromatic Hydrocarbons										
Acenaphthene	ug/L	<0.050	5841578	0.076	<0.050	<0.050	<0.050	<0.050	0.050	5841618
Acenaphthylene	ug/L	<0.050	5841578	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5841618
Anthracene	ug/L	<0.050	5841578	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5841618
Benzo(a)anthracene	ug/L	<0.050	5841578	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5841618
Benzo(a)pyrene	ug/L	<0.010	5841578	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5841618
Benzo(b/j)fluoranthene	ug/L	<0.050	5841578	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5841618
Benzo(g,h,i)perylene	ug/L	<0.050	5841578	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5841618
Benzo(k)fluoranthene	ug/L	<0.050	5841578	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5841618
Chrysene	ug/L	<0.050	5841578	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5841618
Dibenz(a,h)anthracene	ug/L	<0.050	5841578	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5841618
Fluoranthene	ug/L	<0.050	5841578	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5841618
Fluorene	ug/L	<0.050	5841578	0.11	<0.050	<0.050	<0.050	<0.050	0.050	5841618
Indeno(1,2,3-cd)pyrene	ug/L	<0.050	5841578	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5841618
1-Methylnaphthalene	ug/L	<0.050	5841578	7.5	<0.050	<0.050	<0.050	<0.050	0.050	5841618
2-Methylnaphthalene	ug/L	<0.050	5841578	0.12	<0.050	<0.050	<0.050	<0.050	0.050	5841618
Naphthalene	ug/L	<0.050	5841578	11	<0.050	<0.050	<0.050	<0.050	0.050	5841618
Phenanthrene	ug/L	<0.030	5841578	0.043	<0.030	<0.030	<0.030	<0.030	0.030	5841618
Pyrene	ug/L	<0.050	5841578	0.053	<0.050	<0.050	<0.050	<0.050	0.050	5841618
Surrogate Recovery (%)										
D10-Anthracene	%	21 (1)	5841578	94	98	97	88	98		5841618
D14-Terphenyl (FS)	%	33 (1)	5841578	54	83	82	46 (2)	82		5841618
D8-Acenaphthylene	%	36 (1)	5841578	99	98	97	96	99		5841618

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

(1) Surrogate recovery was below the lower control limit due to matrix interference(high amount of sediment presented in the sample bottle). This may represent a low bias in some results.

(2) Surrogate recovery may have been impacted by the amount of sediment that was present in sample.

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O.REG 153 PAHS (WATER)

Maxxam ID		IHM239	IHM240	IHM241	IHM242		
Sampling Date		2018/11/13	2018/11/13	2018/11/13	2018/11/13		
COC Number		102893	102893	102893	102893		
	UNITS	EXMW-4	MW-5	EXMW-5	DUP-2	RDL	QC Batch
Calculated Parameters							
Methylnaphthalene, 2-(1-)	ug/L	<0.071	<0.071	<0.071	10	0.071	5838815
Polyaromatic Hydrocarbons							
Acenaphthene	ug/L	<0.050	<0.050	<0.050	0.094	0.050	5841618
Acenaphthylene	ug/L	<0.050	<0.050	<0.050	<0.050	0.050	5841618
Anthracene	ug/L	<0.050	<0.050	<0.050	<0.050	0.050	5841618
Benzo(a)anthracene	ug/L	<0.050	<0.050	<0.050	<0.050	0.050	5841618
Benzo(a)pyrene	ug/L	<0.010	<0.010	<0.010	<0.010	0.010	5841618
Benzo(b/j)fluoranthene	ug/L	<0.050	<0.050	<0.050	<0.050	0.050	5841618
Benzo(g,h,i)perylene	ug/L	<0.050	<0.050	<0.050	<0.050	0.050	5841618
Benzo(k)fluoranthene	ug/L	<0.050	<0.050	<0.050	<0.050	0.050	5841618
Chrysene	ug/L	<0.050	<0.050	<0.050	<0.050	0.050	5841618
Dibenz(a,h)anthracene	ug/L	<0.050	<0.050	<0.050	<0.050	0.050	5841618
Fluoranthene	ug/L	<0.050	<0.050	<0.050	<0.050	0.050	5841618
Fluorene	ug/L	<0.050	<0.050	<0.050	0.14	0.050	5841618
Indeno(1,2,3-cd)pyrene	ug/L	<0.050	<0.050	<0.050	<0.050	0.050	5841618
1-Methylnaphthalene	ug/L	<0.050	<0.050	<0.050	9.9	0.050	5841618
2-Methylnaphthalene	ug/L	<0.050	<0.050	<0.050	0.17	0.050	5841618
Naphthalene	ug/L	0.089	<0.050	<0.050	15	0.050	5841618
Phenanthrene	ug/L	<0.030	<0.030	<0.030	0.054	0.030	5841618
Pyrene	ug/L	<0.050	<0.050	<0.050	0.051	0.050	5841618
Surrogate Recovery (%)							
D10-Anthracene	%	99	99	99	96		5841618
D14-Terphenyl (FS)	%	82	83	65	60		5841618
D8-Acenaphthylene	%	101	98	100	99		5841618

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B8U4943
Report Date: 2018/11/19

Pinchin Ltd
Client Project #: 230236.002
Sampler Initials: MK

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

Maxxam ID		IHM233		IHM234	IHM235	IHM236	IHM237		
Sampling Date		2018/11/13		2018/11/13	2018/11/13	2018/11/13	2018/11/13		
COC Number		102893		102893	102893	102893	102893		
	UNITS	EXMW-1	QC Batch	MW-1	EXMW-2	MW-2	EXMW-3	RDL	QC Batch
Calculated Parameters									
1,3-Dichloropropene (cis+trans)	ug/L	<0.50	5838816	<0.50	<0.50	<0.50	<0.50	0.50	5838816
Volatile Organics									
Acetone (2-Propanone)	ug/L	<10	5839695	<10	<10	12	75	10	5839695
Benzene	ug/L	<0.20	5839695	78	<0.20	<0.20	<0.20	0.20	5839695
Bromodichloromethane	ug/L	<0.50	5839695	<0.50	<0.50	<0.50	<0.50	0.50	5839695
Bromoform	ug/L	<1.0	5839695	<1.0	<1.0	<1.0	<1.0	1.0	5839695
Bromomethane	ug/L	<0.50	5839695	<0.50	<0.50	<0.50	<0.50	0.50	5839695
Carbon Tetrachloride	ug/L	<0.20	5839695	<0.20	<0.20	<0.20	<0.20	0.20	5839695
Chlorobenzene	ug/L	<0.20	5839695	<0.20	<0.20	<0.20	<0.20	0.20	5839695
Chloroform	ug/L	<0.20	5839695	<0.20	<0.20	<0.20	<0.20	0.20	5839695
Dibromochloromethane	ug/L	<0.50	5839695	<0.50	<0.50	<0.50	<0.50	0.50	5839695
1,2-Dichlorobenzene	ug/L	<0.50	5839695	<0.50	<0.50	<0.50	<0.50	0.50	5839695
1,3-Dichlorobenzene	ug/L	<0.50	5839695	<0.50	<0.50	<0.50	<0.50	0.50	5839695
1,4-Dichlorobenzene	ug/L	<0.50	5839695	<0.50	<0.50	<0.50	<0.50	0.50	5839695
Dichlorodifluoromethane (FREON 12)	ug/L	<1.0	5839695	<1.0	<1.0	<1.0	<1.0	1.0	5839695
1,1-Dichloroethane	ug/L	<0.20	5839695	<0.20	<0.20	<0.20	<0.20	0.20	5839695
1,2-Dichloroethane	ug/L	<0.50	5839695	<0.50	<0.50	<0.50	<0.50	0.50	5839695
1,1-Dichloroethylene	ug/L	<0.20	5839695	<0.20	<0.20	<0.20	<0.20	0.20	5839695
cis-1,2-Dichloroethylene	ug/L	<0.50	5839695	<0.50	<0.50	<0.50	<0.50	0.50	5839695
trans-1,2-Dichloroethylene	ug/L	<0.50	5839695	<0.50	<0.50	<0.50	<0.50	0.50	5839695
1,2-Dichloropropane	ug/L	<0.20	5839695	<0.20	<0.20	<0.20	<0.20	0.20	5839695
cis-1,3-Dichloropropene	ug/L	<0.30	5839695	<0.30	<0.30	<0.30	<0.30	0.30	5839695
trans-1,3-Dichloropropene	ug/L	<0.40	5839695	<0.40	<0.40	<0.40	<0.40	0.40	5839695
Ethylbenzene	ug/L	<0.20	5839695	37	<0.20	<0.20	<0.20	0.20	5839695
Ethylene Dibromide	ug/L	<0.20	5839695	<0.20	<0.20	<0.20	<0.20	0.20	5839695
Hexane	ug/L	<1.0	5839695	<1.0	<1.0	<1.0	<1.0	1.0	5839695
Methylene Chloride(Dichloromethane)	ug/L	<2.0	5839695	<2.0	<2.0	<2.0	<2.0	2.0	5839695
Methyl Ethyl Ketone (2-Butanone)	ug/L	<10	5839695	<10	<10	<10	<10	10	5839695
Methyl Isobutyl Ketone	ug/L	<5.0	5839695	<5.0	<5.0	<5.0	<5.0	5.0	5839695
Methyl t-butyl ether (MTBE)	ug/L	<0.50	5839695	1.2	<0.50	1.3	<0.50	0.50	5839695
Styrene	ug/L	<0.50	5839695	<0.50	<0.50	<0.50	<0.50	0.50	5839695
1,1,1,2-Tetrachloroethane	ug/L	<0.50	5839695	<0.50	<0.50	<0.50	<0.50	0.50	5839695
1,1,2,2-Tetrachloroethane	ug/L	<0.50	5839695	<0.50	<0.50	<0.50	<0.50	0.50	5839695
Tetrachloroethylene	ug/L	<0.20	5839695	<0.20	<0.20	<0.20	<0.20	0.20	5839695
Toluene	ug/L	<0.20	5839695	16	<0.20	<0.20	<0.20	0.20	5839695
1,1,1-Trichloroethane	ug/L	<0.20	5839695	<0.20	<0.20	<0.20	<0.20	0.20	5839695

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B8U4943
Report Date: 2018/11/19

Pinchin Ltd
Client Project #: 230236.002
Sampler Initials: MK

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

Maxxam ID		IHM233		IHM234	IHM235	IHM236	IHM237		
Sampling Date		2018/11/13		2018/11/13	2018/11/13	2018/11/13	2018/11/13		
COC Number		102893		102893	102893	102893	102893		
	UNITS	EXMW-1	QC Batch	MW-1	EXMW-2	MW-2	EXMW-3	RDL	QC Batch
1,1,2-Trichloroethane	ug/L	<0.50	5839695	<0.50	<0.50	<0.50	<0.50	0.50	5839695
Trichloroethylene	ug/L	<0.20	5839695	<0.20	<0.20	<0.20	<0.20	0.20	5839695
Trichlorofluoromethane (FREON 11)	ug/L	<0.50	5839695	<0.50	<0.50	<0.50	<0.50	0.50	5839695
Vinyl Chloride	ug/L	<0.20	5839695	<0.20	<0.20	<0.20	<0.20	0.20	5839695
p+m-Xylene	ug/L	<0.20	5839695	68	<0.20	<0.20	<0.20	0.20	5839695
o-Xylene	ug/L	<0.20	5839695	20	<0.20	<0.20	<0.20	0.20	5839695
Total Xylenes	ug/L	<0.20	5839695	89	<0.20	<0.20	<0.20	0.20	5839695
F1 (C6-C10)	ug/L	<25	5839695	680	<25	<25	<25	25	5839695
F1 (C6-C10) - BTEX	ug/L	<25	5839695	460	<25	<25	<25	25	5839695
F2-F4 Hydrocarbons									
F2 (C10-C16 Hydrocarbons)	ug/L	<100	5841590	380	<100	<100	<100	100	5841620
F3 (C16-C34 Hydrocarbons)	ug/L	<200	5841590	<200	<200	<200	<200	200	5841620
F4 (C34-C50 Hydrocarbons)	ug/L	<200	5841590	<200	<200	<200	<200	200	5841620
Reached Baseline at C50	ug/L	Yes	5841590	Yes	Yes	Yes	Yes		5841620
Surrogate Recovery (%)									
o-Terphenyl	%	117	5841590	94	102	103	98		5841620
4-Bromofluorobenzene	%	83	5839695	93	83	85	85		5839695
D4-1,2-Dichloroethane	%	112	5839695	101	108	108	109		5839695
D8-Toluene	%	93	5839695	97	96	94	95		5839695

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

Maxxam ID		IHM238	IHM239	IHM240	IHM241	IHM242		
Sampling Date		2018/11/13	2018/11/13	2018/11/13	2018/11/13	2018/11/13		
COC Number		102893	102893	102893	102893	102893		
	UNITS	MW-4	EXMW-4	MW-5	EXMW-5	DUP-2	RDL	QC Batch
Calculated Parameters								
1,3-Dichloropropene (cis+trans)	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	5838816
Volatile Organics								
Acetone (2-Propanone)	ug/L	<10	40	<10	34	<10	10	5839695
Benzene	ug/L	<0.20	<0.20	<0.20	<0.20	68	0.20	5839695
Bromodichloromethane	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	5839695
Bromoform	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	5839695
Bromomethane	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	5839695
Carbon Tetrachloride	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	5839695
Chlorobenzene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	5839695
Chloroform	ug/L	0.28	<0.20	<0.20	<0.20	<0.20	0.20	5839695
Dibromochloromethane	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	5839695
1,2-Dichlorobenzene	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	5839695
1,3-Dichlorobenzene	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	5839695
1,4-Dichlorobenzene	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	5839695
Dichlorodifluoromethane (FREON 12)	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	5839695
1,1-Dichloroethane	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	5839695
1,2-Dichloroethane	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	5839695
1,1-Dichloroethylene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	5839695
cis-1,2-Dichloroethylene	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	5839695
trans-1,2-Dichloroethylene	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	5839695
1,2-Dichloropropane	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	5839695
cis-1,3-Dichloropropene	ug/L	<0.30	<0.30	<0.30	<0.30	<0.30	0.30	5839695
trans-1,3-Dichloropropene	ug/L	<0.40	<0.40	<0.40	<0.40	<0.40	0.40	5839695
Ethylbenzene	ug/L	<0.20	<0.20	<0.20	<0.20	30	0.20	5839695
Ethylene Dibromide	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	5839695
Hexane	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	5839695
Methylene Chloride(Dichloromethane)	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5839695
Methyl Ethyl Ketone (2-Butanone)	ug/L	<10	<10	<10	<10	<10	10	5839695
Methyl Isobutyl Ketone	ug/L	<5.0	<5.0	<5.0	<5.0	<5.0	5.0	5839695
Methyl t-butyl ether (MTBE)	ug/L	<0.50	<0.50	<0.50	<0.50	1.2	0.50	5839695
Styrene	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	5839695
1,1,1,2-Tetrachloroethane	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	5839695
1,1,2,2-Tetrachloroethane	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	5839695
Tetrachloroethylene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	5839695
Toluene	ug/L	<0.20	0.31	<0.20	0.30	14	0.20	5839695
1,1,1-Trichloroethane	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	5839695

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Report Date: 2018/11/19

Pinchin Ltd
Client Project #: 230236.002
Sampler Initials: MK

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

Maxxam ID		IHM238	IHM239	IHM240	IHM241	IHM242		
Sampling Date		2018/11/13	2018/11/13	2018/11/13	2018/11/13	2018/11/13		
COC Number		102893	102893	102893	102893	102893		
	UNITS	MW-4	EXMW-4	MW-5	EXMW-5	DUP-2	RDL	QC Batch
1,1,2-Trichloroethane	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	5839695
Trichloroethylene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	5839695
Trichlorofluoromethane (FREON 11)	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	5839695
Vinyl Chloride	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	5839695
p+m-Xylene	ug/L	<0.20	<0.20	<0.20	<0.20	58	0.20	5839695
o-Xylene	ug/L	<0.20	<0.20	<0.20	<0.20	18	0.20	5839695
Total Xylenes	ug/L	<0.20	<0.20	<0.20	<0.20	75	0.20	5839695
F1 (C6-C10)	ug/L	<25	<25	<25	<25	580	25	5839695
F1 (C6-C10) - BTEX	ug/L	<25	<25	<25	<25	390	25	5839695
F2-F4 Hydrocarbons								
F2 (C10-C16 Hydrocarbons)	ug/L	<100	<100	<100	<100	470	100	5841620
F3 (C16-C34 Hydrocarbons)	ug/L	<200	<200	<200	<200	<200	200	5841620
F4 (C34-C50 Hydrocarbons)	ug/L	<200	<200	<200	<200	<200	200	5841620
Reached Baseline at C50	ug/L	Yes	Yes	Yes	Yes	Yes		5841620
Surrogate Recovery (%)								
o-Terphenyl	%	91	101	100	106	101		5841620
4-Bromofluorobenzene	%	83	83	85	81	94		5839695
D4-1,2-Dichloroethane	%	110	111	121	112	104		5839695
D8-Toluene	%	94	94	90	94	98		5839695

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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O.REG 153 VOCS BY HS (WATER)

Maxxam ID		IHM232		
Sampling Date		2018/11/13		
COC Number		102893		
	UNITS	TRIP BLANK	RDL	QC Batch
Calculated Parameters				
1,3-Dichloropropene (cis+trans)	ug/L	<0.50	0.50	5838816
Volatile Organics				
Acetone (2-Propanone)	ug/L	<10	10	5839308
Benzene	ug/L	<0.20	0.20	5839308
Bromodichloromethane	ug/L	<0.50	0.50	5839308
Bromoform	ug/L	<1.0	1.0	5839308
Bromomethane	ug/L	<0.50	0.50	5839308
Carbon Tetrachloride	ug/L	<0.20	0.20	5839308
Chlorobenzene	ug/L	<0.20	0.20	5839308
Chloroform	ug/L	<0.20	0.20	5839308
Dibromochloromethane	ug/L	<0.50	0.50	5839308
1,2-Dichlorobenzene	ug/L	<0.50	0.50	5839308
1,3-Dichlorobenzene	ug/L	<0.50	0.50	5839308
1,4-Dichlorobenzene	ug/L	<0.50	0.50	5839308
Dichlorodifluoromethane (FREON 12)	ug/L	<1.0	1.0	5839308
1,1-Dichloroethane	ug/L	<0.20	0.20	5839308
1,2-Dichloroethane	ug/L	<0.50	0.50	5839308
1,1-Dichloroethylene	ug/L	<0.20	0.20	5839308
cis-1,2-Dichloroethylene	ug/L	<0.50	0.50	5839308
trans-1,2-Dichloroethylene	ug/L	<0.50	0.50	5839308
1,2-Dichloropropane	ug/L	<0.20	0.20	5839308
cis-1,3-Dichloropropene	ug/L	<0.30	0.30	5839308
trans-1,3-Dichloropropene	ug/L	<0.40	0.40	5839308
Ethylbenzene	ug/L	<0.20	0.20	5839308
Ethylene Dibromide	ug/L	<0.20	0.20	5839308
Hexane	ug/L	<1.0	1.0	5839308
Methylene Chloride(Dichloromethane)	ug/L	<2.0	2.0	5839308
Methyl Ethyl Ketone (2-Butanone)	ug/L	<10	10	5839308
Methyl Isobutyl Ketone	ug/L	<5.0	5.0	5839308
Methyl t-butyl ether (MTBE)	ug/L	<0.50	0.50	5839308
Styrene	ug/L	<0.50	0.50	5839308
1,1,1,2-Tetrachloroethane	ug/L	<0.50	0.50	5839308
1,1,2,2-Tetrachloroethane	ug/L	<0.50	0.50	5839308
Tetrachloroethylene	ug/L	<0.20	0.20	5839308
Toluene	ug/L	<0.20	0.20	5839308
1,1,1-Trichloroethane	ug/L	<0.20	0.20	5839308

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Report Date: 2018/11/19

Pinchin Ltd
Client Project #: 230236.002
Sampler Initials: MK

O.REG 153 VOCS BY HS (WATER)

Maxxam ID		IHM232		
Sampling Date		2018/11/13		
COC Number		102893		
	UNITS	**TRIP BLANK**	**RDL**	**QC Batch**
1,1,2-Trichloroethane	ug/L	<0.50	0.50	5839308
Trichloroethylene	ug/L	<0.20	0.20	5839308
Trichlorofluoromethane (FREON 11)	ug/L	<0.50	0.50	5839308
Vinyl Chloride	ug/L	<0.20	0.20	5839308
p+m-Xylene	ug/L	<0.20	0.20	5839308
o-Xylene	ug/L	<0.20	0.20	5839308
Total Xylenes	ug/L	<0.20	0.20	5839308
Surrogate Recovery (%)				
4-Bromofluorobenzene	%	92		5839308
D4-1,2-Dichloroethane	%	102		5839308
D8-Toluene	%	96		5839308

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B8U4943
Report Date: 2018/11/19

Pinchin Ltd
Client Project #: 230236.002
Sampler Initials: MK

TEST SUMMARY

Maxxam ID: IHM232
Sample ID: TRIP BLANK
Matrix: Water

Collected: 2018/11/13
Shipped:
Received: 2018/11/14

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
1,3-Dichloropropene Sum	CALC	5838816	N/A	2018/11/19	Automated Statchk
Volatile Organic Compounds in Water	GC/MS	5839308	N/A	2018/11/16	Blair Gannon

Maxxam ID: IHM233
Sample ID: EXMW-1
Matrix: Water

Collected: 2018/11/13
Shipped:
Received: 2018/11/14

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	5838815	N/A	2018/11/19	Automated Statchk
1,3-Dichloropropene Sum	CALC	5838816	N/A	2018/11/19	Automated Statchk
Chromium (VI) in Water	IC	5832710	N/A	2018/11/19	Lang Le
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	5841590	2018/11/16	2018/11/18	Margaret Kulczyk-Stanko
Mercury	CV/AA	5840721	2018/11/16	2018/11/16	Ron Morrison
Dissolved Metals by ICPMS	ICP/MS	5840092	N/A	2018/11/16	Arefa Dabhad
PAH Compounds in Water by GC/MS (SIM)	GC/MS	5841578	2018/11/16	2018/11/17	Mitesh Raj
Volatile Organic Compounds and F1 PHCs	GC/MSFD	5839695	N/A	2018/11/16	Denis Reid

Maxxam ID: IHM234
Sample ID: MW-1
Matrix: Water

Collected: 2018/11/13
Shipped:
Received: 2018/11/14

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	5838815	N/A	2018/11/19	Automated Statchk
1,3-Dichloropropene Sum	CALC	5838816	N/A	2018/11/19	Automated Statchk
Chromium (VI) in Water	IC	5832710	N/A	2018/11/19	Lang Le
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	5841620	2018/11/16	2018/11/19	Margaret Kulczyk-Stanko
Mercury	CV/AA	5840721	2018/11/16	2018/11/16	Ron Morrison
Dissolved Metals by ICPMS	ICP/MS	5840092	N/A	2018/11/16	Arefa Dabhad
PAH Compounds in Water by GC/MS (SIM)	GC/MS	5841618	2018/11/16	2018/11/17	Mitesh Raj
Volatile Organic Compounds and F1 PHCs	GC/MSFD	5839695	N/A	2018/11/16	Denis Reid

Maxxam ID: IHM235
Sample ID: EXMW-2
Matrix: Water

Collected: 2018/11/13
Shipped:
Received: 2018/11/14

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	5838815	N/A	2018/11/19	Automated Statchk
1,3-Dichloropropene Sum	CALC	5838816	N/A	2018/11/19	Automated Statchk
Chromium (VI) in Water	IC	5832710	N/A	2018/11/19	Lang Le
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	5841620	2018/11/16	2018/11/19	Margaret Kulczyk-Stanko
Mercury	CV/AA	5840721	2018/11/16	2018/11/16	Ron Morrison
Dissolved Metals by ICPMS	ICP/MS	5840092	N/A	2018/11/16	Arefa Dabhad
PAH Compounds in Water by GC/MS (SIM)	GC/MS	5841618	2018/11/16	2018/11/17	Mitesh Raj
Volatile Organic Compounds and F1 PHCs	GC/MSFD	5839695	N/A	2018/11/16	Denis Reid

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Report Date: 2018/11/19

Pinchin Ltd
Client Project #: 230236.002
Sampler Initials: MK

TEST SUMMARY

Maxxam ID: IHM236
Sample ID: MW-2
Matrix: Water

Collected: 2018/11/13
Shipped:
Received: 2018/11/14

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	5838815	N/A	2018/11/19	Automated Statchk
1,3-Dichloropropene Sum	CALC	5838816	N/A	2018/11/19	Automated Statchk
Chromium (VI) in Water	IC	5832710	N/A	2018/11/19	Lang Le
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	5841620	2018/11/16	2018/11/19	Margaret Kulczyk-Stanko
Mercury	CV/AA	5840721	2018/11/16	2018/11/16	Ron Morrison
Dissolved Metals by ICPMS	ICP/MS	5840092	N/A	2018/11/16	Arefa Dabhad
PAH Compounds in Water by GC/MS (SIM)	GC/MS	5841618	2018/11/16	2018/11/17	Mitesh Raj
Volatile Organic Compounds and F1 PHCs	GC/MSFD	5839695	N/A	2018/11/16	Denis Reid

Maxxam ID: IHM237
Sample ID: EXMW-3
Matrix: Water

Collected: 2018/11/13
Shipped:
Received: 2018/11/14

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	5838815	N/A	2018/11/19	Automated Statchk
1,3-Dichloropropene Sum	CALC	5838816	N/A	2018/11/19	Automated Statchk
Chromium (VI) in Water	IC	5832710	N/A	2018/11/19	Lang Le
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	5841620	2018/11/16	2018/11/19	Margaret Kulczyk-Stanko
Mercury	CV/AA	5840721	2018/11/16	2018/11/16	Ron Morrison
Dissolved Metals by ICPMS	ICP/MS	5840092	N/A	2018/11/16	Arefa Dabhad
PAH Compounds in Water by GC/MS (SIM)	GC/MS	5841618	2018/11/16	2018/11/17	Mitesh Raj
Volatile Organic Compounds and F1 PHCs	GC/MSFD	5839695	N/A	2018/11/16	Denis Reid

Maxxam ID: IHM238
Sample ID: MW-4
Matrix: Water

Collected: 2018/11/13
Shipped:
Received: 2018/11/14

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	5838815	N/A	2018/11/19	Automated Statchk
1,3-Dichloropropene Sum	CALC	5838816	N/A	2018/11/19	Automated Statchk
Chromium (VI) in Water	IC	5832710	N/A	2018/11/19	Lang Le
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	5841620	2018/11/16	2018/11/19	Margaret Kulczyk-Stanko
Mercury	CV/AA	5840721	2018/11/16	2018/11/16	Ron Morrison
Dissolved Metals by ICPMS	ICP/MS	5840092	N/A	2018/11/16	Arefa Dabhad
PAH Compounds in Water by GC/MS (SIM)	GC/MS	5841618	2018/11/16	2018/11/17	Mitesh Raj
Volatile Organic Compounds and F1 PHCs	GC/MSFD	5839695	N/A	2018/11/16	Denis Reid

Maxxam ID: IHM239
Sample ID: EXMW-4
Matrix: Water

Collected: 2018/11/13
Shipped:
Received: 2018/11/14

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	5838815	N/A	2018/11/19	Automated Statchk
1,3-Dichloropropene Sum	CALC	5838816	N/A	2018/11/19	Automated Statchk
Chromium (VI) in Water	IC	5832710	N/A	2018/11/19	Lang Le
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	5841620	2018/11/16	2018/11/19	Margaret Kulczyk-Stanko

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Maxxam Job #: B8U4943
Report Date: 2018/11/19

Pinchin Ltd
Client Project #: 230236.002
Sampler Initials: MK

TEST SUMMARY

Maxxam ID: IHM239
Sample ID: EXMW-4
Matrix: Water

Collected: 2018/11/13
Shipped:
Received: 2018/11/14

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Mercury	CV/AA	5840721	2018/11/16	2018/11/16	Ron Morrison
Dissolved Metals by ICPMS	ICP/MS	5840092	N/A	2018/11/16	Arefa Dabhad
PAH Compounds in Water by GC/MS (SIM)	GC/MS	5841618	2018/11/16	2018/11/17	Mitesh Raj
Volatile Organic Compounds and F1 PHCs	GC/MSFD	5839695	N/A	2018/11/16	Denis Reid

Maxxam ID: IHM240
Sample ID: MW-5
Matrix: Water

Collected: 2018/11/13
Shipped:
Received: 2018/11/14

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	5838815	N/A	2018/11/19	Automated Statchk
1,3-Dichloropropene Sum	CALC	5838816	N/A	2018/11/19	Automated Statchk
Chromium (VI) in Water	IC	5832710	N/A	2018/11/19	Lang Le
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	5841620	2018/11/16	2018/11/19	Margaret Kulczyk-Stanko
Mercury	CV/AA	5840721	2018/11/16	2018/11/16	Ron Morrison
Dissolved Metals by ICPMS	ICP/MS	5840092	N/A	2018/11/16	Arefa Dabhad
PAH Compounds in Water by GC/MS (SIM)	GC/MS	5841618	2018/11/16	2018/11/17	Mitesh Raj
Volatile Organic Compounds and F1 PHCs	GC/MSFD	5839695	N/A	2018/11/19	Denis Reid

Maxxam ID: IHM240 Dup
Sample ID: MW-5
Matrix: Water

Collected: 2018/11/13
Shipped:
Received: 2018/11/14

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Chromium (VI) in Water	IC	5832710	N/A	2018/11/19	Lang Le

Maxxam ID: IHM241
Sample ID: EXMW-5
Matrix: Water

Collected: 2018/11/13
Shipped:
Received: 2018/11/14

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	5838815	N/A	2018/11/19	Automated Statchk
1,3-Dichloropropene Sum	CALC	5838816	N/A	2018/11/19	Automated Statchk
Chromium (VI) in Water	IC	5832710	N/A	2018/11/19	Lang Le
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	5841620	2018/11/16	2018/11/19	Margaret Kulczyk-Stanko
Mercury	CV/AA	5840721	2018/11/16	2018/11/16	Ron Morrison
Dissolved Metals by ICPMS	ICP/MS	5840092	N/A	2018/11/16	Arefa Dabhad
PAH Compounds in Water by GC/MS (SIM)	GC/MS	5841618	2018/11/16	2018/11/17	Mitesh Raj
Volatile Organic Compounds and F1 PHCs	GC/MSFD	5839695	N/A	2018/11/16	Denis Reid

Maxxam ID: IHM242
Sample ID: DUP-2
Matrix: Water

Collected: 2018/11/13
Shipped:
Received: 2018/11/14

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	5838815	N/A	2018/11/19	Automated Statchk

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Maxxam Job #: B8U4943
Report Date: 2018/11/19

Pinchin Ltd
Client Project #: 230236.002
Sampler Initials: MK

TEST SUMMARY

Maxxam ID: IHM242
Sample ID: DUP-2
Matrix: Water

Collected: 2018/11/13
Shipped:
Received: 2018/11/14

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
1,3-Dichloropropene Sum	CALC	5838816	N/A	2018/11/19	Automated Statchk
Chromium (VI) in Water	IC	5832710	N/A	2018/11/19	Lang Le
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	5841620	2018/11/16	2018/11/19	Margaret Kulczyk-Stanko
Mercury	CV/AA	5840721	2018/11/16	2018/11/16	Ron Morrison
Dissolved Metals by ICPMS	ICP/MS	5840092	N/A	2018/11/16	Arefa Dabhad
PAH Compounds in Water by GC/MS (SIM)	GC/MS	5841618	2018/11/16	2018/11/17	Mitesh Raj
Volatile Organic Compounds and F1 PHCs	GC/MSFD	5839695	N/A	2018/11/16	Denis Reid

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Maxxam Job #: B8U4943
Report Date: 2018/11/19

Pinchin Ltd
Client Project #: 230236.002
Sampler Initials: MK

GENERAL COMMENTS

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

Package 1	8.3°C

Sample IHM233 [EXMW-1] : Mercury analysis: Sample was not field filtered and preserved. Analysis was completed with the client's consent.
Hexavalent chromium analysis: Sample was not field filtered and preserved. Analysis was completed with the client's consent.

Results relate only to the items tested.

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Maxxam Job #: B8U4943
Report Date: 2018/11/19

Pinchin Ltd
Client Project #: 230236.002
Sampler Initials: MK

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
5832710	LLE	Matrix Spike [IHM240-03]	Chromium (VI)	2018/11/19		101	%	80 - 120
5832710	LLE	Spiked Blank	Chromium (VI)	2018/11/19		102	%	80 - 120
5832710	LLE	Method Blank	Chromium (VI)	2018/11/19	<0.50		ug/L	
5832710	LLE	RPD [IHM240-03]	Chromium (VI)	2018/11/19	NC		%	20
5839308	BG1	Matrix Spike	4-Bromofluorobenzene	2018/11/16		97	%	70 - 130
			D4-1,2-Dichloroethane	2018/11/16		104	%	70 - 130
			D8-Toluene	2018/11/16		100	%	70 - 130
			Acetone (2-Propanone)	2018/11/16		99	%	60 - 140
			Benzene	2018/11/16		96	%	70 - 130
			Bromodichloromethane	2018/11/16		101	%	70 - 130
			Bromoform	2018/11/16		104	%	70 - 130
			Bromomethane	2018/11/16		94	%	60 - 140
			Carbon Tetrachloride	2018/11/16		96	%	70 - 130
			Chlorobenzene	2018/11/16		96	%	70 - 130
			Chloroform	2018/11/16		99	%	70 - 130
			Dibromochloromethane	2018/11/16		103	%	70 - 130
			1,2-Dichlorobenzene	2018/11/16		97	%	70 - 130
			1,3-Dichlorobenzene	2018/11/16		95	%	70 - 130
			1,4-Dichlorobenzene	2018/11/16		96	%	70 - 130
			Dichlorodifluoromethane (FREON 12)	2018/11/16		78	%	60 - 140
			1,1-Dichloroethane	2018/11/16		97	%	70 - 130
			1,2-Dichloroethane	2018/11/16		101	%	70 - 130
			1,1-Dichloroethylene	2018/11/16		92	%	70 - 130
			cis-1,2-Dichloroethylene	2018/11/16		98	%	70 - 130
			trans-1,2-Dichloroethylene	2018/11/16		95	%	70 - 130
			1,2-Dichloropropane	2018/11/16		100	%	70 - 130
			cis-1,3-Dichloropropene	2018/11/16		101	%	70 - 130
			trans-1,3-Dichloropropene	2018/11/16		103	%	70 - 130
			Ethylbenzene	2018/11/16		95	%	70 - 130
			Ethylene Dibromide	2018/11/16		100	%	70 - 130
			Hexane	2018/11/16		92	%	70 - 130
			Methylene Chloride(Dichloromethane)	2018/11/16		102	%	70 - 130
			Methyl Ethyl Ketone (2-Butanone)	2018/11/16		103	%	60 - 140
			Methyl Isobutyl Ketone	2018/11/16		106	%	70 - 130
			Methyl t-butyl ether (MTBE)	2018/11/16		94	%	70 - 130
			Styrene	2018/11/16		99	%	70 - 130
			1,1,1,2-Tetrachloroethane	2018/11/16		100	%	70 - 130
			1,1,2,2-Tetrachloroethane	2018/11/16		104	%	70 - 130
			Tetrachloroethylene	2018/11/16		95	%	70 - 130
			Toluene	2018/11/16		92	%	70 - 130
			1,1,1-Trichloroethane	2018/11/16		95	%	70 - 130
			1,1,2-Trichloroethane	2018/11/16		101	%	70 - 130
			Trichloroethylene	2018/11/16		98	%	70 - 130
			Trichlorofluoromethane (FREON 11)	2018/11/16		95	%	70 - 130
			Vinyl Chloride	2018/11/16		95	%	70 - 130
			p+m-Xylene	2018/11/16		94	%	70 - 130
			o-Xylene	2018/11/16		94	%	70 - 130
5839308	BG1	Spiked Blank	4-Bromofluorobenzene	2018/11/16		98	%	70 - 130
			D4-1,2-Dichloroethane	2018/11/16		101	%	70 - 130
			D8-Toluene	2018/11/16		100	%	70 - 130
			Acetone (2-Propanone)	2018/11/16		100	%	60 - 140
			Benzene	2018/11/16		98	%	70 - 130
			Bromodichloromethane	2018/11/16		102	%	70 - 130
			Bromoform	2018/11/16		104	%	70 - 130

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Bromomethane	2018/11/16		96	%	60 - 140
			Carbon Tetrachloride	2018/11/16		98	%	70 - 130
			Chlorobenzene	2018/11/16		98	%	70 - 130
			Chloroform	2018/11/16		101	%	70 - 130
			Dibromochloromethane	2018/11/16		104	%	70 - 130
			1,2-Dichlorobenzene	2018/11/16		97	%	70 - 130
			1,3-Dichlorobenzene	2018/11/16		97	%	70 - 130
			1,4-Dichlorobenzene	2018/11/16		97	%	70 - 130
			Dichlorodifluoromethane (FREON 12)	2018/11/16		83	%	60 - 140
			1,1-Dichloroethane	2018/11/16		100	%	70 - 130
			1,2-Dichloroethane	2018/11/16		101	%	70 - 130
			1,1-Dichloroethylene	2018/11/16		95	%	70 - 130
			cis-1,2-Dichloroethylene	2018/11/16		100	%	70 - 130
			trans-1,2-Dichloroethylene	2018/11/16		98	%	70 - 130
			1,2-Dichloropropane	2018/11/16		101	%	70 - 130
			cis-1,3-Dichloropropene	2018/11/16		100	%	70 - 130
			trans-1,3-Dichloropropene	2018/11/16		100	%	70 - 130
			Ethylbenzene	2018/11/16		98	%	70 - 130
			Ethylene Dibromide	2018/11/16		101	%	70 - 130
			Hexane	2018/11/16		95	%	70 - 130
			Methylene Chloride(Dichloromethane)	2018/11/16		103	%	70 - 130
			Methyl Ethyl Ketone (2-Butanone)	2018/11/16		103	%	60 - 140
			Methyl Isobutyl Ketone	2018/11/16		106	%	70 - 130
			Methyl t-butyl ether (MTBE)	2018/11/16		96	%	70 - 130
			Styrene	2018/11/16		102	%	70 - 130
			1,1,1,2-Tetrachloroethane	2018/11/16		102	%	70 - 130
			1,1,2,2-Tetrachloroethane	2018/11/16		104	%	70 - 130
			Tetrachloroethylene	2018/11/16		98	%	70 - 130
			Toluene	2018/11/16		95	%	70 - 130
			1,1,1-Trichloroethane	2018/11/16		98	%	70 - 130
			1,1,2-Trichloroethane	2018/11/16		103	%	70 - 130
			Trichloroethylene	2018/11/16		100	%	70 - 130
			Trichlorofluoromethane (FREON 11)	2018/11/16		98	%	70 - 130
			Vinyl Chloride	2018/11/16		99	%	70 - 130
			p+m-Xylene	2018/11/16		98	%	70 - 130
			o-Xylene	2018/11/16		99	%	70 - 130
5839308	BG1	Method Blank	4-Bromofluorobenzene	2018/11/16		95	%	70 - 130
			D4-1,2-Dichloroethane	2018/11/16		102	%	70 - 130
			D8-Toluene	2018/11/16		96	%	70 - 130
			Acetone (2-Propanone)	2018/11/16	<10		ug/L	
			Benzene	2018/11/16	<0.20		ug/L	
			Bromodichloromethane	2018/11/16	<0.50		ug/L	
			Bromoform	2018/11/16	<1.0		ug/L	
			Bromomethane	2018/11/16	<0.50		ug/L	
			Carbon Tetrachloride	2018/11/16	<0.20		ug/L	
			Chlorobenzene	2018/11/16	<0.20		ug/L	
			Chloroform	2018/11/16	<0.20		ug/L	
			Dibromochloromethane	2018/11/16	<0.50		ug/L	
			1,2-Dichlorobenzene	2018/11/16	<0.50		ug/L	
			1,3-Dichlorobenzene	2018/11/16	<0.50		ug/L	
			1,4-Dichlorobenzene	2018/11/16	<0.50		ug/L	
			Dichlorodifluoromethane (FREON 12)	2018/11/16	<1.0		ug/L	
			1,1-Dichloroethane	2018/11/16	<0.20		ug/L	
			1,2-Dichloroethane	2018/11/16	<0.50		ug/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			1,1-Dichloroethylene	2018/11/16	<0.20		ug/L	
			cis-1,2-Dichloroethylene	2018/11/16	<0.50		ug/L	
			trans-1,2-Dichloroethylene	2018/11/16	<0.50		ug/L	
			1,2-Dichloropropane	2018/11/16	<0.20		ug/L	
			cis-1,3-Dichloropropene	2018/11/16	<0.30		ug/L	
			trans-1,3-Dichloropropene	2018/11/16	<0.40		ug/L	
			Ethylbenzene	2018/11/16	<0.20		ug/L	
			Ethylene Dibromide	2018/11/16	<0.20		ug/L	
			Hexane	2018/11/16	<1.0		ug/L	
			Methylene Chloride(Dichloromethane)	2018/11/16	<2.0		ug/L	
			Methyl Ethyl Ketone (2-Butanone)	2018/11/16	<10		ug/L	
			Methyl Isobutyl Ketone	2018/11/16	<5.0		ug/L	
			Methyl t-butyl ether (MTBE)	2018/11/16	<0.50		ug/L	
			Styrene	2018/11/16	<0.50		ug/L	
			1,1,1,2-Tetrachloroethane	2018/11/16	<0.50		ug/L	
			1,1,2,2-Tetrachloroethane	2018/11/16	<0.50		ug/L	
			Tetrachloroethylene	2018/11/16	<0.20		ug/L	
			Toluene	2018/11/16	<0.20		ug/L	
			1,1,1-Trichloroethane	2018/11/16	<0.20		ug/L	
			1,1,2-Trichloroethane	2018/11/16	<0.50		ug/L	
			Trichloroethylene	2018/11/16	<0.20		ug/L	
			Trichlorofluoromethane (FREON 11)	2018/11/16	<0.50		ug/L	
			Vinyl Chloride	2018/11/16	<0.20		ug/L	
			p+m-Xylene	2018/11/16	<0.20		ug/L	
			o-Xylene	2018/11/16	<0.20		ug/L	
			Total Xylenes	2018/11/16	<0.20		ug/L	
5839308	BG1	RPD	Acetone (2-Propanone)	2018/11/16	NC		%	30
			Benzene	2018/11/16	1.9		%	30
			Bromodichloromethane	2018/11/16	NC		%	30
			Bromoform	2018/11/16	NC		%	30
			Bromomethane	2018/11/16	NC		%	30
			Carbon Tetrachloride	2018/11/16	NC		%	30
			Chlorobenzene	2018/11/16	NC		%	30
			Chloroform	2018/11/16	0.60		%	30
			Dibromochloromethane	2018/11/16	NC		%	30
			1,2-Dichlorobenzene	2018/11/16	NC		%	30
			1,3-Dichlorobenzene	2018/11/16	NC		%	30
			1,4-Dichlorobenzene	2018/11/16	NC		%	30
			Dichlorodifluoromethane (FREON 12)	2018/11/16	NC		%	30
			1,1-Dichloroethane	2018/11/16	NC		%	30
			1,2-Dichloroethane	2018/11/16	NC		%	30
			1,1-Dichloroethylene	2018/11/16	NC		%	30
			cis-1,2-Dichloroethylene	2018/11/16	NC		%	30
			trans-1,2-Dichloroethylene	2018/11/16	NC		%	30
			1,2-Dichloropropane	2018/11/16	NC		%	30
			cis-1,3-Dichloropropene	2018/11/16	NC		%	30
			trans-1,3-Dichloropropene	2018/11/16	NC		%	30
			Ethylbenzene	2018/11/16	NC		%	30
			Ethylene Dibromide	2018/11/16	NC		%	30
			Hexane	2018/11/16	NC		%	30
			Methylene Chloride(Dichloromethane)	2018/11/16	NC		%	30
			Methyl Ethyl Ketone (2-Butanone)	2018/11/16	NC		%	30
			Methyl Isobutyl Ketone	2018/11/16	NC		%	30
			Methyl t-butyl ether (MTBE)	2018/11/16	NC		%	30

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Styrene	2018/11/16	NC		%	30
			1,1,1,2-Tetrachloroethane	2018/11/16	NC		%	30
			1,1,2,2-Tetrachloroethane	2018/11/16	NC		%	30
			Tetrachloroethylene	2018/11/16	NC		%	30
			Toluene	2018/11/16	1.3		%	30
			1,1,1-Trichloroethane	2018/11/16	NC		%	30
			1,1,2-Trichloroethane	2018/11/16	NC		%	30
			Trichloroethylene	2018/11/16	NC		%	30
			Trichlorofluoromethane (FREON 11)	2018/11/16	NC		%	30
			Vinyl Chloride	2018/11/16	NC		%	30
			p+m-Xylene	2018/11/16	NC		%	30
			o-Xylene	2018/11/16	NC		%	30
			Total Xylenes	2018/11/16	NC		%	30
5839695	DR1	Matrix Spike	4-Bromofluorobenzene	2018/11/16		102	%	70 - 130
			D4-1,2-Dichloroethane	2018/11/16		101	%	70 - 130
			D8-Toluene	2018/11/16		105	%	70 - 130
			Acetone (2-Propanone)	2018/11/16		98	%	60 - 140
			Benzene	2018/11/16		90	%	70 - 130
			Bromodichloromethane	2018/11/16		93	%	70 - 130
			Bromoform	2018/11/16		88	%	70 - 130
			Bromomethane	2018/11/16		85	%	60 - 140
			Carbon Tetrachloride	2018/11/16		90	%	70 - 130
			Chlorobenzene	2018/11/16		91	%	70 - 130
			Chloroform	2018/11/16		93	%	70 - 130
			Dibromochloromethane	2018/11/16		115	%	70 - 130
			1,2-Dichlorobenzene	2018/11/16		89	%	70 - 130
			1,3-Dichlorobenzene	2018/11/16		95	%	70 - 130
			1,4-Dichlorobenzene	2018/11/16		91	%	70 - 130
			Dichlorodifluoromethane (FREON 12)	2018/11/16		59 (1)	%	60 - 140
			1,1-Dichloroethane	2018/11/16		93	%	70 - 130
			1,2-Dichloroethane	2018/11/16		95	%	70 - 130
			1,1-Dichloroethylene	2018/11/16		91	%	70 - 130
			cis-1,2-Dichloroethylene	2018/11/16		92	%	70 - 130
			trans-1,2-Dichloroethylene	2018/11/16		87	%	70 - 130
			1,2-Dichloropropane	2018/11/16		93	%	70 - 130
			cis-1,3-Dichloropropene	2018/11/16		99	%	70 - 130
			trans-1,3-Dichloropropene	2018/11/16		108	%	70 - 130
			Ethylbenzene	2018/11/16		95	%	70 - 130
			Ethylene Dibromide	2018/11/16		91	%	70 - 130
			Hexane	2018/11/16		92	%	70 - 130
			Methylene Chloride(Dichloromethane)	2018/11/16		84	%	70 - 130
			Methyl Ethyl Ketone (2-Butanone)	2018/11/16		100	%	60 - 140
			Methyl Isobutyl Ketone	2018/11/16		85	%	70 - 130
			Methyl t-butyl ether (MTBE)	2018/11/16		93	%	70 - 130
			Styrene	2018/11/16		96	%	70 - 130
			1,1,1,2-Tetrachloroethane	2018/11/16		90	%	70 - 130
			1,1,2,2-Tetrachloroethane	2018/11/16		91	%	70 - 130
			Tetrachloroethylene	2018/11/16		91	%	70 - 130
			Toluene	2018/11/16		93	%	70 - 130
			1,1,1-Trichloroethane	2018/11/16		92	%	70 - 130
			1,1,2-Trichloroethane	2018/11/16		93	%	70 - 130
			Trichloroethylene	2018/11/16		90	%	70 - 130
			Trichlorofluoromethane (FREON 11)	2018/11/16		89	%	70 - 130
			Vinyl Chloride	2018/11/16		80	%	70 - 130

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			p+m-Xylene	2018/11/16		95	%	70 - 130
			o-Xylene	2018/11/16		96	%	70 - 130
			F1 (C6-C10)	2018/11/16		99	%	60 - 140
5839695	DR1	Spiked Blank	4-Bromofluorobenzene	2018/11/16		100	%	70 - 130
			D4-1,2-Dichloroethane	2018/11/16		99	%	70 - 130
			D8-Toluene	2018/11/16		105	%	70 - 130
			Acetone (2-Propanone)	2018/11/16		84	%	60 - 140
			Benzene	2018/11/16		88	%	70 - 130
			Bromodichloromethane	2018/11/16		91	%	70 - 130
			Bromoform	2018/11/16		84	%	70 - 130
			Bromomethane	2018/11/16		80	%	60 - 140
			Carbon Tetrachloride	2018/11/16		89	%	70 - 130
			Chlorobenzene	2018/11/16		88	%	70 - 130
			Chloroform	2018/11/16		91	%	70 - 130
			Dibromochloromethane	2018/11/16		87	%	70 - 130
			1,2-Dichlorobenzene	2018/11/16		88	%	70 - 130
			1,3-Dichlorobenzene	2018/11/16		96	%	70 - 130
			1,4-Dichlorobenzene	2018/11/16		91	%	70 - 130
			Dichlorodifluoromethane (FREON 12)	2018/11/16		62	%	60 - 140
			1,1-Dichloroethane	2018/11/16		91	%	70 - 130
			1,2-Dichloroethane	2018/11/16		91	%	70 - 130
			1,1-Dichloroethylene	2018/11/16		90	%	70 - 130
			cis-1,2-Dichloroethylene	2018/11/16		89	%	70 - 130
			trans-1,2-Dichloroethylene	2018/11/16		85	%	70 - 130
			1,2-Dichloropropane	2018/11/16		90	%	70 - 130
			cis-1,3-Dichloropropene	2018/11/16		92	%	70 - 130
			trans-1,3-Dichloropropene	2018/11/16		96	%	70 - 130
			Ethylbenzene	2018/11/16		94	%	70 - 130
			Ethylene Dibromide	2018/11/16		86	%	70 - 130
			Hexane	2018/11/16		92	%	70 - 130
			Methylene Chloride(Dichloromethane)	2018/11/16		81	%	70 - 130
			Methyl Ethyl Ketone (2-Butanone)	2018/11/16		88	%	60 - 140
			Methyl Isobutyl Ketone	2018/11/16		80	%	70 - 130
			Methyl t-butyl ether (MTBE)	2018/11/16		91	%	70 - 130
			Styrene	2018/11/16		95	%	70 - 130
			1,1,1,2-Tetrachloroethane	2018/11/16		87	%	70 - 130
			1,1,2,2-Tetrachloroethane	2018/11/16		85	%	70 - 130
			Tetrachloroethylene	2018/11/16		88	%	70 - 130
			Toluene	2018/11/16		90	%	70 - 130
			1,1,1-Trichloroethane	2018/11/16		91	%	70 - 130
			1,1,2-Trichloroethane	2018/11/16		89	%	70 - 130
			Trichloroethylene	2018/11/16		89	%	70 - 130
			Trichlorofluoromethane (FREON 11)	2018/11/16		88	%	70 - 130
			Vinyl Chloride	2018/11/16		80	%	70 - 130
			p+m-Xylene	2018/11/16		95	%	70 - 130
			o-Xylene	2018/11/16		94	%	70 - 130
			F1 (C6-C10)	2018/11/16		98	%	60 - 140
5839695	DR1	Method Blank	4-Bromofluorobenzene	2018/11/16		89	%	70 - 130
			D4-1,2-Dichloroethane	2018/11/16		100	%	70 - 130
			D8-Toluene	2018/11/16		96	%	70 - 130
			Acetone (2-Propanone)	2018/11/16	<10		ug/L	
			Benzene	2018/11/16	<0.20		ug/L	
			Bromodichloromethane	2018/11/16	<0.50		ug/L	
			Bromoform	2018/11/16	<1.0		ug/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Bromomethane	2018/11/16	<0.50		ug/L	
			Carbon Tetrachloride	2018/11/16	<0.20		ug/L	
			Chlorobenzene	2018/11/16	<0.20		ug/L	
			Chloroform	2018/11/16	<0.20		ug/L	
			Dibromochloromethane	2018/11/16	<0.50		ug/L	
			1,2-Dichlorobenzene	2018/11/16	<0.50		ug/L	
			1,3-Dichlorobenzene	2018/11/16	<0.50		ug/L	
			1,4-Dichlorobenzene	2018/11/16	<0.50		ug/L	
			Dichlorodifluoromethane (FREON 12)	2018/11/16	<1.0		ug/L	
			1,1-Dichloroethane	2018/11/16	<0.20		ug/L	
			1,2-Dichloroethane	2018/11/16	<0.50		ug/L	
			1,1-Dichloroethylene	2018/11/16	<0.20		ug/L	
			cis-1,2-Dichloroethylene	2018/11/16	<0.50		ug/L	
			trans-1,2-Dichloroethylene	2018/11/16	<0.50		ug/L	
			1,2-Dichloropropane	2018/11/16	<0.20		ug/L	
			cis-1,3-Dichloropropene	2018/11/16	<0.30		ug/L	
			trans-1,3-Dichloropropene	2018/11/16	<0.40		ug/L	
			Ethylbenzene	2018/11/16	<0.20		ug/L	
			Ethylene Dibromide	2018/11/16	<0.20		ug/L	
			Hexane	2018/11/16	<1.0		ug/L	
			Methylene Chloride(Dichloromethane)	2018/11/16	<2.0		ug/L	
			Methyl Ethyl Ketone (2-Butanone)	2018/11/16	<10		ug/L	
			Methyl Isobutyl Ketone	2018/11/16	<5.0		ug/L	
			Methyl t-butyl ether (MTBE)	2018/11/16	<0.50		ug/L	
			Styrene	2018/11/16	<0.50		ug/L	
			1,1,1,2-Tetrachloroethane	2018/11/16	<0.50		ug/L	
			1,1,2,2-Tetrachloroethane	2018/11/16	<0.50		ug/L	
			Tetrachloroethylene	2018/11/16	<0.20		ug/L	
			Toluene	2018/11/16	<0.20		ug/L	
			1,1,1-Trichloroethane	2018/11/16	<0.20		ug/L	
			1,1,2-Trichloroethane	2018/11/16	<0.50		ug/L	
			Trichloroethylene	2018/11/16	<0.20		ug/L	
			Trichlorofluoromethane (FREON 11)	2018/11/16	<0.50		ug/L	
			Vinyl Chloride	2018/11/16	<0.20		ug/L	
			p+m-Xylene	2018/11/16	<0.20		ug/L	
			o-Xylene	2018/11/16	<0.20		ug/L	
			Total Xylenes	2018/11/16	<0.20		ug/L	
			F1 (C6-C10)	2018/11/16	<25		ug/L	
			F1 (C6-C10) - BTEX	2018/11/16	<25		ug/L	
5839695	DR1	RPD	Acetone (2-Propanone)	2018/11/16	NC		%	30
			Benzene	2018/11/16	NC		%	30
			Bromodichloromethane	2018/11/16	NC		%	30
			Bromoform	2018/11/16	NC		%	30
			Bromomethane	2018/11/16	NC		%	30
			Carbon Tetrachloride	2018/11/16	NC		%	30
			Chlorobenzene	2018/11/16	NC		%	30
			Chloroform	2018/11/16	NC		%	30
			Dibromochloromethane	2018/11/16	NC		%	30
			1,2-Dichlorobenzene	2018/11/16	NC		%	30
			1,3-Dichlorobenzene	2018/11/16	NC		%	30
			1,4-Dichlorobenzene	2018/11/16	NC		%	30
			Dichlorodifluoromethane (FREON 12)	2018/11/16	NC		%	30
			1,1-Dichloroethane	2018/11/16	NC		%	30
			1,2-Dichloroethane	2018/11/16	NC		%	30

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			1,1-Dichloroethylene	2018/11/16	NC		%	30
			cis-1,2-Dichloroethylene	2018/11/16	NC		%	30
			trans-1,2-Dichloroethylene	2018/11/16	NC		%	30
			1,2-Dichloropropane	2018/11/16	NC		%	30
			cis-1,3-Dichloropropene	2018/11/16	NC		%	30
			trans-1,3-Dichloropropene	2018/11/16	NC		%	30
			Ethylbenzene	2018/11/16	NC		%	30
			Ethylene Dibromide	2018/11/16	NC		%	30
			Hexane	2018/11/16	NC		%	30
			Methylene Chloride(Dichloromethane)	2018/11/16	NC		%	30
			Methyl Ethyl Ketone (2-Butanone)	2018/11/16	NC		%	30
			Methyl Isobutyl Ketone	2018/11/16	NC		%	30
			Methyl t-butyl ether (MTBE)	2018/11/16	NC		%	30
			Styrene	2018/11/16	NC		%	30
			1,1,1,2-Tetrachloroethane	2018/11/16	NC		%	30
			1,1,2,2-Tetrachloroethane	2018/11/16	NC		%	30
			Tetrachloroethylene	2018/11/16	NC		%	30
			Toluene	2018/11/16	NC		%	30
			1,1,1-Trichloroethane	2018/11/16	NC		%	30
			1,1,2-Trichloroethane	2018/11/16	NC		%	30
			Trichloroethylene	2018/11/16	NC		%	30
			Trichlorofluoromethane (FREON 11)	2018/11/16	NC		%	30
			Vinyl Chloride	2018/11/16	NC		%	30
			p+m-Xylene	2018/11/16	NC		%	30
			o-Xylene	2018/11/16	NC		%	30
			Total Xylenes	2018/11/16	NC		%	30
			F1 (C6-C10)	2018/11/16	NC		%	30
			F1 (C6-C10) - BTEX	2018/11/16	NC		%	30
5840092	ADA	Matrix Spike	Dissolved Antimony (Sb)	2018/11/16		110	%	80 - 120
			Dissolved Arsenic (As)	2018/11/16		103	%	80 - 120
			Dissolved Barium (Ba)	2018/11/16		104	%	80 - 120
			Dissolved Beryllium (Be)	2018/11/16		108	%	80 - 120
			Dissolved Boron (B)	2018/11/16		103	%	80 - 120
			Dissolved Cadmium (Cd)	2018/11/16		107	%	80 - 120
			Dissolved Chromium (Cr)	2018/11/16		101	%	80 - 120
			Dissolved Cobalt (Co)	2018/11/16		101	%	80 - 120
			Dissolved Copper (Cu)	2018/11/16		109	%	80 - 120
			Dissolved Lead (Pb)	2018/11/16		101	%	80 - 120
			Dissolved Molybdenum (Mo)	2018/11/16		104	%	80 - 120
			Dissolved Nickel (Ni)	2018/11/16		103	%	80 - 120
			Dissolved Selenium (Se)	2018/11/16		108	%	80 - 120
			Dissolved Silver (Ag)	2018/11/16		104	%	80 - 120
			Dissolved Sodium (Na)	2018/11/16		100	%	80 - 120
			Dissolved Thallium (Tl)	2018/11/16		103	%	80 - 120
			Dissolved Uranium (U)	2018/11/16		101	%	80 - 120
			Dissolved Vanadium (V)	2018/11/16		102	%	80 - 120
			Dissolved Zinc (Zn)	2018/11/16		104	%	80 - 120
5840092	ADA	Spiked Blank	Dissolved Antimony (Sb)	2018/11/16		101	%	80 - 120
			Dissolved Arsenic (As)	2018/11/16		99	%	80 - 120
			Dissolved Barium (Ba)	2018/11/16		100	%	80 - 120
			Dissolved Beryllium (Be)	2018/11/16		99	%	80 - 120
			Dissolved Boron (B)	2018/11/16		99	%	80 - 120
			Dissolved Cadmium (Cd)	2018/11/16		101	%	80 - 120
			Dissolved Chromium (Cr)	2018/11/16		97	%	80 - 120

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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Dissolved Cobalt (Co)	2018/11/16		99	%	80 - 120
			Dissolved Copper (Cu)	2018/11/16		100	%	80 - 120
			Dissolved Lead (Pb)	2018/11/16		95	%	80 - 120
			Dissolved Molybdenum (Mo)	2018/11/16		98	%	80 - 120
			Dissolved Nickel (Ni)	2018/11/16		100	%	80 - 120
			Dissolved Selenium (Se)	2018/11/16		103	%	80 - 120
			Dissolved Silver (Ag)	2018/11/16		99	%	80 - 120
			Dissolved Sodium (Na)	2018/11/16		99	%	80 - 120
			Dissolved Thallium (Tl)	2018/11/16		99	%	80 - 120
			Dissolved Uranium (U)	2018/11/16		97	%	80 - 120
			Dissolved Vanadium (V)	2018/11/16		98	%	80 - 120
			Dissolved Zinc (Zn)	2018/11/16		100	%	80 - 120
5840092	ADA	Method Blank	Dissolved Antimony (Sb)	2018/11/16	<0.50		ug/L	
			Dissolved Arsenic (As)	2018/11/16	<1.0		ug/L	
			Dissolved Barium (Ba)	2018/11/16	<2.0		ug/L	
			Dissolved Beryllium (Be)	2018/11/16	<0.50		ug/L	
			Dissolved Boron (B)	2018/11/16	<10		ug/L	
			Dissolved Cadmium (Cd)	2018/11/16	<0.10		ug/L	
			Dissolved Chromium (Cr)	2018/11/16	<5.0		ug/L	
			Dissolved Cobalt (Co)	2018/11/16	<0.50		ug/L	
			Dissolved Copper (Cu)	2018/11/16	<1.0		ug/L	
			Dissolved Lead (Pb)	2018/11/16	<0.50		ug/L	
			Dissolved Molybdenum (Mo)	2018/11/16	<0.50		ug/L	
			Dissolved Nickel (Ni)	2018/11/16	<1.0		ug/L	
			Dissolved Selenium (Se)	2018/11/16	<2.0		ug/L	
			Dissolved Silver (Ag)	2018/11/16	<0.10		ug/L	
			Dissolved Sodium (Na)	2018/11/16	<100		ug/L	
			Dissolved Thallium (Tl)	2018/11/16	<0.050		ug/L	
			Dissolved Uranium (U)	2018/11/16	<0.10		ug/L	
			Dissolved Vanadium (V)	2018/11/16	<0.50		ug/L	
			Dissolved Zinc (Zn)	2018/11/16	<5.0		ug/L	
5840092	ADA	RPD	Dissolved Antimony (Sb)	2018/11/16	NC		%	20
			Dissolved Arsenic (As)	2018/11/16	NC		%	20
			Dissolved Cadmium (Cd)	2018/11/16	NC		%	20
			Dissolved Cobalt (Co)	2018/11/16	NC		%	20
			Dissolved Copper (Cu)	2018/11/16	17		%	20
			Dissolved Lead (Pb)	2018/11/16	NC		%	20
			Dissolved Nickel (Ni)	2018/11/16	NC		%	20
			Dissolved Selenium (Se)	2018/11/16	NC		%	20
			Dissolved Silver (Ag)	2018/11/16	NC		%	20
			Dissolved Zinc (Zn)	2018/11/16	NC		%	20
5840721	RON	Matrix Spike	Mercury (Hg)	2018/11/16		92	%	75 - 125
5840721	RON	Spiked Blank	Mercury (Hg)	2018/11/16		99	%	80 - 120
5840721	RON	Method Blank	Mercury (Hg)	2018/11/16	<0.1		ug/L	
5840721	RON	RPD	Mercury (Hg)	2018/11/16	NC		%	20
5841578	RAJ	Matrix Spike	D10-Anthracene	2018/11/16		108	%	50 - 130
			D14-Terphenyl (FS)	2018/11/16		102	%	50 - 130
			D8-Acenaphthylene	2018/11/16		100	%	50 - 130
			Acenaphthene	2018/11/16		97	%	50 - 130
			Acenaphthylene	2018/11/16		102	%	50 - 130
			Anthracene	2018/11/16		107	%	50 - 130
			Benzo(a)anthracene	2018/11/16		114	%	50 - 130
			Benzo(a)pyrene	2018/11/16		112	%	50 - 130
			Benzo(b/j)fluoranthene	2018/11/16		112	%	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
			Benzo(g,h,i)perylene	2018/11/16		103	%	50 - 130
			Benzo(k)fluoranthene	2018/11/16		99	%	50 - 130
			Chrysene	2018/11/16		115	%	50 - 130
			Dibenz(a,h)anthracene	2018/11/16		100	%	50 - 130
			Fluoranthene	2018/11/16		117	%	50 - 130
			Fluorene	2018/11/16		94	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2018/11/16		107	%	50 - 130
			1-Methylnaphthalene	2018/11/16		133 (2)	%	50 - 130
			2-Methylnaphthalene	2018/11/16		108	%	50 - 130
			Naphthalene	2018/11/16		100	%	50 - 130
			Phenanthrene	2018/11/16		107	%	50 - 130
			Pyrene	2018/11/16		111	%	50 - 130
5841578	RAJ	Spiked Blank	D10-Anthracene	2018/11/16		90	%	50 - 130
			D14-Terphenyl (FS)	2018/11/16		91	%	50 - 130
			D8-Acenaphthylene	2018/11/16		85	%	50 - 130
			Acenaphthene	2018/11/16		91	%	50 - 130
			Acenaphthylene	2018/11/16		84	%	50 - 130
			Anthracene	2018/11/16		87	%	50 - 130
			Benzo(a)anthracene	2018/11/16		87	%	50 - 130
			Benzo(a)pyrene	2018/11/16		103	%	50 - 130
			Benzo(b/j)fluoranthene	2018/11/16		97	%	50 - 130
			Benzo(g,h,i)perylene	2018/11/16		97	%	50 - 130
			Benzo(k)fluoranthene	2018/11/16		98	%	50 - 130
			Chrysene	2018/11/16		99	%	50 - 130
			Dibenz(a,h)anthracene	2018/11/16		91	%	50 - 130
			Fluoranthene	2018/11/16		88	%	50 - 130
			Fluorene	2018/11/16		87	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2018/11/16		100	%	50 - 130
			1-Methylnaphthalene	2018/11/16		113	%	50 - 130
			2-Methylnaphthalene	2018/11/16		97	%	50 - 130
			Naphthalene	2018/11/16		94	%	50 - 130
			Phenanthrene	2018/11/16		93	%	50 - 130
			Pyrene	2018/11/16		90	%	50 - 130
5841578	RAJ	Method Blank	D10-Anthracene	2018/11/16		87	%	50 - 130
			D14-Terphenyl (FS)	2018/11/16		93	%	50 - 130
			D8-Acenaphthylene	2018/11/16		83	%	50 - 130
			Acenaphthene	2018/11/16	<0.050		ug/L	
			Acenaphthylene	2018/11/16	<0.050		ug/L	
			Anthracene	2018/11/16	<0.050		ug/L	
			Benzo(a)anthracene	2018/11/16	<0.050		ug/L	
			Benzo(a)pyrene	2018/11/16	<0.010		ug/L	
			Benzo(b/j)fluoranthene	2018/11/16	<0.050		ug/L	
			Benzo(g,h,i)perylene	2018/11/16	<0.050		ug/L	
			Benzo(k)fluoranthene	2018/11/16	<0.050		ug/L	
			Chrysene	2018/11/16	<0.050		ug/L	
			Dibenz(a,h)anthracene	2018/11/16	<0.050		ug/L	
			Fluoranthene	2018/11/16	<0.050		ug/L	
			Fluorene	2018/11/16	<0.050		ug/L	
			Indeno(1,2,3-cd)pyrene	2018/11/16	<0.050		ug/L	
			1-Methylnaphthalene	2018/11/16	<0.050		ug/L	
			2-Methylnaphthalene	2018/11/16	<0.050		ug/L	
			Naphthalene	2018/11/16	<0.050		ug/L	
			Phenanthrene	2018/11/16	<0.030		ug/L	
			Pyrene	2018/11/16	<0.050		ug/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
5841578	RAJ	RPD	Acenaphthene	2018/11/16	2.1		%	30
			Acenaphthylene	2018/11/16	8.0		%	30
			Anthracene	2018/11/16	0.76		%	30
			Benzo(a)anthracene	2018/11/16	NC		%	30
			Benzo(a)pyrene	2018/11/16	NC		%	30
			Benzo(b/j)fluoranthene	2018/11/16	NC		%	30
			Benzo(g,h,i)perylene	2018/11/16	NC		%	30
			Benzo(k)fluoranthene	2018/11/16	NC		%	30
			Chrysene	2018/11/16	NC		%	30
			Dibenz(a,h)anthracene	2018/11/16	NC		%	30
			Fluoranthene	2018/11/16	8.1		%	30
			Fluorene	2018/11/16	2.9		%	30
			Indeno(1,2,3-cd)pyrene	2018/11/16	NC		%	30
			1-Methylnaphthalene	2018/11/16	6.1		%	30
			2-Methylnaphthalene	2018/11/16	6.1		%	30
			Naphthalene	2018/11/16	4.6		%	30
			Phenanthrene	2018/11/16	6.9		%	30
			Pyrene	2018/11/16	7.5		%	30
5841590	MKS	Matrix Spike	o-Terphenyl	2018/11/18		114	%	60 - 130
			F2 (C10-C16 Hydrocarbons)	2018/11/18		NC	%	50 - 130
			F3 (C16-C34 Hydrocarbons)	2018/11/18		NC	%	50 - 130
			F4 (C34-C50 Hydrocarbons)	2018/11/18		99	%	50 - 130
5841590	MKS	Spiked Blank	o-Terphenyl	2018/11/18		116	%	60 - 130
			F2 (C10-C16 Hydrocarbons)	2018/11/18		100	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2018/11/18		105	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2018/11/18		96	%	60 - 130
5841590	MKS	Method Blank	o-Terphenyl	2018/11/18		111	%	60 - 130
			F2 (C10-C16 Hydrocarbons)	2018/11/18	<100		ug/L	
			F3 (C16-C34 Hydrocarbons)	2018/11/18	<200		ug/L	
			F4 (C34-C50 Hydrocarbons)	2018/11/18	<200		ug/L	
5841590	MKS	RPD	F2 (C10-C16 Hydrocarbons)	2018/11/18	2.4		%	30
			F3 (C16-C34 Hydrocarbons)	2018/11/18	NC		%	30
			F4 (C34-C50 Hydrocarbons)	2018/11/18	NC		%	30
5841618	RAJ	Matrix Spike	D10-Anthracene	2018/11/16		101	%	50 - 130
			D14-Terphenyl (FS)	2018/11/16		98	%	50 - 130
			D8-Acenaphthylene	2018/11/16		101	%	50 - 130
			Acenaphthene	2018/11/16		103	%	50 - 130
			Acenaphthylene	2018/11/16		106	%	50 - 130
			Anthracene	2018/11/16		101	%	50 - 130
			Benzo(a)anthracene	2018/11/16		105	%	50 - 130
			Benzo(a)pyrene	2018/11/16		102	%	50 - 130
			Benzo(b/j)fluoranthene	2018/11/16		105	%	50 - 130
			Benzo(g,h,i)perylene	2018/11/16		103	%	50 - 130
			Benzo(k)fluoranthene	2018/11/16		95	%	50 - 130
			Chrysene	2018/11/16		101	%	50 - 130
			Dibenz(a,h)anthracene	2018/11/16		99	%	50 - 130
			Fluoranthene	2018/11/16		105	%	50 - 130
			Fluorene	2018/11/16		101	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2018/11/16		102	%	50 - 130
			1-Methylnaphthalene	2018/11/16		111	%	50 - 130
			2-Methylnaphthalene	2018/11/16		103	%	50 - 130
			Naphthalene	2018/11/16		101	%	50 - 130
			Phenanthrene	2018/11/16		103	%	50 - 130
			Pyrene	2018/11/16		104	%	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
5841618	RAJ	Spiked Blank	D10-Anthracene	2018/11/16		101	%	50 - 130
			D14-Terphenyl (FS)	2018/11/16		97	%	50 - 130
			D8-Acenaphthylene	2018/11/16		100	%	50 - 130
			Acenaphthene	2018/11/16		97	%	50 - 130
			Acenaphthylene	2018/11/16		100	%	50 - 130
			Anthracene	2018/11/16		95	%	50 - 130
			Benzo(a)anthracene	2018/11/16		98	%	50 - 130
			Benzo(a)pyrene	2018/11/16		96	%	50 - 130
			Benzo(b/j)fluoranthene	2018/11/16		98	%	50 - 130
			Benzo(g,h,i)perylene	2018/11/16		97	%	50 - 130
			Benzo(k)fluoranthene	2018/11/16		93	%	50 - 130
			Chrysene	2018/11/16		97	%	50 - 130
			Dibenz(a,h)anthracene	2018/11/16		94	%	50 - 130
			Fluoranthene	2018/11/16		99	%	50 - 130
			Fluorene	2018/11/16		95	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2018/11/16		97	%	50 - 130
			1-Methylnaphthalene	2018/11/16		106	%	50 - 130
			2-Methylnaphthalene	2018/11/16		97	%	50 - 130
			Naphthalene	2018/11/16		96	%	50 - 130
			Phenanthrene	2018/11/16		98	%	50 - 130
			Pyrene	2018/11/16		99	%	50 - 130
5841618	RAJ	Method Blank	D10-Anthracene	2018/11/17		101	%	50 - 130
			D14-Terphenyl (FS)	2018/11/17		97	%	50 - 130
			D8-Acenaphthylene	2018/11/17		100	%	50 - 130
			Acenaphthene	2018/11/17	<0.050		ug/L	
			Acenaphthylene	2018/11/17	<0.050		ug/L	
			Anthracene	2018/11/17	<0.050		ug/L	
			Benzo(a)anthracene	2018/11/17	<0.050		ug/L	
			Benzo(a)pyrene	2018/11/17	<0.010		ug/L	
			Benzo(b/j)fluoranthene	2018/11/17	<0.050		ug/L	
			Benzo(g,h,i)perylene	2018/11/17	<0.050		ug/L	
			Benzo(k)fluoranthene	2018/11/17	<0.050		ug/L	
			Chrysene	2018/11/17	<0.050		ug/L	
			Dibenz(a,h)anthracene	2018/11/17	<0.050		ug/L	
			Fluoranthene	2018/11/17	<0.050		ug/L	
			Fluorene	2018/11/17	<0.050		ug/L	
			Indeno(1,2,3-cd)pyrene	2018/11/17	<0.050		ug/L	
			1-Methylnaphthalene	2018/11/17	<0.050		ug/L	
			2-Methylnaphthalene	2018/11/17	<0.050		ug/L	
			Naphthalene	2018/11/17	<0.050		ug/L	
			Phenanthrene	2018/11/17	<0.030		ug/L	
			Pyrene	2018/11/17	<0.050		ug/L	
5841618	RAJ	RPD	Acenaphthene	2018/11/16	NC		%	30
			Acenaphthylene	2018/11/16	NC		%	30
			Anthracene	2018/11/16	NC		%	30
			Benzo(a)anthracene	2018/11/16	NC		%	30
			Benzo(a)pyrene	2018/11/16	NC		%	30
			Benzo(b/j)fluoranthene	2018/11/16	NC		%	30
			Benzo(g,h,i)perylene	2018/11/16	NC		%	30
			Benzo(k)fluoranthene	2018/11/16	NC		%	30
			Chrysene	2018/11/16	NC		%	30
			Dibenz(a,h)anthracene	2018/11/16	NC		%	30
			Fluoranthene	2018/11/16	NC		%	30
			Fluorene	2018/11/16	NC		%	30

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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	2018/11/16	NC		%	30
			1-Methylnaphthalene	2018/11/16	NC		%	30
			2-Methylnaphthalene	2018/11/16	NC		%	30
			Naphthalene	2018/11/16	NC		%	30
			Phenanthrene	2018/11/16	NC		%	30
			Pyrene	2018/11/16	NC		%	30
5841620	MKS	Matrix Spike	o-Terphenyl	2018/11/19		107	%	60 - 130
			F2 (C10-C16 Hydrocarbons)	2018/11/19		106	%	50 - 130
			F3 (C16-C34 Hydrocarbons)	2018/11/19		NC	%	50 - 130
			F4 (C34-C50 Hydrocarbons)	2018/11/19		101	%	50 - 130
5841620	MKS	Spiked Blank	o-Terphenyl	2018/11/19		104	%	60 - 130
			F2 (C10-C16 Hydrocarbons)	2018/11/19		104	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2018/11/19		104	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2018/11/19		98	%	60 - 130
5841620	MKS	Method Blank	o-Terphenyl	2018/11/19		105	%	60 - 130
			F2 (C10-C16 Hydrocarbons)	2018/11/19	<100		ug/L	
			F3 (C16-C34 Hydrocarbons)	2018/11/19	<200		ug/L	
			F4 (C34-C50 Hydrocarbons)	2018/11/19	<200		ug/L	
5841620	MKS	RPD	F2 (C10-C16 Hydrocarbons)	2018/11/19	NC		%	30
			F3 (C16-C34 Hydrocarbons)	2018/11/19	NC		%	30
			F4 (C34-C50 Hydrocarbons)	2018/11/19	NC		%	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.

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 recovery was below the lower control limit. This may represent a low bias in some results for this specific analyte.

(2) The recovery was above the upper control limit. This may represent a high bias in some results for this specific analyte. For results that were not detected (ND), this potential bias has no impact.

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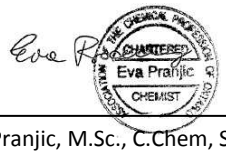
Maxxam Job #: B8U4943
Report Date: 2018/11/19

Pinchin Ltd
Client Project #: 230236.002
Sampler Initials: MK

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

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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14-Nov-18 16:00
Alisha Williamson
B8U4943

J_L ,ENV-871

Presence of Visible Particulate/Sediment

Maxxam Analytics
CAM FCD-01013/5
Page 1 of 1

When there is >1cm of visible particulate/sediment, the amount will be recorded in the field below

			Bottle Types																												
			Inorganics					Organics												Hydrocarbons							Volatiles				Other
	Sample ID	All	CrVI	CN	General	Hg	Metals (Diss.)	Organic 1 of 2	Organic 2 of 2	PCB 1 of 2	PCB 2 of 2	Pest/ Herb 1 of 2	Pest/ Herb 2 of 2	SVOC/ ABN 1 of 2	SVOC/ ABN 2 of 2	PAH 1 of 2	PAH 2 of 2	Dioxin /Furan	F1 Vial 1	F1 Vial 2	F1 Vial 3	F1 Vial 4	F2-F4 1 of 2	F2-F4 2 of 2	F4G	VOC Vial 1	VOC Vial 2	VOC Vial 3	VOC Vial 4	
1	EXMW-1		TS			TS																	S	S		S	S			
2	MW-1																						TS	TS		TS	TS			
3	EXMW-2																						TS	TS		TS	TS			
4	MW-2																						TS	TS		TS	TS			
5	EXMW-3																						TS	TS		TS	TS			
6	MW-4																						TS	TS		TS	TS			
7	EXMW-4																						TS	TS		TS	TS			
8	MW-5																						TS	TS		TS	TS			
9	EXMW-5																						TS	TS		S	TS			
10	Dup-2																						TS	TS		TS	TS			

Comments:

Legend:	
P	Suspended Particulate
TS	Trace Settled Sediment (just covers bottom of container or less)
S	Sediment greater than (>) Trace, but less than (<) 1 cm

Recorded By: (signature/print)

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Phone: 905-817-5700 Fax: 905-817-5779 Toll Free: 800-563-6266
CAM FCD-01191/3

CHAIN OF CUSTODY RECORD 102893 Page 1 of 2

Invoice Information	Report Information (if differs from invoice)	Project Information (where applicable)	Turnaround Time (TAT) Required
Company Name: Pinchin Ltd.	Company Name:	Quotation #:	☐ *Regular TAT (5-7 days) Most analyses
Contact Name: Mike Kosiw	Contact Name:	P.O. #/ AFE#:	PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS
Address: Matt Ryan	Address: SAME	Project #: 230236-002	Rush TAT (Surcharges will be applied)
1 Hines Rd		Site Location:	☐ 1 Day ☐ 2 Days ☒ 3-4 Days
Phone: Kanata	Phone: Fax:	Site #:	Date Required: Monday Nov
Email:	Email:	Sampled By:	Rush Confirmation #: 19 (Afternoon)

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

Regulation 153	Other Regulations
☐ Table 1 ☒ Res/Park ☐ Med/ Fine	☐ CCME ☐ Sanitary Sewer Bylaw
☐ Table 2 ☐ Ind/Comm ☒ Coarse	☐ MISA ☐ Storm Sewer Bylaw
☐ Table 3 ☐ Agri/ Other	☐ PWQO Region
☒ Table 7	☐ Other (Specify)
FOR RSC (PLEASE CIRCLE) Y / (N)	☐ REG 558 (MIN. 3 DAY TAT REQUIRED)

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

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

	SAMPLE IDENTIFICATION	DATE SAMPLED (YYYY/MM/DD)	TIME SAMPLED (HH:MM)	MATRIX	# OF CONTAINERS SUBMITTED	FIELD FILTERED (CIRCLE) Metals / Hg / CrVI	BTEX/ PHC F1	PHCs F2 - F4	VOCs	REG 153 METALS & INORGANICS	REG 153 ICPMS METALS	REG 153 METALS (Hg, Cr VI, ICPMS Metals, HWS - B)	PAHs	HOLD- DO NOT ANALYZE
1	Trip Blank	Nov 13	N/A	GW	2		X		X					
2	ExMW-1 Nov 14, 2018	2018	AM		7		X	X	X		X	X	X	
3	MW-1		PM		7		X	X	X		X	X	X	
4	ExMW-2				7		X	X	X		X	X	X	
5	MW-2				7		X	X	X		X	X	X	
6	ExMW-3				7		X	X	X		X	X	X	
7	MW-4				7		X	X	X		X	X	X	
8	ExMW-4				7		X	X	X		X	X	X	
9	MW-5				7		X	X	X		X	X	X	
10	ExMW-5				7		X	X	X		X	X	X	

LABORATORY USE ONLY		
CUSTODY SEAL (Y) / N		COOLER TEMPERATURES
Present	Intact	
X	X	8.9 8
		6.1 8

COOLING MEDIA PRESENT: (Y) / N

COMMENTS

* Low volume

Please report as "ExMW-1", not "Ex-1" for all

Ice packs

RELINQUISHED BY: (Signature/Print)	DATE: (YYYY/MM/DD)	TIME: (HH:MM)	RECEIVED BY: (Signature/Print)	DATE: (YYYY/MM/DD)	TIME: (HH:MM)
	Nov 14	12:00	Serge Leger	2018/11/14	16:00
Mike Kosiw	2018	PM		2018/11/15	08:00

14-Nov-18 16:00
Alisha Williamson
B8U4943
J_L ENV-871

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available for viewing at www.maxxam.ca/terms. Sample container, preservation, hold time and packages information can be viewed at http://maxxam.ca/wp-content/uploads/Ontario-COC.

COC-1004 (03/17)

White: Maxxam - Yellow: Client

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6740 Campobello Road, Mississauga, Ontario L5N 2L8
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CAM FCD-01191/3

CHAIN OF CUSTODY RECORD 102894 Page 2 of 2

Invoice Information	Report Information (if differs from invoice)	Project Information (where applicable)	Turnaround Time (TAT) Required
Company Name: Pinchin Ltd.	Company Name:	Quotation #:	☐ Regular TAT (5-7 days) Most analyses
Contact Name: Mike Kosiw / Matt Ryan	Contact Name:	P.O. #/ AFE#:	PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS
Address: [illegible] Mikes Rd	Address: GAME	Project #: 2 30236.002	Rush TAT (Surcharges will be applied) ☐ 1 Day ☐ 2 Days ☒ 3-4 Days
Phone: Fax:	Phone: Fax:	Site Location:	
Email:	Email:	Site #:	Date Required: Nov 19,
		Sampled By:	Rush Confirmation #: Afternoon

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

Regulation 153	Other Regulations
☐ Table 1 ☒ Res/Park ☐ Med/ Fine	☐ CCME ☐ Sanitary Sewer Bylaw
☐ Table 2 ☐ Ind/Comm ☒ Coarse	☐ MISA ☐ Storm Sewer Bylaw
☐ Table 3 ☐ Agri/ Other	☐ PWQO Region
☐ Table ____	☐ Other (Specify)
FOR RSC (PLEASE CIRCLE) Y / (N)	☐ REG 558 (MIN. 3 DAY TAT REQUIRED)

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

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

	SAMPLE IDENTIFICATION	DATE SAMPLED (YYYY/MM/DD)	TIME SAMPLED (HH:MM)	MATRIX	# OF CONTAINERS SUBMITTED	FIELD FILTERED (CIRCLE) Metals / Hg / CrVI	BTEX/ PHC F1	PHCs F2 - F4	VOCs	REG 153 METALS & INORGANICS	REG 153 ICPMS METALS	REG 153 METALS (Hg, Cr VI, ICPMS Metals, HWS - B)								HOLD- DO NOT ANALYZE	COMMENTS
1	~~Dup~~ Dup-2	Nov 13 2018	pm	GW	7		X	X	X	X	X	X									
2																					
3																					
4																					
5																					
6																					
7																					
8																					
9																					On ice packs
10																					

LABORATORY USE ONLY

CUSTODY SEAL (Y) N Present	Intact	COOLER TEMPERATURES
X	X	8.9.8
		6.8.8

COOLING MEDIA PRESENT: (Y) / N

RELINQUISHED BY: (Signature/Print)	DATE: (YYYY/MM/DD)	TIME: (HH:MM)	RECEIVED BY: (Signature/Print)	DATE: (YYYY/MM/DD)	TIME: (HH:MM)
[signature]	NOV 14	12:00	[signature] Sean Legge	2018/11/14	16:00
Mike Kosiw	2018	PM	[signature] Jamie Power	2018/11/15	0800

MAXXAM JOB #

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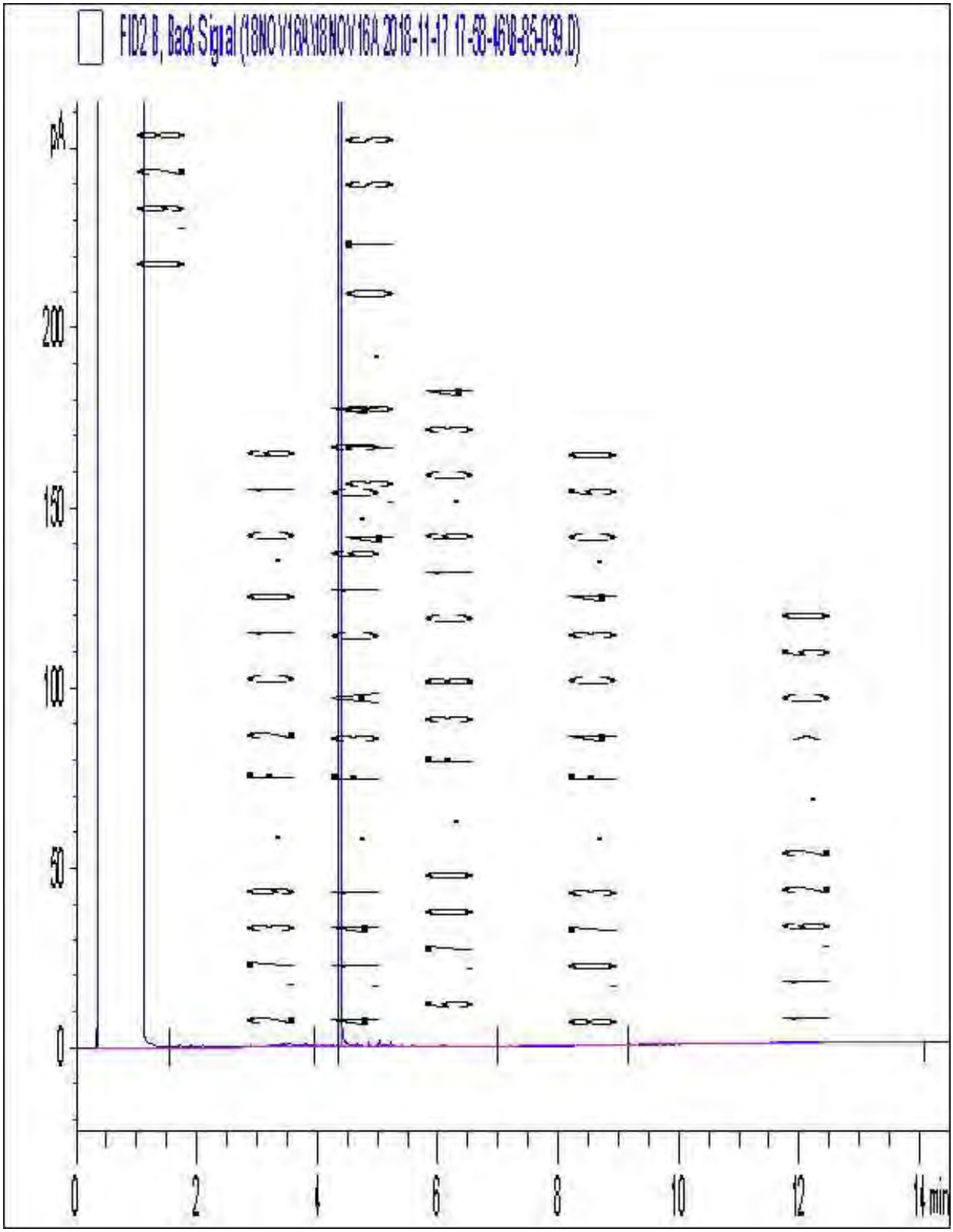
COC-1004 (03/17) White: Maxxam – Yellow: Client

Maxxam Job #: B8U4943
Report Date: 2018/11/19
Maxxam Sample: IHM233

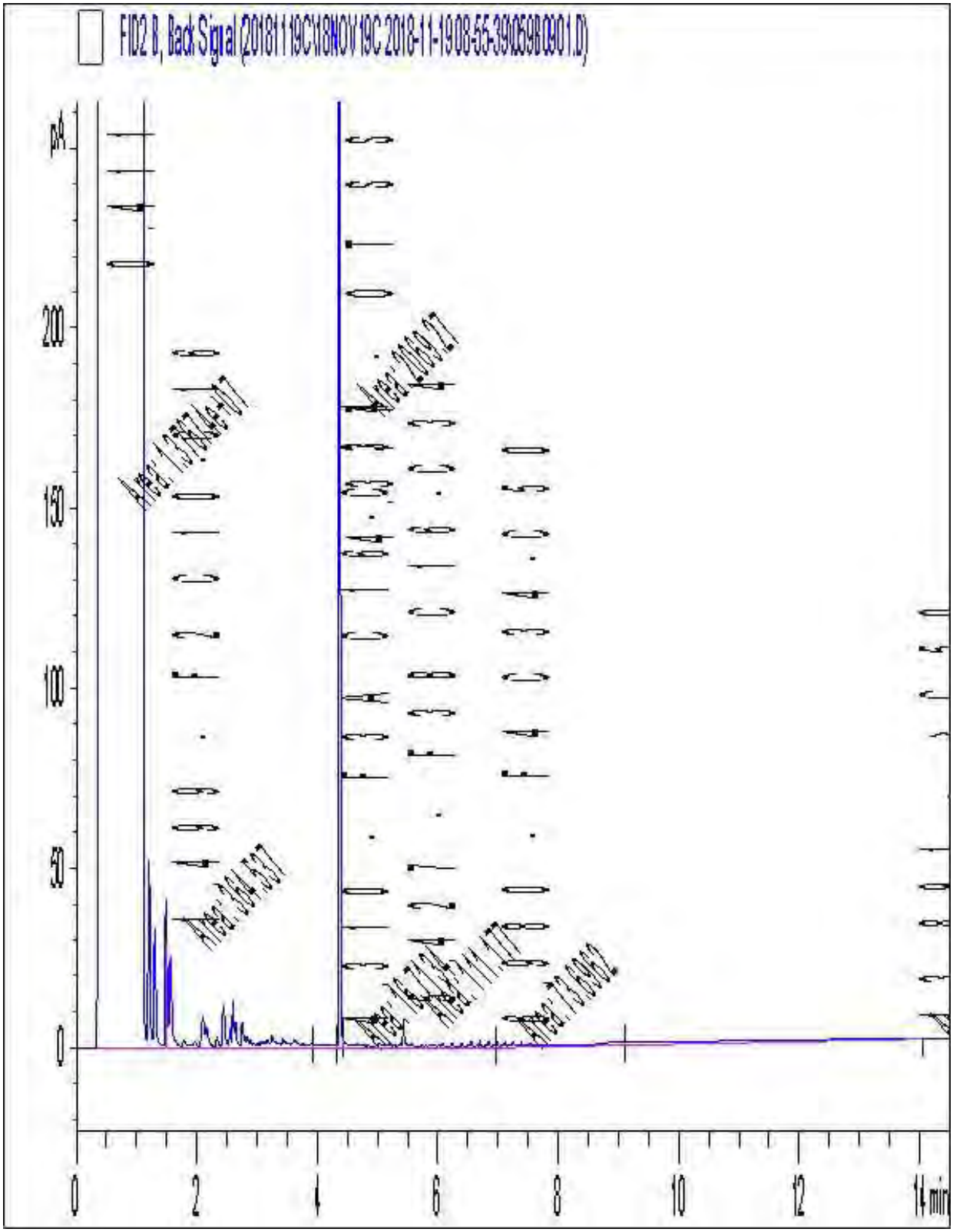
Pinchin Ltd
Client Project #: 230236.002
Client ID: EXMW-1

Petroleum Hydrocarbons F2-F4 in Water Chromatogram



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

Petroleum Hydrocarbons F2-F4 in Water Chromatogram

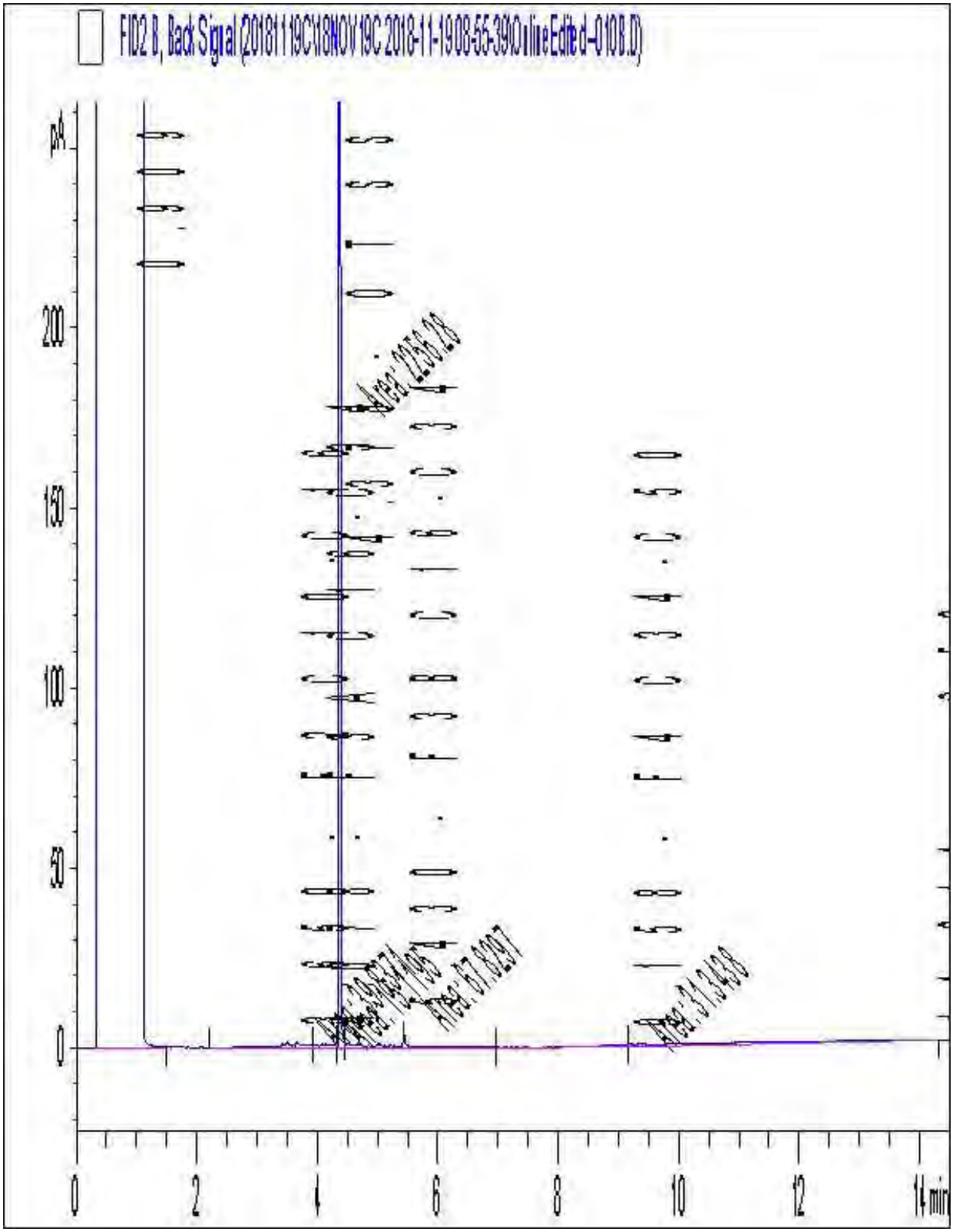


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Maxxam Job #: B8U4943
Report Date: 2018/11/19
Maxxam Sample: IHM235

Pinchin Ltd
Client Project #: 230236.002
Client ID: EXMW-2

Petroleum Hydrocarbons F2-F4 in Water Chromatogram

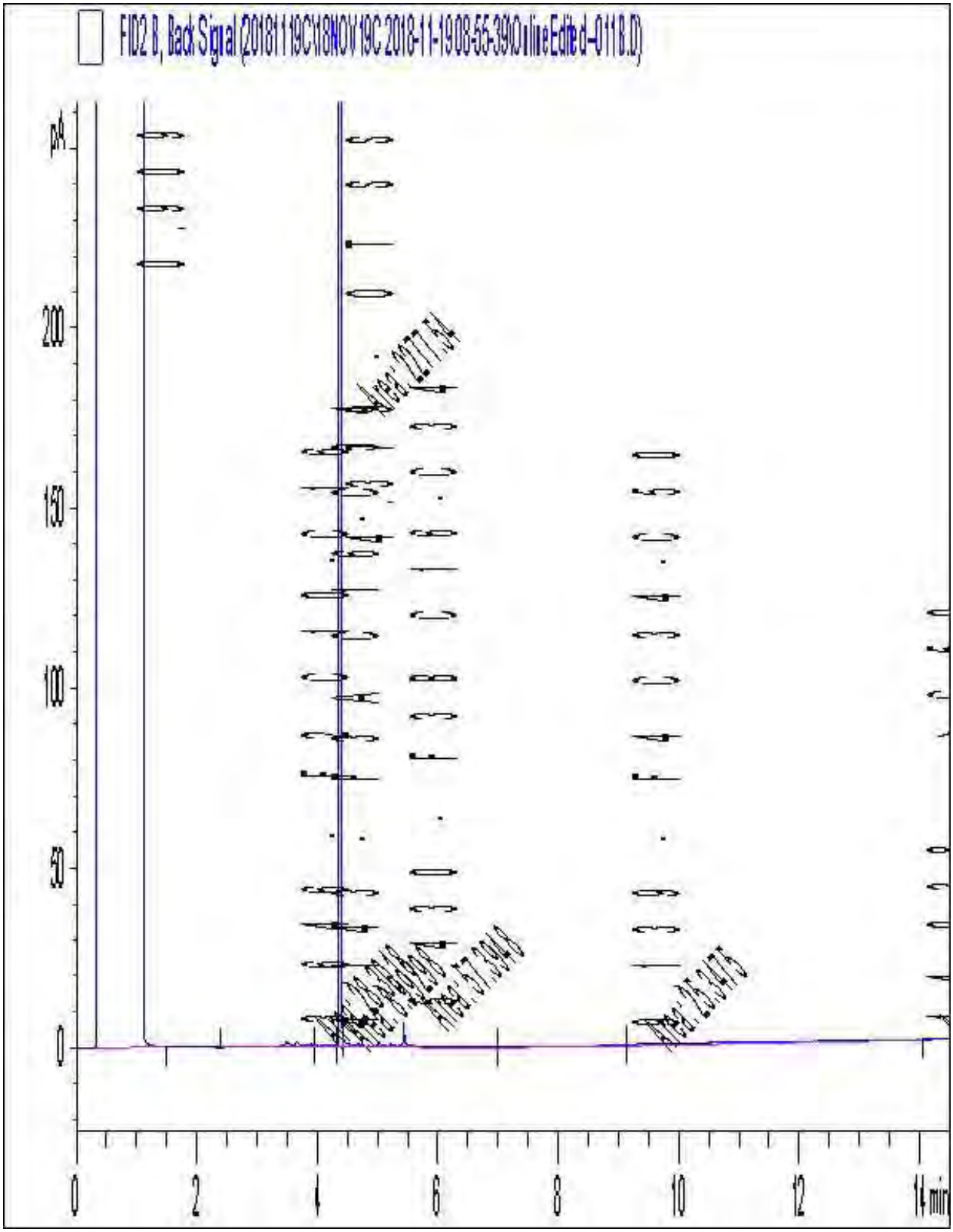


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Maxxam Job #: B8U4943
Report Date: 2018/11/19
Maxxam Sample: IHM236

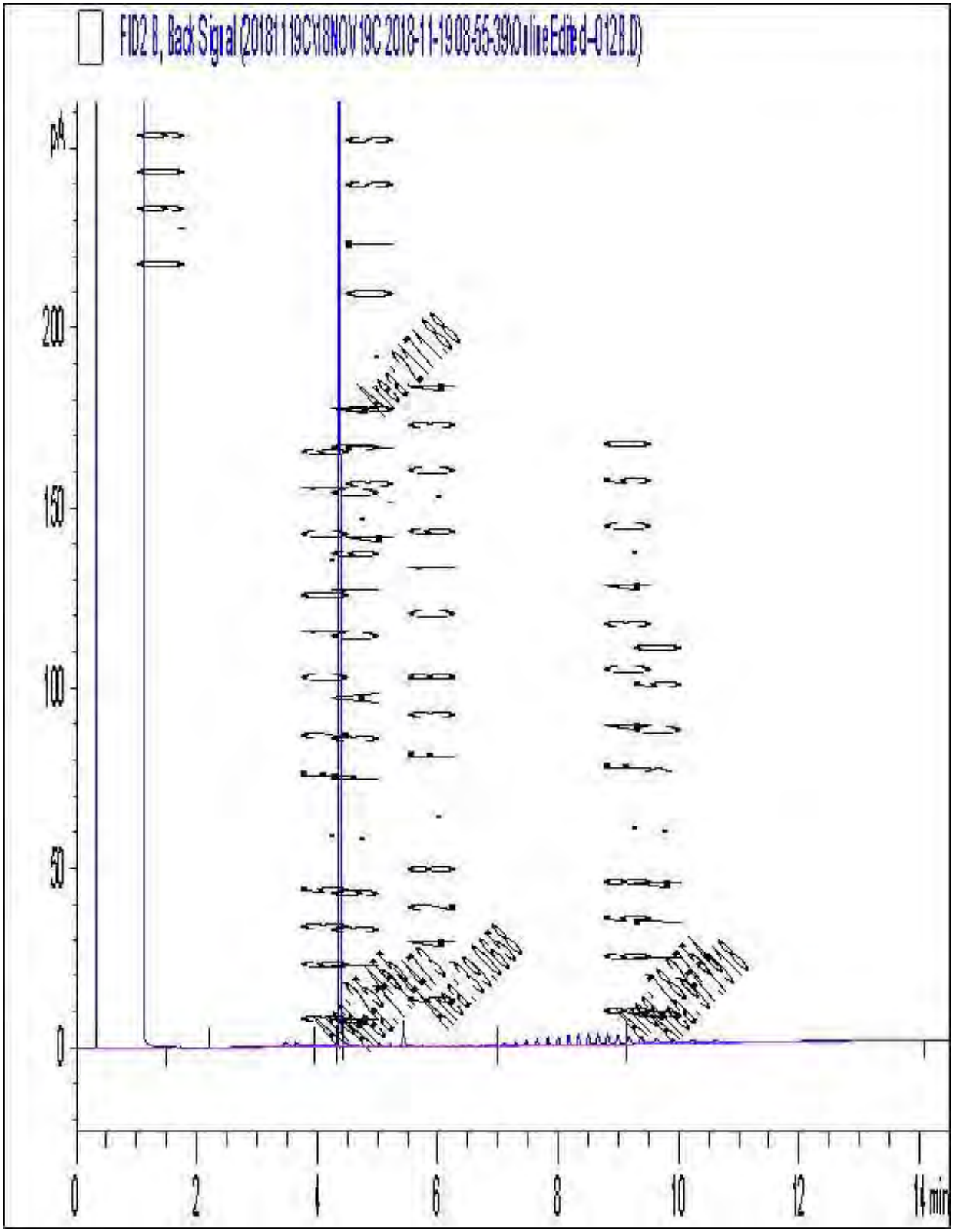
Pinchin Ltd
Client Project #: 230236.002
Client ID: MW-2

Petroleum Hydrocarbons F2-F4 in Water Chromatogram



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

Petroleum Hydrocarbons F2-F4 in Water Chromatogram

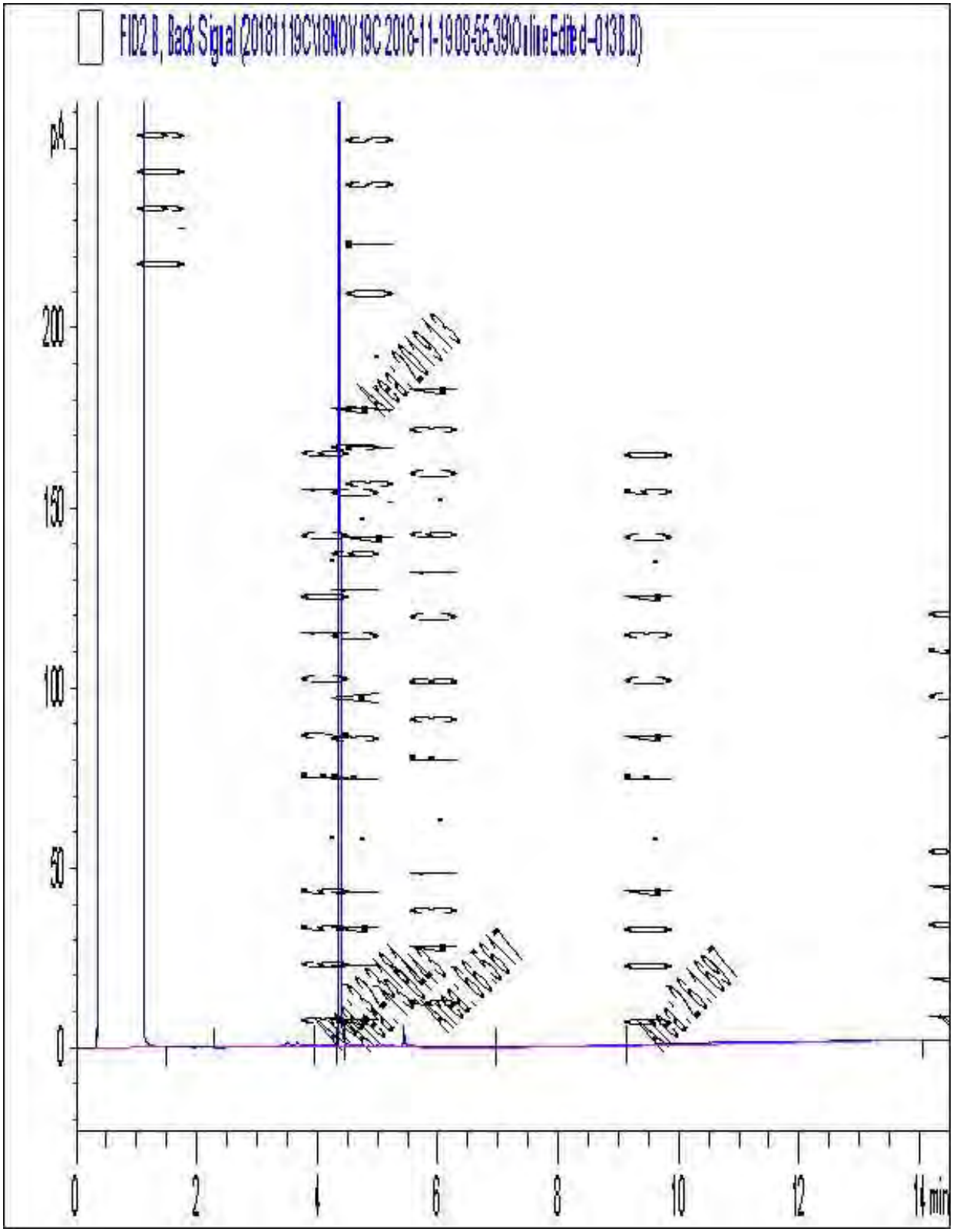


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Maxxam Job #: B8U4943
Report Date: 2018/11/19
Maxxam Sample: IHM238

Pinchin Ltd
Client Project #: 230236.002
Client ID: MW-4

Petroleum Hydrocarbons F2-F4 in Water Chromatogram

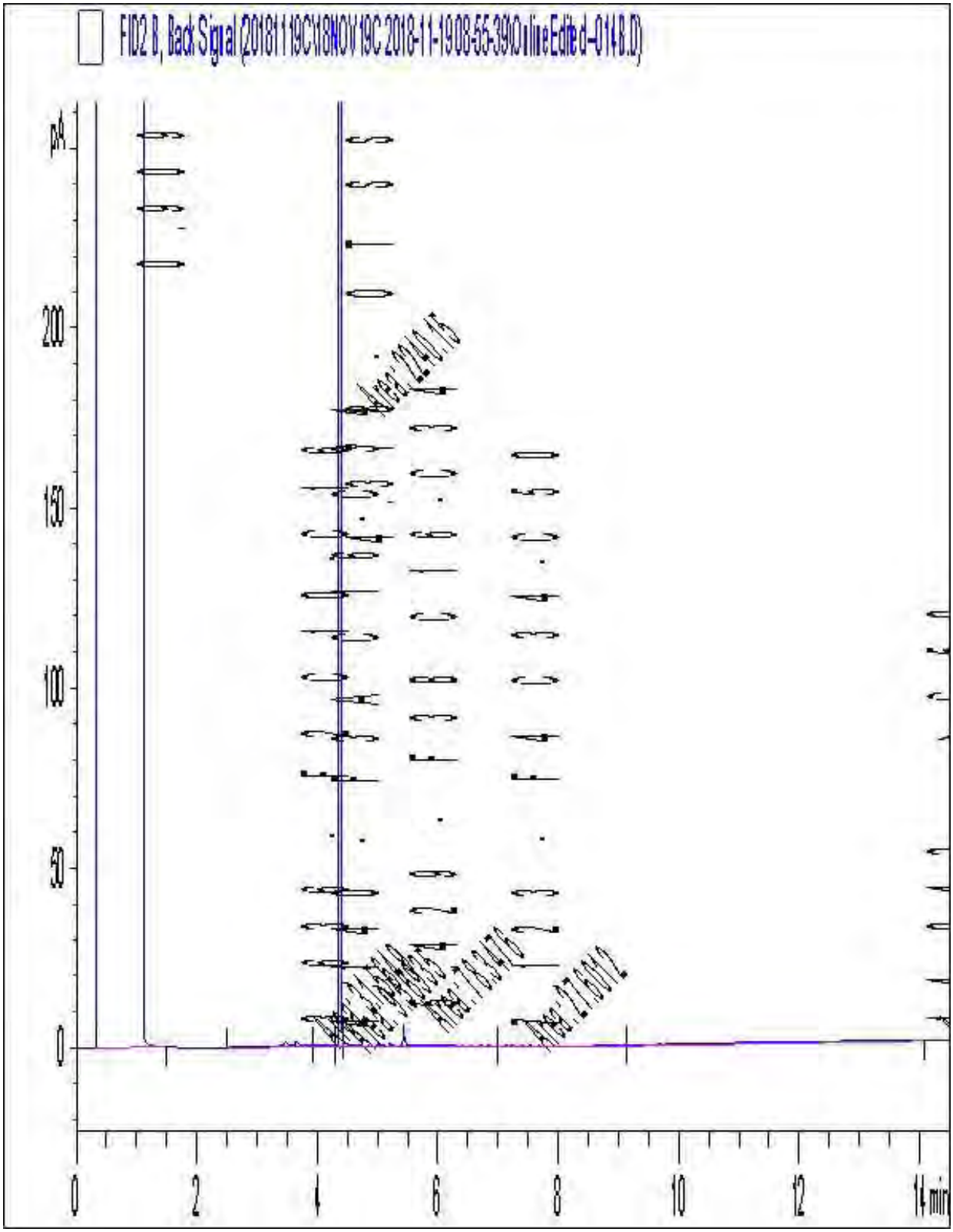


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Maxxam Job #: B8U4943
Report Date: 2018/11/19
Maxxam Sample: IHM239

Pinchin Ltd
Client Project #: 230236.002
Client ID: EXMW-4

Petroleum Hydrocarbons F2-F4 in Water Chromatogram

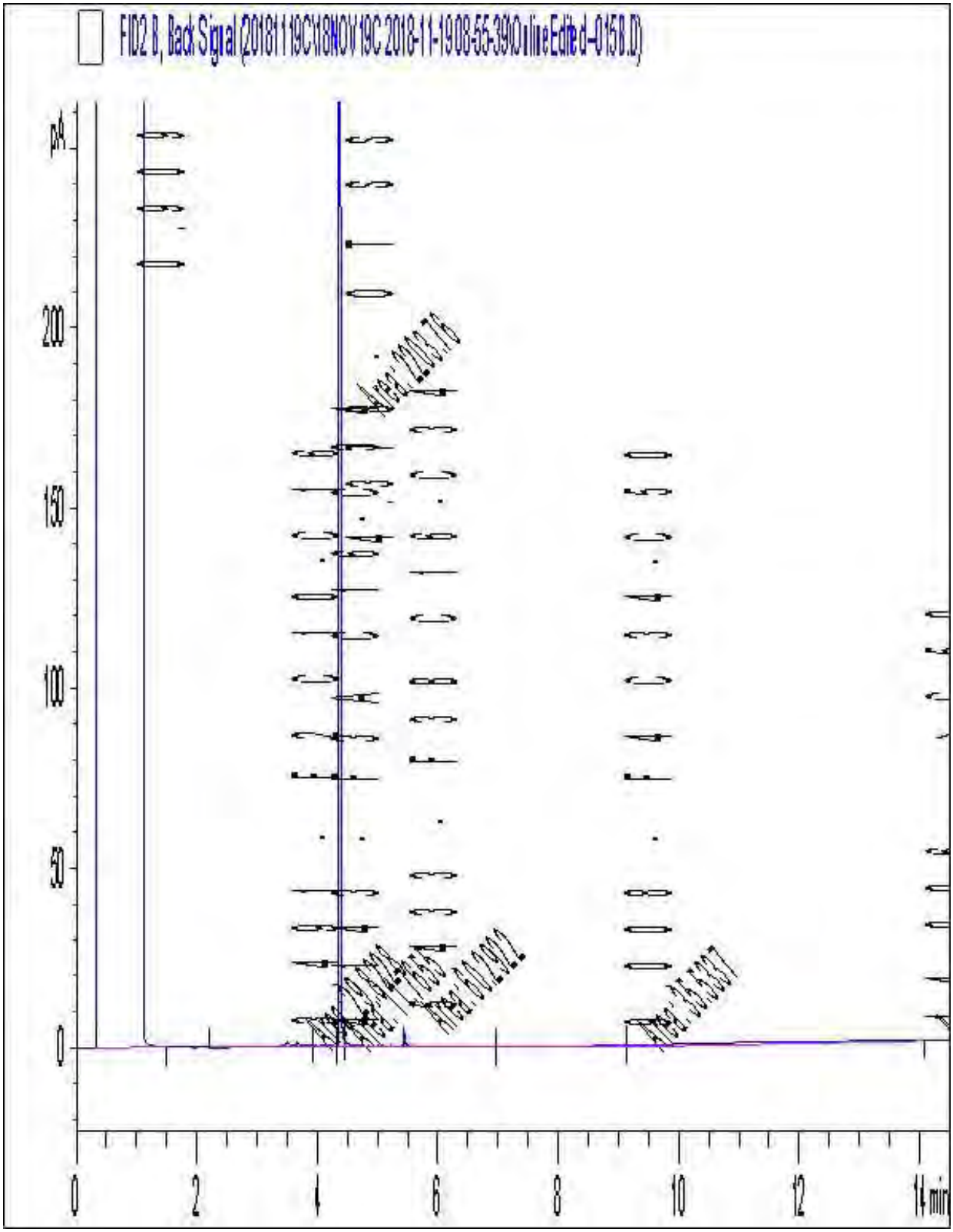


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Maxxam Job #: B8U4943
Report Date: 2018/11/19
Maxxam Sample: IHM240

Pinchin Ltd
Client Project #: 230236.002
Client ID: MW-5

Petroleum Hydrocarbons F2-F4 in Water Chromatogram

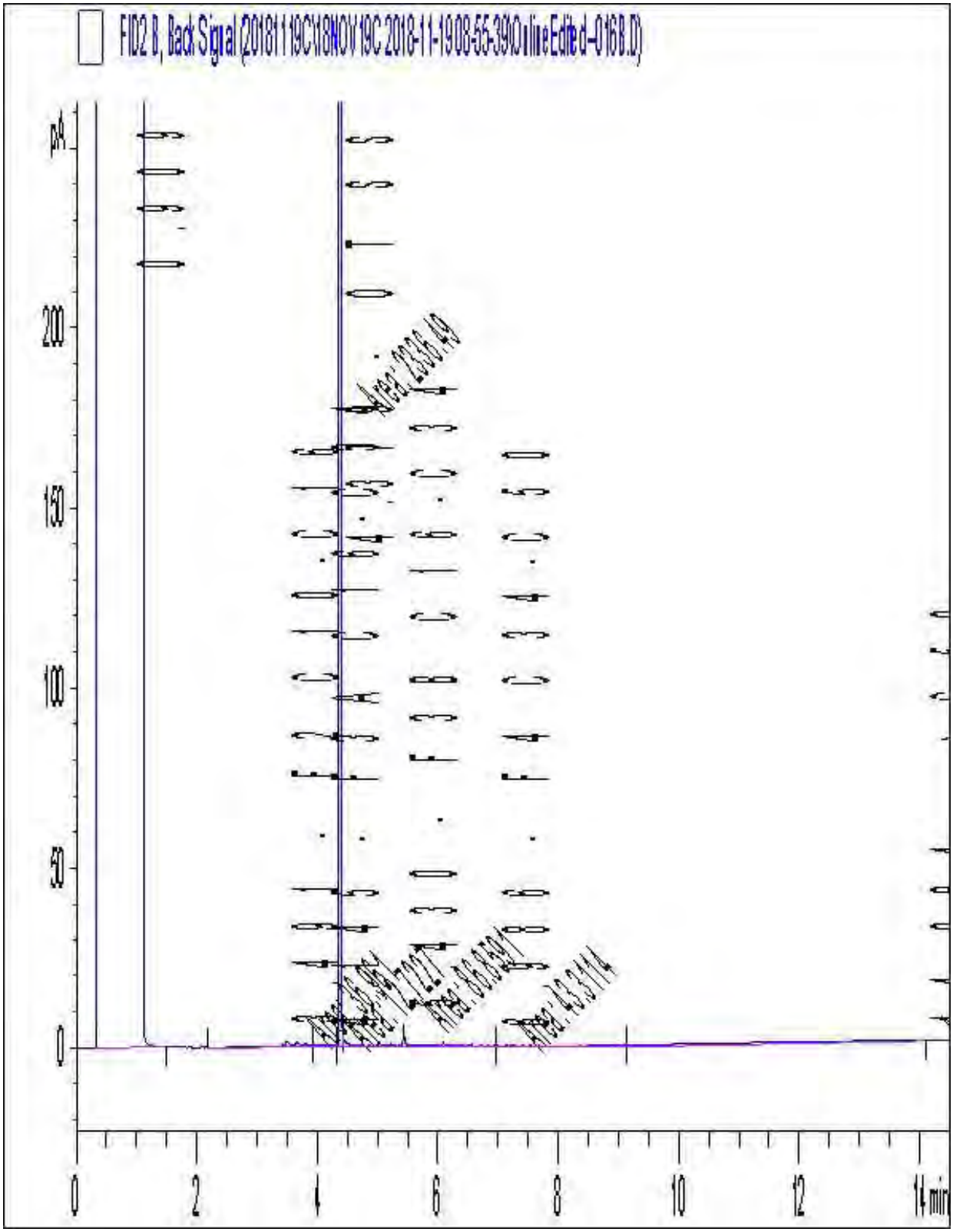


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Maxxam Job #: B8U4943
Report Date: 2018/11/19
Maxxam Sample: IHM241

Pinchin Ltd
Client Project #: 230236.002
Client ID: EXMW-5

Petroleum Hydrocarbons F2-F4 in Water Chromatogram

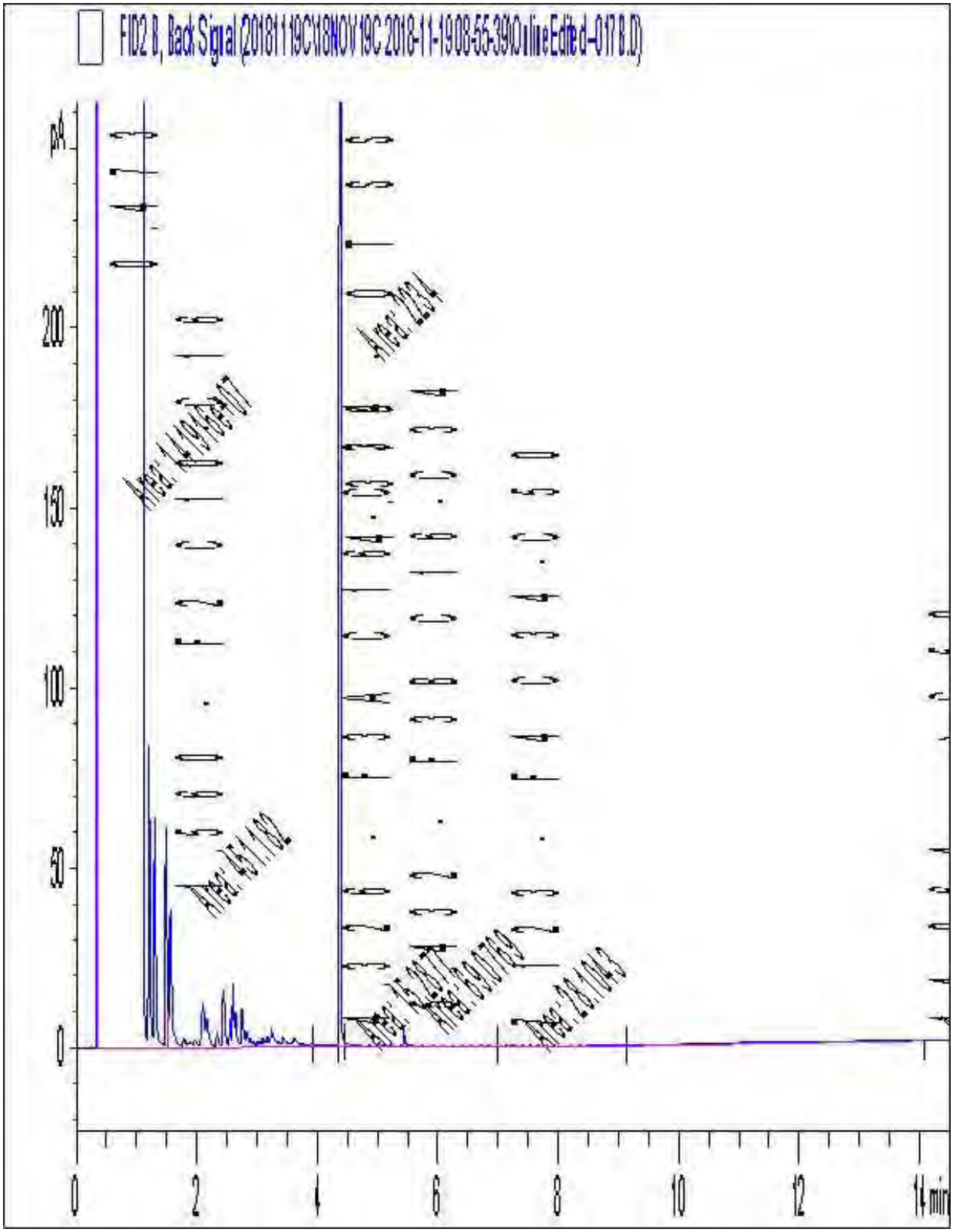


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Maxxam Job #: B8U4943
Report Date: 2018/11/19
Maxxam Sample: IHM242

Pinchin Ltd
Client Project #: 230236.002
Client ID: DUP-2

Petroleum Hydrocarbons F2-F4 in Water Chromatogram



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