



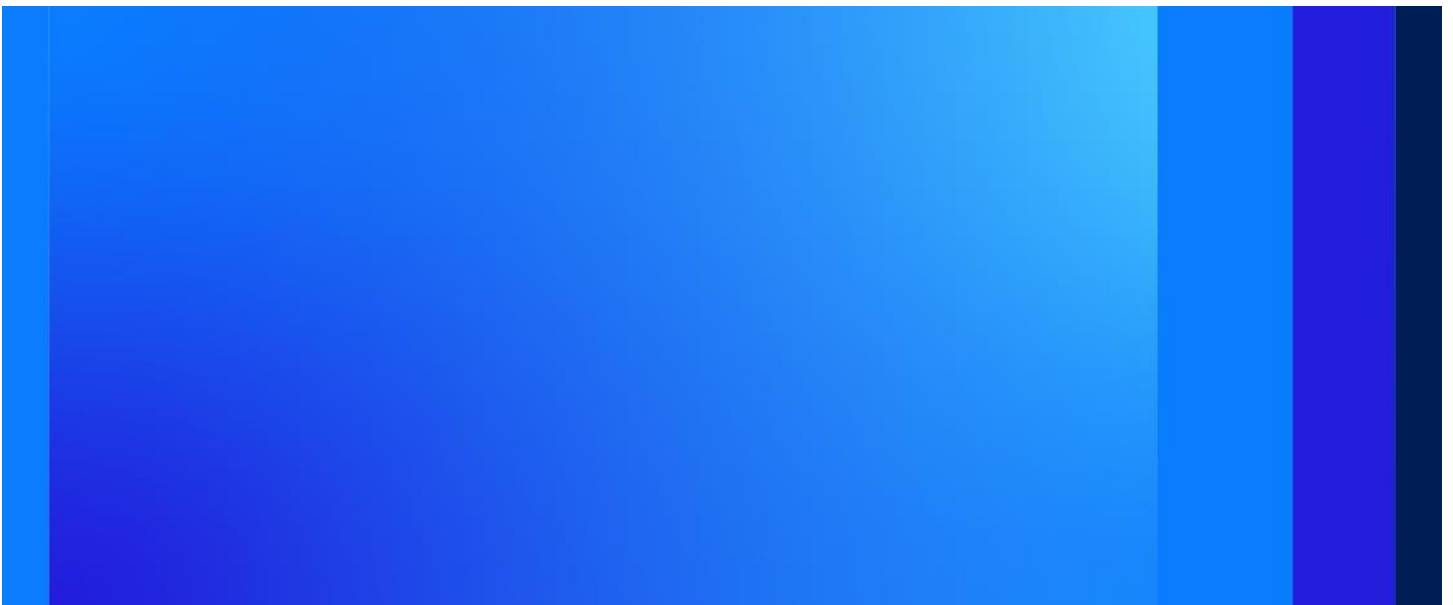
Pointed Mountain Pipeline Abandonment Project

Phase II Environmental Site Assessment
PM-1 Site, Kilometre Post 0.0, Northwest Territories

Final

April 2024

Westcoast Energy Inc.



Pointed Mountain Pipeline Abandonment Project

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Acronyms and Abbreviations

APEC	area of potential environmental concern
AST	aboveground storage tank
BC	British Columbia
BTEX	benzene, toluene, ethylbenzene, and xylenes
CCME	Canadian Council of Ministers of the Environment
CoA	certificate of analysis
COC	contaminant of concern
COPC	contaminant of potential concern
DQE	Data Quality Evaluation
ESA	environmental site assessment
F	Fraction(s)
ILCR	incremental lifetime cancer risk
km	kilometre(s)
KP	Kilometre Post
L	litre(s)
m	metre(s)
mbgs	metre(s) below ground surface
mg/kg	milligram(s) per kilogram
NWT	Northwest Territories
PAH	polycyclic aromatic hydrocarbon
PHC	petroleum hydrocarbon
ppm _v	part(s) per million by volume
QA/QC	Quality Assurance/Quality Control
SQG	Soil Quality Guideline
PM-1 Site or the Site	the site area of aboveground infrastructure located at Kilometre Post 0.0
the Guideline	the Government of the NWT's Environmental Guideline for Contaminated Site Remediation
the Project	Pointed Mountain Pipeline Abandonment Project
VOC	volatile organic compound
Westcoast	Westcoast Energy Inc.
Yukon	Yukon Territory

1. Introduction

Jacobs Consultancy Canada Inc. (Jacobs) completed this Phase II Environmental Site Assessment (ESA) to confirm subsurface conditions at the PM-1 Site (PM-1 Site or the Site), located at Kilometre Post (KP) 0.0 of the Pointed Mountain Pipeline in the Northwest Territories (NWT). Figure 1 shows the alignment of the Pointed Mountain Pipeline through the NWT, Yukon Territory (Yukon), and British Columbia (BC).

The Pointed Mountain Pipeline is a deactivated Nominal Pipe Size 20 gas gathering pipeline that is no longer connected to the Westcoast Energy Inc. (Westcoast) pipeline network and thus has no prospective future use. Westcoast is planning on abandoning the Pointed Mountain Pipeline in late 2024 through 2025, based on our current understanding of the schedule. The investigation activities summarized herein were completed in support of the Pointed Mountain Pipeline Abandonment Project (the Project).

2. Physical Setting

2.1 Topography and Drainage

Topography is gently rolling with an elevation decrease towards the south-southeast (Jacobs 2021a) with an elevation of approximately 360 metres (m) above sea level (Westcoast 2021). Surface water runoff at the Site is likely to follow the local topography.

2.2 Regional Geology and Soils

The bedrock in the area around the PM-1 Site is mapped as undivided Shale of the Fort St. John Group (Lower Cretaceous), comprised of a dark-grey shale with some interbedded, fine-grained sandstone (Fallas and Lane 2001). Surficial geology is mapped as Quaternary glacial till blankets composed of sand to clay sediments with striated clasts of various lithologies (Bednarski 2002).

There are no detailed soil surveys available for this area. However, soils in the region are generally dominated by poorly drained Typic Mesisols of the Trail River soil unit with some Cyric and Hydric Fibrisols (Government of Canada 1975).

2.3 Local Groundwater Use

Jacobs conducted a search of the Government of the NWT Geospatial Database (Government of the NWT 2021) and the Groundwater Information Network (GIN 2021) for records of groundwater wells near PM-1 Site. No groundwater wells were identified within 1 kilometre (km) of the Site (GIN 2021).

3. Investigation Methodology

3.1 Health and Safety

Prior to the initiation of the field work at the Site, Jacobs and Westcoast prepared a Site-specific health and safety plan that identified the potential health and safety hazards and necessary controls. CSA-approved personal protective equipment was worn during all field activities conducted at the Site.

3.2 Utility Locates

As public utility notification services (e.g., a One Call operation) are not available in the NWT, owners of infrastructure adjacent to the PM-1 infrastructure were notified of the anticipated ground disturbance prior to field activities. Westcoast contracted a third-party private locator (West Geomatics Ltd.) to mark Westcoast's lease boundary, and to identify potential utilities and underground facility locations (i.e., electrical lines, flare stack pipes, flare stack supports, underground pipelines, and unidentified underground features). Figure 2 shows the locations of the identified utilities at the Site.

3.3 Soil Sampling Program

Boreholes were advanced using either a handheld auger or Pionjar portable hammer drill to a maximum depth of 3.0 metres below ground surface (mbgs). Collected soil samples were screened in the field to measure soil headspace vapour concentrations of petroleum hydrocarbons (PHCs) and volatile organic compounds (VOCs) using an RKI Eagle 2 Multi Gas Detector set to methane elimination mode. The subsurface soil stratigraphy, including major and minor soil types, colour, apparent moisture content, firmness, cohesiveness, inclusions, and indicators of apparent contamination were recorded, along with soil headspace vapour concentrations, on the borehole logs provided in Appendix A.

Sampling equipment was decontaminated between sample intervals. Boreholes were backfilled using the remaining soil cuttings upon completion.

3.4 Assessment Guidelines

Canada Energy Regulator guidance (CER 2020) stipulates the use of both territorial and federal (Canadian Council of Ministers of the Environment [CCME]) guidelines for soil quality, in terms of protection of human health and the environment. Within NWT, contaminated sites are legislated under the *Environmental Protection Act* (Government of the NWT 1988). The NWT Ministry of Environment and Natural Resources regulates contaminated sites within the structure of CCME's three-tiered framework for development of site-specific remedial approaches:

- **Tier 1: Criteria-based** – involves direct adoption of tabulated generic remediation criteria published by CCME and pertaining to specific land uses including agricultural, residential/parkland, commercial, and industrial.
- **Tier 2: Modified Criteria** – adoption of tabulated generic remediation criteria published by CCME with limited modifications based on applicability of human health and ecological exposure pathways.
- **Tier 3: Risk-based** – site-specific risk assessment.

Note that the generic numerical soil criteria provided within the Government of the NWT's Environmental Guideline for Contaminated Site Remediation (the Guideline) (Government of the NWT 2003, draft updates issued in 2023) were adopted from the CCME guidelines and standards that were current at the time it was

issued. Many of these guidelines and standards listed in the Guideline have been superseded. As such, the most current CCME guidelines and standards are applied herein to reflect current understanding of contaminant toxicity and risk.

In terms of potential risk, the following Site-specific information is relevant to the selection of the appropriate Soil Quality Guidelines (SQGs) for this assessment:

- The Site is currently used for industrial purposes; however, the surrounding land use and intended future use of the Site is natural/forested, which fits under CCME's definition of residential/parkland land use.
- Particle size analysis completed on three soil samples collected as part of the investigation activities described herein indicated the soils at the PM-1 Site are fine-grained (Table 1); however, layers of sand and silt, or sand and gravel were encountered in most of the boreholes. As a result, the most conservative of the fine- or coarse-grained guidelines were applied.

CCME guidelines are provided in the following documents:

- Canadian Soil Quality Guidelines for the Protection of Environmental and Human Health (CCME 2004a-d, 2010).
- Canada-Wide Standard for Petroleum Hydrocarbons (PHCs) in Soil (CCME 2008).

For carcinogenic compounds, CCME provides guidelines protective of humans based on an incremental lifetime cancer risk (ILCR) of either 1 in 100,000 or 1 in 1,000,000, to be chosen based on the discretion of the assessor.

Selection of an appropriate ILCR for the Site applies to benzene (all human health exposure pathways) and human direct contact risks (dermal contact, incidental, and accidental ingestion or inhalation of soil particles) pertaining to exposure to eight carcinogenic PAH analytes, including the following for which calculation of the benzo[a]pyrene total potency equivalent and Index of Additive Cancer Risk are required:

- | | |
|----------------------------|---------------------------|
| ▪ benzo[a]anthracene | ▪ benzo[a]pyrene |
| ▪ benzo[b+j+k]fluoranthene | ▪ chrysene |
| ▪ benzo[k]fluoranthene | ▪ dibenz[a,h]anthracene |
| ▪ benzo[g,h,i]perylene | ▪ indeno[1,2,3-c,d]pyrene |

Selection of appropriate CCME SQGs herein is based on an ILCR of 1 in 100,000 based on the remote nature of the Site and the low likelihood of frequent human access.

3.4.1 Summary of Applicable Guidelines

Additional information about Site conditions and relevant exposure pathways is provided in the preliminary Conceptual Site Model attached in Appendix E. Although Tier 2 pathway exclusion is permitted in the Guideline (Government of NWT 2003) and CCME guidance documents, all pathways have been considered applicable at the PM-1 Site. The CCME SQGs applied in Tables 2 through 4 reflect the use of the most conservative numerical value (that is, Tier 1) for a residential/parkland land use scenario. In cases where the guideline for fine- or coarse-grained soils were different, the most conservative value was applied.

4. Investigation Results

To assess the historical diesel impacts in soil as well as areas of potential environmental concern (APECs) identified during the Phase I ESA, 27 boreholes were completed at the Site. Three surface soil samples were also collected in locations where deeper investigation was restricted by the presence of aboveground and underground infrastructure. These APECs are described in Exhibit 1.

Figure 3 presents the borehole and surface sample locations. Appendix B provides photographs of the Site.

Exhibit 1. PM-1 APEC and COPC Summary

Identified APECs	COPCs
Former methanol AST (15,000-L)	Methanol
Two diesel ASTs, 8,620-L capacity	PHC F1-F4, BTEX, PAHs
Pig launcher, unidentified substance leaking from pig catch basin	PHC F1-F4, BTEX, PAHs
Generator building (location of 2018 diesel release)	PHC F1-F4, BTEX, PAHs
Former flare stack and pad	PHC F1-F4, BTEX, PAHs
Risers with associated valves and actuators. Hydraulic fluid observed leaking from the actuator system	PHC F1-F4, BTEX, PAHs
Areas of stressed vegetation, potentially associated with broadleaf control	Herbicides

Notes:

AST = aboveground storage tank

BTEX = benzene, toluene, ethylbenzene, and xylene

COPC = contaminant of potential concern

F = Fraction(s)

L = litres(s)

PAH = polycyclic aromatic hydrocarbon

Twelve boreholes, PM_01 to PM_08, BH01, BH04, BH09, and BH12 on Figure 3 were advanced to a maximum depth of 1.5 mbgs on September 20, 2020 to investigate PHC contamination near the generator building. The locations were based on Site topography and likely drainage direction given the surficial nature of the release. Note, samples were not collected from boreholes BH01, BH04, BH09, and BH12.

Soil samples were generally collected at 0.3-m intervals for field screening of headspace vapour concentrations to identify likely zones of contamination.

On August 17, 18, and 21, 2021, 15 additional boreholes (PM-1-SB001 to PM-1-SB011, PM-1-SB038 and PM-1-SB041 to PM-1-SB043) were advanced, and 3 surface samples (PM-1-SS1 to PM-1-SS3) were collected at the Site. The additional investigation was completed to further delineate the extent of PHC contamination identified in September 2020, and to assess soil quality in the APECs, identified as part of the desktop portion of the Phase I ESA (Jacobs 2021).

One borehole (PM-1-SB038) was advanced near the historic flare stack and flare pad area. The Pointed Mountain Pipeline was used to transport natural gas, and no liquids were stored or managed in the area of the historic flare stack and flare pad. During the field sampling event, no visual indicators of contamination were observed in the area. As such, it was determined that no additional sampling would be required. In addition, the producer tie-in piping north of the PM-1 Site infrastructure was identified as an APEC during the Phase I ESA desktop study (Jacobs 2021). During field reconnaissance, no indicators of contamination were observed and, as such, no soil samples were collected.

As shown in Exhibit 1, methanol was identified as a COPC during the desktop portion of the Phase I ESA. However, given the limited cargo weight capacity on the interior and exterior of the helicopter used to access the Site, and the concern for cross-contamination and rejection of data based on the presence of methanol preservative vials for the BTEX/PHC F1 samples, no soil methanol analyses were completed during assessment activities in 2021. Methanol was subsequently investigated by Jacobs and concentrations were found to be less than applicable guidelines (Jacobs 2023).

Soil samples collected during the field investigations were analyzed for BTEX and PHC F1 to F4. Soil samples collected during the August 2021 field investigation were additionally analyzed for PAHs. Each of the surficial soil samples, PM-1-SS1 to PM-1-SS3 were also analyzed for herbicides due to the presence of stressed vegetation or bare ground conditions.

AGAT Laboratories, accredited by the Canadian Association for Laboratory Accreditation Inc., completed all analyses.

Laboratory analytical results are presented in Tables 1 through 4 and summarized in the subsections below.

4.1 Soil Headspace Vapours

Soil headspace vapours were measured in all soil samples collected during the investigation using an RKI Eagle 2. Combustible hydrocarbon vapour measurements (detected by the monitor calibrated with hexane), ranged from non-detect (i.e., below 5 parts per million by volume [ppm_v]) to 300 ppm_v (detected in borehole PM_01 north of the diesel tanks). VOC vapour measurements (detected by the monitor calibrated with isobutylene) were collected in during the September 2020 only and ranged from non-detect (i.e., below 5 ppm_v) to 280 ppm_v (detected in borehole PM_01 north of the diesel tanks). Headspace vapour readings are provided in Table 2 and shown on the borehole logs in Appendix A.

4.2 Soil Stratigraphy

The Site is predominated by silty clay to clay, with a thin (0.2 m) layer of sand and gravel present at the top of most boreholes. Particle size analysis was completed on three samples (from PM_03, PM_07, and PM-1-SB004) and indicated the soil was fine-grained (72 percent fines, 81 percent fines, and 87 percent fines, respectively). Laboratory particle size analysis results are presented in Table 1.

A layer of silt or silt and sand was encountered between 1.0 and 1.3 to 1.5 mbgs (end of borehole or auger refusal) in five boreholes (PM_05, BH09, PM_07, BH12, PM_08). A layer of sand and silt at surface was encountered at depths up to 0.75 mbgs in five boreholes (PM-1-SB009, PM-1-SB011, PM-1-SB038, PM-1-SB041, PM-1-SB042). A layer of sand and gravel was encountered between 2 and 2.5 mbgs (auger refusal) in PM-1-SB005. Further detail is provided on the borehole logs presented in Appendix A.

4.3 Soil Analytical Results

4.3.1 Petroleum Hydrocarbons

All soil samples collected at the Site were submitted for analysis of BTEX and PHC F1 to F4. Analytical results indicated that concentrations of one or more of PHC F1 to F3 exceeded the CCME SQGs in eight boreholes and three surface sampling locations. Analytical results indicated that concentrations of one or more of benzene, toluene, ethylbenzene, or xylenes exceeded the CCME SQGs in four boreholes and one surface sampling location. Concentrations of BTEX and PHC F1 to F4 were found to be below applicable CCME SQGs in all other sampling locations. The locations of boreholes with exceedances are presented on Figure 3 along with the estimated extent of the soil contaminant plume based on exceedances of the guideline for PHC F2, the most widespread contaminant of concern (COC) at the Site. Three-dimensional Earth Volumetric Studio (C-Tech, <https://www.ctech.com/>) was used to project the plume footprint to the extent shown based on statistical kriging. With the exception of those at surface sample location PM-1-SS-2, the identified PHC impacts are associated with the historical diesel release. PHC impacts at PM-1-SS2 are associated with historical piggings activities.

Laboratory analytical results are presented in Table 2.

4.3.2 Polycyclic Aromatic Hydrocarbons

All soil samples collected in August 2021 were submitted for analysis of PAHs. One or both of naphthalene or phenanthrene was identified in four boreholes (PM-1-SB004, PM-1-SB005, PM-1-SB006, and PM-1-SB008) and two surface sampling locations (PM-1-SS2 and PM-1-SS3) at concentrations exceeding the applied CCME SQGs. The locations of the exceedances are presented on Figure 3. In most cases, the presence of above-guideline naphthalene and phenanthrene was associated with the greatest concentrations of PHC F2 and F3.

Table 3 presents the PAH analytical results.

4.3.3 Herbicides and Organic Halides

Surface samples PM-1-SS1 to PM-1-SS-3 were submitted for analysis of herbicides based on field observations of stressed vegetation surrounding the aboveground infrastructure and reports of vegetation control from Operations staff. Herbicide analysis was requested; however, due to laboratory error, the sample was analyzed beyond the recommended holding time. As a result, the concentrations of herbicide analytes detected are considered estimates. Concentrations of atrazine (one sample), bromacil (three samples), diuron (three samples), and glyphosate (two samples) were detected at concentrations above the method detection limit. CCME does not have guidelines for these parameters. Therefore, estimated concentrations do not affect the findings of the investigation.

Laboratory analytical results are presented in Table 4.

4.4 Quality Assurance and Quality Control

Quality Assurance and Quality Control (QA/QC) measures employed during field activities included:

- Donning a clean pair of nitrile gloves prior to collecting each soil sample
- Collecting and analyzing appropriate field QC samples
- Using proper sampling containers, storage methods, and shipping containers

- Decontaminating field tools and sampling equipment prior to collecting each soil sample
- Maintaining and documenting chain-of-custody for all samples through collection, storage, and shipment to the receiving laboratory

QA/QC measures employed by AGAT are reviewed in the data quality evaluation (DQE) provided in Appendix D. The DQE covers 90 soil samples reported in four CoAs reported as Work Orders 20N654509, 21N791280, 21N791282, and 21N793815.

The DQE indicated all required criteria were met, with the following exceptions:

- In CoA 21N793815, the glyphosate, and extractable organic halides analyses were completed past the recommended holding time by factor of two in samples PM-1-SS1, PM-1-SS2, and PM-1-SS3. The detected results were flagged "J" and should be considered estimated. The non-detect results were flagged "R", rejected, and cannot be used for Project decision-making.

Aside from the measured herbicide concentrations, the remaining laboratory analytical data can be used for Project decisions, taking into consideration the qualifications applied to the data. As the affected herbicides do not have guidelines, the flags noted above are not considered to impact the findings of the assessment.

5. Discussion

Soil investigations completed at the PM-1 Site have confirmed the presence of PHC F1 to F3, benzene, toluene, ethylbenzene, xylenes, naphthalene, and phenanthrene at concentrations exceeding applied CCME SQGs. As such, these analytes are confirmed COCs. Exhibit 2 presents the COCs as well as the guidelines proposed for future remedial efforts at the Site.

Exhibit 2. PM-1 Summary of COCs and Proposed Remediation Criteria

COC	Investigation Results	Proposed Remediation Criteria (mg/kg)	Rationale for Selection	Exposure Pathways Protected
PHC F1	Concentrations exceeding applicable CCME guidelines detected in seven boreholes (PM_01, PM_04, PM_07, PM_08, PM1-SB005, PM1-SB006, PM-1-SB008) and one surface sample location (PM-1-SS3).	30 ^a	Most conservative guideline available in CCME documentation.	Protection of potable groundwater, ecological direct soil contact, vapour inhalation , soil ingestion, soil ingestion and dermal contact.
PHC F2	Concentrations exceeding applicable CCME guidelines detected in eight boreholes (PM_01, PM_04, PM_07, PM_08, PM-1-SB004, PM-1-SB005, PM-1-SB006, PM-1-SB008) and three surface sample locations (PM-1-SS1 to PM-1-SS3).	150 ^a	Most conservative guideline available in CCME documentation.	Ecological direct soil contact , vapour inhalation, protection of potable groundwater, protection of freshwater aquatic life, soil ingestion and dermal contact.
PHC F3	Concentrations exceeding applicable CCME guidelines detected in seven boreholes (PM_01, PM_04, PM_07, PM_08, PM-1-SB005, PM-1-SB006, PM-1-SB-008) and three surface sample locations (PM-1-SS1 to PM-1-SS3).	300 ^a	Most conservative guideline available in CCME documentation.	Ecological direct soil contact , soil ingestion, soil dermal contact.
Benzene	Concentrations exceeding applicable CCME guidelines detected in one borehole (PM-1-SB008).	0.0068 ^b	Most conservative guideline available in CCME documentation.	Protection of potable water , vapour inhalation, ecological direct soil contact, soil ingestion, soil dermal contact.
Toluene	Concentrations exceeding applicable CCME Guidelines detected in one borehole (PM-1-SB008)	0.08 ^c	Most conservative guideline available in CCME documentation.	Protection of potable water , protection of freshwater aquatic life, ecological direct soil contact, vapour inhalation, soil ingestion, soil dermal contact.
Ethylbenzene	Concentrations exceeding applicable CCME guidelines detected in four boreholes (PM_04, PM-07, PM-1-SB006, PM-1-SB-008) and one surface sample location (PM-1-SS3).	0.018 ^d	Most conservative guideline available in CCME documentation.	Protection of potable water , ecological direct soil contact, vapour inhalation, soil ingestion, soil dermal contact.

Exhibit 2. PM-1 Summary of COCs and Proposed Remediation Criteria

COC	Investigation Results	Proposed Remediation Criteria (mg/kg)	Rationale for Selection	Exposure Pathways Protected
Xylenes	Concentrations exceeding applicable CCME guidelines detected in two boreholes (PM_07 and PM-1-SB008).	2.4 ^e	Most conservative guideline available in CCME documentation.	Protection of potable water , ecological direct soil contact, vapour inhalation.
Naphthalene	Concentrations of naphthalene exceeding applicable guidelines detected in four boreholes (PM-1-SB004, PM-1-SB005, PM-1-SB006, PM-1-SB008) and two surface sample locations (PM-1-SS2 and PM-1-SS3).	0.013 ^f	Most conservative guideline available in CCME documentation.	Protection of freshwater aquatic life , soil and food ingestion.
Phenanthrene	Concentrations of phenanthrene exceeding applicable standards detected in two boreholes (PM-1-SB006, PM-1-SB008).	0.046 ^f	Most conservative guideline available in CCME documentation.	Protection of freshwater aquatic life , soil and food ingestion.

^aCCME 2008

^bCCME 2004a

^cCCME 2004b

^dCCME 2004c

^eCCME 2004d

^fCCME 2010

Notes:

Bold text indicates the governing exposure pathway (i.e., the most conservative guideline)

mg/kg = milligram(s) per kilogram

As shown, the remediation criteria selection for PHCs is based on protection of potable groundwater and ecological direct contact risks. Note that the ecological direct soil contact pathway cannot be eliminated or adjusted without Site-specific risk assessment. The only groundwater observed during the investigations was seepage in PM-1-SB002 at 1.95 mbgs and saturated sand and gravel at 2.0 to 2.5 mbgs in PM-1-SB005. Therefore, there is insufficient information on the potential presence of an aquifer that could be used as a potable water source and the protection of potable water pathway is considered applicable at the Site.

Remediation criteria for naphthalene and phenanthrene are based on protection of freshwater aquatic life based on the presence of a swamp within 60 m of the lease boundary (Figure 2).

Although sand, gravel, or fill was observed near the surface (up to 0.75 mbgs) in 15 boreholes, wet or saturated conditions were not observed at such shallow depths. PHC impacts were predominantly located at depths below 0.75 mbgs in the clay.

A layer of sand and gravel was observed at 2.0 to 2.5 mbgs in PM-1-SB005. PHC impacts were identified in this borehole; however, they were limited to depths of 1.0 to 1.5 mbgs and did not encounter the sand and gravel. PHC impacts at the PM-1 Site are predominantly located in the clay till unit at the PM-1 Site, indicating that the clay will primarily control the migration of contamination.

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Groundwater (as seepage) into the boreholes was observed during the investigation in PM-1-SB002 (at 1.95 mbgs) and PM-1-SB005 (at 2.0 to 2.5 mbgs), PHC soil impacts are delineated at depths above these levels in these boreholes.

Vertical and lateral delineation of PHCs and PAHs was limited by the handheld investigation method, the presence of nearby infrastructure, and the property boundaries. As such, the vertical extent of PHC and PAH impacts near the two source areas is unknown. The extent of the plume to the west of the Site boundary (i.e., on Paramount Resources Ltd.'s property) is also unknown.

Methanol was not assessed as part of the Phase II ESA investigation; however, Jacobs subsequently completed sampling and analysis for methanol in September 2023. Soil samples collected from three hand-auger holes were submitted and analyzed for methanol. Concentrations of methanol were below the CCME SQGs for both fine- and coarse-grained soil in soil samples (Jacobs 2023). Conclusion

Based on the results of the Phase II ESA, additional investigation and remediation are warranted at the PM-1 Site.

6. Closure

The conclusions in this Phase II ESA represent the best judgement of the assessor based on the Site conditions observed during field Site visits in September 2020 and August 2021 and current environmental standards and guidelines. Section 8 provides limitations to the Phase II ESA.

Jacobs trusts that the Phase II ESA findings and recommendations meet your present requirements. Should you have any comments or concerns, please contact Melissa Magnuson via email (melissa.magnuson@jacobs.com).

Yours truly,
Jacobs Consultancy Canada Inc.

Prepared By:

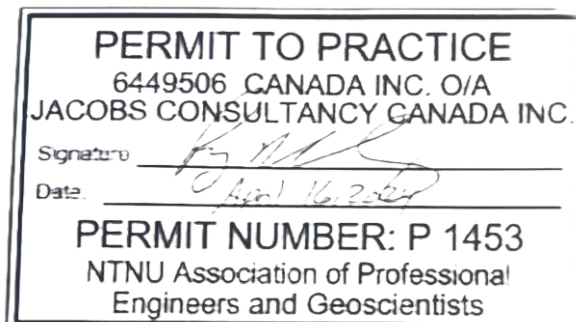


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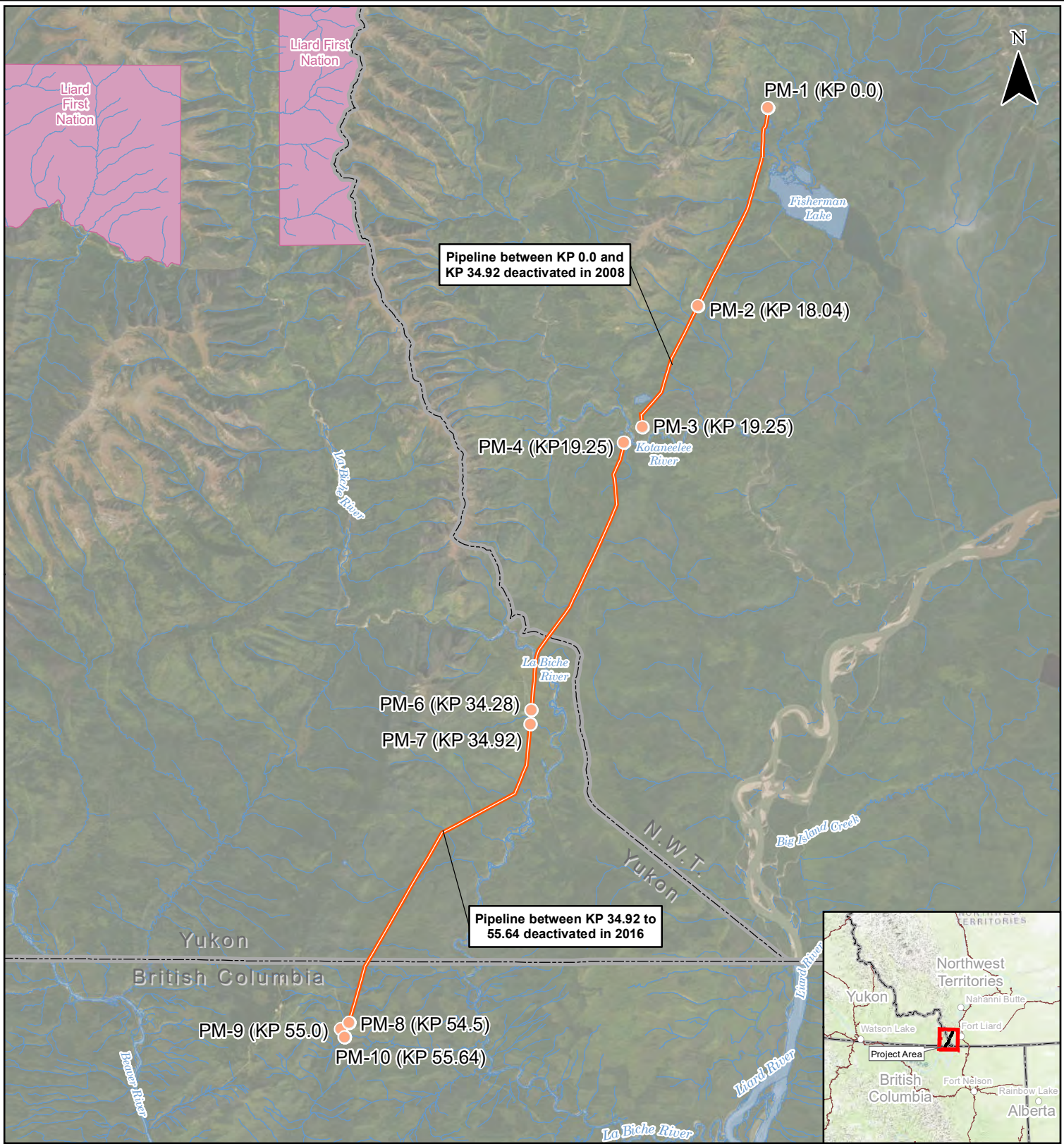
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8. References

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Figures



- Site Location
- Pointed Mountain Pipeline Route
- Provincial Boundary
- Watercourse
- Water Body
- First Nations (Interim Protected Lands)

FIGURE 1
PROJECT OVERVIEW
PHASE II ENVIRONMENTAL SITE ASSESSMENT
WESTCOAST ENERGY INC.
POINTED MOUNTAIN PIPELINE
ABANDONMENT PROJECT



NAD 1983 UTM Zone 10N
Satellite Imagery: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community; Roads: NRCAN 2014-2015; Railway: NRCAN 2012.

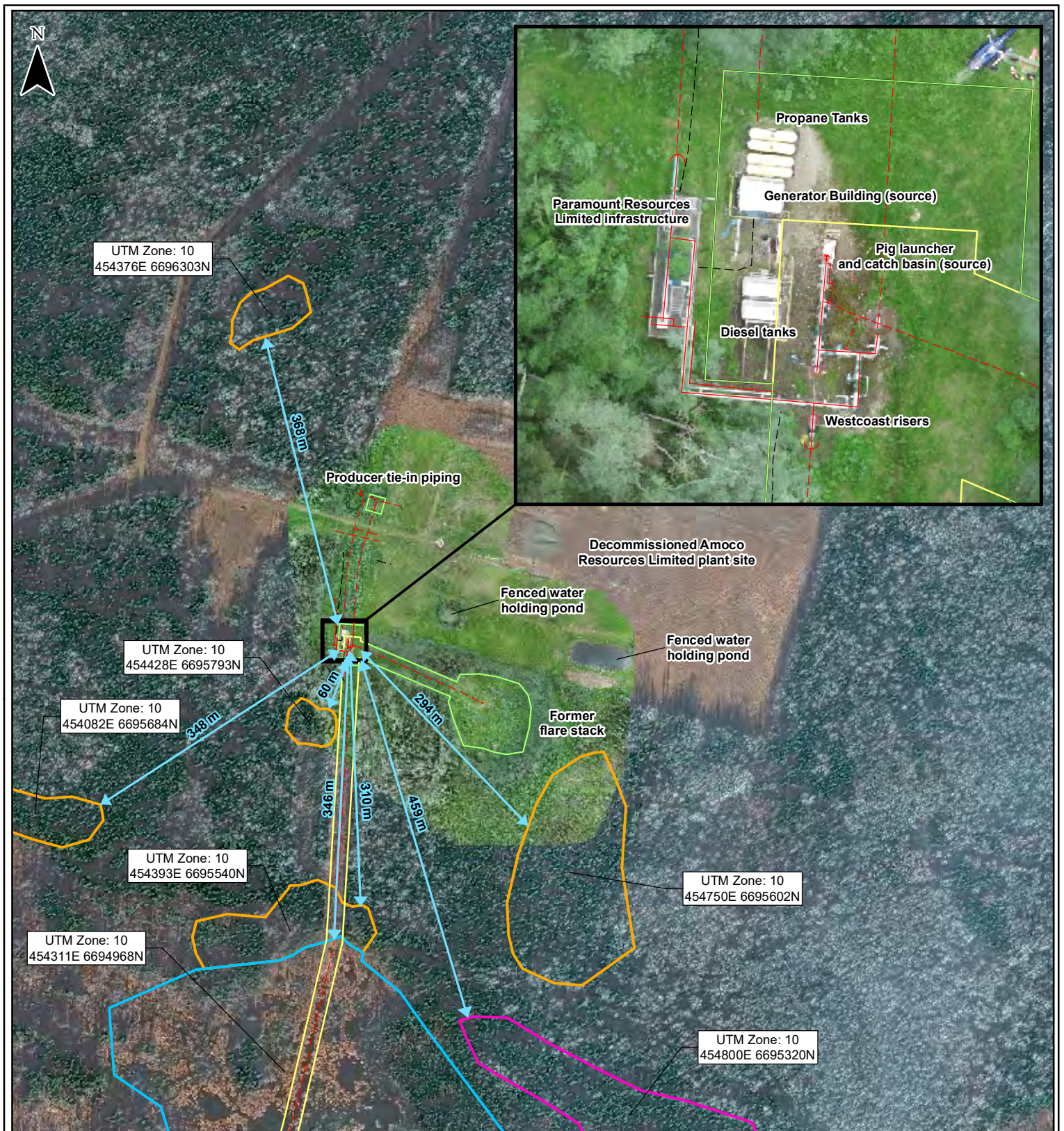
SCALE: 1:275,000
0 5 10
Kilometres
(All Locations Approximate)

Jacobs

Although there is no reason to believe that there are any errors associated with the data used to generate this product or in the product itself, users of these data are advised that errors in the data may be present.

April 2024

CE862600



--- Underground Pipeline
 --- Aboveground Pipeline
 --- Underground Power

--- Pointed Mountain Pipeline Right-of-Way
 --- Westcoast Site Boundary
 --- Distance to Waterbody (m)

Wetlands
 --- Fen
 --- Shallow Water
 --- Swamp

FIGURE 2
SITE OVERVIEW
PHASE II ENVIRONMENTAL SITE ASSESSMENT
PM-1 SITE, NORTHWEST TERRITORIES
WESTCOAST ENERGY INC. POINTED MOUNTAIN
PIPELINE ABANDONMENT PROJECT



NAD 1983 UTM Zone 10N
 Satellite Imagery: ; Roads: NRCAN 2014-2015; Railway: NRCAN 2012; Wetlands: Jacobs 2021.

SCALE: 1:6,500
 0 100 200
 Metres
 (All Locations Approximate)

Jacobs

Although there is no reason to believe that there are any errors associated with the data used to generate this product or in the product itself, users of these data are advised that errors in the data may be present.

April 2024

CE862600

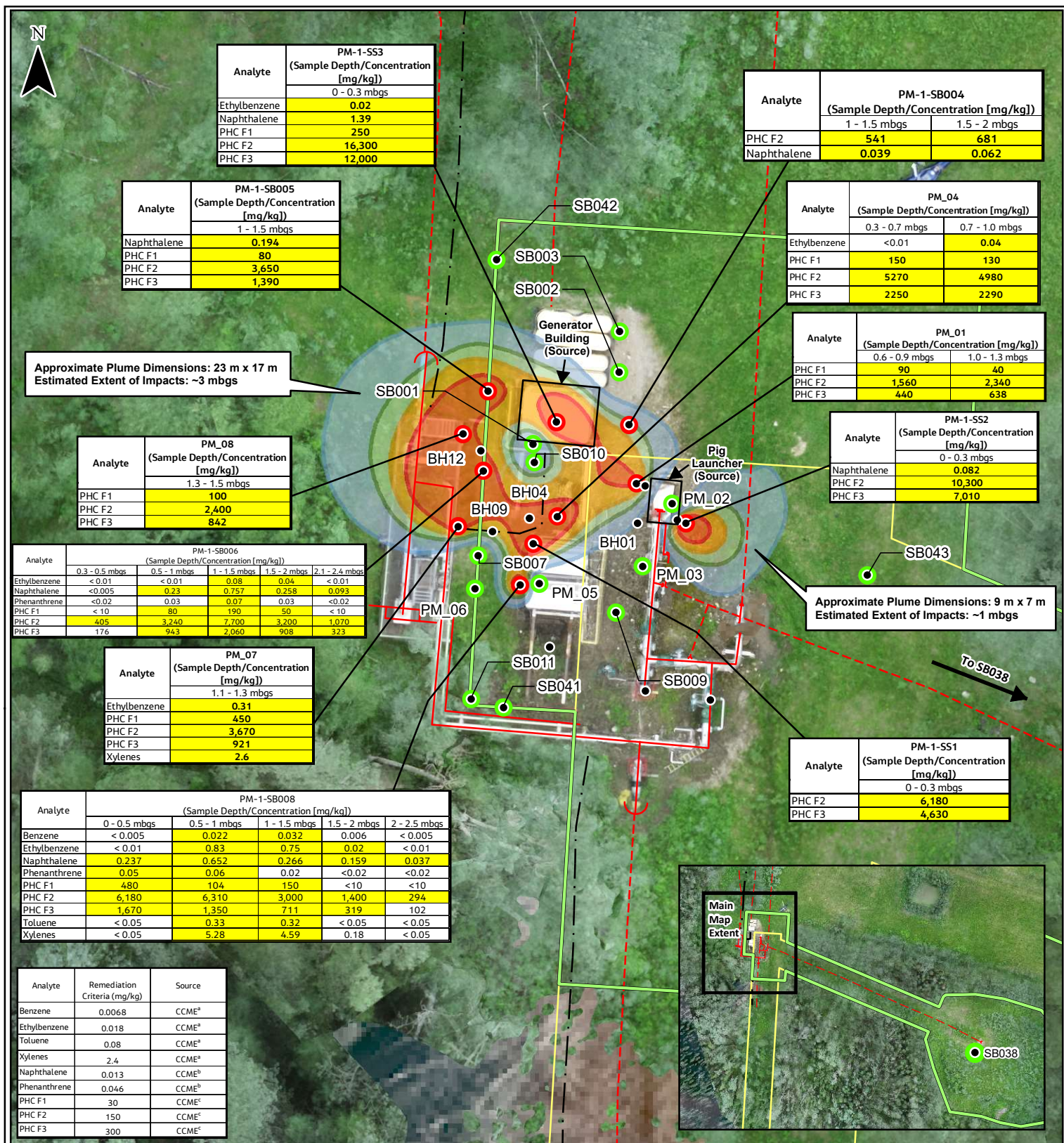


FIGURE 3

SOIL ANALYTICAL RESULTS

PHASE II ENVIRONMENTAL SITE ASSESSMENT

PM-1 SITE, NORTHWEST TERRITORIES

WESTCOAST ENERGY INC.

POINTED MOUNTAIN PIPELINE

ABANDONMENT PROJECT

SCALE: 1:350

0 7.5 15

Metres

(All Locations Approximate)



Jacobs

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April 2024

CE810500

Tables

Table 1. Soil Analytical Results - Particle Size Analysis*Limited Phase II Environmental Site Assessment, PM-1 Site, Kilometre Post 0.0, Northwest Territories*

Sample ID	Sample Date (DD-MMM-YY)	Sample Depth	Sieve Analysis (75 microns)	Sieve Texture
		mbgs	% Retained	
PM_03_SOa	20-Sep-20	0.3 - 0.5	28	Fine
PM_07_SOa	20-Sep-20	1.1 - 1.3	19	Fine
PM-1-SB004C	17-Aug-21	1.0 - 1.5	13	Fine

Note:

mbgs = metre(s) below ground surface

Table 2. Soil Analytical Results - Petroleum Hydrocarbons
Limited Phase II Environmental Site Assessment, PM-1 Site, Kilometre Post 0.0, Northwest Territories

Sample ID	Sample Date (DD-MMM-YY)	Sample Depth mbgs	Combustible Hydrocarbons ppm _v	Volatile Organic Compounds ppm _v	Benzene mg/kg	Toluene mg/kg	Ethylbenzene mg/kg	Xylenes, Total mg/kg	PHC F1 mg/kg	PHC F1-BTEX mg/kg	PHC F2 mg/kg	PHC F3 mg/kg	PHC F4 mg/kg	Moisture Content %
CCME ^{a,b}					0.0068	0.08	0.018	2.4	NG	30	150	300	2800	NG
September 2020														
PM_01_S0a	20-Sep-20	0.0 - 0.3	100	2	<0.005	<0.05	<0.01	<0.05	<10	<10	<10	29	16	25
PM_01_S0b	20-Sep-20	0.6 - 0.9	130	18	<0.005	<0.05	<0.01	0.05	90	90	1560	440	44	24
PM_01_S0c	20-Sep-20	1.0 - 1.3	300	280	<0.005	<0.05	<0.01	<0.05	40	40	2340	638	44	23
PM_02_S0a	20-Sep-20	0.5 - 0.8	135	0	<0.005	<0.05	<0.01	<0.05	<10	<10	<10	23	10	15
PM_03_S0a	20-Sep-20	0.3 - 0.5	40	0	<0.005	<0.05	<0.01	<0.05	<10	<10	<10	64	26	20
PM_03_S0b	20-Sep-20	1.0 - 1.2	60	0	<0.005	<0.05	<0.01	<0.05	<10	<10	<10	28	13	23
PM_04_S0a	20-Sep-20	0.3 - 0.7	190	38	<0.005	<0.05	<0.01	<0.05	150	150	5270	2250	353	21
PM_04_S0b	20-Sep-20	0.7 - 1.0	55	26	<0.005	<0.05	0.04	0.11	130	130	4980	2290	423	22
PM_05_S0a	20-Sep-20	0.5 - 0.8	25	0	<0.005	<0.05	<0.01	<0.05	<10	<10	<10	29	17	26
PM_05_S0b	20-Sep-20	1.0 - 1.2	145	0	<0.005	<0.05	<0.01	<0.05	<10	<10	<10	79	37	24
PM_06_S0b	20-Sep-20	1.1 - 1.3	180	18	<0.005	<0.05	<0.01	<0.05	<10	<10	<10	36	20	21
PM_07_S0a	20-Sep-20	1.1 - 1.3	0	26	<0.005	<0.05	0.31	2.6	450	450	3670	921	34	21
PM_08_S0a	20-Sep-20	0.7 - 1.0	60	0	<0.005	<0.05	<0.01	<0.05	<10	<10	<10	29	16	24
PM_08_S0b	20-Sep-20	1.3 - 1.5	130	26	<0.005	<0.05	<0.01	0.11	100	100	2400	842	93	22
August 2021														
PM-1-SB001A	17-Aug-21	0.1 - 0.5	60	--	< 0.005	< 0.05	< 0.01	< 0.05	< 10	< 10	< 10	46	20	22
PM-1-SB001B	17-Aug-21	0.5 - 1.0	10	--	< 0.005	< 0.05	< 0.01	< 0.05	< 10	< 10	< 10	48	20	21
PM-1-SB001C	17-Aug-21	1.0 - 1.5	10	--	< 0.005	< 0.05	< 0.01	< 0.05	< 10	< 10	< 10	53	22	23
PM-1-SB001D	17-Aug-21	1.5 - 1.8	< 5	--	< 0.005	< 0.05	< 0.01	< 0.05	< 10	< 10	< 10	33	12	15
PM-1-SB002A	17-Aug-21	0.1 - 0.5	< 5	--	< 0.005	< 0.05	< 0.01	< 0.05	< 10	< 10	< 10	35	18	21
PM-1-SB002B	17-Aug-21	0.5 - 1.0	< 5	--	< 0.005	< 0.05	< 0.01	< 0.05	< 10	< 10	< 10	49	20	17
PM-1-SB002C	17-Aug-21	1.0 - 1.5	60	--	< 0.005	< 0.05	< 0.01	< 0.05	< 10	< 10	< 10	35	12	22
PM-1-SB002D	17-Aug-21	1.9 - 1.9	10	--	< 0.005	< 0.05	< 0.01	< 0.05	< 10	< 10	< 10	41	13	16
PM-1-SB003A	17-Aug-21	0.3 - 0.5	< 5	--	< 0.005	< 0.05	< 0.01	< 0.05	< 10	< 10	< 10	209	55	21
PM-1-SB003B	17-Aug-21	0.5 - 1.0	10	--	< 0.005	< 0.05	< 0.01	< 0.05	< 10	< 10	< 10	38	16	25
PM-1-SB003C	17-Aug-21	1.0 - 1.5	< 5	--	< 0.005	< 0.05	< 0.01	< 0.05	< 10	< 10	< 10	43	18	19
PM-1-SB003D	17-Aug-21	1.5 - 2.0	10	--	< 0.005	< 0.05	< 0.01	< 0.05	< 10	< 10	< 10	39	14	18
PM-1-SB004A	17-Aug-21	0.1 - 0.5	15	--	< 0.005	< 0.05	< 0.01	< 0.05	< 10	< 10	< 10	26	< 10	21
PM-1-SB004B	17-Aug-21	0.5 - 1.0	15	--	< 0.005	< 0.05	< 0.01	< 0.05	< 10	< 10	< 10	45	21	22
PM-1-SB004C	17-Aug-21	1.0 - 1.5	15	--	< 0.005	< 0.05	< 0.01	< 0.05	20	20	541	186	21	21
PM-1-SB004D	17-Aug-21	1.5 - 2.0	15	--	< 0.005	< 0.05	< 0.01	< 0.05	10	10	681	225	22	21
PM-1-SB004E	17-Aug-21	2.0 - 2.5	15	--	< 0.005	< 0.05	< 0.01	< 0.05	< 10	< 10	< 10	35	11	12
PM-1-SB004F	17-Aug-21	2.5 - 3.0	10	--	< 0.005	< 0.05	< 0.01	< 0.05	< 10	< 10	< 10	29	< 10	10
PM-1-SB005A	17-Aug-21	0.1 - 0.5	10	--	< 0.005	< 0.05	< 0.01	< 0.05	< 10	< 10	< 10	26	14	23
PM-1-SB005B	17-Aug-21	0.5 - 1.0	< 5	--	< 0.005	< 0.05	< 0.01	< 0.05	< 10	< 10	< 10	41	16	24
PM-1-SB005C	17-Aug-21	1.0 - 1.5	5	--	< 0.005	< 0.05	< 0.01	< 0.05	80	80	3650	1390	163	21
PM-1-SB005D	17-Aug-21	1.5 - 2.0	30	--	< 0.005	< 0.05	< 0.01	< 0.05	< 10	< 10	88	94	33	23
PM-1-SB005E	17-Aug-21	2.0 - 2.5	15	--	< 0.005	< 0.05	< 0.01	< 0.05	< 10	< 10	57	68	23	13
PM-1-SB006A	17-Aug-21	0.3 - 0.5	< 5	--	< 0.005	< 0.05	< 0.01	< 0.05	< 10	< 10	405	176	21	26
PM-1-SB006B	18-Aug-21	0.5 - 1.0	10	--	< 0.005	< 0.05	< 0.01	< 0.05	80	80	3240	943	39	24
PM-1-SB006C	18-Aug-21	1.0 - 1.5	40	--	< 0.005	< 0.05	0.08	0.14	190	190	7700	2060	52	22
PM-1-SB006D	18-Aug-21	1.5 - 2.0	60	--	< 0.005	< 0.05	0.04	0.34	50	50	3200	908	41	23
PM-1-SB006E	18-Aug-21	2.1 - 2.4	10	--	< 0.005	< 0.05	< 0.01	< 0.05	< 10	< 10	1070	323	22	14
PM-1-SB007A	18-Aug-21	0.1 - 0.4	5	--	< 0.005	< 0.05	< 0.01	< 0.05	< 10	< 10	12	22	< 10	16
PM-1-SB007B	18-Aug-21	0.5 - 1.0	< 5	--	< 0.005	< 0.05	< 0.01	< 0.05	< 10	< 10	11	52	24	24
PM-1-SB007C	18-Aug-21	1.0 - 1.5	< 5	--	< 0.005	< 0.05	< 0.01	< 0.05	< 10	< 10	13	64	34	22
PM-1-SB007D	18-Aug-21	1.5 - 2.0	5	--	< 0.005	< 0.05	< 0.01	< 0.05	< 10	< 10	< 10	39	15	22
PM-1-SB007E	18-Aug-21	2.0 - 2.5	10	--	< 0.005	< 0.05	< 0.01	< 0.05	< 10	< 10	12	41	14	12
PM-1-SB008A	18-Aug-21	0.0 - 0.5	140	--	< 0.005	< 0.05	< 0.01	< 0.05	480	480	6180	1670	20	20
PM-1-SB008B	18-Aug-21	0.5 - 1.0	80	--	0.022	0.33	0.83	5.28	110	104	6310	1350	26	21
DUP-3-0821	18-Aug-21	0.5 - 1.0	--	--	0.01	0.25	0.61	3.88	93	88	7610	1650	22	19
RPD			--	--	NC	28%	31%	31%	17%	17%	19%	20%	NC	10%
PM-1-SB008C	18-Aug-21	1.0 - 1.5	40	--	0.032	0.32	0.75	4.59	156	150	3000	711	40	21
PM-1-SB008D	18-Aug-21	1.5 - 2.0	120	--	0.006	< 0.05	0.02	0.18	< 10	< 10	1400	319	< 10	22
PM-1-SB008E	18-Aug-21	2.0 - 2.5	30	--	< 0.005	< 0.05	< 0.01	< 0.05	< 10	< 10	294	102	11	12
DUP-4-0821	18-Aug-21	2.0 - 2.5	--	--	< 0.005	< 0.05	< 0.01	< 0.05	< 10	< 10	311	101	< 10	13
RPD			--	--	NC	NC	NC	NC	NC	NC	6%	1%	NC	8%
PM-1-SB009A	18-Aug-21	0.2 - 0.5	5	--	< 0.005	< 0.05	< 0.01	< 0.05	< 10	< 10	< 10	31	< 10	20
PM-1-SB009B	18-Aug-21	0.5 - 1.0	< 5	--	< 0.005	< 0.05	< 0.01	< 0.05	< 10	< 10	< 10	< 10	< 10	19
PM-1-SB009C	18-Aug-21	1.0 - 1.5	5	--	< 0.005	< 0.05	< 0.01	< 0.05	< 10	< 10	< 10	42	19	23
DUP-6-0821	18-Aug-21	1.0 - 1.5	--	--	< 0.005	< 0.05	< 0.01	< 0.05	< 10	< 10	< 10	33	18	23
RPD			--	--	NC	NC	NC	NC	NC	NC	24%	5%	0%	
PM-1-SB010A	21-Aug-21	0.0 - 0.5	< 5	--	< 0.005	< 0.05	< 0.01	< 0.05	< 10	< 10	28	72	28	22
PM-1-SB010B	21-Aug-21	0.5 - 1.0	< 5	--	< 0.005	< 0.05	< 0.01	< 0.05	< 10	< 10	< 10	80	32	22
DUP-7-0821	21-Aug-21	0.5 - 1.0	--	--	< 0.005	< 0.05	< 0.01	< 0.05	< 10	< 10	< 10	75	34	22
RPD			--	--	NC	NC	NC	NC	NC	NC	6%	6%	0%	
PM-1-SB010C	21-Aug-21	1.0 - 1.5	< 5	--	< 0.005	< 0.05	< 0.01	< 0.05	< 10	< 10	< 10	58	23	23
PM-1-SB010D	21-Aug-21	1.5 - 2.0	< 5	--	< 0.005	< 0.05	< 0.01	< 0.05	< 10	< 10	< 10	33	13	12
DUP-2-0821	18-Aug-21	1.5 - 2.0	--	--	< 0.005	< 0.05	< 0.01	< 0.05	< 10	< 10	< 10	42	14	21
RPD			--	--	NC	NC	NC	NC	NC	NC	24%	7%	55%	
PM-1-SB011A	18-Aug-21	0.3 - 0.5	5	--	< 0.005	< 0.05	< 0.01	< 0.05	< 10	< 10	< 10	38	23	20
PM-1-SB011B	18-Aug-21	0.5 - 1.0	< 5	--	< 0.005	< 0.05	< 0.01	< 0.05	< 10	< 10	< 10	56	26	18
DUP-1-0821	18-Aug-21	0.5 - 1.0	--	--	< 0.005	< 0.05	< 0.01	< 0.05	< 10	< 10	< 10	33	19	23

Table 2. Soil Analytical Results - Petroleum Hydrocarbons
Limited Phase II Environmental Site Assessment, PM-1 Site, Kilometre Post 0.0, Northwest Territories

Sample ID	Sample Date (DD-MMM-YY)	Sample Depth	Combustible Hydrocarbons	Volatile Organic Compounds	Benzene	Toluene	Ethylbenzene	Xylenes, Total	PHC F1	PHC F1-BTEX	PHC F2	PHC F3	PHC F4	Moisture Content
		mbgs	ppm _v	ppm _v	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	%
RPD			--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
PM-1-SB011C	18-Aug-21	1.0 - 1.5	< 5	--	< 0.005	< 0.05	< 0.01	< 0.05	< 10	< 10	< 10	57	32	20
PM-1-SB011D	18-Aug-21	1.5 - 2.0	< 5	--	< 0.005	< 0.05	< 0.01	< 0.05	< 10	< 10	< 10	55	33	20
PM-1-SB038A	21-Aug-21	0.0 - 0.2	5	--	< 0.005	< 0.05	< 0.01	< 0.05	< 10	< 10	< 10	41	18	19
PM-1-SB038B	21-Aug-21	0.5 - 1.0	5	--	< 0.005	0.06	< 0.01	< 0.05	< 10	< 10	< 10	32	16	25
PM-1-SB038C	21-Aug-21	1.0 - 1.5	< 5	--	< 0.005	< 0.05	< 0.01	< 0.05	< 10	< 10	< 10	38	15	15
PM-1-SB041A	18-Aug-21	0.1 - 0.5	10	--	< 0.005	< 0.05	< 0.01	< 0.05	< 10	< 10	< 10	34	< 10	17
PM-1-SB041B	18-Aug-21	0.5 - 1.0	10	--	< 0.005	< 0.05	< 0.01	< 0.05	< 10	< 10	< 10	< 10	< 10	21
PM-1-SB041C	18-Aug-21	1.0 - 1.5	5	--	< 0.005	< 0.05	< 0.01	< 0.05	< 10	< 10	< 10	24	10	21
PM-1-SB041D	18-Aug-21	1.5 - 2.0	5	--	< 0.005	< 0.05	< 0.01	< 0.05	< 10	< 10	< 10	29	14	21
DUP-5-0821	18-Aug-21	1.5 - 2.0	--	--	< 0.005	< 0.05	< 0.01	< 0.05	< 10	< 10	< 10	20	11	19
RPD			--	--	NC	NC	NC	NC	NC	NC	NC	37%	24%	NC
PM-1-SB042A	21-Aug-21	0.0 - 0.2	5	--	< 0.005	< 0.05	< 0.01	< 0.05	< 10	< 10	< 10	32	16	20
PM-1-SB042B	21-Aug-21	0.8 - 1.0	10	--	< 0.005	< 0.05	< 0.01	< 0.05	< 10	< 10	< 10	35	19	14
PM-1-SB042C	21-Aug-21	1.0 - 1.5	10	--	< 0.005	< 0.05	< 0.01	< 0.05	< 10	< 10	< 10	33	16	21
PM-1-SB042D	21-Aug-21	1.5 - 2.0	15	--	< 0.005	< 0.05	< 0.01	< 0.05	< 10	< 10	< 10	48	21	22
PM-1-SB042E	21-Aug-21	2.0 - 2.5	15	--	< 0.005	< 0.05	< 0.01	< 0.05	< 10	< 10	< 10	37	16	22
PM-1-SB043A	21-Aug-21	0.1 - 0.5	< 5	--	< 0.005	< 0.05	< 0.01	< 0.05	< 10	< 10	< 10	87	44	19
DUP-8-0821	21-Aug-21	0.1 - 0.5	--	--	< 0.005	< 0.05	< 0.01	< 0.05	< 10	< 10	< 10	59	33	21
RPD			--	--	NC	NC	NC	NC	NC	NC	NC	38%	29%	10%
PM-1-SB043B	21-Aug-21	0.5 - 1.0	< 5	--	< 0.005	< 0.05	< 0.01	< 0.05	< 10	< 10	< 10	45	21	21
PM-1-SB043C	21-Aug-21	1.0 - 1.5	< 5	--	< 0.005	< 0.05	< 0.01	< 0.05	< 10	< 10	< 10	66	29	22
PM-1-SS1	21-Aug-21	0.0 - 0.3	10	--	< 0.005	< 0.05	< 0.01	< 0.05	< 10	< 10	6180	4630	47	43
PM-1-SS2	21-Aug-21	0.0 - 0.3	15	--	< 0.005	< 0.05	< 0.01	< 0.05	< 10	< 10	10300	7010	164	21
PM-1-SS3	21-Aug-21	0.0 - 0.3	50	--	< 0.005	< 0.05	0.02	1.32	250	250	16300	12000	164	26
TB-1 Soil	21-Aug-18	--	--	--	< 0.005	< 0.05	< 0.01	< 0.05	< 10	< 10	< 10	< 10	< 10	< 1

^a Canadian Council of Ministers of the Environment (CCME). 2004. Canadian Soil Quality Guidelines for the Protection of Environmental and Human Health. Residential/parkland land use, most conservative of fine- or coarse-grained guidelines. ILCR of 10⁻⁵ applied for benzene.

^b Canadian Council of Ministers of the Environment (CCME). 2008. Canada-Wide Standards for Petroleum Hydrocarbons (PHC) in Soil. January. Residential/parkland land use, most conservative of fine- or coarse-grained soil guidelines.

Notes:

-- = not measured

Yellow highlight indicates value exceeds referenced guideline.

BTEX = benzene, toluene, ethylbenzene, and xylenes

F = fraction

ILCR = incremental life cancer risk

mbgs = metre(s) below ground surface

mg/kg = milligram(s) per kilogram

NC = RPD could not be calculated as one or more results was less than, or within 5 times, the detection limit

NG = no guideline

ppm_v = parts per million by volume

RPD = relative percentage difference calculated using:

$$RPD\% = \frac{|S - D|}{\frac{1}{2}(S + D)} \times 100\%$$

Where:

S = Sample value

D = Duplicate or replicate value

Table 3. Soil Analytical Results - Polycyclic Aromatic Hydrocarbons
Limited Phase II Environmental Site Assessment, PM-1 Site, Kilometre Post 0.0, Northwest Territories

Sample ID	Sample Date	Sample Depth mbgs	2-Methylnaphthalene	Acenaphthene	Acenaphthylene	Acridine	Anthracene	BaP TPE	Benzo[a]anthracene	Benzo[a]pyrene	Benzo[b,j]fluoranthene	Benzo[ghi]perylene	Benzo[k]fluoranthene	Chrysene	Dibenz[ah]anthracene	Fluoranthene	Fluorene	Indeno[1,2,3-cd]pyrene	Naphthalene	Phenanthrene	Pyrene	Quinoline	IACR - Coarse	IACR - Fine	
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	NA
			CCME ^a	NG	0.28	320	NG	2.5	5.3	1	0.6	1	NG	1	6.2	1	15.4	0.25	1	0.013	0.046	7.7	NG	1	1
PM-1-SB001A	17-Aug-21	0.1 - 0.5	<0.005	<0.005	<0.005	<0.05	<0.004	0.0225	<0.02	<0.03	<0.03	<0.05	<0.02	<0.05	<0.005	<0.01	<0.01	<0.02	<0.005	<0.02	<0.01	<0.05	0.0136	0.0259	
PM-1-SB001B	17-Aug-21	0.5 - 1.0	<0.005	<0.005	<0.005	<0.05	<0.004	0.0225	<0.02	<0.03	<0.03	<0.05	<0.02	<0.05	<0.005	<0.01	<0.01	<0.02	<0.005	<0.02	<0.01	<0.05	0.0136	0.0259	
PM-1-SB001C	17-Aug-21	1.0 - 1.5	<0.005	<0.005	<0.005	<0.05	<0.004	0.0225	<0.02	<0.03	<0.03	<0.05	<0.02	<0.05	<0.005	<0.01	<0.01	<0.02	<0.005	<0.02	<0.01	<0.05	0.0136	0.0259	
PM-1-SB001D	17-Aug-21	1.5 - 1.8	<0.005	<0.005	<0.005	<0.05	<0.004	0.0225	<0.02	<0.03	<0.03	<0.05	<0.02	<0.05	<0.005	<0.01	<0.01	<0.02	<0.005	<0.02	<0.01	<0.05	0.0136	0.0259	
PM-1-SB002A	17-Aug-21	0.1 - 0.5	<0.005	<0.005	<0.005	<0.05	<0.004	0.0225	<0.02	<0.03	<0.03	<0.05	<0.02	<0.05	<0.005	<0.01	<0.01	<0.02	<0.005	<0.02	<0.01	<0.05	0.0136	0.0259	
PM-1-SB002B	17-Aug-21	0.5 - 1.0	<0.005	<0.005	<0.005	<0.05	<0.004	0.0225	<0.02	<0.03	<0.03	<0.05	<0.02	<0.05	<0.005	<0.01	<0.01	<0.02	<0.005	<0.02	<0.01	<0.05	0.0136	0.0259	
PM-1-SB002C	17-Aug-21	1.0 - 1.5	<0.005	<0.005	<0.005	<0.05	<0.004	0.0225	<0.02	<0.03	<0.03	<0.05	<0.02	<0.05	<0.005	<0.01	<0.01	<0.02	<0.005	<0.02	<0.01	<0.05	0.0136	0.0259	
PM-1-SB002D	17-Aug-21	1.9 - 1.9	<0.005	<0.005	<0.005	<0.05	<0.004	0.0225	<0.02	<0.03	<0.03	<0.05	<0.02	<0.05	<0.005	<0.01	<0.01	<0.02	<0.005	<0.02	<0.01	<0.05	0.0136	0.0259	
PM-1-SB003A	17-Aug-21	0.3 - 0.5	<0.005	<0.005	<0.005	<0.05	<0.004	0.0225	<0.02	<0.03	<0.03	<0.05	<0.02	<0.05	<0.005	<0.01	<0.01	<0.02	<0.005	<0.02	<0.01	<0.05	0.0136	0.0259	
PM-1-SB003B	17-Aug-21	0.5 - 1.0	<0.005	<0.005	<0.005	<0.05	<0.004	0.0225	<0.02	<0.03	<0.03	<0.05	<0.02	<0.05	<0.005	<0.01	<0.01	<0.02	<0.005	<0.02	<0.01	<0.05	0.0136	0.0259	
PM-1-SB003C	17-Aug-21	1.0 - 1.5	<0.005	<0.005	<0.005	<0.05	<0.004	0.0225	<0.02	<0.03	<0.03	<0.05	<0.02	<0.05	<0.005	<0.01	<0.01	<0.02	<0.005	<0.02	<0.01	<0.05	0.0136	0.0259	
PM-1-SB003D	17-Aug-21	1.5 - 2.0	<0.005	<0.005	<0.005	<0.05	<0.004	0.0225	<0.02	<0.03	<0.03	<0.05	<0.02	<0.05	<0.005	<0.01	<0.01	<0.02	<0.005	<0.02	<0.01	<0.05	0.0136	0.0259	
PM-1-SB004A	17-Aug-21	0.1 - 0.5	<0.005	<0.005	<0.005	<0.05	<0.004	0.0225	<0.02	<0.03	<0.03	<0.05	<0.02	<0.05	<0.005	<0.01	<0.01	<0.02	<0.005	<0.02	<0.01	<0.05	0.0136	0.0259	
PM-1-SB004B	17-Aug-21	0.5 - 1.0	<0.005	<0.005	<0.005	<0.05	<0.004	0.0225	<0.02	<0.03	<0.03	<0.05	<0.02	<0.05	<0.005	<0.01	<0.01	<0.02	<0.005	<0.02	<0.01	<0.05	0.0136	0.0259	
PM-1-SB004C	17-Aug-21	1.0 - 1.5	0.016	<0.005	<0.005	<0.05	<0.004	0.0225	<0.02	<0.03	<0.03	<0.05	<0.02	<0.05	<0.005	<0.01	<0.01	<0.02	0.039	<0.02	<0.01	<0.05	0.0136	0.0259	
PM-1-SB004D	17-Aug-21	1.5 - 2.0	0.048	<0.005	<0.005	<0.05	<0.004	0.0225	<0.02	<0.03	<0.03	<0.05	<0.02	<0.05	<0.005	<0.01	<0.01	<0.02	0.062	<0.02	<0.01	<0.05	0.0136	0.0259	
PM-1-SB004E	17-Aug-21	2.0 - 2.5	<0.005	<0.005	<0.005	<0.05	<0.004	0.0225	<0.02	<0.03	<0.03	<0.05	<0.02	<0.05	<0.005	<0.01	<0.01	<0.02	<0.005	<0.02	<0.01	<0.05	0.0136	0.0259	
PM-1-SB004F	17-Aug-21	2.5 - 3.0	<0.005	<0.005	<0.005	<0.05	<0.004	0.0225	<0.02	<0.03	<0.03	<0.05	<0.02	<0.05	<0.005	<0.01	<0.01	<0.02	<0.005	<0.02	<0.01	<0.05	0.0136	0.0259	
PM-1-SB005A	17-Aug-21	0.1 - 0.5	<0.005	<0.005	<0.005	<0.05	<0.004	0.0225	<0.02	<0.03	<0.03	<0.05	<0.02	<0.05	<0.005	<0.01	<0.01	<0.02	<0.005	<0.02	<0.01	<0.05	0.0136	0.0259	
PM-1-SB005B	17-Aug-21	0.5 - 1.0	<0.005	<0.005	<0.005	<0.05	<0.004	0.0225	<0.02	<0.03	<0.03	<0.05	<0.02	<0.05	<0.005	<0.01	<0.01	<0.02	<0.005	<0.02	<0.01	<0.05	0.0136	0.0259	
PM-1-SB005C	17-Aug-21	1.0 - 1.5	0.156	<0.005	<0.005	<0.05	<0.004	0.0225	<0.02	<0.03	<0.03	<0.05	<0.02	<0.05	<0.005	<0.01	0.06	<0.02	0.194	0.03	0.01	<0.05	0.0136	0.0259	
PM-1-SB005D	17-Aug-21	1.5 - 2.0	<0.005	<0.005	<0.005	<0.05	<0.004	0.0225	<0.02	<0.03	<0.03	<0.05	<0.02	<0.05	<0.005	<0.01	<0.01	<0.02	0.007	<0.02	<0.01	<0.05	0.0136	0.0259	
PM-1-SB005E	17-Aug-21	2.0 - 2.5	<0.005	<0.005	<0.005	<0.05	<0.004	0.0225	<0.02	<0.03	<0.03	<0.05	<0.02	<0.05	<0.005	<0.01	<0.01	<0.02	<0.005	<0.02	<0.01	<0.05	0.0136	0.0259	
PM-1-SB006A	17-Aug-21	0.3 - 0.5	<0.005	<0.005	<0.005	<0.05	<0.004	0.0225	<0.02	<0.03	<0.03	<0.05	<0.02	<0.05	<0.005	<0.01	<0.01	<0.02	<0.005	<0.02	<0.01	<0.05	0.0136	0.0259	
PM-1-SB006B	18-Aug-21	0.5 - 1.0	0.038	<0.005	<0.005	<0.05	<0.004	0.0225	<0.02	<0.03	<0.03	<0.05	<0.02	<0.05	<0.005	<0.01	0.05	<0.02	0.23	0.03	<0.01	<0.05	0.0136	0.0259	
PM-1-SB006C	18-Aug-21	1.0 - 1.5	0.813	<0.005	<0.005	<0.05	<0.004	0.0225	<0.02	<0.03	<0.03	<0.05	<0.02	<0.05	<0.005	<0.01	0.13	<0.02	0.757	0.07	0.02	<0.05	0.0136	0.0259	
PM-1-SB006D	18-Aug-21	1.5 - 2.0	0.306	<0.005	<0.005	<0.05	<0.004	0.0225	<0.02	<0.03	<0.03	<0.05	<0.02	<0.05	<0.005	<0.01	0.05	<0.02	0.258	0.03	<0.01	<0.05	0.0136	0.0259	
PM-1-SB006E	18-Aug-21	2.1 - 2.4	0.107	<0.005	<0.005	<0.05	<0.004	0.0225	<0.02	<0.03	<0.03	<0.05	<0.02	<0.05	<0.005	<0.01	0.02	<0.02	0.093	<0.02	<0.01	<0.05	0.0136	0.0259	
PM-1-SB007A	18-Aug-21	0.1 - 0.4	<0.005	<0.005	<0.005	<0.05	<0.004	0.0225	<0.02	<0.03	<0.03	<0.05	<0.02	<0.05	<0.005	<0.01	<0.01	<0.02	<0.005	<0.02	<0.01	<0.05	0.0136	0.0259	
PM-1-SB007B	18-Aug-21	0.5 - 1.0	<0.005	<0.005	<0.005	<0.05	<0.004	0.0225	<0.02	<0.03	<0.03	<0.05	<0.02	<0.05	<0.005	<0.01	<0.01	<0.02	<0.005	<0.02	<0.01	<0.05	0.0136	0.0259	
PM-1-SB007C	18-Aug-21	1.0 - 1.5	<0.005	<0.005	<0.005	<0.05	<0.004	0.0225	<0.02	<0.03	<0.03	<0.05	<0.02	<0.05	<0.005	<0.01	<0.01	<0.02	<0.005	<0.02	<0.01	<0.05	0.0136	0.0259	
PM-1-SB007D	18-Aug-21	1.5 - 2.0	<0.005	<0.005	<0.005	<0.05	<0.004	0.0225	<0.02	<0.03	<0.03	<0.05	<0.02	<0.05	<0.005	<0.01	<0.01	<0.02	<0.005	<0.02	<0.01	<0.05	0.0136	0.0259	
PM-1-SB007E	18-Aug-21	2.0 - 2.5	<0.005	<0.005	<0.005	<0.05	<0.004	0.0225	<0.02	<0.03	<0.03	<0.05	<0.02	<0.05	<0.005	<0.01	<0.01	<0.02	<0.005	<0.02	<0.01	<0.05	0.0136	0.0259	
PM-1-SB008A	18-Aug-21	0.0 - 0.5	0.018	<0.005	<0.005	<0.05	<0.004	0.0225	<0.02	<0.03	<0.03	<0.05	<0.02	<0.05	<0.005	<0.01	0.08	<0.02	0.237	0.05	0.02	<0.05	0.0136	0.0259	
PM-1-SB008B	18-Aug-21	0.5 - 1.0	0.733	<0.005	<0.005	<0.05	<0.004	0.0225	<0.02	<0.03	<0.03	<0.05	<0.02	<0.05	<0.005	<0.01	0.09	<0.02	0.652	0.06	0.02	<0.05	0.0136	0.0259	
DUP-3-0821	18-Aug-21	0.5 - 1.0	0.629	<0.005	<0.005	<0.05	<0.004	0.0225	<0.02	<0.03	<0.03	<0.05	<0.02	<0.05	<0.005	<0.01	0.11	<0.02	0.618	0.06	0.02	<0.05	0.0136	0.0259	
RPD	-	-	15%	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	20%	NC	5%	NC	NC	NC	NC	NC	
PM-1-SB008C	18-Aug-21	1.0 - 1.5	0.292	<0.005	<0.005	<0.05	<0.004	0.0225	<0.02	<0.03	<0.03	<0.05	<0.02	<0.05	<0.005	<0.01	0.04	<0.02	0.266	0.02	0.01	<0.05	0.0136	0.0259	
PM-1-SB008D	18-Aug-21	1.5 - 2.0	0.204	<0.005	<0.005	<0.05	<0.004	0.0225	<0.02	<0.03	<0.03	<0.05	<0.02	<0.05	<0.005	<0.01	0.03	<0.02	0.159	<0.02	<0.01	<0.05	0.0136	0.0259	
PM-1-SB008E	18-Aug-21	2.0 - 2.5	0.038	<0.005	<0.005	<0.05	<0.004	0.0225	<0.02	<0.03	<0.03	<0.05	<0.02	<0.05	<0.005	<0.01	<0.01	<0.02	0.037	<0.02	<0.01	<0.05	0.0136	0.0259	
DUP-4-0821	18-Aug-21	2.0 - 2.5	0.046	<0.005	<0.005	<0.05	<0.004	0.0225	<0.02	<0.03	<0.03	<0.05	<0.02	<0.05	<0.005	<0.01	<0.01	<0.02	0.033	<0.02	<0.01	<0.05	0.0136	0.0259	
RPD	-	-	19%	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	11%							

Table 3. Soil Analytical Results - Polycyclic Aromatic Hydrocarbons
Limited Phase II Environmental Site Assessment, PM-1 Site, Kilometre Post 0.0, Northwest Territories

Sample ID	Sample Date	Sample Depth	2-Methylnaphthalene	Acenaphthene	Acenaphthylene	Acridine	Anthracene	BaP TPE	Benzo[a]anthracene	Benzo[a]pyrene	Benzo[b+ j]fluoranthene	Benzo[ghi]perylene	Benzo[k]fluoranthene	Chrysene	Dibenzo[a,h]anthracene	Fluoranthene	Fluorene	Indeno[1,2,3-cd]pyrene	Naphthalene	Phenanthrene	Pyrene	Quinoline	IACR - Coarse	IACR - Fine
		mbgs	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	NA
PM-1-SB042B	21-Aug-21	0.8 - 1.0	< 0.005	< 0.005	< 0.005	< 0.05	< 0.004	0.0225	< 0.02	< 0.03	< 0.03	< 0.05	< 0.02	< 0.05	< 0.005	< 0.01	< 0.01	< 0.02	< 0.005	< 0.02	< 0.01	< 0.05	0.0136	0.0259
PM-1-SB042C	21-Aug-21	1.0 - 1.5	< 0.005	< 0.005	< 0.005	< 0.05	< 0.004	0.0225	< 0.02	< 0.03	< 0.03	< 0.05	< 0.02	< 0.05	< 0.005	< 0.01	< 0.01	< 0.02	< 0.005	< 0.02	< 0.01	< 0.05	0.0136	0.0259
PM-1-SB042D	21-Aug-21	1.5 - 2.0	< 0.005	< 0.005	< 0.005	< 0.05	< 0.004	0.0225	< 0.02	< 0.03	< 0.03	< 0.05	< 0.02	< 0.05	< 0.005	< 0.01	< 0.01	< 0.02	< 0.005	< 0.02	< 0.01	< 0.05	0.0136	0.0259
PM-1-SB042E	21-Aug-21	2.0 - 2.5	< 0.005	< 0.005	< 0.005	< 0.05	< 0.004	0.0225	< 0.02	< 0.03	< 0.03	< 0.05	< 0.02	< 0.05	< 0.005	< 0.01	< 0.01	< 0.02	< 0.005	< 0.02	< 0.01	< 0.05	0.0136	0.0259
PM-1-SB043A	21-Aug-21	0.1 - 0.5	< 0.005	< 0.005	< 0.005	< 0.05	< 0.004	0.0225	< 0.02	< 0.03	< 0.03	< 0.05	< 0.02	< 0.05	< 0.005	< 0.01	< 0.01	< 0.02	< 0.005	< 0.02	< 0.01	< 0.05	0.0136	0.0259
DUP-8-0821	21-Aug-21	0.1 - 0.5	< 0.005	< 0.005	< 0.005	< 0.05	< 0.004	0.0225	< 0.02	< 0.03	< 0.03	< 0.05	< 0.02	< 0.05	< 0.005	< 0.01	< 0.01	< 0.02	< 0.005	< 0.02	< 0.01	< 0.05	0.0136	0.0259
RPD	-	-	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
PM-1-SB043B	21-Aug-21	0.5 - 1.0	< 0.005	< 0.005	< 0.005	< 0.05	< 0.004	0.0225	< 0.02	< 0.03	< 0.03	< 0.05	< 0.02	< 0.05	< 0.005	< 0.01	< 0.01	< 0.02	< 0.005	< 0.02	< 0.01	< 0.05	0.0136	0.0259
PM-1-SB043C	21-Aug-21	1.0 - 1.5	< 0.005	< 0.005	< 0.005	< 0.05	< 0.004	0.0225	< 0.02	< 0.03	< 0.03	< 0.05	< 0.02	< 0.05	< 0.005	< 0.01	< 0.01	< 0.02	< 0.005	< 0.02	< 0.01	< 0.05	0.0136	0.0259
PM-1-SS1	21-Aug-21	0.0 - 0.3	0.007	< 0.005	< 0.005	< 0.05	< 0.004	0.0225	< 0.02	< 0.03	< 0.03	< 0.05	< 0.02	< 0.05	< 0.005	< 0.01	< 0.01	< 0.02	< 0.005	< 0.02	0.03	< 0.05	0.0136	0.0259
PM-1-SS2	21-Aug-21	0.0 - 0.3	0.038	< 0.005	< 0.005	< 0.05	< 0.004	0.0225	< 0.02	< 0.03	< 0.03	< 0.05	< 0.02	< 0.05	< 0.005	< 0.01	< 0.01	< 0.02	0.082	< 0.02	0.05	< 0.05	0.0136	0.0259
PM-1-SS3	21-Aug-21	0.0 - 0.3	1.31	< 0.005	< 0.005	< 0.05	< 0.004	0.0225	< 0.02	< 0.03	< 0.03	< 0.05	< 0.02	< 0.05	< 0.005	< 0.01	< 0.01	< 0.02	1.39	< 0.02	0.06	< 0.05	0.0136	0.0259

^a Canadian Council of Ministers of the Environment (CCME). 2010. Canadian Soil Quality Guidelines for the Protection of Environmental and Human Health - Polycyclic Aromatic Hydrocarbons. Residential/parkland land use, fine-grained soils.

Notes:
mbgs = metre(s) below ground surface
mg/kg = milligram(s) per kilogram
NG = no guideline
NC = RPD could not be calculated as one or more results was less than, or within five times, the detection limit
B[a]P TPE = benzo[a]pyrene total potency equivalents
RPD = relative percentage difference calculated using:
RPD% = $\frac{|S - D|}{\frac{1}{2}(S + D)} \times 100\%$ Where:
S = Sample value
D = Duplicate or replicate value

Table 4. Soil Analytical Results - Herbicides and Organic Halides

Limited Phase II Environmental Site Assessment, PM-1 Site, Kilometre Post 0.0, Northwest Territories

Sample ID	Sample Date	Sample Depth	Atrazine	Bromacil	Diuron	Linuron	Simazine	Tebuthiuron	Extractable Organic Halides	Glyphosate	
			mbgs	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
			CCME	NG	NG	NG	NG	NG	NG	NG	NG
PM-1-SS1	21-Aug-21	0.0 - 0.3	<0.0081R	0.247 J	0.06 J	<0.045R	<0.028R	<0.041R	<5R	0.22 J	
PM-1-SS2	21-Aug-21	0.0 - 0.3	<0.0081R	0.0821 J	0.05 J	<0.045R	<0.028R	<0.041R	<5R	0.06 J	
PM-1-SS3	21-Aug-21	0.0 - 0.3	0.322 J	0.128 J	0.51 J	<0.045R	<0.028R	<0.041R	<5R	<0.03R	

Notes:

mbgs = metre(s) below ground surface

mg/kg = milligram(s) per kilogram

NG = no guideline

R = The sample result was rejected because of deficiencies in the ability to analyze the sample and meet the quality control criteria. The presence or absence of the analyte could not be verified. Data qualified "R" were not used in the decision-making process.

J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

Appendix A

Borehole Logs

PROJECT: Westcoast Energy Inc.
Pointed Mountain Pipeline Abandonment Project
PM-1 Site
DATE OF DRILLING: September 20, 2020

DRILLING METHOD: Hand Auger
LOGGED BY: J. Bilyk

LATITUDE: 60.39688
LONGITUDE: -123.8262

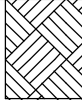
DEPTH (mbgs)	SOIL DESCRIPTION	STRATA PLOT	DEPTH (mbgs)	BACKFILL DETAILS	FIELD READINGS	
					Combustible Hydrocarbons (ppm)	Volatile Organic Compounds (ppm)
0.2	<u>GRAVEL</u> : some sand, some silt, moist		359.70 0.20	 Backfilled with soil cuttings		
0.4	End of borehole at 0.2 mbgs. Backfilled with soil cuttings.					
0.6						
0.8						
1.0						
1.2						
1.4						
1.6						
1.8						
2.0						
2.2						
2.4						
2.6						
2.8						

NOTES:

PROJECT: Westcoast Energy Inc.
Pointed Mountain Pipeline Abandonment Project
PM-1 Site
DATE OF DRILLING: September 20, 2020

DRILLING METHOD: Hand Auger
LOGGED BY: J. Bilyk

LATITUDE: 60.39688
LONGITUDE: -123.82633

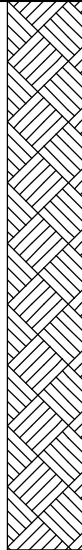
DEPTH (mbgs)	SOIL DESCRIPTION	STRATA PLOT	DEPTH (mbgs)	BACKFILL DETAILS	FIELD READINGS	
					Combustible Hydrocarbons (ppm)	Volatile Organic Compounds (ppm)
0.2	SAND AND GRAVEL: trace silt, brown, moist		360.28	 Backfilled with soil cuttings	150	98
	CLAY: trace silt, light brown, moist, suspected hydrocarbon odour		0.10			
	End of borehole at 0.2 mbgs. Backfilled with soil cuttings.		360.18 0.20			
0.4						
0.6						
0.8						
1.0						
1.2						
1.4						
1.6						
1.8						
2.0						
2.2						
2.4						
2.6						
2.8						

NOTES:

PROJECT: Westcoast Energy Inc.
Pointed Mountain Pipeline Abandonment Project
PM-1 Site
DATE OF DRILLING: September 20, 2020

DRILLING METHOD: Hand Auger
LOGGED BY: J. Bilyk

LATITUDE: 60.3969
LONGITUDE: -123.82637

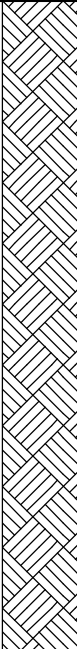
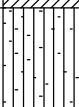
DEPTH (mbgs)	SOIL DESCRIPTION	STRATA PLOT	DEPTH (mbgs)	BACKFILL DETAILS	FIELD READINGS	
					Combustible Hydrocarbons (ppm)	Volatile Organic Compounds (ppm)
0.2	<u>CLAY</u> : trace to some silt, brown, moist, low to medium plasticity			 Backfilled with soil cuttings	185	88
0.4						
0.6						
0.8						
1.0	<u>SILT AND SAND</u> : trace to some gravel, grey, wet to moist, suspected hydrocarbon odour		360.34 1.00			
1.2	End of borehole at 1.1 mbgs due to auger refusal. Backfilled with soil cuttings.		360.24 1.10			
1.4						
1.6						
1.8						
2.0						
2.2						
2.4						
2.6						
2.8						

NOTES:

PROJECT: Westcoast Energy Inc.
Pointed Mountain Pipeline Abandonment Project
PM-1 Site
DATE OF DRILLING: September 20, 2020

DRILLING METHOD: Hand Auger
LOGGED BY: J. Bilyk

LATITUDE: 60.3969
LONGITUDE: -123.82638

DEPTH (mbgs)	SOIL DESCRIPTION	STRATA PLOT	DEPTH (mbgs)	BACKFILL DETAILS	FIELD READINGS	
					Combustible Hydrocarbons (ppm)	Volatile Organic Compounds (ppm)
0.2	<u>CLAY:</u> grey to brown, moist			 Backfilled with soil cuttings	105	22
0.4						
0.6						
0.8						
1.0						
1.2						
1.4	<u>SILT AND SAND:</u> some clay, grey, moist to wet, suspected hydrocarbon odour		361.44 1.10			
1.6	End of borehole at 1.3 mbgs. Backfilled with soil cuttings.		361.24 1.30			
1.8						
2.0						
2.2						
2.4						
2.6						
2.8						

NOTES:

PROJECT: Westcoast Energy Inc.
Pointed Mountain Pipeline Abandonment Project
PM-1 Site
DATE OF DRILLING: September 20, 2020

DRILLING METHOD: Hand Auger
LOGGED BY: J. Bilyk

LATITUDE: 60.3969
LONGITUDE: -123.8262

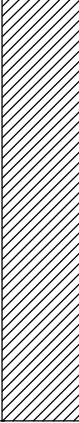
DEPTH (mbgs)	SOIL DESCRIPTION	STRATA PLOT	DEPTH (mbgs)	BACKFILL DETAILS	FIELD READINGS	
					Combustible Hydrocarbons (ppm)	Volatile Organic Compounds (ppm)
0.2	GRAVEL: some sand, some silt, brown to grey, moist		360.28	 Backfilled with soil cuttings PM_01_SOa	100	2
	CLAY: silty, brown to grey, moist		0.10			
0.4						
0.6						
0.8						
1.0	- wet, strong suspected hydrocarbon odour below 1.0 mbgs					
1.2						
1.4						
1.6						
1.8						
2.0						
2.2						
2.4						
2.6						
2.8						
	End of borehole at 1.25 mbgs due to auger refusal. Backfilled with soil cuttings.		359.13 1.25			

NOTES:

PROJECT: Westcoast Energy Inc.
Pointed Mountain Pipeline Abandonment Project
PM-1 Site
DATE OF DRILLING: September 20, 2020

DRILLING METHOD: Hand Auger
LOGGED BY: J. Bilyk

LATITUDE: 60.39689
LONGITUDE: -123.82615

DEPTH (mbgs)	SOIL DESCRIPTION	STRATA PLOT	DEPTH (mbgs)	BACKFILL DETAILS	FIELD READINGS	
					Combustible Hydrocarbons (ppm)	Volatile Organic Compounds (ppm)
0.2	<u>GRAVEL</u> : some silt, trace clay, brown to grey, wet		360.65	 Backfilled with soil cuttings	135	0
0.4	<u>CLAY</u> : trace to some sand, trace to some gravel, trace silt, brown, wet		0.25			
0.6				PM_02_S0a		
0.8				PM_02_S0b	80	0
1.0			359.80			
1.2	End of borehole at 1.1 mbgs due to auger refusal. Backfilled with soil cuttings.		1.10			
1.4						
1.6						
1.8						
2.0						
2.2						
2.4						
2.6						
2.8						

NOTES:

PROJECT: Westcoast Energy Inc.
Pointed Mountain Pipeline Abandonment Project
PM-1 Site
DATE OF DRILLING: September 20, 2020

DRILLING METHOD: Hand Auger
LOGGED BY: J. Bilyk

LATITUDE: 60.39686
LONGITUDE: -123.82619

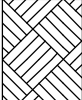
DEPTH (mbgs)	SOIL DESCRIPTION	STRATA PLOT	DEPTH (mbgs)	BACKFILL DETAILS	FIELD READINGS	
					Combustible Hydrocarbons (ppm)	Volatile Organic Compounds (ppm)
0.2	<u>GRAVEL</u> : some silt, trace sand, brown, wet		360.70	 Backfilled with soil cuttings	40	0
0.2	<u>CLAY</u> : trace silt, brown, wet		0.20			
0.4				 PM_03_SOa	35	0
0.6						
0.8						
1.0						
1.2			359.70	 PM_03_SOb	60	0
1.2	End of borehole at 1.2 mbgs due to auger refusal. Backfilled with soil cuttings.		1.20			
1.4						
1.6						
1.8						
2.0						
2.2						
2.4						
2.6						
2.8						

NOTES:

PROJECT: Westcoast Energy Inc.
Pointed Mountain Pipeline Abandonment Project
PM-1 Site
DATE OF DRILLING: September 20, 2020

DRILLING METHOD: Hand Auger
LOGGED BY: J. Bilyk

LATITUDE: 60.39688
LONGITUDE: -123.82629

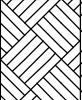
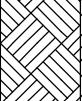
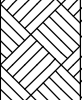
DEPTH (mbgs)	SOIL DESCRIPTION	STRATA PLOT	DEPTH (mbgs)	BACKFILL DETAILS	FIELD READINGS	
					Combustible Hydrocarbons (ppm)	Volatile Organic Compounds (ppm)
0.2	SAND AND GRAVEL: trace silt, brown, moist		360.18	 Backfilled with soil cuttings	190	38
0.2	CLAY: trace silt, trace sand, brown, moist, faint suspected hydrocarbon odour		0.20			
0.4	- strong suspected hydrocarbon odour below 0.3 mbgs			PM_04_SOa		
0.6						
0.8				PM_04_SOb	55	26
1.0						
1.0	End of borehole at 1.0 mbgs. Backfilled with soil cuttings.		359.38 1.00			
1.2						
1.4						
1.6						
1.8						
2.0						
2.2						
2.4						
2.6						
2.8						

NOTES:

PROJECT: Westcoast Energy Inc.
Pointed Mountain Pipeline Abandonment Project
PM-1 Site
DATE OF DRILLING: September 20, 2020

DRILLING METHOD: Hand Auger
LOGGED BY: J. Bilyk

LATITUDE: 60.3968
LONGITUDE: -123.82631

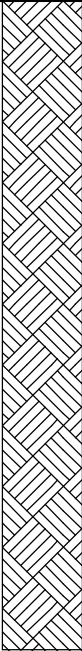
DEPTH (mbgs)	SOIL DESCRIPTION	STRATA PLOT	DEPTH (mbgs)	BACKFILL DETAILS	FIELD READINGS	
					Combustible Hydrocarbons (ppm)	Volatile Organic Compounds (ppm)
0.2	<u>SAND AND GRAVEL</u> : brown to dark brown, moist		360.66 0.20	 Backfilled with soil cuttings	20	0
0.4	<u>CLAY</u> : some silt, brown to grey, moist, low plasticity, brown to grey, moist					
0.6				 PM_05_SOb	25	0
0.8						
1.0	<u>SILT</u> : trace clay, trace to some sand, dark grey, moist to wet, organic odour		359.86 1.00	 PM_05_SOb	20	0
1.2					145	0
1.2	End of borehole at 1.2 mbgs. Backfilled with soil cuttings.		359.66 1.20			
1.4						
1.6						
1.8						
2.0						
2.2						
2.4						
2.6						
2.8						

NOTES:

PROJECT: Westcoast Energy Inc.
Pointed Mountain Pipeline Abandonment Project
PM-1 Site
DATE OF DRILLING: September 20, 2020

DRILLING METHOD: Hand Auger
LOGGED BY: J. Bilyk

LATITUDE: 60.3968
LONGITUDE: -123.82639

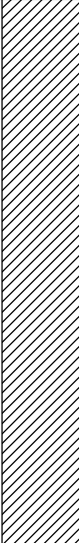
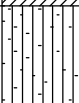
DEPTH (mbgs)	SOIL DESCRIPTION	STRATA PLOT	DEPTH (mbgs)	BACKFILL DETAILS	FIELD READINGS	
					Combustible Hydrocarbons (ppm)	Volatile Organic Compounds (ppm)
0.2	<u>CLAY</u> : trace to some silt, brown, moist, low to medium plasticity			 Backfilled with soil cuttings	60	0
0.4						
0.6					0	0
0.8					0	0
1.0	- some silt, wet below 1.0 mbgs				180	18
1.2						
1.4	End of borehole at 1.3 mbgs due to auger refusal. Backfilled with soil cuttings.					
1.6						
1.8						
2.0						
2.2						
2.4						
2.6						
2.8						

NOTES:

PROJECT: Westcoast Energy Inc.
Pointed Mountain Pipeline Abandonment Project
PM-1 Site
DATE OF DRILLING: September 20, 2020

DRILLING METHOD: Hand Auger
LOGGED BY: J. Bilyk

LATITUDE: 60.3969
LONGITUDE: -123.82641

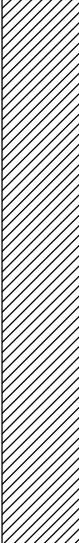
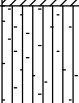
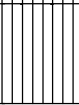
DEPTH (mbgs)	SOIL DESCRIPTION	STRATA PLOT	DEPTH (mbgs)	BACKFILL DETAILS	FIELD READINGS	
					Combustible Hydrocarbons (ppm)	Volatile Organic Compounds (ppm)
0.2	CLAY: grey to brown, moist			 Backfilled with soil cuttings	0	26
0.4						
0.6						
0.8						
1.0	SILT AND SAND: some clay, grey, moist to wet, suspected hydrocarbon odour		359.52 1.10	 PM_07_SOa	0	26
1.2			359.32 1.30			
1.4	End of borehole at 1.3 mbgs. Backfilled with soil cuttings.				0	26
1.6						
1.8						
2.0						
2.2						
2.4						
2.6						
2.8						

NOTES:

PROJECT: Westcoast Energy Inc.
Pointed Mountain Pipeline Abandonment Project
PM-1 Site
DATE OF DRILLING: September 20, 2020

DRILLING METHOD: Hand Auger
LOGGED BY: J. Bilyk

LATITUDE: 60.3969
LONGITUDE: -123.82641

DEPTH (mbgs)	SOIL DESCRIPTION	STRATA PLOT	DEPTH (mbgs)	BACKFILL DETAILS	FIELD READINGS	
					Combustible Hydrocarbons (ppm)	Volatile Organic Compounds (ppm)
0.2	CLAY: grey to brown, moist			 Backfilled with soil cuttings PM_08_SOa	60	0
0.4						
0.6						
0.8						
1.0	SILT AND SAND some clay, grey, moist to wet, suspected hydrocarbon odour		361.68 1.10	 PM_08_SOb	130	26
1.2			361.48 1.30			
1.4	SILT: some clay, trace sand, brown to grey, wet, suspected hydrocarbon odour		361.28 1.50			
1.6	End of borehole at 1.5 mbgs. Backfilled with soil cuttings.					
1.8						
2.0						
2.2						
2.4						
2.6						
2.8						

NOTES:

PROJECT: Westcoast Energy Inc.
Pointed Mountain Pipeline Abandonment Project
PM-1 Site
DATE OF DRILLING: August 17, 2021

DRILLING METHOD: Dutch Auger and Pionjar
LOGGED BY: R. Manning

LATITUDE: 60.39692
LONGITUDE: -123.82626

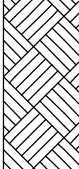
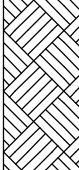
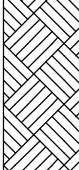
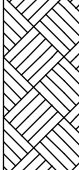
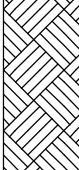
DEPTH (mbgs)	SOIL DESCRIPTION	STRATA PLOT	DEPTH (mbgs)	BACKFILL DETAILS	FIELD READINGS
					Organic Vapours - Hydrocarbon Sensor Calibrated with Hexane (ppm)
0.2	<u>GRAVEL</u> : some clay, brown, wet <u>CLAY</u> : some silt, some sand, trace gravel fill, brown, wet		364.77 0.05	Backfilled with soil cuttings PM-1-SB001A	60
0.4	- consolidated below 0.5 mbgs			PM-1-SB001B	10
0.6					
0.8					
1.0	- some gravel, moist below 1 mbgs			PM-1-SB001C	10
1.2					
1.4					
1.6	- gravelly, difficult to auger below 1.5 mbgs			PM-1-SB001D	0
1.8	End of borehole at 1.8 mbgs due to auger refusal. Backfilled with soil cuttings.		363.02 1.80		
2.0					
2.2					
2.4					
2.6					
2.8					
3.0					

NOTES:

PROJECT: Westcoast Energy Inc.
Pointed Mountain Pipeline Abandonment Project
PM-1 Site
DATE OF DRILLING: August 17, 2021

DRILLING METHOD: Dutch Auger and Pionjar
LOGGED BY: R. Manning

LATITUDE: 60.39696
LONGITUDE: -123.8262

DEPTH (mbgs)	SOIL DESCRIPTION	STRATA PLOT	DEPTH (mbgs)	BACKFILL DETAILS	FIELD READINGS
					Organic Vapours - Hydrocarbon Sensor Calibrated with Hexane (ppm)
0.2	<u>FILL</u> : sand and gravel, brown, well graded, moist		367.36	 Backfilled with soil cuttings	0
	<u>CLAY</u> : some silt, brown, moist to wet, medium plasticity, some oxidation		0.10		
0.4	- wet, more dense below 0.5 mbgs			 PM-1-SB002A	0
0.6					
0.8					
1.0					
1.2	- saturated below 1.5 mbgs			 PM-1-SB002B	60
1.4					
1.6					
1.8					
2.0	- some gravel below 1.9 mbgs		365.51	 PM-1-SB002C	10
2.0	End of borehole at 2.0 mbgs due to auger and pionjar refusal, water in borehole. Backfilled with soil cuttings.		1.95		
2.2				 PM-1-SB002D	
2.4					
2.6					
2.8					
3.0					

NOTES:

PROJECT: Westcoast Energy Inc.
Pointed Mountain Pipeline Abandonment Project
PM-1 Site
DATE OF DRILLING: August 17, 2021

DRILLING METHOD: Dutch Auger and Pionjar
LOGGED BY: R. Manning

LATITUDE: 60.39699
LONGITUDE: -123.82622

DEPTH (mbgs)	SOIL DESCRIPTION	STRATA PLOT	DEPTH (mbgs)	BACKFILL DETAILS	FIELD READINGS
					Organic Vapours - Hydrocarbon Sensor Calibrated with Hexane (ppm)
0.2	<u>TOPSOIL</u> : vegetation, rootlets, moist		365.86 0.20	Backfilled with soil cuttings	
0.4	<u>CLAY</u> : some silt, some sand, trace gravel, brown, dry to moist, some oxidation - moist below 0.3 mbgs			PM-1-SB003A	0
0.6	- wet below 0.5 mbgs			PM-1-SB003B	10
0.8					
1.0				PM-1-SB003C	0
1.2					
1.4					
1.6	- some gravel interbedded, wet to saturated below 1.5 mbgs			PM-1-SB003D	10
1.8					
2.0	End of borehole at 2.0 mbgs due to auger and pionjar refusal. Backfilled with soil cuttings.		364.06 2.00		
2.2					
2.4					
2.6					
2.8					
3.0					

NOTES:

PROJECT: Westcoast Energy Inc.
Pointed Mountain Pipeline Abandonment Project
PM-1 Site
DATE OF DRILLING: August 17, 2021

DRILLING METHOD: Dutch Auger and Pionjar
LOGGED BY: R. Manning

LATITUDE: 60.39696
LONGITUDE: -123.82628

DEPTH (mbgs)	SOIL DESCRIPTION	STRATA PLOT	DEPTH (mbgs)	BACKFILL DETAILS	FIELD READINGS
					Organic Vapours - Hydrocarbon Sensor Calibrated with Hexane (ppm)
0.2	<u>FILL</u> : sand and gravel, brown, moist		365.82	Backfilled with soil cuttings and bentonite	15
	<u>CLAY</u> : some sand, some silt, trace gravel, brown, moist to wet, medium to high plasticity		0.10		
0.4	- dark brown, suspected hydrocarbon odour below 0.5 mbgs			PM-1-SB004A	15
0.6				PM-1-SB004B	
0.8				PM-1-SB004C	
1.0				PM-1-SB004D	
1.2	- hand auger refusal, continue with pionjar below 1.5 mbgs			PM-1-SB004E	15
1.4				PM-1-SB004F	
1.6				PM-1-SB004G	
1.8				PM-1-SB004H	
2.0	- some coarse-grained gravel, some cobbles, some oxidation, faint suspected hydrocarbon odour			PM-1-SB004I	15
2.2				PM-1-SB004J	
2.4	- brown, moist, below 2.5 mbgs			PM-1-SB004K	10
2.6				PM-1-SB004L	
2.8				PM-1-SB004M	
3.0				PM-1-SB004N	
	End of borehole at 3.0 mbgs. Backfilled with soil cuttings and bentonite.		362.92 3.00		

NOTES:

PROJECT: Westcoast Energy Inc.
Pointed Mountain Pipeline Abandonment Project
PM-1 Site
DATE OF DRILLING: August 17, 2021

DRILLING METHOD: Dutch Auger
LOGGED BY: R. Manning

LATITUDE: 60.39695
LONGITUDE: -123.82639

DEPTH (mbgs)	SOIL DESCRIPTION	STRATA PLOT	DEPTH (mbgs)	BACKFILL DETAILS	FIELD READINGS
					Organic Vapours - Hydrocarbon Sensor Calibrated with Hexane (ppm)
0.2	<u>TOPSOIL</u> : some rootlets, some sand and gravel, moist		366.96	 Backfilled with soil cuttings	10
	<u>CLAY</u> : some sand, some silt, trace gravel, brown, moist to wet, medium to high plasticity		0.10	PM-1-SB005A	
0.4					
0.6					
0.8					
1.0	- suspected hydrocarbon odour below 1 mbgs			PM-1-SB005C	5
1.2					
1.4					
1.6	- wet below 1.5 mbgs			PM-1-SB005D	30
1.8					
2.0	<u>SAND</u> : and gravel, wet, coarse grained		365.06	 PM-1-SB005E	15
2.2			2.00		
2.4					
2.6	End of borehole at 2.5 mbgs due to auger refusal. Backfilled with soil cuttings.		364.56		
2.8			2.50		
3.0					

NOTES:

PROJECT: Westcoast Energy Inc.
Pointed Mountain Pipeline Abandonment Project
PM-1 Site
DATE OF DRILLING: August 18, 2021

DRILLING METHOD: Dutch Auger and Pionjar
LOGGED BY: R. Manning

LATITUDE: 60.39691
LONGITUDE: -123.82641

DEPTH (mbgs)	SOIL DESCRIPTION	STRATA PLOT	DEPTH (mbgs)	BACKFILL DETAILS	FIELD READINGS
					Organic Vapours - Hydrocarbon Sensor Calibrated with Hexane (ppm)
0.2	<u>SILT</u> : clayey, some sand, trace gravel, light brown, moist, medium plasticity			Backfilled with soil cuttings and bentonite	
0.4	- dark brown, wet, some wood fragments, some coarse-grained grey and black sand lenses, suspected hydrocarbon odour below 0.3 m			PM-1-SB006A	0
0.6	<u>CLAY</u> : grey brown, moist to wet, medium plasticity, hydrocarbon sheen on surface, suspected hydrocarbon odour		359.03 0.50	PM-1-SB006B	10
0.8					
1.0				PM-1-SB006C	40
1.2					
1.4					
1.6				PM-1-SB006D	60
1.8					
2.0					
2.2	- some coarse sand and gravel, brown, moist to wet below 2.1 mbgs			PM-1-SB006E	10
2.4	End of borehole at 2.4 mbgs due to auger and pionjar refusal. Backfilled with soil cuttings and bentonite.		357.13 2.40		
2.6					
2.8					
3.0					

NOTES:

PROJECT: Westcoast Energy Inc.
Pointed Mountain Pipeline Abandonment Project
PM-1 Site
DATE OF DRILLING: August 18, 2021

DRILLING METHOD: Dutch Auger and Pionjar
LOGGED BY: R. Manning

LATITUDE: 60.39686
LONGITUDE: -123.82638

DEPTH (mbgs)	SOIL DESCRIPTION	STRATA PLOT	DEPTH (mbgs)	BACKFILL DETAILS	FIELD READINGS
					Organic Vapours - Hydrocarbon Sensor Calibrated with Hexane (ppm)
	<u>TOPSOIL</u> : some rootlets, dark brown to black		359.69	Backfilled with soil cuttings and bentonite	5
0.2	<u>CLAY</u> : some silt, some sand, brown, moist, rootlets		0.10	PM-1-SB007A	
0.4	- trace gravel, brown to grey, some light grey, coarse-grained sand lenses below 0.4 mbgs			PM-1-SB007B	0
0.6					
0.8					
1.0				PM-1-SB007C	0
1.2					
1.4					
1.6				PM-1-SB007D	5
1.8					
2.0	- some gravel below 2 mbgs			PM-1-SB007E	10
2.2					
2.4					
2.6	End of borehole at 2.5 mbgs due to auger refusal. Backfilled with soil cuttings and bentonite.		357.29 2.50		
2.8					
3.0					

NOTES:

PROJECT: Westcoast Energy Inc.
Pointed Mountain Pipeline Abandonment Project
PM-1 Site
DATE OF DRILLING: August 18, 2021

DRILLING METHOD: Dutch Auger
LOGGED BY: R. Manning

LATITUDE: 60.39684
LONGITUDE: -123.82625

DEPTH (mbgs)	SOIL DESCRIPTION	STRATA PLOT	DEPTH (mbgs)	BACKFILL DETAILS	FIELD READINGS
					Organic Vapours - Hydrocarbon Sensor Calibrated with Hexane (ppm)
0.2	<u>CLAY</u> : silty, some sand, trace gravel, light brown, some oxidation			Backfilled with soil cuttings PM-1-SB008A	140
0.4					
0.6	- grey brown, medium plasticity, suspected hydrocarbon odour below 0.5 mbgs			PM-1-SB008B	80
0.8					
1.0	- dark grey to black, moist, suspected hydrocarbon odour and decaying/organic odour below 1.0 mbgs			PM-1-SB008C	40
1.2					
1.4					
1.6	- sandy, some gravel, brown below 1.5 mbgs			PM-1-SB008D	120
1.8					
2.0	- some silt, dark brown, some oxidation below 2 mbgs			PM-1-SB008E	30
2.2					
2.4					
2.6	End of borehole at 2.5 mbgs due to auger refusal. Backfilled with soil cuttings.		365.23 2.50		
2.8					
3.0					

NOTES:

PROJECT: Westcoast Energy Inc.
Pointed Mountain Pipeline Abandonment Project
PM-1 Site
DATE OF DRILLING: August 18, 2021

DRILLING METHOD: Dutch Auger
LOGGED BY: R. Manning

LATITUDE: 60.39682
LONGITUDE: -123.82619

DEPTH (mbgs)	SOIL DESCRIPTION	STRATA PLOT	DEPTH (mbgs)	BACKFILL DETAILS	FIELD READINGS
					Organic Vapours - Hydrocarbon Sensor Calibrated with Hexane (ppm)
0.2	<u>SAND</u> : fine grained, and silt, some clay, light brown, moist		363.98	 Backfilled with soil cuttings	5
	<u>CLAY</u> : silty, some sand, light to medium brown, moist, medium plasticity		0.20	PM-1-SB009A	
0.4				PM-1-SB009B	0
0.6					
0.8					
1.0	- wet below 1.0 mbgs			PM-1-SB009C	5
1.2			362.68		
1.4			1.50		
1.6	End of borehole at 1.5 mbgs. Backfilled with soil cuttings.				
1.8					
2.0					
2.2					
2.4					
2.6					
2.8					
3.0					

NOTES:

PROJECT: Westcoast Energy Inc.
Pointed Mountain Pipeline Abandonment Project
PM-1 Site
DATE OF DRILLING: August 21, 2021

DRILLING METHOD: Dutch Auger and Pionjar
LOGGED BY: R. Manning

LATITUDE: 60.39691
LONGITUDE: -123.82629

DEPTH (mbgs)	SOIL DESCRIPTION	STRATA PLOT	DEPTH (mbgs)	BACKFILL DETAILS	FIELD READINGS
					Organic Vapours - Hydrocarbon Sensor Calibrated with Hexane (ppm)
0.2	<u>CLAY</u>: some sand, some silt, some gravel, brown, moist - gravelly below 0.7 mbgs			Backfilled with soil cuttings PM-1-SB010A	0
0.4				PM-1-SB010B	0
0.6				PM-1-SB010C	0
0.8				PM-1-SB010D	0
1.0					
1.2					
1.4					
1.6					
1.8					
2.0					
2.2	End of borehole at 2.2 mbgs. Backfilled with soil cuttings.		360.49 2.20		
2.4					
2.6					
2.8					
3.0					

NOTES:

PROJECT: Westcoast Energy Inc.
Pointed Mountain Pipeline Abandonment Project
PM-1 Site
DATE OF DRILLING: August 18, 2021

DRILLING METHOD: Dutch Auger
LOGGED BY: R. Manning

LATITUDE: 60.39678
LONGITUDE: -123.82647

DEPTH (mbgs)	SOIL DESCRIPTION	STRATA PLOT	DEPTH (mbgs)	BACKFILL DETAILS	FIELD READINGS
					Organic Vapours - Hydrocarbon Sensor Calibrated with Hexane (ppm)
0.2	<u>TOPSOIL</u> : rootlets, light brown/reddish brown, moist		362.12	Backfilled with soil cuttings	5
	<u>SAND</u> : some silt, some clay, light brown, moist		0.10		
	<u>CLAY</u> : silty, some sand, trace gravel, light to dark brown, moist		361.97		
0.4			0.25	PM-1-SB011A	
0.6				PM-1-SB011B	0
0.8	- some reddish fibres interbedded below 0.7 mbgs				
1.0	- silty, brown, becoming dark brown to black below 1.0 mbgs			PM-1-SB011C	0
1.2					
1.4					
1.6	- dark brown below 1.5 mbgs			PM-1-SB011D	0
2.0	End of borehole at 2.0 mbgs. Backfilled with soil cuttings.		360.22		
2.2			2.00		
2.4					
2.6					
2.8					
3.0					

NOTES:

PROJECT: Westcoast Energy Inc.
Pointed Mountain Pipeline Abandonment Project
PM-1 Site
DATE OF DRILLING: August 21, 2021

DRILLING METHOD: Dutch Auger
LOGGED BY: R. Manning

LATITUDE: 60.39612
LONGITUDE: -123.82317

DEPTH (mbgs)	SOIL DESCRIPTION	STRATA PLOT	DEPTH (mbgs)	BACKFILL DETAILS	FIELD READINGS
					Organic Vapours - Hydrocarbon Sensor Calibrated with Hexane (ppm)
0.2	<u>TOPSOIL</u> : rootlets, brown, moist		356.45	Backfilled with soil cuttings PM-1-SB038A	5
0.4	<u>SAND</u> : some silt, some gravel, brown, poorly graded, moist, fine grained		0.20		
0.6	<u>CLAY</u> : some silt, some sand, some gravel, brown, moist		356.15	PM-1-SB038B	5
1.0	- cobbles, some oxidation below 1 mbgs		0.50		
1.4			355.15	PM-1-SB038C	0
1.6	End of borehole at 1.5 mbgs. Backfilled with soil cuttings.		1.50		
1.8					
2.0					
2.2					
2.4					
2.6					
2.8					
3.0					

NOTES:

PROJECT: Westcoast Energy Inc.
Pointed Mountain Pipeline Abandonment Project
PM-1 Site
DATE OF DRILLING: August 18, 2021

DRILLING METHOD: Dutch Auger
LOGGED BY: R. Manning

LATITUDE: 60.39681
LONGITUDE: -123.82628

DEPTH (mbgs)	SOIL DESCRIPTION	STRATA PLOT	DEPTH (mbgs)	BACKFILL DETAILS	FIELD READINGS
					Organic Vapours - Hydrocarbon Sensor Calibrated with Hexane (ppm)
0.2	<u>SAND</u> : silty, some clay, some gravel, some cobbles, dark brown, moist, trace rootlets			Backfilled with soil cuttings	10
0.4	- sand and silt, trace clay, poorly graded, light brown, fine grained below 0.15 mbgs			PM-1-SB041A	
0.6	<u>CLAY</u> : brown		367.54 0.50	PM-1-SB041B	10
0.8	- some sand, moist below 1.0 mbgs			PM-1-SB041C	5
1.0				PM-1-SB041D	5
1.2					
1.4	- moist to wet below 1.5 mbgs				
1.6					
1.8					
2.0	End of borehole at 2.0 mbgs. Backfilled with soil cuttings.		366.04 2.00		
2.2					
2.4					
2.6					
2.8					
3.0					

NOTES:

PROJECT: Westcoast Energy Inc.
Pointed Mountain Pipeline Abandonment Project
PM-1 Site
DATE OF DRILLING: August 21, 2021

DRILLING METHOD: Dutch Auger and Pionjar
LOGGED BY: R. Manning

LATITUDE: 60.39707
LONGITUDE: -123.82632

DEPTH (mbgs)	SOIL DESCRIPTION	STRATA PLOT	DEPTH (mbgs)	BACKFILL DETAILS	FIELD READINGS
					Organic Vapours - Hydrocarbon Sensor Calibrated with Hexane (ppm)
0.2	<u>TOPSOIL</u> : some clay, some silt, some sand, rootlets, dark brown, moist		368.01	Backfilled with soil cuttings PM-1-SB042A	5
	<u>CLAY</u> : some sand, light brown		0.20		
	<u>SAND</u> : light brown, poorly graded, moist, fine grained		367.91		
0.4			0.30		
0.6					
0.8	<u>CLAY</u> : some silt, some sand, some gravel, dark brown, moist to wet, medium plasticity		367.46	PM-1-SB042B	10
1.0			0.75		
1.2					
1.4				PM-1-SB042C	10
1.6	- wet, 10 cm lens of coarse grained gravel, silt, and sand at 1.6 mbgs				
1.8				PM-1-SB042D	15
2.0					
2.2					
2.4				PM-1-SB042E	15
2.6					
2.8	End of borehole at 2.7 mbgs. Backfilled with soil cuttings.		365.51		
3.0			2.70		

NOTES:

PROJECT: Westcoast Energy Inc.
Pointed Mountain Pipeline Abandonment Project
PM-1 Site
DATE OF DRILLING: August 21, 2021

DRILLING METHOD: Dutch Auger
LOGGED BY: R. Manning

LATITUDE: 60.39685
LONGITUDE: -123.82593

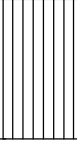
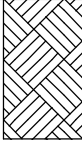
DEPTH (mbgs)	SOIL DESCRIPTION	STRATA PLOT	DEPTH (mbgs)	BACKFILL DETAILS	FIELD READINGS
					Organic Vapours - Hydrocarbon Sensor Calibrated with Hexane (ppm)
	<u>TOPSOIL</u> : rootlets, moist				
0.2	<u>CLAY</u> : some silt, some sand, some gravel, brown, moist, medium plasticity		364.45	Backfilled with soil cuttings	0
	- coarse-grained sand and gravel lens, 10 cm thick, brown, moist, at 0.25 mbgs		0.10	PM-1-SB043A	
0.4					
0.6				PM-1-SB043B	0
0.8					
1.0				PM-1-SB043C	0
1.2					
1.4			363.05		
1.6	End of borehole at 1.5 mbgs due to auger refusal. Backfilled with soil cuttings.		1.50		
1.8					
2.0					
2.2					
2.4					
2.6					
2.8					
3.0					

NOTES:

PROJECT: Westcoast Energy Inc.
Pointed Mountain Pipeline Abandonment Project
PM-1 Site
DATE OF DRILLING: August 21, 2021

DRILLING METHOD: Dutch Auger
LOGGED BY: R. Manning

LATITUDE: 60.39686
LONGITUDE: -123.82626

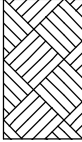
DEPTH (mbgs)	SOIL DESCRIPTION	STRATA PLOT	DEPTH (mbgs)	BACKFILL DETAILS	FIELD READINGS
					Organic Vapours - Hydrocarbon Sensor Calibrated with Hexane (ppm)
0.2	<u>SILT</u> : clayey, some sand, dark brown - light brown below 0.1 mbgs		367.04 0.30	 Backfilled with soil cuttings PM-1-SS1	10
0.4	End of sample at 0.3 mbgs. Backfilled with soil cuttings.				
0.6					
0.8					
1.0					
1.2					
1.4					
1.6					
1.8					
2.0					
2.2					
2.4					
2.6					
2.8					
3.0					

NOTES:

PROJECT: Westcoast Energy Inc.
Pointed Mountain Pipeline Abandonment Project
PM-1 Site
DATE OF DRILLING: August 21, 2021

DRILLING METHOD: Dutch Auger
LOGGED BY: R. Manning

LATITUDE: 60.39689
LONGITUDE: -123.8262

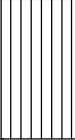
DEPTH (mbgs)	SOIL DESCRIPTION	STRATA PLOT	DEPTH (mbgs)	BACKFILL DETAILS	FIELD READINGS
					Organic Vapours - Hydrocarbon Sensor Calibrated with Hexane (ppm)
0.2	SAND AND GRAVEL: some silt, some clay, black to brown, well graded, wet, coarse grained, faint suspected hydrocarbon odour		366.57	 Backfilled with soil cuttings PM-1-SS2	15
0.4	End of sample at 0.3 mbgs. Backfilled with soil cuttings.		0.30		
0.6					
0.8					
1.0					
1.2					
1.4					
1.6					
1.8					
2.0					
2.2					
2.4					
2.6					
2.8					
3.0					

NOTES:

PROJECT: Westcoast Energy Inc.
Pointed Mountain Pipeline Abandonment Project
PM-1 Site
DATE OF DRILLING: August 21, 2021

DRILLING METHOD: Dutch Auger
LOGGED BY: R. Manning

LATITUDE: 60.39693
LONGITUDE: -123.82627

DEPTH (mbgs)	SOIL DESCRIPTION	STRATA PLOT	DEPTH (mbgs)	BACKFILL DETAILS	FIELD READINGS
					Organic Vapours - Hydrocarbon Sensor Calibrated with Hexane (ppm)
0.2	<u>SILT</u> : sandy, some clay, strong suspected hydrocarbon odour			 Backfilled with bentonite PM-1-SS3	50
0.4	End of sample at 0.3 mbgs. Backfilled with bentonite.		0.30		
0.6					
0.8					
1.0					
1.2					
1.4					
1.6					
1.8					
2.0					
2.2					
2.4					
2.6					
2.8					
3.0					

NOTES:

Appendix B

Site Photographs

Appendix B. Photograph Log for Site PM-1



Photograph 1: Aerial view of former Amoco Gas Plant site north of the PM-1 aboveground infrastructure, facing southeast.



Photograph 2: Facing southwest towards aboveground infrastructure at PM-1.



Photograph 3: Facing northwest towards aboveground infrastructure at PM-1. Tall riser on the left side of the photograph owned by Paramount Resources Ltd.



Photograph 4: Facing south towards aboveground infrastructure at PM-1. Tall riser in the background is owned by Paramount Resources Ltd.



Photograph 5: Facing southeast towards diesel aboveground storage tanks on platforms.



Photograph 6: Elevated diesel aboveground storage tanks. Facing southeast. Tall riser on the right side of the photograph owned by Paramount Resources Ltd.



Photograph 7: Flare stack surrounded by metal guard in cleared area east of PM-1 infrastructure.

Appendix C

Laboratory Certificates of Analysis

CLIENT NAME: JACOBS
UNIT 150, 205 QUARRY PARK BLVD SE
CALGARY, AB T2C 3E7
403-258-6411

ATTENTION TO: Colin Piggot

PROJECT: CE795100.A.CS.EV.2.16 / Enbridge Pointed Mountain

AGAT WORK ORDER: 20N654509

SOIL ANALYSIS REVIEWED BY: Loan Nguyen, Senior Analyst

TRACE ORGANICS REVIEWED BY: Elena Gorobets, Report Writer

DATE REPORTED: Sep 30, 2020

PAGES (INCLUDING COVER): 20

VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (403) 735-2005

*Notes

Disclaimer:

- All work conducted herein has been done using accepted standard protocols, and generally accepted practices and methods. AGAT test methods may incorporate modifications from the specified reference methods to improve performance.
- All samples will be disposed of within 30 days following analysis, unless expressly agreed otherwise in writing. Please contact your Client Project Manager if you require additional sample storage time.
- AGAT's liability in connection with any delay, performance or non-performance of these services is only to the Client and does not extend to any other third party. Unless expressly agreed otherwise in writing, AGAT's liability is limited to the actual cost of the specific analysis or analyses included in the services.
- This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
- The test results reported herewith relate only to the samples as received by the laboratory.
- Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to, warranties of merchantability, fitness for a particular purpose, or non-infringement. AGAT assumes no responsibility for any errors or omissions in the guidelines contained in this document.
- All reportable information as specified by ISO/IEC 17025:2017 is available from AGAT Laboratories upon request.



AGAT Laboratories

Certificate of Analysis

AGAT WORK ORDER: 20N654509

PROJECT: CE795100.A.CS.EV.2.16 / Enbridge Pointed Mountain

ATTENTION TO: Colin Piggot

SAMPLED BY: JB/RSL

2910 12TH STREET NE
CALGARY, ALBERTA
CANADA T2E 7P7
TEL (403)735-2005
FAX (403)735-2771
<http://www.agatlabs.com>

CLIENT NAME: JACOBS

SAMPLING SITE:

Soil Analysis - Texture

DATE RECEIVED: 2020-09-23

DATE REPORTED: 2020-09-30

		SAMPLE DESCRIPTION:		PM_03_SOa	PM_07_SOa
		SAMPLE TYPE:		Soil	Soil
		DATE SAMPLED:		2020-09-20	2020-09-20
Parameter	Unit	G / S	RDL	1482504	1482511
Particle Size Distribution (Sand)	%		2	28	19
Particle Size Distribution (Silt)	%		2	20	22
Particle Size Distribution (Clay)	%		2	52	59
Soil Texture				Clay	Clay

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

1482504-1482511 Soil Texture is a calculated parameter. The calculated parameter is non-accredited. The parameters that are components of the calculation are accredited.

Analysis performed at AGAT Calgary (unless marked by *)

Certified By:



AGAT Laboratories

Certificate of Analysis

AGAT WORK ORDER: 20N654509

PROJECT: CE795100.A.CS.EV.2.16 / Enbridge Pointed Mountain

2910 12TH STREET NE
CALGARY, ALBERTA
CANADA T2E 7P7
TEL (403)735-2005
FAX (403)735-2771
<http://www.agatlabs.com>

CLIENT NAME: JACOBS

SAMPLING SITE:

ATTENTION TO: Colin Piggot

SAMPLED BY: JB/RS

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2020-09-23

DATE REPORTED: 2020-09-30

		SAMPLE DESCRIPTION:		PM_01_SOa	PM_01_SOb	PM_01_SOc	PM_02_SOa	PM_03_SOa	PM_03_SOb	PM_04_SOa	PM_04_SOb
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2020-09-20	2020-09-20	2020-09-20	2020-09-20	2020-09-20	2020-09-20	2020-09-20	2020-09-20
Parameter	Unit	G / S	RDL	1482498	1482501	1482502	1482503	1482504	1482505	1482506	1482507
Benzene	mg/kg	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Toluene	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ethylbenzene	mg/kg	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.04
Xylenes	mg/kg	0.05	<0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.11
C6 - C10 (F1)	mg/kg	10	<10	90	40	<10	<10	<10	<10	150	130
C6 - C10 (F1 minus BTEX)	mg/kg	10	<10	90	40	<10	<10	<10	<10	150	130
C10 - C16 (F2)	mg/kg	10	<10	1560	2340	<10	<10	<10	<10	5270	4980
C16 - C34 (F3)	mg/kg	10	29	440	638	23	64	28	2250	2290	
C34 - C50 (F4)	mg/kg	10	16	44	44	10	26	13	353	423	
Gravimetric Heavy Hydrocarbons	mg/kg	1000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Moisture Content	%	1.00	25	24	23	15	20	23	21	22	
Surrogate	Unit	Acceptable Limits									
Toluene-d8 (BTEX)	%	60-140	104	103	126	106	114	104	105	100	
o-Terphenyl (F2-F4)	%	60-140	110	107	108	108	113	108	113	100	

Certified By:

Elena Gorobets



Certificate of Analysis

AGAT WORK ORDER: 20N654509

PROJECT: CE795100.A.CS.EV.2.16 / Enbridge Pointed Mountain

2910 12TH STREET NE
CALGARY, ALBERTA
CANADA T2E 7P7
TEL (403)735-2005
FAX (403)735-2771
<http://www.agatlabs.com>

CLIENT NAME: JACOBS

SAMPLING SITE:

ATTENTION TO: Colin Piggot

SAMPLED BY:JB/RS�

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2020-09-23

DATE REPORTED: 2020-09-30

		SAMPLE DESCRIPTION:		PM_05_SOa	PM_05_SOb	PM_06_SOb	PM_07_SOa	PM_08_SOa	PM_08_SOb
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2020-09-20	2020-09-20	2020-09-20	2020-09-20	2020-09-20	2020-09-20
Parameter	Unit	G / S	RDL	1482508	1482509	1482510	1482511	1482512	1482513
Benzene	mg/kg	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Toluene	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ethylbenzene	mg/kg	0.01	<0.01	<0.01	<0.01	<0.01	0.31	<0.01	<0.01
Xylenes	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	2.60	<0.05	0.11
C6 - C10 (F1)	mg/kg	10	<10	<10	<10	<10	450	<10	100
C6 - C10 (F1 minus BTEX)	mg/kg	10	<10	<10	<10	<10	450	<10	100
C10 - C16 (F2)	mg/kg	10	<10	<10	<10	<10	3670	<10	2400
C16 - C34 (F3)	mg/kg	10	29	79	36	921	29	842	
C34 - C50 (F4)	mg/kg	10	17	37	20	34	16	93	
Gravimetric Heavy Hydrocarbons	mg/kg	1000	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Moisture Content	%	1.00	26	24	21	21	24	22	
Surrogate	Unit	Acceptable Limits							
Toluene-d8 (BTEX)	%	60-140	104	122	102	88	104	102	
o-Terphenyl (F2-F4)	%	60-140	115	111	116	122	105	114	

Certified By:

Elena Gorobets



AGAT Laboratories

Certificate of Analysis

AGAT WORK ORDER: 20N654509

PROJECT: CE795100.A.CS.EV.2.16 / Enbridge Pointed Mountain

ATTENTION TO: Colin Piggot

SAMPLED BY: JB/RSL

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CLIENT NAME: JACOBS

SAMPLING SITE:

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2020-09-23

DATE REPORTED: 2020-09-30

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

1482498-1482513 Results are based on the dry weight of the sample.

The C6-C10 (F1) fraction is calculated using toluene response factor.

The C10 - C16 (F2), C16 - C34 (F3), and C34 - C50 (F4) fractions are calculated using the average response factor for n-C10, n-C16, and n-C34.

Gravimetric Heavy Hydrocarbons (F4g) are not included in and cannot be added to the Total C6-C50 and are only determined if the chromatogram of the C34 - C50 hydrocarbons indicates that hydrocarbons >C50 are present.

Quality control data is available upon request.

Assistance in the interpretation of data is available upon request.

This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.

nC6 and nC10 response factors are within 30% of Toluene response factor.

nC10, nC16 and nC34 response factors are within 10% of their average.

C50 response factor is within 70% of nC10 + nC16 + nC34 average.

Linearity is within 15%.

The chromatogram returned to baseline by the retention time of nC50.

C6 - C10 (F1 minus BTEX) is a calculated parameter. The calculated value is F1 minus BTEX. The calculated parameter is non-accredited. The parameters that are components of the calculation are accredited.

C>10 - C16 (F2- Napthalene) is a calculated parameter. The calculated value is F2 - Napthalene (if requested). The calculated parameter is non-accredited. The parameters that are components of the calculation are accredited.

C>16 - C34 (F3-PAH) is a calculated parameter. The calculated value is F3-PAH (if requested). The calculated parameter is non-accredited. The parameters that are components of the calculation are accredited.

Xylenes is a calculated parameter. The calculated value is the sum of m&p-Xylenes + o-Xylene. The calculated parameter is non-accredited. The parameters that are components of the calculation are accredited.

Extraction and holding times were met for this sample.

Analysis performed at AGAT Calgary (unless marked by *)

Certified By:

Elena Gorobets

Quality Assurance

CLIENT NAME: JACOBS

AGAT WORK ORDER: 20N654509

PROJECT: CE795100.A.CS.EV.2.16 / Enbridge Pointed Mountain

ATTENTION TO: Colin Piggot

SAMPLING SITE:

SAMPLED BY: JB/RSL

Soil Analysis

RPT Date: Sep 30, 2020			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE			MATRIX SPIKE			
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper

Soil Analysis - Texture

Particle Size Distribution (Sand)	1412089		42	43	2.5%	< 2	109%	80%	120%
Particle Size Distribution (Silt)	1412089		25	25	0.2%	< 2	81%	80%	120%
Particle Size Distribution (Clay)	1412089		33	32	3.1%	< 2	113%	80%	120%

Comments: Duplicate NA: results are less than 5X the RDL and RDP will not be calculated.

Certified By:



Quality Assurance

CLIENT NAME: JACOBS

AGAT WORK ORDER: 20N654509

PROJECT: CE795100.A.CS.EV.2.16 / Enbridge Pointed Mountain

ATTENTION TO: Colin Piggot

SAMPLING SITE:

SAMPLED BY: JB/RS�

Trace Organics Analysis

RPT Date: Sep 30, 2020			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)															
Benzene	5606	1488573	<0.005	<0.005	NA	< 0.005	100%	60%	140%	87%	60%	140%	96%	60%	140%
Toluene	5606	1488573	<0.05	<0.05	NA	< 0.05	97%	60%	140%	93%	60%	140%	86%	60%	140%
Ethylbenzene	5606	1488573	<0.01	<0.01	NA	< 0.01	99%	60%	140%	96%	60%	140%	72%	60%	140%
Xylenes	5606	1488573	<0.05	<0.05	NA	< 0.05	97%	60%	140%	88%	60%	140%	63%	60%	140%
C6 - C10 (F1)	5606	1488573	<10	<10	NA	< 10	106%	60%	140%	127%	60%	140%	99%	60%	140%
C10 - C16 (F2)	6918	1482501	1560	1490	4.6%	< 10	86%	60%	140%	111%	60%	140%	129%	60%	140%
C16 - C34 (F3)	6918	1482501	440	414	6.1%	< 10	89%	60%	140%	104%	60%	140%	122%	60%	140%
C34 - C50 (F4)	6918	1482501	44	34	NA	< 10	91%	60%	140%	113%	60%	140%	134%	60%	140%

Comments: Duplicate NA: results are less than 5X the RDL and RDP will not be calculated.
The sample spikes and dups are not from the same sample ID.

Certified By: *Elena Gorobets*



Time Markers

AGAT WORK ORDER: 20N654509

PROJECT: CE795100.A.CS.EV.2.16 / Enbridge Pointed Mountain

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CLIENT NAME: JACOBS

ATTENTION TO: Colin Piggot

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
1482498	PM_01_S0a	Soil	20-SEP-2020	23-SEP-2020

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

Parameter	Date Prepared	Date Analyzed	Initials
Benzene	28-SEP-2020	29-SEP-2020	JW
Toluene	28-SEP-2020	29-SEP-2020	JW
Ethylbenzene	28-SEP-2020	29-SEP-2020	JW
Xylenes	28-SEP-2020	29-SEP-2020	JW
C6 - C10 (F1)	28-SEP-2020	29-SEP-2020	JW
C6 - C10 (F1 minus BTEX)	28-SEP-2020	29-SEP-2020	JW
C10 - C16 (F2)	28-SEP-2020	30-SEP-2020	LP
C16 - C34 (F3)	28-SEP-2020	30-SEP-2020	LP
C34 - C50 (F4)	28-SEP-2020	30-SEP-2020	LP
Gravimetric Heavy Hydrocarbons	28-SEP-2020	30-SEP-2020	LP
Moisture Content	28-SEP-2020	30-SEP-2020	LP
Toluene-d8 (BTEX)	28-SEP-2020	29-SEP-2020	JW
o-Terphenyl (F2-F4)	28-SEP-2020	30-SEP-2020	LP

1482501	PM_01_S0b	Soil	20-SEP-2020	23-SEP-2020
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Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

Parameter	Date Prepared	Date Analyzed	Initials
Benzene	28-SEP-2020	29-SEP-2020	JW
Toluene	28-SEP-2020	29-SEP-2020	JW
Ethylbenzene	28-SEP-2020	29-SEP-2020	JW
Xylenes	28-SEP-2020	29-SEP-2020	JW
C6 - C10 (F1)	28-SEP-2020	29-SEP-2020	JW
C6 - C10 (F1 minus BTEX)	28-SEP-2020	29-SEP-2020	JW
C10 - C16 (F2)	28-SEP-2020	30-SEP-2020	LP
C16 - C34 (F3)	28-SEP-2020	30-SEP-2020	LP
C34 - C50 (F4)	28-SEP-2020	30-SEP-2020	LP
Gravimetric Heavy Hydrocarbons	28-SEP-2020	30-SEP-2020	LP
Moisture Content	28-SEP-2020	30-SEP-2020	LP
Toluene-d8 (BTEX)	28-SEP-2020	29-SEP-2020	JW
o-Terphenyl (F2-F4)	28-SEP-2020	30-SEP-2020	LP

1482502	PM_01_S0c	Soil	20-SEP-2020	23-SEP-2020
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Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

Parameter	Date Prepared	Date Analyzed	Initials
Benzene	28-SEP-2020	29-SEP-2020	JW
Toluene	28-SEP-2020	29-SEP-2020	JW



Time Markers

AGAT WORK ORDER: 20N654509

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CLIENT NAME: JACOBS

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
1482502	PM_01_SOc	Soil	20-SEP-2020	23-SEP-2020

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

Parameter	Date Prepared	Date Analyzed	Initials
Ethylbenzene	28-SEP-2020	29-SEP-2020	JW
Xylenes	28-SEP-2020	29-SEP-2020	JW
C6 - C10 (F1)	28-SEP-2020	29-SEP-2020	JW
C6 - C10 (F1 minus BTEX)	28-SEP-2020	29-SEP-2020	JW
C10 - C16 (F2)	28-SEP-2020	30-SEP-2020	LP
C16 - C34 (F3)	28-SEP-2020	30-SEP-2020	LP
C34 - C50 (F4)	28-SEP-2020	30-SEP-2020	LP
Gravimetric Heavy Hydrocarbons	28-SEP-2020	30-SEP-2020	LP
Moisture Content	28-SEP-2020	30-SEP-2020	LP
Toluene-d8 (BTEX)	28-SEP-2020	29-SEP-2020	JW
o-Terphenyl (F2-F4)	28-SEP-2020	30-SEP-2020	LP

1482503	PM_02_S0a	Soil	20-SEP-2020	23-SEP-2020
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Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

Parameter	Date Prepared	Date Analyzed	Initials
Benzene	28-SEP-2020	29-SEP-2020	JW
Toluene	28-SEP-2020	29-SEP-2020	JW
Ethylbenzene	28-SEP-2020	29-SEP-2020	JW
Xylenes	28-SEP-2020	29-SEP-2020	JW
C6 - C10 (F1)	28-SEP-2020	29-SEP-2020	JW
C6 - C10 (F1 minus BTEX)	28-SEP-2020	29-SEP-2020	JW
C10 - C16 (F2)	28-SEP-2020	30-SEP-2020	LP
C16 - C34 (F3)	28-SEP-2020	30-SEP-2020	LP
C34 - C50 (F4)	28-SEP-2020	30-SEP-2020	LP
Gravimetric Heavy Hydrocarbons	28-SEP-2020	30-SEP-2020	LP
Moisture Content	28-SEP-2020	30-SEP-2020	LP
Toluene-d8 (BTEX)	28-SEP-2020	29-SEP-2020	JW
o-Terphenyl (F2-F4)	28-SEP-2020	30-SEP-2020	LP

1482504	PM_03_S0a	Soil	20-SEP-2020	23-SEP-2020
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Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

Parameter	Date Prepared	Date Analyzed	Initials
Benzene	28-SEP-2020	29-SEP-2020	JW
Toluene	28-SEP-2020	29-SEP-2020	JW
Ethylbenzene	28-SEP-2020	29-SEP-2020	JW
Xylenes	28-SEP-2020	29-SEP-2020	JW



Time Markers

AGAT WORK ORDER: 20N654509

PROJECT: CE795100.A.CS.EV.2.16 / Enbridge Pointed Mountain

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CLIENT NAME: JACOBS

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
1482504	PM_03_S0a	Soil	20-SEP-2020	23-SEP-2020

Petroleum Hydrocarbons (BTEx/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

Parameter	Date Prepared	Date Analyzed	Initials
C6 - C10 (F1)	28-SEP-2020	29-SEP-2020	JW
C6 - C10 (F1 minus BTEx)	28-SEP-2020	29-SEP-2020	JW
C10 - C16 (F2)	28-SEP-2020	30-SEP-2020	LP
C16 - C34 (F3)	28-SEP-2020	30-SEP-2020	LP
C34 - C50 (F4)	28-SEP-2020	30-SEP-2020	LP
Gravimetric Heavy Hydrocarbons	28-SEP-2020	30-SEP-2020	LP
Moisture Content	28-SEP-2020	30-SEP-2020	LP
Toluene-d8 (BTEx)	28-SEP-2020	29-SEP-2020	JW
o-Terphenyl (F2-F4)	28-SEP-2020	30-SEP-2020	LP

Soil Analysis - Texture

Parameter	Date Prepared	Date Analyzed	Initials
Particle Size Distribution (Sand)	29-SEP-2020	29-SEP-2020	PS
Particle Size Distribution (Silt)	29-SEP-2020	29-SEP-2020	PS
Particle Size Distribution (Clay)	29-SEP-2020	29-SEP-2020	PS

1482505	PM_03_S0b	Soil	20-SEP-2020	23-SEP-2020
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Petroleum Hydrocarbons (BTEx/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

Parameter	Date Prepared	Date Analyzed	Initials
Benzene	28-SEP-2020	29-SEP-2020	JW
Toluene	28-SEP-2020	29-SEP-2020	JW
Ethylbenzene	28-SEP-2020	29-SEP-2020	JW
Xylenes	28-SEP-2020	29-SEP-2020	JW
C6 - C10 (F1)	28-SEP-2020	29-SEP-2020	JW
C6 - C10 (F1 minus BTEx)	28-SEP-2020	29-SEP-2020	JW
C10 - C16 (F2)	28-SEP-2020	30-SEP-2020	LP
C16 - C34 (F3)	28-SEP-2020	30-SEP-2020	LP
C34 - C50 (F4)	28-SEP-2020	30-SEP-2020	LP
Gravimetric Heavy Hydrocarbons	28-SEP-2020	30-SEP-2020	LP
Moisture Content	28-SEP-2020	30-SEP-2020	LP
Toluene-d8 (BTEx)	28-SEP-2020	29-SEP-2020	JW
o-Terphenyl (F2-F4)	28-SEP-2020	30-SEP-2020	LP

1482506	PM_04_S0a	Soil	20-SEP-2020	23-SEP-2020
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Petroleum Hydrocarbons (BTEx/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

Parameter	Date Prepared	Date Analyzed	Initials
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Time Markers

AGAT WORK ORDER: 20N654509

PROJECT: CE795100.A.CS.EV.2.16 / Enbridge Pointed Mountain

ATTENTION TO: Colin Piggot

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CLIENT NAME: JACOBS

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
1482506	PM_04_S0a	Soil	20-SEP-2020	23-SEP-2020

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

Parameter	Date Prepared	Date Analyzed	Initials
Benzene	28-SEP-2020	29-SEP-2020	JW
Toluene	28-SEP-2020	29-SEP-2020	JW
Ethylbenzene	28-SEP-2020	29-SEP-2020	JW
Xylenes	28-SEP-2020	29-SEP-2020	JW
C6 - C10 (F1)	28-SEP-2020	29-SEP-2020	JW
C6 - C10 (F1 minus BTEX)	28-SEP-2020	29-SEP-2020	JW
C10 - C16 (F2)	28-SEP-2020	30-SEP-2020	LP
C16 - C34 (F3)	28-SEP-2020	30-SEP-2020	LP
C34 - C50 (F4)	28-SEP-2020	30-SEP-2020	LP
Gravimetric Heavy Hydrocarbons	28-SEP-2020	30-SEP-2020	LP
Moisture Content	28-SEP-2020	30-SEP-2020	LP
Toluene-d8 (BTEX)	28-SEP-2020	29-SEP-2020	JW
o-Terphenyl (F2-F4)	28-SEP-2020	30-SEP-2020	LP

1482507	PM_04_S0b	Soil	20-SEP-2020	23-SEP-2020
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Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

Parameter	Date Prepared	Date Analyzed	Initials
Benzene	28-SEP-2020	29-SEP-2020	JW
Toluene	28-SEP-2020	29-SEP-2020	JW
Ethylbenzene	28-SEP-2020	29-SEP-2020	JW
Xylenes	28-SEP-2020	29-SEP-2020	JW
C6 - C10 (F1)	28-SEP-2020	29-SEP-2020	JW
C6 - C10 (F1 minus BTEX)	28-SEP-2020	29-SEP-2020	JW
C10 - C16 (F2)	28-SEP-2020	30-SEP-2020	LP
C16 - C34 (F3)	28-SEP-2020	30-SEP-2020	LP
C34 - C50 (F4)	28-SEP-2020	30-SEP-2020	LP
Gravimetric Heavy Hydrocarbons	28-SEP-2020	30-SEP-2020	LP
Moisture Content	28-SEP-2020	30-SEP-2020	LP
Toluene-d8 (BTEX)	28-SEP-2020	29-SEP-2020	JW
o-Terphenyl (F2-F4)	28-SEP-2020	30-SEP-2020	LP

1482508	PM_05_S0a	Soil	20-SEP-2020	23-SEP-2020
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Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

Parameter	Date Prepared	Date Analyzed	Initials
Benzene	28-SEP-2020	29-SEP-2020	JW
Toluene	28-SEP-2020	29-SEP-2020	JW



Time Markers

AGAT WORK ORDER: 20N654509

PROJECT: CE795100.A.CS.EV.2.16 / Enbridge Pointed Mountain

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CLIENT NAME: JACOBS

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
1482508	PM_05_S0a	Soil	20-SEP-2020	23-SEP-2020

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

Parameter	Date Prepared	Date Analyzed	Initials
Ethylbenzene	28-SEP-2020	29-SEP-2020	JW
Xylenes	28-SEP-2020	29-SEP-2020	JW
C6 - C10 (F1)	28-SEP-2020	29-SEP-2020	JW
C6 - C10 (F1 minus BTEX)	28-SEP-2020	29-SEP-2020	JW
C10 - C16 (F2)	28-SEP-2020	30-SEP-2020	LP
C16 - C34 (F3)	28-SEP-2020	30-SEP-2020	LP
C34 - C50 (F4)	28-SEP-2020	30-SEP-2020	LP
Gravimetric Heavy Hydrocarbons	28-SEP-2020	30-SEP-2020	LP
Moisture Content	28-SEP-2020	30-SEP-2020	LP
Toluene-d8 (BTEX)	28-SEP-2020	29-SEP-2020	JW
o-Terphenyl (F2-F4)	28-SEP-2020	30-SEP-2020	LP

1482509	PM_05_S0b	Soil	20-SEP-2020	23-SEP-2020
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Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

Parameter	Date Prepared	Date Analyzed	Initials
Benzene	28-SEP-2020	29-SEP-2020	JW
Toluene	28-SEP-2020	29-SEP-2020	JW
Ethylbenzene	28-SEP-2020	29-SEP-2020	JW
Xylenes	28-SEP-2020	29-SEP-2020	JW
C6 - C10 (F1)	28-SEP-2020	29-SEP-2020	JW
C6 - C10 (F1 minus BTEX)	28-SEP-2020	29-SEP-2020	JW
C10 - C16 (F2)	28-SEP-2020	30-SEP-2020	LP
C16 - C34 (F3)	28-SEP-2020	30-SEP-2020	LP
C34 - C50 (F4)	28-SEP-2020	30-SEP-2020	LP
Gravimetric Heavy Hydrocarbons	28-SEP-2020	30-SEP-2020	LP
Moisture Content	28-SEP-2020	30-SEP-2020	LP
Toluene-d8 (BTEX)	28-SEP-2020	29-SEP-2020	JW
o-Terphenyl (F2-F4)	28-SEP-2020	30-SEP-2020	LP

1482510	PM_06_S0b	Soil	20-SEP-2020	23-SEP-2020
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Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

Parameter	Date Prepared	Date Analyzed	Initials
Benzene	28-SEP-2020	29-SEP-2020	JW
Toluene	28-SEP-2020	29-SEP-2020	JW
Ethylbenzene	28-SEP-2020	29-SEP-2020	JW
Xylenes	28-SEP-2020	29-SEP-2020	JW



Time Markers

AGAT WORK ORDER: 20N654509

PROJECT: CE795100.A.CS.EV.2.16 / Enbridge Pointed Mountain

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2910 12TH STREET NE
CALGARY, ALBERTA
CANADA T2E 7P7
TEL (403)735-2005
FAX (403)735-2771
<http://www.agatlabs.com>

CLIENT NAME: JACOBS

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
1482510	PM_06_SOb	Soil	20-SEP-2020	23-SEP-2020

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

Parameter	Date Prepared	Date Analyzed	Initials
C6 - C10 (F1)	28-SEP-2020	29-SEP-2020	JW
C6 - C10 (F1 minus BTEX)	28-SEP-2020	29-SEP-2020	JW
C10 - C16 (F2)	28-SEP-2020	30-SEP-2020	LP
C16 - C34 (F3)	28-SEP-2020	30-SEP-2020	LP
C34 - C50 (F4)	28-SEP-2020	30-SEP-2020	LP
Gravimetric Heavy Hydrocarbons	28-SEP-2020	30-SEP-2020	LP
Moisture Content	28-SEP-2020	30-SEP-2020	LP
Toluene-d8 (BTEX)	28-SEP-2020	29-SEP-2020	JW
o-Terphenyl (F2-F4)	28-SEP-2020	30-SEP-2020	LP

1482511	PM_07_SOb	Soil	20-SEP-2020	23-SEP-2020
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Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

Parameter	Date Prepared	Date Analyzed	Initials
Benzene	28-SEP-2020	29-SEP-2020	JW
Toluene	28-SEP-2020	29-SEP-2020	JW
Ethylbenzene	28-SEP-2020	29-SEP-2020	JW
Xylenes	28-SEP-2020	29-SEP-2020	JW
C6 - C10 (F1)	28-SEP-2020	29-SEP-2020	JW
C6 - C10 (F1 minus BTEX)	28-SEP-2020	29-SEP-2020	JW
C10 - C16 (F2)	28-SEP-2020	30-SEP-2020	LP
C16 - C34 (F3)	28-SEP-2020	30-SEP-2020	LP
C34 - C50 (F4)	28-SEP-2020	30-SEP-2020	LP
Gravimetric Heavy Hydrocarbons	28-SEP-2020	30-SEP-2020	LP
Moisture Content	28-SEP-2020	30-SEP-2020	LP
Toluene-d8 (BTEX)	28-SEP-2020	29-SEP-2020	JW
o-Terphenyl (F2-F4)	28-SEP-2020	30-SEP-2020	LP

Soil Analysis - Texture

Parameter	Date Prepared	Date Analyzed	Initials
Particle Size Distribution (Sand)	29-SEP-2020	29-SEP-2020	PS
Particle Size Distribution (Silt)	29-SEP-2020	29-SEP-2020	PS
Particle Size Distribution (Clay)	29-SEP-2020	29-SEP-2020	PS

1482512	PM_08_SOb	Soil	20-SEP-2020	23-SEP-2020
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Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

Parameter	Date Prepared	Date Analyzed	Initials
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Time Markers

AGAT WORK ORDER: 20N654509

PROJECT: CE795100.A.CS.EV.2.16 / Enbridge Pointed Mountain

ATTENTION TO: Colin Piggot

2910 12TH STREET NE
CALGARY, ALBERTA
CANADA T2E 7P7
TEL (403)735-2005
FAX (403)735-2771
<http://www.agatlabs.com>

CLIENT NAME: JACOBS

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
1482512	PM_08_S0a	Soil	20-SEP-2020	23-SEP-2020

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

Parameter	Date Prepared	Date Analyzed	Initials
Benzene	28-SEP-2020	29-SEP-2020	JW
Toluene	28-SEP-2020	29-SEP-2020	JW
Ethylbenzene	28-SEP-2020	29-SEP-2020	JW
Xylenes	28-SEP-2020	29-SEP-2020	JW
C6 - C10 (F1)	28-SEP-2020	29-SEP-2020	JW
C6 - C10 (F1 minus BTEX)	28-SEP-2020	29-SEP-2020	JW
C10 - C16 (F2)	28-SEP-2020	30-SEP-2020	LP
C16 - C34 (F3)	28-SEP-2020	30-SEP-2020	LP
C34 - C50 (F4)	28-SEP-2020	30-SEP-2020	LP
Gravimetric Heavy Hydrocarbons	28-SEP-2020	30-SEP-2020	LP
Moisture Content	28-SEP-2020	30-SEP-2020	LP
Toluene-d8 (BTEX)	28-SEP-2020	29-SEP-2020	JW
o-Terphenyl (F2-F4)	28-SEP-2020	30-SEP-2020	LP

1482513	PM_08_S0b	Soil	20-SEP-2020	23-SEP-2020
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Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

Parameter	Date Prepared	Date Analyzed	Initials
Benzene	28-SEP-2020	29-SEP-2020	JW
Toluene	28-SEP-2020	29-SEP-2020	JW
Ethylbenzene	28-SEP-2020	29-SEP-2020	JW
Xylenes	28-SEP-2020	29-SEP-2020	JW
C6 - C10 (F1)	28-SEP-2020	29-SEP-2020	JW
C6 - C10 (F1 minus BTEX)	28-SEP-2020	29-SEP-2020	JW
C10 - C16 (F2)	28-SEP-2020	30-SEP-2020	LP
C16 - C34 (F3)	28-SEP-2020	30-SEP-2020	LP
C34 - C50 (F4)	28-SEP-2020	30-SEP-2020	LP
Gravimetric Heavy Hydrocarbons	28-SEP-2020	30-SEP-2020	LP
Moisture Content	28-SEP-2020	30-SEP-2020	LP
Toluene-d8 (BTEX)	28-SEP-2020	29-SEP-2020	JW
o-Terphenyl (F2-F4)	28-SEP-2020	30-SEP-2020	LP

Method Summary

CLIENT NAME: JACOBS

AGAT WORK ORDER: 20N654509

PROJECT: CE795100.A.CS.EV.2.16 / Enbridge Pointed Mountain

ATTENTION TO: Colin Piggot

SAMPLING SITE:

SAMPLED BY:JB/RS�

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Soil Analysis			
Particle Size Distribution (Sand)	SOIL 0520; SOIL 0110; SOIL 0120	JONES 2001	HYDROMETER
Particle Size Distribution (Silt)	SOIL 0520; SOIL 0110; SOIL 0120	JONES 2001	HYDROMETER
Particle Size Distribution (Clay)	SOIL 0520; SOIL 0110; SOIL 0120	JONES 2001	HYDROMETER
Trace Organics Analysis			
Benzene	TO-0543	EPA SW-846 5021 & 8260	GC/MS
Toluene	TO-0543	EPA SW-846 5021 & 8260	GC/MS
Ethylbenzene	TO-0543	EPA SW-846 5021 & 8260	GC/MS
Xylenes	TO-0543	EPA SW-846 5021 & 8260	GC/MS
C6 - C10 (F1)	TO-0543	CCME Tier 1 Method	GC/FID
C6 - C10 (F1 minus BTEX)	TO-0543	CCME Tier 1 Method	GC/FID
C10 - C16 (F2)	TO-0560	CCME Tier 1 Method	GC/FID
C16 - C34 (F3)	TO-0560	CCME Tier 1 Method	GC/FID
C34 - C50 (F4)	TO-0560	CCME Tier 1 Method	GC/FID
Gravimetric Heavy Hydrocarbons	TO-0560	CCME Tier 1 Method	GC/FID
Moisture Content	TO-0560	CCME Tier 1 Method	GC/FID
Toluene-d8 (BTEX)	TO-0543	EPA SW-846 5021 & 8260	GC/MS
o-Terphenyl (F2-F4)	TO 0560	CCME Tier 1 Method	GC/FID

Chain of Custody Record

Emergency Support Services Hotline 1-855-AGAT 245 (1-855-242-8245)

Report to:

Company: Jacobs Engineering Group

Same as COC#:

[illegible]

Samples Relinquished By (Print Name and Sign):

Jay Bilyk

Samples Relinquished By (Print Name and Sign):

Samples Relinquished By (Print Name and Sign):

Date/Time	Location	Activity	Remarks
10/10/2023 10:00	Room 101	Meeting with Mr. Smith	Discussed project progress
10/10/2023 14:30	Office	Working on report	Completed section 2
10/10/2023 18:00	Gym	Cardio workout	30 minutes
10/11/2023 09:00	Room 101	Meeting with Mr. Jones	Discussed budget
10/11/2023 11:00	Office	Working on report	Completed section 3
10/11/2023 15:00	Office	Working on report	Completed section 4
10/11/2023 18:00	Gym	Cardio workout	30 minutes
10/12/2023 09:00	Room 101	Meeting with Mr. Brown	Discussed project progress
10/12/2023 11:00	Office	Working on report	Completed section 5
10/12/2023 15:00	Office	Working on report	Completed section 6
10/12/2023 18:00	Gym	Cardio workout	30 minutes
10/13/2023 09:00	Room 101	Meeting with Mr. Green	Discussed project progress
10/13/2023 11:00	Office	Working on report	Completed section 7
10/13/2023 15:00	Office	Working on report	Completed section 8
10/13/2023 18:00	Gym	Cardio workout	30 minutes
10/14/2023 09:00	Room 101	Meeting with Mr. Black	Discussed project progress
10/14/2023 11:00	Office	Working on report	Completed section 9
10/14/2023 15:00	Office	Working on report	Completed section 10
10/14/2023 18:00	Gym	Cardio workout	30 minutes
10/15/2023 09:00	Room 101	Meeting with Mr. White	Discussed project progress
10/15/2023 11:00	Office	Working on report	Completed section 11
10/15/2023 15:00	Office	Working on report	Completed section 12
10/15/2023 18:00	Gym	Cardio workout	30 minutes
10/16/2023 09:00	Room 101	Meeting with Mr. Grey	Discussed project progress
10/16/2023 11:00	Office	Working on report	Completed section 13
10/16/2023 15:00	Office	Working on report	Completed section 14
10/16/2023 18:00	Gym	Cardio workout	30 minutes
10/17/2023 09:00	Room 101	Meeting with Mr. Yellow	Discussed project progress
10/17/2023 11:00	Office	Working on report	Completed section 15
10/17/2023 15:00	Office	Working on report	Completed section 16
10/17/2023 18:00	Gym	Cardio workout	30 minutes
10/18/2023 09:00	Room 101	Meeting with Mr. Purple	Discussed project progress
10/18/2023 11:00	Office	Working on report	Completed section 17
10/18/2023 15:00	Office	Working on report	Completed section 18
10/18/2023 18:00	Gym	Cardio workout	30 minutes
10/19/2023 09:00	Room 101	Meeting with Mr. Blue	Discussed project progress
10/19/2023 11:00	Office	Working on report	Completed section 19
10/19/2023 15:00	Office	Working on report	Completed section 20
10/19/2023 18:00	Gym	Cardio workout	30 minutes
10/20/2023 09:00	Room 101	Meeting with Mr. Orange	Discussed project progress
10/20/2023 11:00	Office	Working on report	Completed section 21
10/20/2023 15:00	Office	Working on report	Completed section 22
10/20/2023 18:00	Gym	Cardio workout	30 minutes
10/21/2023 09:00	Room 101	Meeting with Mr. Pink	Discussed project progress
10/21/2023 11:00	Office	Working on report	Completed section 23
10/21/2023 15:00	Office	Working on report	Completed section 24
10/21/2023 18:00	Gym	Cardio workout	30 minutes
10/22/2023 09:00	Room 101	Meeting with Mr. Brown	Discussed project progress
10/22/2023 11:00	Office	Working on report	Completed section 25
10/22/2023 15:00	Office	Working on report	Completed section 26
10/22/2023 18:00	Gym	Cardio workout	30 minutes
10/23/2023 09:00	Room 101	Meeting with Mr. Green	Discussed project progress
10/23/2023 11:00	Office	Working on report	Completed section 27
10/23/2023 15:00	Office	Working on report	Completed section 28
10/23/2023 18:00	Gym	Cardio workout	30 minutes
10/24/2023 09:00	Room 101	Meeting with Mr. Black	Discussed project progress
10/24/2023 11:00	Office	Working on report	Completed section 29
10/24/2023 15:00	Office	Working on report	Completed section 30
10/24/2023 18:00	Gym	Cardio workout	30 minutes
10/25/2023 09:00	Room 101	Meeting with Mr. White	Discussed project progress
10/25/2023 11:00	Office	Working on report	Completed section 31
10/25/2023 15:00	Office	Working on report	Completed section 32
10/25/2023 18:00	Gym	Cardio workout	30 minutes
10/26/2023 09:00	Room 101	Meeting with Mr. Grey	Discussed project progress
10/26/2023 11:00	Office	Working on report	Completed section 33
10/26/2023 15:00	Office	Working on report	Completed section 34
10/26/2023 18:00	Gym	Cardio workout	30 minutes
10/27/2023 09:00	Room 101	Meeting with Mr. Yellow	Discussed project progress
10/27/2023 11:00	Office	Working on report	Completed section 35
10/27/2023 15:00	Office	Working on report	Completed section 36
10/27/2023 18:00	Gym	Cardio workout	30 minutes
10/28/2023 09:00			

20-Sept-20

Date/Time	Location	Activity	Remarks
10/10/2023	...	...	...

Date/Time	Location	Activity	Remarks
10/10/2023	...	...	...
10/11/2023	...	...	...
10/12/2023	...	...	...
10/13/2023	...	...	...
10/14/2023	...	...	...
10/15/2023	...	...	...
10/16/2023	...	...	...
10/17/2023	...	...	...
10/18/2023	...	...	...
10/19/2023	...	...	...
10/20/2023	...	...	...
10/21/2023	...	...	...
10/22/2023	...	...	...
10/23/2023	...	...	...
10/24/2023	...	...	...
10/25/2023	...	...	...
10/26/2023	...	...	...
10/27/2023	...	...	...
10/28/2023	...	...	...
10/29/2023	...	...	...
10/30/2023	...	...	...
10/31/2023	...	...	...

Samples Received By (Print Name and Sign):

Samples Received By (Print Name and Sign)

Samples Received By (Print Name and Sign):

Date/Time

28 Sep 2010

Date/Time	Location	Activity	Notes
10/10/2023 10:00	Room 101	Meeting with Mr. Smith	Discussed project progress
10/10/2023 14:30	Room 202	Training session	Completed module 3
10/11/2023 09:00	Room 101	Meeting with Mr. Jones	Discussed budget review
10/11/2023 13:00	Room 303	Workshop	Group discussion on new initiative
10/12/2023 11:00	Room 101	Meeting with Mr. Brown	Discussed client feedback
10/12/2023 15:00	Room 202	Training session	Completed module 4
10/13/2023 08:30	Room 101	Meeting with Mr. Green	Discussed team performance
10/13/2023 12:00	Room 303	Workshop	Group discussion on new initiative
10/13/2023 16:00	Room 101	Meeting with Mr. White	Discussed project timeline
10/14/2023 10:00	Room 202	Training session	Completed module 5
10/14/2023 14:00	Room 101	Meeting with Mr. Black	Discussed project status
10/15/2023 09:30	Room 303	Workshop	Group discussion on new initiative
10/15/2023 13:30	Room 101	Meeting with Mr. Grey	Discussed project budget
10/16/2023 11:30	Room 202	Training session	Completed module 6
10/16/2023 15:30	Room 101	Meeting with Mr. Yellow	Discussed project risks
10/17/2023 08:00	Room 303	Workshop	Group discussion on new initiative
10/17/2023 12:30	Room 101	Meeting with Mr. Purple	Discussed project goals
10/18/2023 10:30	Room 202	Training session	Completed module 7
10/18/2023 14:30	Room 101	Meeting with Mr. Blue	Discussed project outcomes
10/19/2023 09:00	Room 303	Workshop	Group discussion on new initiative
10/19/2023 13:00	Room 101	Meeting with Mr. Red	Discussed project results
10/20/2023 11:00	Room 202	Training session	Completed module 8
10/20/2023 15:00	Room 101	Meeting with Mr. Orange	Discussed project impact
10/21/2023 08:30	Room 303	Workshop	Group discussion on new initiative
10/21/2023 12:30	Room 101	Meeting with Mr. Pink	Discussed project challenges
10/22/2023 10:30	Room 202	Training session	Completed module 9
10/22/2023 14:30	Room 101	Meeting with Mr. Brown	Discussed project lessons learned
10/23/2023 09:00	Room 303	Workshop	Group discussion on new initiative
10/23/2023 13:00	Room 101	Meeting with Mr. White	Discussed project future plans
10/24/2023 11:00	Room 202	Training session	Completed module 10
10/24/2023 15:00	Room 101	Meeting with Mr. Black	Discussed project final report
10/25/2023 08:30	Room 303	Workshop	Group discussion on new initiative
10/25/2023 12:30	Room 101	Meeting with Mr. Grey	Discussed project closure
10/26/2023 10:30	Room 202	Training session	Completed module 11
10/26/2023 14:30	Room 101	Meeting with Mr. Yellow	Discussed project evaluation
10/27/2023 09:00	Room 303	Workshop	Group discussion on new initiative
10/27/2023 13:00	Room 101	Meeting with Mr. Purple	Discussed project feedback
10/28/2023 11:00	Room 202	Training session	Completed module 12
10/28/2023 15:00	Room 101	Meeting with Mr. Blue	Discussed project next steps
10/29/2023 08:30	Room 303	Workshop	Group discussion on new initiative
10/29/2023 12:30	Room 101	Meeting with Mr. Red	Discussed project conclusion
10/30/2023 10:30	Room 202	Training session	Completed module 13
10/30/2023 14:30	Room 101	Meeting with Mr. Orange	Discussed project final review
10/31/2023 09:00	Room 303	Workshop	Group discussion on new initiative
10/31/2023 13:00	Room 101	Meeting with Mr. Pink	Discussed project final report

Date/Time	Location	Activity	Remarks
10/10/2023	...	...	...

Pink Copy - Client

Yellow Copy - AG/

White Copy- AGA

Page 2 of 2

C 48238

RECEIVING BASICS - Shipping

Company/Consultant: Jacobs
 Courier: ROSENAN Prepaid Collect
 Waybill# 250035604
 Branch: EDM GP ☒ FM RD VAN LYD FSJ EST SASK Other: _____
 If multiple sites were submitted at once: ☒ Yes No
 Custody Seal Intact: Yes No ☒ NA
 TAT: <24hr 24-48hr 48-72hr ☒ Reg Other _____
 Cooler Quantity: 15 (5 COCs mixed)

TIME SENSITIVE ISSUES - Shipping

ALREADY EXCEEDED HOLD TIME? Yes ☒ No
 Inorganic Tests (Please Circle): Mibi , BOD , Nitrate/Nitrite , Turbidity , Color , Microtox , Ortho PO4 , Tedlar Bag , Residual Chlorine , Chlorophyll* , Chloramines*
 Earliest Expiry: _____
 Hydrocarbons: Earliest Expiry w/ methanol vials

SAMPLE INTEGRITY - Shipping

Hazardous Samples: YES ☒ NO Precaution Taken: _____
 Legal Samples: Yes ☒ No
 International Samples: Yes ☒ No
 Tape Sealed: Yes ☒ No
 Coolant Used: Icepack ☒ Bagged Ice Free Ice Free Water None

Temperature (Bottles/Jars only) N/A if only Soil Bags Received

FROZEN (Please Circle if samples received Frozen)

1 (Bottle/Jar) 5 + 4 + 3 = 4 °C 2 (Bottle/Jar) 4 + 4 + 4 = 4 °C
 3 (Bottle/Jar) 3 + 4 + 5 = 4 °C 4 (Bottle/Jar) 5 + 6 + 4 = 5 °C
 5 (Bottle/Jar) 3 + 4 + 2 = 3 °C 6 (Bottle/Jar) 4 + 5 + 3 = 4 °C
 7 (Bottle/Jar) 5 + 4 + 4 = 5 °C 8 (Bottle/Jar) 4 + 4 + 4 = 4 °C
 9 (Bottle/Jar) _____ + _____ + _____ = _____ °C 10 (Bottle/Jar) _____ + _____ + _____ = _____ °C
 (If more than 10 coolers are received use another sheet of paper and attach)

LOGISTICS USE ONLY

Workorder No: 20N654509
 Samples Damaged: Yes ☒ No If YES why?
 No Bubble Wrap Frozen Courier
 Other: _____
 Account Project Manager: _____ have they been notified of the above issues: Yes No
 Whom spoken to: _____ Date/Time: _____
 CPM Initial _____
 General Comments: _____

* Subcontracted Analysis (See CPM)

From: [Bilyk, Jay/CGY](#)
To: [Mary Grace Unera](#); [Long Tran](#)
Cc: [Barnsdall, Neil](#)
Subject: RE: AGAT Laboratories Analytical Review | CE795100.A.CS.EV.2.16 / Enbridge Pointed Mountain | Work Order 20N654509
Date: Monday, September 28, 2020 4:04:33 PM

Mary Grace and Long,
Please add grain size by two point hydrometer to the following samples.

- PM_03_SOa
- PM_07_SOa

Thanks
Jay

From: Long Tran <ltran@agatlabs.com> **On Behalf Of** Sample-Notification
Sent: Monday, September 28, 2020 2:42 PM
To: Sohi, Jessie/CGY <Jessie.Sohi@jacobs.com>; Barnsdall, Neil <Neil.Barnsdall@jacobs.com>; Bilyk, Jay/CGY <Jay.Bilyk@jacobs.com>; Piggot, Colin/CGY <Colin.Piggot@jacobs.com>
Cc: Mary Grace Unera <unera@agatlabs.com>; Long Tran <ltran@agatlabs.com>; Sample-Notification <sample-notification@agatlabs.com>
Subject: [EXTERNAL] AGAT Laboratories Analytical Review | CE795100.A.CS.EV.2.16 / Enbridge Pointed Mountain | Work Order 20N654509

On behalf of your primary Project Manager, CPMname:

AGAT Laboratories has received samples on your behalf. Please note, discrepancies have been encountered between your samples and the regulatory requirements. All discrepancies are listed in the attached Sample Integrity Report (SIR).

Please, review the attached documentation to verify your scheduled due date for results, sample receipt temperature, along with any cited non-conformances and reply within 24 hours if you require changes to assigned analysis, sample identification and/or company information.

Also note: Samples received at our Grande Prairie branch are effective upon receipt at the laboratory performing the analysis. The corresponding RUSH turnaround time and due date have been assigned accordingly.

If you have any questions or concerns, please, contact your primary project manager.

Please note your results will be emailed to you in a PDF and Excel document format once they become available. These results will also be available via **WebEarth**: <http://webearth.agatlabs.com/>.

If you require a WebEarth username and password please don't hesitate to contact the above Project Manager or an AGAT Sales Representative for further assistance.

Kind Regards,

Long Tran, B.Sc.
Project Coordinator

CLIENT NAME: JACOBS
UNIT 150, 205 QUARRY PARK BLVD SE
CALGARY, AB T2C 3E7
403-258-6411

ATTENTION TO: Patrick Kalita

PROJECT: CE810600

AGAT WORK ORDER: 21N791280

SOIL ANALYSIS REVIEWED BY: Loan Nguyen, Senior Analyst

TRACE ORGANICS REVIEWED BY: Elena Gorobets, Report Writer

DATE REPORTED: Oct 06, 2021

PAGES (INCLUDING COVER): 102

VERSION*: 2

Should you require any information regarding this analysis please contact your client services representative at (403) 735-2005

*Notes

VERSION 2: Supersedes Version 1: Additional Sieve data for sample 2879898 included. 06-OCT-21 MGU

Disclaimer:

- All work conducted herein has been done using accepted standard protocols, and generally accepted practices and methods. AGAT test methods may incorporate modifications from the specified reference methods to improve performance.
- All samples will be disposed of within 30 days after receipt unless a Long Term Storage Agreement is signed and returned. Some specialty analysis may be exempt, please contact your Client Project Manager for details.
- AGAT's liability in connection with any delay, performance or non-performance of these services is only to the Client and does not extend to any other third party. Unless expressly agreed otherwise in writing, AGAT's liability is limited to the actual cost of the specific analysis or analyses included in the services.
- This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
- The test results reported herewith relate only to the samples as received by the laboratory.
- Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to, warranties of merchantability, fitness for a particular purpose, or non-infringement. AGAT assumes no responsibility for any errors or omissions in the guidelines contained in this document.
- All reportable information as specified by ISO/IEC 17025:2017 is available from AGAT Laboratories upon request.



AGAT Laboratories

Certificate of Analysis

AGAT WORK ORDER: 21N791280

PROJECT: CE810600

2910 12TH STREET NE
CALGARY, ALBERTA
CANADA T2E 7P7
TEL (403)735-2005
FAX (403)735-2771
<http://www.agatlabs.com>

CLIENT NAME: JACOBS

SAMPLING SITE:

ATTENTION TO: Patrick Kalita

SAMPLED BY:

Particle Size by Sieve

DATE RECEIVED: 2021-08-19

DATE REPORTED: 2021-10-06

SAMPLE DESCRIPTION: PM-1-SB004-c

SAMPLE TYPE: Soil

DATE SAMPLED: 2021-08-17

G / S RDL 2879898

Parameter	Unit	G / S	RDL
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Sieve Analysis - 75 microns	%	1	13
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Sieve Texture			Fine
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Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

2879898 Value reported is amount of sample retained on sieve after wash with water and represents proportion by weight particles larger than indicated sieve size.
Sieve Texture is a calculated parameter. The calculated parameter is non-accredited. The parameters that are components of the calculation are accredited.

Analysis performed at AGAT Calgary (unless marked by *)

Certified By:



AGAT Laboratories

Certificate of Analysis

AGAT WORK ORDER: 21N791280

PROJECT: CE810600

2910 12TH STREET NE
CALGARY, ALBERTA
CANADA T2E 7P7
TEL (403)735-2005
FAX (403)735-2771
<http://www.agatlabs.com>

CLIENT NAME: JACOBS

SAMPLING SITE:

ATTENTION TO: Patrick Kalita

SAMPLED BY:

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2021-08-19

DATE REPORTED: 2021-10-06

		SAMPLE DESCRIPTION:		PM-1-SB001-a	PM-1-SB001-b	PM-1-SB001-c	PM-1-SB001-d	PM-1-SB002-a	PM-1-SB002-b	PM-1-SB002-c	PM-1-SB002-d
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2021-08-17	2021-08-17	2021-08-17	2021-08-17	2021-08-17	2021-08-17	2021-08-17	2021-08-17
Parameter	Unit	G / S	RDL	2879861	2879885	2879886	2879887	2879888	2879889	2879890	2879891
Benzene	mg/kg	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Toluene	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ethylbenzene	mg/kg	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Xylenes	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
C6 - C10 (F1)	mg/kg	10	<10	<10	<10	<10	<10	<10	<10	<10	<10
C6 - C10 (F1 minus BTEX)	mg/kg	10	<10	<10	<10	<10	<10	<10	<10	<10	<10
C10 - C16 (F2)	mg/kg	10	<10	<10	<10	<10	<10	<10	<10	<10	<10
C16 - C34 (F3)	mg/kg	10	46	48	53	33	35	49	35	41	
C34 - C50 (F4)	mg/kg	10	20	20	22	12	18	20	12	13	
Gravimetric Heavy Hydrocarbons	mg/kg	1000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Moisture Content	%	1.00	22	21	23	15	21	17	22	16	
Surrogate	Unit	Acceptable Limits									
Toluene-d8 (BTEX)	%	60-140	64	64	70	60	64	63	74	92	
o-Terphenyl (F2-F4)	%	60-140	105	112	107	108	105	109	107	111	

Certified By:

Elena Gorobets



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Certificate of Analysis

AGAT WORK ORDER: 21N791280

PROJECT: CE810600

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CLIENT NAME: JACOBS

SAMPLING SITE:

ATTENTION TO: Patrick Kalita

SAMPLED BY:

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2021-08-19

DATE REPORTED: 2021-10-06

		SAMPLE DESCRIPTION:		PM-1-SB003-a	PM-1-SB003-b	PM-1-SB003-c	PM-1-SB003-d	PM-1-SB004-a	PM-1-SB004-b	PM-1-SB004-c	PM-1-SB004-d
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2021-08-17	2021-08-17	2021-08-17	2021-08-17	2021-08-17	2021-08-17	2021-08-17	2021-08-17
Parameter	Unit	G / S	RDL	2879892	2879893	2879894	2879895	2879896	2879897	2879898	2879899
Benzene	mg/kg	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Toluene	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ethylbenzene	mg/kg	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Xylenes	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
C6 - C10 (F1)	mg/kg	10	<10	<10	<10	<10	<10	<10	<10	20	10
C6 - C10 (F1 minus BTEX)	mg/kg	10	<10	<10	<10	<10	<10	<10	<10	20	10
C10 - C16 (F2)	mg/kg	10	<10	<10	<10	<10	<10	<10	<10	541	681
C16 - C34 (F3)	mg/kg	10	209	38	43	39	26	45	186	225	
C34 - C50 (F4)	mg/kg	10	55	16	18	14	<10	21	21	22	
Gravimetric Heavy Hydrocarbons	mg/kg	1000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Moisture Content	%	1.00	21	25	19	18	21	22	21	21	
Surrogate	Unit	Acceptable Limits									
Toluene-d8 (BTEX)	%	60-140	72	72	68	60	72	84	70	76	
o-Terphenyl (F2-F4)	%	60-140	111	117	106	108	110	109	110	110	

Certified By:

Elena Gorobets



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AGAT WORK ORDER: 21N791280

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CLIENT NAME: JACOBS

SAMPLING SITE:

ATTENTION TO: Patrick Kalita

SAMPLED BY:

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2021-08-19

DATE REPORTED: 2021-10-06

		SAMPLE DESCRIPTION:		PM-1-SB004-e	PM-1-SB004-f	PM-1-SB005-a	PM-1-SB005-b	PM-1-SB005-c	PM-1-SB005-d	PM-1-SB005-e	PM-1-SB006-a
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2021-08-17	2021-08-17	2021-08-17	2021-08-17	2021-08-17	2021-08-17	2021-08-17	2021-08-17
Parameter	Unit	G / S	RDL	2879900	2879901	2879902	2879903	2879904	2879905	2879906	2879907
Benzene	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Toluene	mg/kg		0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ethylbenzene	mg/kg		0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Xylenes	mg/kg		0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
C6 - C10 (F1)	mg/kg		10	<10	<10	<10	<10	80	<10	<10	<10
C6 - C10 (F1 minus BTEX)	mg/kg		10	<10	<10	<10	<10	80	<10	<10	<10
C10 - C16 (F2)	mg/kg		10	<10	<10	<10	<10	3650	88	57	405
C16 - C34 (F3)	mg/kg		10	35	29	26	41	1390	94	68	176
C34 - C50 (F4)	mg/kg		10	11	<10	14	16	163	33	23	21
Gravimetric Heavy Hydrocarbons	mg/kg		1000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Moisture Content	%		1.00	12	10	23	24	21	23	13	26
Surrogate	Unit	Acceptable Limits									
Toluene-d8 (BTEX)	%		60-140	60	68	64	64	62	91	65	69
o-Terphenyl (F2-F4)	%		60-140	107	108	133	111	108	109	112	111

Certified By:

Elena Gorobets



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AGAT WORK ORDER: 21N791280

PROJECT: CE810600

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CLIENT NAME: JACOBS

SAMPLING SITE:

ATTENTION TO: Patrick Kalita

SAMPLED BY:

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2021-08-19

DATE REPORTED: 2021-10-06

		SAMPLE DESCRIPTION: PM-1-SB006-b		PM-1-SB006-c	PM-1-SB006-d	PM-1-SB006-e	PM-1-SB007-a	PM-1-SB007-b	PM-1-SB007-c	PM-1-SB007-d
		SAMPLE TYPE: Soil		Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED: 2021-08-18		2021-08-18	2021-08-18	2021-08-18	2021-08-18	2021-08-18	2021-08-18	2021-08-18
Parameter	Unit	G / S	RDL	2879908	2879909	2879910	2879911	2879912	2879913	2879914
Benzene	mg/kg	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Toluene	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ethylbenzene	mg/kg	0.01	<0.01	0.08	0.04	<0.01	<0.01	<0.01	<0.01	<0.01
Xylenes	mg/kg	0.05	<0.05	0.14	0.34	<0.05	<0.05	<0.05	<0.05	<0.05
C6 - C10 (F1)	mg/kg	10	80	190	50	<10	<10	<10	<10	<10
C6 - C10 (F1 minus BTEX)	mg/kg	10	80	190	50	<10	<10	<10	<10	<10
C10 - C16 (F2)	mg/kg	10	3240	7700	3200	1070	12	11	13	<10
C16 - C34 (F3)	mg/kg	10	943	2060	908	323	22	52	64	39
C34 - C50 (F4)	mg/kg	10	39	52	41	22	<10	24	34	15
Gravimetric Heavy Hydrocarbons	mg/kg	1000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Moisture Content	%	1.00	24	22	23	14	16	24	22	22
Surrogate	Unit	Acceptable Limits								
Toluene-d8 (BTEX)	%	60-140	62	67	81	106	63	74	68	67
o-Terphenyl (F2-F4)	%	60-140	110	108	123	100	118	100	107	100

Certified By:

Elena Gorobets



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AGAT WORK ORDER: 21N791280

PROJECT: CE810600

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CLIENT NAME: JACOBS

SAMPLING SITE:

ATTENTION TO: Patrick Kalita

SAMPLED BY:

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2021-08-19

DATE REPORTED: 2021-10-06

		SAMPLE DESCRIPTION: PM-1-SB007-e		PM-1-SB011-a	PM-1-SB011-b	PM-1-SB011-c	PM-1-SB011-d	PM-1-SB008-a	PM-1-SB008-b	PM-1-SB008-c
		SAMPLE TYPE: Soil		Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED: 2021-08-18		2021-08-18	2021-08-18	2021-08-18	2021-08-18	2021-08-18	2021-08-18	2021-08-18
Parameter	Unit	G / S	RDL	2879916	2879917	2879918	2879919	2879920	2879921	2879922
Benzene	mg/kg	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.022
Toluene	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.33
Ethylbenzene	mg/kg	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.83
Xylenes	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	5.28
C6 - C10 (F1)	mg/kg	10	<10	<10	<10	<10	<10	<10	480	110
C6 - C10 (F1 minus BTEX)	mg/kg	10	<10	<10	<10	<10	<10	<10	480	104
C10 - C16 (F2)	mg/kg	10	12	<10	<10	<10	<10	<10	6180	6310
C16 - C34 (F3)	mg/kg	10	41	38	56	57	55	1670	1350	711
C34 - C50 (F4)	mg/kg	10	14	23	26	32	33	20	26	40
Gravimetric Heavy Hydrocarbons	mg/kg	1000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Moisture Content	%	1.00	12	20	18	20	20	20	21	21
Surrogate	Unit	Acceptable Limits								
Toluene-d8 (BTEX)	%	60-140	64	68	63	76	72	74	87	103
o-Terphenyl (F2-F4)	%	60-140	97	97	113	110	108	96	102	103

Certified By:

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CLIENT NAME: JACOBS

SAMPLING SITE:

ATTENTION TO: Patrick Kalita

SAMPLED BY:

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2021-08-19

DATE REPORTED: 2021-10-06

		SAMPLE DESCRIPTION:		PM-1-SB008-d	PM-1-SB008-e	PM-1-SB041-a	PM-1-SB041-b	PM-1-SB041-c	PM-1-SB009-a	PM-1-SB009-b	PM-1-SB009-c
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2021-08-18	2021-08-18	2021-08-18	2021-08-18	2021-08-18	2021-08-18	2021-08-18	2021-08-18
Parameter	Unit	G / S	RDL	2879924	2879925	2879926	2879927	2879928	2879930	2879931	2879932
Benzene	mg/kg		0.005	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Toluene	mg/kg		0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ethylbenzene	mg/kg		0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Xylenes	mg/kg		0.05	0.18	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
C6 - C10 (F1)	mg/kg		10	<10	<10	<10	<10	<10	<10	<10	<10
C6 - C10 (F1 minus BTEX)	mg/kg		10	<10	<10	<10	<10	<10	<10	<10	<10
C10 - C16 (F2)	mg/kg		10	1400	294	<10	<10	<10	<10	<10	<10
C16 - C34 (F3)	mg/kg		10	319	102	34	<10	24	31	<10	42
C34 - C50 (F4)	mg/kg		10	<10	11	<10	<10	10	<10	<10	19
Gravimetric Heavy Hydrocarbons	mg/kg		1000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Moisture Content	%		1.00	22	12	17	21	21	20	19	23
Surrogate	Unit	Acceptable Limits									
Toluene-d8 (BTEX)	%		60-140	87	94	84	86	77	90	83	82
o-Terphenyl (F2-F4)	%		60-140	111	110	105	109	110	111	105	109

Certified By:

Elena Gorobets



AGAT Laboratories

Certificate of Analysis

AGAT WORK ORDER: 21N791280

PROJECT: CE810600

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CLIENT NAME: JACOBS

SAMPLING SITE:

ATTENTION TO: Patrick Kalita

SAMPLED BY:

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2021-08-19

DATE REPORTED: 2021-10-06

		SAMPLE DESCRIPTION:		DUP-1	DUP-2	DUP-3	DUP-4	DUP-5	DUP-6
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2021-08-18	2021-08-18	2021-08-18	2021-08-18	2021-08-18	2021-08-18
Parameter	Unit	G / S	RDL	2879933	2879935	2879936	2879937	2879938	2879939
Benzene	mg/kg	0.005	<0.005	<0.005	<0.005	0.010	<0.005	<0.005	<0.005
Toluene	mg/kg	0.05	<0.05	<0.05	<0.05	0.25	<0.05	<0.05	<0.05
Ethylbenzene	mg/kg	0.01	<0.01	<0.01	<0.01	0.61	<0.01	<0.01	<0.01
Xylenes	mg/kg	0.05	<0.05	<0.05	<0.05	3.88	<0.05	<0.05	<0.05
C6 - C10 (F1)	mg/kg	10	<10	<10	<10	93	<10	<10	<10
C6 - C10 (F1 minus BTEX)	mg/kg	10	<10	<10	<10	88	<10	<10	<10
C10 - C16 (F2)	mg/kg	10	<10	<10	<10	7610	311	<10	<10
C16 - C34 (F3)	mg/kg	10	33	42	1650	101	20	33	33
C34 - C50 (F4)	mg/kg	10	19	14	22	<10	11	18	18
Gravimetric Heavy Hydrocarbons	mg/kg	1000	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Moisture Content	%	1.00	23	21	19	13	19	23	23
Surrogate	Unit	Acceptable Limits							
Toluene-d8 (BTEX)	%	60-140	84	88	90	87	87	81	81
o-Terphenyl (F2-F4)	%	60-140	106	102	105	108	104	98	98

Certified By:

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CLIENT NAME: JACOBS

SAMPLING SITE:

ATTENTION TO: Patrick Kalita

SAMPLED BY:

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2021-08-19

DATE REPORTED: 2021-10-06

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

2879861-2879939 Results are based on the dry weight of the sample.

The C6-C10 (F1) fraction is calculated using toluene response factor.

The C10 - C16 (F2), C16 - C34 (F3), and C34 - C50 (F4) fractions are calculated using the average response factor for n-C10, n-C16, and n-C34.

Gravimetric Heavy Hydrocarbons (F4g) are not included in and cannot be added to the Total C6-C50 and are only determined if the chromatogram of the C34 - C50 hydrocarbons indicates that hydrocarbons >C50 are present.

Quality control data is available upon request.

Assistance in the interpretation of data is available upon request.

This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.

nC6 and nC10 response factors are within 30% of Toluene response factor.

nC10, nC16 and nC34 response factors are within 10% of their average.

C50 response factor is within 70% of nC10 + nC16 + nC34 average.

Linearity is within 15%.

The chromatogram returned to baseline by the retention time of nC50.

C6 - C10 (F1 minus BTEX) is a calculated parameter. The calculated value is F1 minus BTEX. The calculated parameter is non-accredited. The parameters that are components of the calculation are accredited.

C>10 - C16 (F2- Napthalene) is a calculated parameter. The calculated value is F2 - Napthalene (if requested). The calculated parameter is non-accredited. The parameters that are components of the calculation are accredited.

C>16 - C34 (F3-PAH) is a calculated parameter. The calculated value is F3-PAH (if requested). The calculated parameter is non-accredited. The parameters that are components of the calculation are accredited.

Xylenes is a calculated parameter. The calculated value is the sum of m&p-Xylenes + o-Xylene. The calculated parameter is non-accredited. The parameters that are components of the calculation are accredited.

Extraction and holding times were met for this sample.

Analysis performed at AGAT Calgary (unless marked by *)

Certified By:

Elena Gorobets



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PROJECT: CE810600

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CLIENT NAME: JACOBS

SAMPLING SITE:

ATTENTION TO: Patrick Kalita

SAMPLED BY:

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Non-Methanol Field Stabilized)

DATE RECEIVED: 2021-08-19

DATE REPORTED: 2021-10-06

SAMPLE DESCRIPTION: PM-1-SB041-d

SAMPLE TYPE: Soil

DATE SAMPLED: 2021-08-18

Parameter Unit G / S RDL 2879929

Benzene mg/kg 0.005 <0.005

Toluene mg/kg 0.05 <0.05

Ethylbenzene mg/kg 0.01 <0.01

Xylenes mg/kg 0.05 <0.05

C6 - C10 (F1) mg/kg 10 <10

C6 - C10 (F1 minus BTEX) mg/kg 10 <10

C10 - C16 (F2) mg/kg 10 <10

C16 - C34 (F3) mg/kg 10 29

C34 - C50 (F4) mg/kg 10 14

Gravimetric Heavy Hydrocarbons mg/kg 1000 N/A

Moisture Content % 1.00 21

Surrogate Unit Acceptable Limits

Toluene-d8 (BTEX) % 60-140 82

o-Terphenyl (F2-F4) % 60-140 109

Certified By:

Elena Gorobets



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CLIENT NAME: JACOBS

ATTENTION TO: Patrick Kalita

SAMPLING SITE:

SAMPLED BY:

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Non-Methanol Field Stabilized)

DATE RECEIVED: 2021-08-19

DATE REPORTED: 2021-10-06

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

2879929

Results are based on the dry weight of the sample.

The C6-C10 (F1) fraction is calculated using toluene response factor.

The C10 - C16 (F2), C16 - C34 (F3), and C34 - C50 (F4) fractions are calculated using the average response factor for n-C10, n-C16, and n-C34.

Gravimetric Heavy Hydrocarbons (F4g) are not included in and cannot be added to the Total C6-C50 and are only determined if the chromatogram of the C34 - C50 hydrocarbons indicates that hydrocarbons >C50 are present.

Quality control data is available upon request.

Assistance in the interpretation of data is available upon request.

This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.

nC6 and nC10 response factors are within 30% of Toluene response factor.

nC10, nC16 and nC34 response factors are within 10% of their average.

C50 response factor is within 70% of nC10 + nC16 + nC34 average.

Linearity is within 15%.

The chromatogram returned to baseline by the retention time of nC50.

C6 - C10 (F1 minus BTEX) is a calculated parameter. The calculated value is F1 minus BTEX. The calculated parameter is non-accredited. The parameters that are components of the calculation are accredited.

C>10 - C16 (F2- Naphthalene) is a calculated parameter. The calculated value is F2 - Naphthalene (if requested). The calculated parameter is non-accredited. The parameters that are components of the calculation are accredited.

C>16 - C34 (F3-PAH) is a calculated parameter. The calculated value is F3-PAH (if requested). The calculated parameter is non-accredited. The parameters that are components of the calculation are accredited.

Xylenes is a calculated parameter. The calculated value is the sum of m&p-Xylenes + o-Xylene. The calculated parameter is non-accredited. The parameters that are components of the calculation are accredited.

Extraction and holding times were met for this sample.

Terracore vialss received empty

Soil samples for BTEXS/VPH analysis were not sampled using hermetic sampling or methanol field stabilization.

Analysis performed at AGAT Calgary (unless marked by *)

Certified By:

Elena Gorobets



Certificate of Analysis

AGAT WORK ORDER: 21N791280

PROJECT: CE810600

2910 12TH STREET NE
CALGARY, ALBERTA
CANADA T2E 7P7
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FAX (403)735-2771
<http://www.agatlabs.com>

CLIENT NAME: JACOBS

SAMPLING SITE:

ATTENTION TO: Patrick Kalita

SAMPLED BY:

Polyaromatic Hydrocarbon Analysis - Soil

DATE RECEIVED: 2021-08-19

DATE REPORTED: 2021-10-06

		SAMPLE DESCRIPTION:		PM-1-SB001-a	PM-1-SB001-b	PM-1-SB001-c	PM-1-SB001-d	PM-1-SB002-a	PM-1-SB002-b	PM-1-SB002-c	PM-1-SB002-d
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2021-08-17	2021-08-17	2021-08-17	2021-08-17	2021-08-17	2021-08-17	2021-08-17	2021-08-17
Parameter	Unit	G / S	RDL	2879861	2879885	2879886	2879887	2879888	2879889	2879890	2879891
Acenaphthene	mg/kg	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Acenaphthylene	mg/kg	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Anthracene	mg/kg	0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Acridine	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Quinoline	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Naphthalene	mg/kg	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2-Methylnaphthalene	mg/kg	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Fluorene	mg/kg	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Phenanthrene	mg/kg	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Fluoranthene	mg/kg	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Pyrene	mg/kg	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Benzo[a]anthracene	mg/kg	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Chrysene	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo[b+j]fluoranthene	mg/kg	0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Benzo[k]fluoranthene	mg/kg	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Benzo[a]pyrene	mg/kg	0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Indeno[1,2,3-cd]pyrene	mg/kg	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Dibenzo[ah]anthracene	mg/kg	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Benzo[ghi]perylene	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
B[a]P TPE	mg/kg	0.0225	0.0225	0.0225	0.0225	0.0225	0.0225	0.0225	0.0225	0.0225	0.0225
IACR (Coarse Soil)		0.0136	0.0136	0.0136	0.0136	0.0136	0.0136	0.0136	0.0136	0.0136	0.0136
IACR (Fine Soil)		0.0259	0.0259	0.0259	0.0259	0.0259	0.0259	0.0259	0.0259	0.0259	0.0259
Surrogate	Unit	Acceptable Limits									
p-Terphenyl-d14 (PAH)	%	50-140	103	100	103	107	105	104	102	105	
p-Naphthalene-d8 (PAH)	%	50-150	91	90	89	92	95	100	92	95	
P_Pyrene-d10 (PAH)	%	50-150	116	115	115	124	114	117	113	118	

Certified By:

Elena Gorobets



AGAT Laboratories

Certificate of Analysis

AGAT WORK ORDER: 21N791280

PROJECT: CE810600

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CLIENT NAME: JACOBS

SAMPLING SITE:

ATTENTION TO: Patrick Kalita

SAMPLED BY:

Polyaromatic Hydrocarbon Analysis - Soil

DATE RECEIVED: 2021-08-19

DATE REPORTED: 2021-10-06

		SAMPLE DESCRIPTION:		PM-1-SB003-a	PM-1-SB003-b	PM-1-SB003-c	PM-1-SB003-d	PM-1-SB004-a	PM-1-SB004-b	PM-1-SB004-c	PM-1-SB004-d
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2021-08-17	2021-08-17	2021-08-17	2021-08-17	2021-08-17	2021-08-17	2021-08-17	2021-08-17
Parameter	Unit	G / S	RDL	2879892	2879893	2879894	2879895	2879896	2879897	2879898	2879899
Acenaphthene	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Acenaphthylene	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Anthracene	mg/kg		0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Acridine	mg/kg		0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Quinoline	mg/kg		0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Naphthalene	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.039	0.062
2-Methylnaphthalene	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.016	0.048
Fluorene	mg/kg		0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Phenanthrene	mg/kg		0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Fluoranthene	mg/kg		0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Pyrene	mg/kg		0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Benzo[a]anthracene	mg/kg		0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Chrysene	mg/kg		0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo[b+j]fluoranthene	mg/kg		0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Benzo[k]fluoranthene	mg/kg		0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Benzo[a]pyrene	mg/kg		0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Indeno[1,2,3-cd]pyrene	mg/kg		0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Dibenzo[ah]anthracene	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Benzo[ghi]perylene	mg/kg		0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
B[a]P TPE	mg/kg		0.0225	0.0225	0.0225	0.0225	0.0225	0.0225	0.0225	0.0225	0.0225
IACR (Coarse Soil)			0.0136	0.0136	0.0136	0.0136	0.0136	0.0136	0.0136	0.0136	0.0136
IACR (Fine Soil)			0.0259	0.0259	0.0259	0.0259	0.0259	0.0259	0.0259	0.0259	0.0259
Surrogate	Unit	Acceptable Limits									
p-Terphenyl-d14 (PAH)	%	50-140		105	105	102	106	108	107	103	117
p-Naphthalene-d8 (PAH)	%	50-150		98	91	91	95	94	95	90	102
P_Pyrene-d10 (PAH)	%	50-150		122	118	118	118	117	125	118	131

Certified By:

Elena Gorobets



Certificate of Analysis

AGAT WORK ORDER: 21N791280

PROJECT: CE810600

2910 12TH STREET NE
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CANADA T2E 7P7
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<http://www.agatlabs.com>

CLIENT NAME: JACOBS

SAMPLING SITE:

ATTENTION TO: Patrick Kalita

SAMPLED BY:

Polyaromatic Hydrocarbon Analysis - Soil

DATE RECEIVED: 2021-08-19

DATE REPORTED: 2021-10-06

		SAMPLE DESCRIPTION: PM-1-SB004-e		PM-1-SB004-f	PM-1-SB005-a	PM-1-SB005-b	PM-1-SB005-c	PM-1-SB005-d	PM-1-SB005-e	PM-1-SB006-a
		SAMPLE TYPE: Soil		Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED: 2021-08-17		2021-08-17	2021-08-17	2021-08-17	2021-08-17	2021-08-17	2021-08-17	2021-08-17
Parameter	Unit	G / S	RDL	2879900	2879901	2879902	2879903	2879904	2879905	2879906
Acenaphthene	mg/kg	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Acenaphthylene	mg/kg	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Anthracene	mg/kg	0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Acridine	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Quinoline	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Naphthalene	mg/kg	0.005	<0.005	<0.005	<0.005	<0.005	0.194	0.007	<0.005	<0.005
2-Methylnaphthalene	mg/kg	0.005	<0.005	<0.005	<0.005	<0.005	0.156	<0.005	<0.005	<0.005
Fluorene	mg/kg	0.01	<0.02	<0.02	<0.02	<0.02	0.06	<0.02	<0.02	<0.02
Phenanthrene	mg/kg	0.02	<0.02	<0.02	<0.02	<0.02	0.03	<0.02	<0.02	<0.02
Fluoranthene	mg/kg	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Pyrene	mg/kg	0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.01
Benzo[a]anthracene	mg/kg	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Chrysene	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo[b+j]fluoranthene	mg/kg	0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Benzo[k]fluoranthene	mg/kg	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Benzo[a]pyrene	mg/kg	0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Indeno[1,2,3-cd]pyrene	mg/kg	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Dibenzo[ah]anthracene	mg/kg	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Benzo[ghi]perylene	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
B[a]P TPE	mg/kg	0.0225	0.0225	0.0225	0.0225	0.0225	0.0225	0.0225	0.0225	0.0225
IACR (Coarse Soil)		0.0136	0.0136	0.0136	0.0136	0.0136	0.0136	0.0136	0.0136	0.0136
IACR (Fine Soil)		0.0259	0.0259	0.0259	0.0259	0.0259	0.0259	0.0259	0.0259	0.0259
Surrogate	Unit	Acceptable Limits								
p-Terphenyl-d14 (PAH)	%	50-140		109	101	104	114	108	98	103
p-Naphthalene-d8 (PAH)	%	50-150		99	89	87	107	77	98	87
P_Pyrene-d10 (PAH)	%	50-150		126	116	119	127	116	110	120

Certified By:

Elena Gorobets



AGAT Laboratories

Certificate of Analysis

AGAT WORK ORDER: 21N791280

PROJECT: CE810600

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<http://www.agatlabs.com>

CLIENT NAME: JACOBS

SAMPLING SITE:

ATTENTION TO: Patrick Kalita

SAMPLED BY:

Polyaromatic Hydrocarbon Analysis - Soil

DATE RECEIVED: 2021-08-19

DATE REPORTED: 2021-10-06

		SAMPLE DESCRIPTION: PM-1-SB006-b		PM-1-SB006-c	PM-1-SB006-d	PM-1-SB006-e	PM-1-SB007-a	PM-1-SB007-b	PM-1-SB007-c	PM-1-SB007-d
		SAMPLE TYPE: Soil		Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED: 2021-08-18		2021-08-18	2021-08-18	2021-08-18	2021-08-18	2021-08-18	2021-08-18	2021-08-18
Parameter	Unit	G / S	RDL	2879908	2879909	2879910	2879911	2879912	2879913	2879914
Acenaphthene	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Acenaphthylene	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Anthracene	mg/kg		0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Acridine	mg/kg		0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Quinoline	mg/kg		0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Naphthalene	mg/kg		0.005	0.230	0.757	0.258	0.093	<0.005	<0.005	<0.005
2-Methylnaphthalene	mg/kg		0.005	0.038	0.813	0.306	0.107	<0.005	<0.005	<0.005
Fluorene	mg/kg		0.01	0.05	0.13	0.05	0.02	<0.02	<0.02	<0.02
Phenanthrene	mg/kg		0.02	0.03	0.07	0.03	<0.02	<0.02	<0.02	<0.02
Fluoranthene	mg/kg		0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Pyrene	mg/kg		0.01	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01
Benzo[a]anthracene	mg/kg		0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Chrysene	mg/kg		0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo[b+j]fluoranthene	mg/kg		0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Benzo[k]fluoranthene	mg/kg		0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Benzo[a]pyrene	mg/kg		0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Indeno[1,2,3-cd]pyrene	mg/kg		0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Dibenzo[ah]anthracene	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Benzo[ghi]perylene	mg/kg		0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
B[a]P TPE	mg/kg		0.0225	0.0225	0.0225	0.0225	0.0225	0.0225	0.0225	0.0225
IACR (Coarse Soil)			0.0136	0.0136	0.0136	0.0136	0.0136	0.0136	0.0136	0.0136
IACR (Fine Soil)			0.0259	0.0259	0.0259	0.0259	0.0259	0.0259	0.0259	0.0259
Surrogate	Unit	Acceptable Limits								
p-Terphenyl-d14 (PAH)	%	50-140		99	108	112	104	107	107	106
p-Naphthalene-d8 (PAH)	%	50-150		87	71	84	85	86	87	90
P_Pyrene-d10 (PAH)	%	50-150		109	116	127	115	125	121	123

Certified By:

Elena Gorobets



AGAT Laboratories

Certificate of Analysis

AGAT WORK ORDER: 21N791280

PROJECT: CE810600

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CLIENT NAME: JACOBS

SAMPLING SITE:

ATTENTION TO: Patrick Kalita

SAMPLED BY:

Polyaromatic Hydrocarbon Analysis - Soil

DATE RECEIVED: 2021-08-19

DATE REPORTED: 2021-10-06

		SAMPLE DESCRIPTION:		PM-1-SB007-e	PM-1-SB011-a	PM-1-SB011-b	PM-1-SB011-c	PM-1-SB011-d	PM-1-SB008-a	PM-1-SB008-b	PM-1-SB008-c
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2021-08-18	2021-08-18	2021-08-18	2021-08-18	2021-08-18	2021-08-18	2021-08-18	2021-08-18
Parameter	Unit	G / S	RDL	2879916	2879917	2879918	2879919	2879920	2879921	2879922	2879923
Acenaphthene	mg/kg	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Acenaphthylene	mg/kg	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Anthracene	mg/kg	0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Acridine	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Quinoline	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Naphthalene	mg/kg	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.237	0.652	0.266
2-Methylnaphthalene	mg/kg	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.018	0.733	0.292
Fluorene	mg/kg	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.08	0.09	0.04
Phenanthrene	mg/kg	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.05	0.06	0.02
Fluoranthene	mg/kg	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Pyrene	mg/kg	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	0.02	0.01
Benzo[a]anthracene	mg/kg	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Chrysene	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo[b+j]fluoranthene	mg/kg	0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Benzo[k]fluoranthene	mg/kg	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Benzo[a]pyrene	mg/kg	0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Indeno[1,2,3-cd]pyrene	mg/kg	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Dibenzo[ah]anthracene	mg/kg	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Benzo[ghi]perylene	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
B[a]P TPE	mg/kg	0.0225	0.0225	0.0225	0.0225	0.0225	0.0225	0.0225	0.0225	0.0225	0.0225
IACR (Coarse Soil)		0.0136	0.0136	0.0136	0.0136	0.0136	0.0136	0.0136	0.0136	0.0136	0.0136
IACR (Fine Soil)		0.0259	0.0259	0.0259	0.0259	0.0259	0.0259	0.0259	0.0259	0.0259	0.0259
Surrogate	Unit	Acceptable Limits									
p-Terphenyl-d14 (PAH)	%	50-140		102	110	109	104	108	107	115	107
p-Naphthalene-d8 (PAH)	%	50-150		87	87	93	85	89	75	87	80
P_Pyrene-d10 (PAH)	%	50-150		117	123	119	114	123	111	125	120

Certified By:

Elena Gorobets



AGAT Laboratories

Certificate of Analysis

AGAT WORK ORDER: 21N791280

PROJECT: CE810600

2910 12TH STREET NE
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CLIENT NAME: JACOBS

SAMPLING SITE:

ATTENTION TO: Patrick Kalita

SAMPLED BY:

Polyaromatic Hydrocarbon Analysis - Soil

DATE RECEIVED: 2021-08-19

DATE REPORTED: 2021-10-06

		SAMPLE DESCRIPTION:		PM-1-SB008-d	PM-1-SB008-e	PM-1-SB041-a	PM-1-SB041-b	PM-1-SB041-c	PM-1-SB041-d	PM-1-SB009-a	PM-1-SB009-b
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2021-08-18	2021-08-18	2021-08-18	2021-08-18	2021-08-18	2021-08-18	2021-08-18	2021-08-18
Parameter	Unit	G / S	RDL	2879924	2879925	2879926	2879927	2879928	2879929	2879930	2879931
Acenaphthene	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Acenaphthylene	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Anthracene	mg/kg		0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Acridine	mg/kg		0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Quinoline	mg/kg		0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Naphthalene	mg/kg		0.005	0.159	0.037	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2-Methylnaphthalene	mg/kg		0.005	0.204	0.038	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Fluorene	mg/kg		0.01	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Phenanthrene	mg/kg		0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Fluoranthene	mg/kg		0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Pyrene	mg/kg		0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Benzo[a]anthracene	mg/kg		0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Chrysene	mg/kg		0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo[b+j]fluoranthene	mg/kg		0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Benzo[k]fluoranthene	mg/kg		0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Benzo[a]pyrene	mg/kg		0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Indeno[1,2,3-cd]pyrene	mg/kg		0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Dibenzo[ah]anthracene	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Benzo[ghi]perylene	mg/kg		0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
B[a]P TPE	mg/kg		0.0225	0.0225	0.0225	0.0225	0.0225	0.0225	0.0225	0.0225	0.0225
IACR (Coarse Soil)			0.0136	0.0136	0.0136	0.0136	0.0136	0.0136	0.0136	0.0136	0.0136
IACR (Fine Soil)			0.0259	0.0259	0.0259	0.0259	0.0259	0.0259	0.0259	0.0259	0.0259
Surrogate	Unit	Acceptable Limits									
p-Terphenyl-d14 (PAH)	%	50-140		112	113	110	107	109	115	106	110
p-Naphthalene-d8 (PAH)	%	50-150		87	84	99	98	96	104	96	97
P_Pyrene-d10 (PAH)	%	50-150		125	106	104	107	106	112	104	106

Certified By:

Elena Gorobets



Certificate of Analysis

AGAT WORK ORDER: 21N791280

PROJECT: CE810600

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CLIENT NAME: JACOBS

SAMPLING SITE:

ATTENTION TO: Patrick Kalita

SAMPLED BY:

Polyaromatic Hydrocarbon Analysis - Soil

DATE RECEIVED: 2021-08-19

DATE REPORTED: 2021-10-06

SAMPLE DESCRIPTION: PM-1-SB009-c			DUP-1	DUP-2	DUP-3	DUP-4	DUP-5	DUP-6		
SAMPLE TYPE: Soil			Soil	Soil	Soil	Soil	Soil	Soil		
DATE SAMPLED: 2021-08-18			2021-08-18	2021-08-18	2021-08-18	2021-08-18	2021-08-18	2021-08-18		
Parameter	Unit	G / S	RDL	2879932	2879933	2879935	2879936	2879937	2879938	2879939
Acenaphthene	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Acenaphthylene	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Anthracene	mg/kg		0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Acridine	mg/kg		0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Quinoline	mg/kg		0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Naphthalene	mg/kg		0.005	<0.005	<0.005	<0.005	0.618	0.033	<0.005	<0.005
2-Methylnaphthalene	mg/kg		0.005	<0.005	<0.005	<0.005	0.629	0.046	<0.005	<0.005
Fluorene	mg/kg		0.01	<0.02	<0.02	<0.02	0.11	<0.02	<0.02	<0.02
Phenanthrene	mg/kg		0.02	<0.02	<0.02	<0.02	0.06	<0.02	<0.02	<0.02
Fluoranthene	mg/kg		0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Pyrene	mg/kg		0.01	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	<0.01
Benzo[a]anthracene	mg/kg		0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Chrysene	mg/kg		0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo[b+j]fluoranthene	mg/kg		0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Benzo[k]fluoranthene	mg/kg		0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Benzo[a]pyrene	mg/kg		0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Indeno[1,2,3-cd]pyrene	mg/kg		0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Dibenzo[ah]anthracene	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Benzo[ghi]perylene	mg/kg		0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
B[a]P TPE	mg/kg		0.0225	0.0225	0.0225	0.0225	0.0225	0.0225	0.0225	0.0225
IACR (Coarse Soil)			0.0136	0.0136	0.0136	0.0136	0.0136	0.0136	0.0136	0.0136
IACR (Fine Soil)			0.0259	0.0259	0.0259	0.0259	0.0259	0.0259	0.0259	0.0259
Surrogate	Unit	Acceptable Limits								
p-Terphenyl-d14 (PAH)	%	50-140	105	98	112	104	110	110	110	108
p-Naphthalene-d8 (PAH)	%	50-150	93	90	88	74	85	101	101	97
P_Pyrene-d10 (PAH)	%	50-150	103	97	127	110	124	110	110	106

Certified By:

Elena Gorobets



AGAT Laboratories

Certificate of Analysis

AGAT WORK ORDER: 21N791280

PROJECT: CE810600

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CLIENT NAME: JACOBS

SAMPLING SITE:

ATTENTION TO: Patrick Kalita

SAMPLED BY:

Polyaromatic Hydrocarbon Analysis - Soil

DATE RECEIVED: 2021-08-19

DATE REPORTED: 2021-10-06

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

2879861-2879939 Results are based on the dry weight of the sample.

Based on GC/MS target ion analysis.

Isomers Benzo(b)fluoranthene and Benzo(j)fluoranthene have the same GC retention time and are reported as the sum based on the Benzo(b)fluoranthene response.

B[a]P TPE, IACR (Coarse) and IACR (Fine) are calculated parameters. They are calculated according to the Alberta Tier 1 Soil and Groundwater Remediation Guidelines, January 10, 2019. Note that if the analysis returns non-detects for a parameter, 1/2 the detection limit is entered into the formulas. As per the Guidance Manual for Environmental Site Characterization in Support of Environmental and Human Health Risk Assessment Volume 4 Analytical Methods (2016).

Analysis performed at AGAT Calgary (unless marked by *)

Certified By:

Elena Gorobets

Quality Assurance

CLIENT NAME: JACOBS

PROJECT: CE810600

SAMPLING SITE:

AGAT WORK ORDER: 21N791280

ATTENTION TO: Patrick Kalita

SAMPLED BY:

Soil Analysis

RPT Date: Oct 06, 2021			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE				
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper

Soil Analysis - Total Organic Carbon (W-B Wet Oxidation)

Total Organic Carbon	2875252	0.60	0.71	NA	< 0.15	90%	80%	120%		99%	80%	120%
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Comments: Matrix spike NA: Spike level < native concentration. Matrix spike acceptance limits do not apply and are not calculated.
Duplicate NA: results are less than 5X the RDL and RDP will not be calculated.

Soil Analysis - Lime Requirement

Lime Requirement to pH 6.5**	886	0447	<6.5	<6.5	NA	N/A
Lime Requirement @ pH 7.0**	886	0447	<7.0	<7.0	NA	N/A

Comments: Duplicate NA: results are less than 5X the RDL and RDP will not be calculated.

Nutrients Package 2

Available Phosphorus - P	2879906	<1	<1	NA	< 1	104%	80%	120%	98%	80%	120%	NA	80%	120%
Available Potassium	2879906 2879906	166	162	2.1%	< 8	94%	80%	120%	85%	80%	120%	NA	80%	120%
Available Sulfur (SO4-S)	2879906 2879906	1520	1640	7.7%	< 3	97%	80%	120%	118%	80%	120%	NA	80%	120%

Comments: Matrix spike NA: Spike level < native concentration. Matrix spike acceptance limits do not apply and are not calculated.
Duplicate NA: results are less than 5X the RDL and RDP will not be calculated.

Soil Analysis - Alkalinity, Bulk Density, Moisture, pH (Sat. Paste)

Bicarbonate, Soluble	2363	177	180	1.7%	< 5	80%	120%		80%	120%		80%	120%
Carbonate, Soluble	2363	<5	<5	NA	< 5	80%	120%		80%	120%		80%	120%
Bulk Density, Crude - Wet (As Received Soil)	2879898 2879898	1855	1869	0.8%	N/A	97%	80%	120%					
Moisture Content (Wet Weight)**	3363 7534	14.4	14.0	2.8%	< 0.01								
pH (Saturated Paste)	2879838 9838	6.01	6.08	1.2%	N/A	100%	90%	110%					

Comments: If the RPD value is NA, the results of the duplicates are under 5X the RDL and will not be calculated.

Particle Size by Sieve

Sieve Analysis - 75 microns	3037199	22	25	12.8%	< 1	100%	80%	120%
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Comments: Duplicate NA: results are less than 5X the RDL and RDP will not be calculated.

Certified By:



Quality Assurance

CLIENT NAME: JACOBS

PROJECT: CE810600

SAMPLING SITE:

AGAT WORK ORDER: 21N791280

ATTENTION TO: Patrick Kalita

SAMPLED BY:

Trace Organics Analysis

RPT Date: Oct 06, 2021			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)															
Benzene	3456	2879885	<0.005	<0.005	NA	< 0.005	119%	60%	140%	81%	60%	140%	91%	60%	140%
Toluene	3456	2879885	<0.05	<0.05	NA	< 0.05	110%	60%	140%	87%	60%	140%	90%	60%	140%
Ethylbenzene	3456	2879885	<0.01	<0.01	NA	< 0.01	77%	60%	140%	90%	60%	140%	91%	60%	140%
Xylenes	3456	2879885	<0.05	<0.05	NA	< 0.05	96%	60%	140%	90%	60%	140%	89%	60%	140%
C6 - C10 (F1)	3456	2879885	<10	<10	NA	< 10	96%	60%	140%	95%	60%	140%	85%	60%	140%
C10 - C16 (F2)	6403	2879885	<10	<10	NA	< 10	109%	60%	140%	112%	60%	140%	130%	60%	140%
C16 - C34 (F3)	6403	2879885	48	49	NA	< 10	112%	60%	140%	111%	60%	140%	126%	60%	140%
C34 - C50 (F4)	6403	2879885	20	21	NA	< 10	103%	60%	140%	96%	60%	140%	112%	60%	140%

Comments: Duplicate NA: results are less than 5X the RDL and RDP will not be calculated.
The sample spikes and dups are not from the same sample ID.

Polyaromatic Hydrocarbon Analysis - Soil

Acenaphthene	993	2879885	<0.005	<0.005	NA	< 0.005	103%	50%	140%	97%	50%	140%	98%	50%	140%
Acenaphthylene	993	2879885	<0.005	<0.005	NA	< 0.005	105%	50%	140%	104%	50%	140%	104%	50%	140%
Anthracene	993	2879885	<0.004	<0.004	NA	< 0.004	99%	50%	140%	109%	50%	140%	107%	50%	140%
Acridine	993	2879885	<0.05	<0.05	NA	< 0.05	99%	50%	140%	119%	50%	140%	93%	50%	140%
Quinoline	993	2879885	<0.05	<0.05	NA	< 0.05	124%	50%	140%	106%	50%	140%	102%	50%	140%
Naphthalene	993	2879885	<0.005	<0.005	NA	< 0.005	109%	50%	140%	95%	50%	140%	93%	50%	140%
2-Methylnaphthalene	993	2879885	<0.005	<0.005	NA	< 0.005	96%	50%	140%	88%	50%	140%	90%	50%	140%
Fluorene	993	2879885	<0.02	<0.02	NA	< 0.01	108%	50%	140%	100%	50%	140%	100%	50%	140%
Phenanthrene	993	2879885	<0.02	<0.02	NA	< 0.02	97%	50%	140%	97%	50%	140%	93%	50%	140%
Fluoranthene	993	2879885	<0.01	<0.01	NA	< 0.01	104%	50%	140%	118%	50%	140%	119%	50%	140%
Pyrene	993	2879885	<0.01	<0.01	NA	< 0.01	104%	50%	140%	105%	50%	140%	99%	50%	140%
Benzo[a]anthracene	993	2879885	<0.02	<0.02	NA	< 0.02	105%	50%	140%	119%	50%	140%	114%	50%	140%
Chrysene	993	2879885	<0.05	<0.05	NA	< 0.05	97%	50%	140%	99%	50%	140%	95%	50%	140%
Benzo[b+j]fluoranthene	993	2879885	<0.03	<0.03	NA	< 0.03	103%	50%	140%	111%	50%	140%	105%	50%	140%
Benzo[k]fluoranthene	993	2879885	<0.02	<0.02	NA	< 0.02	92%	50%	140%	102%	50%	140%	98%	50%	140%
Benzo[a]pyrene	993	2879885	<0.03	<0.03	NA	< 0.03	110%	50%	140%	116%	50%	140%	117%	50%	140%
Indeno[1,2,3-cd]pyrene	993	2879885	<0.02	<0.02	NA	< 0.02	104%	50%	140%	108%	50%	140%	102%	50%	140%
Dibenzo[ah]anthracene	993	2879885	<0.005	<0.005	NA	< 0.005	107%	50%	140%	111%	50%	140%	107%	50%	140%
Benzo[ghi]perylene	993	2879885	<0.05	<0.05	NA	< 0.05	102%	50%	140%	106%	50%	140%	97%	50%	140%

Comments: Duplicate NA: results are less than 5X the RDL and RDP will not be calculated.
The sample spikes and dups are not from the same sample ID.

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

Benzene	3457	2879905	< 0.005	< 0.005	NA	< 0.005	96%	60%	140%	86%	60%	140%	103%	60%	140%
Toluene	3457	2879905	< 0.05	< 0.05	NA	< 0.05	94%	60%	140%	97%	60%	140%	92%	60%	140%
Ethylbenzene	3457	2879905	< 0.01	< 0.01	NA	< 0.01	79%	60%	140%	97%	60%	140%	82%	60%	140%
Xylenes	3457	2879905	< 0.05	0.11	NA	< 0.05	87%	60%	140%	99%	60%	140%	78%	60%	140%
C6 - C10 (F1)	3457	2879905	<10	30	NA	< 10	91%	60%	140%	88%	60%	140%	79%	60%	140%

Quality Assurance

CLIENT NAME: JACOBS

PROJECT: CE810600

SAMPLING SITE:

AGAT WORK ORDER: 21N791280

ATTENTION TO: Patrick Kalita

SAMPLED BY:

Trace Organics Analysis (Continued)

RPT Date: Oct 06, 2021			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
C10 - C16 (F2)	6404	2879905	88	82	7.1%	< 10	100%	60%	140%	100%	60%	140%	96%	60%	140%
C16 - C34 (F3)	6404	2879905	94	93	1.1%	< 10	102%	60%	140%	99%	60%	140%	94%	60%	140%
C34 - C50 (F4)	6404	2879905	33	36	NA	< 10	99%	60%	140%	101%	60%	140%	94%	60%	140%

Comments: Duplicate NA: results are less than 5X the RDL and RDP will not be calculated.
The sample spikes and dups are not from the same sample ID.

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

Benzene	6112	2879925	<0.005	<0.005	NA	< 0.005	100%	60%	140%	97%	60%	140%	120%	60%	140%
Toluene	6112	2879925	<0.05	<0.05	NA	< 0.05	86%	60%	140%	89%	60%	140%	109%	60%	140%
Ethylbenzene	6112	2879925	< 0.01	0.03	NA	< 0.01	83%	60%	140%	89%	60%	140%	105%	60%	140%
Xylenes	6112	2879925	< 0.05	0.23	NA	< 0.05	85%	60%	140%	86%	60%	140%	102%	60%	140%
C6 - C10 (F1)	6112	2879925	<10	20	NA	< 10	81%	60%	140%	87%	60%	140%	118%	60%	140%
C10 - C16 (F2)	6403	2879925	294	216	30.6%	< 10	109%	60%	140%	111%	60%	140%	NA	60%	140%
C16 - C34 (F3)	6403	2879925	102	81	23.0%	< 10	112%	60%	140%	110%	60%	140%	135%	60%	140%
C34 - C50 (F4)	6403	2879925	11	<10	NA	< 10	103%	60%	140%	96%	60%	140%	111%	60%	140%

Comments: Duplicate NA: results are less than 5X the RDL and RDP will not be calculated.
The sample spikes and dups are not from the same sample ID.

Matrix spike NA: Spike level < native concentration. Matrix spike acceptance limits do not apply and are not calculated.

Polyaromatic Hydrocarbon Analysis - Soil

Acenaphthene	994	2879905	<0.005	<0.005	NA	< 0.005	103%	50%	140%	96%	50%	140%	90%	50%	140%
Acenaphthylene	994	2879905	<0.005	<0.005	NA	< 0.005	105%	50%	140%	106%	50%	140%	97%	50%	140%
Anthracene	994	2879905	<0.004	<0.004	NA	< 0.004	99%	50%	140%	108%	50%	140%	111%	50%	140%
Acridine	994	2879905	<0.05	<0.05	NA	< 0.05	99%	50%	140%	109%	50%	140%	104%	50%	140%
Quinoline	994	2879905	<0.05	<0.05	NA	< 0.05	124%	50%	140%	105%	50%	140%	121%	50%	140%
Naphthalene	994	2879905	0.007	0.006	NA	< 0.005	109%	50%	140%	91%	50%	140%	93%	50%	140%
2-Methylnaphthalene	994	2879905	<0.005	<0.005	NA	< 0.005	96%	50%	140%	89%	50%	140%	96%	50%	140%
Fluorene	994	2879905	<0.02	<0.02	NA	< 0.01	108%	50%	140%	100%	50%	140%	83%	50%	140%
Phenanthrene	994	2879905	<0.02	<0.02	NA	< 0.02	97%	50%	140%	94%	50%	140%	97%	50%	140%
Fluoranthene	994	2879905	<0.01	<0.01	NA	< 0.01	104%	50%	140%	118%	50%	140%	120%	50%	140%
Pyrene	994	2879905	<0.01	<0.01	NA	< 0.01	104%	50%	140%	102%	50%	140%	102%	50%	140%
Benzo[a]anthracene	994	2879905	<0.02	<0.02	NA	< 0.02	105%	50%	140%	115%	50%	140%	119%	50%	140%
Chrysene	994	2879905	<0.05	<0.05	NA	< 0.05	97%	50%	140%	99%	50%	140%	101%	50%	140%
Benzo[b+j]fluoranthene	994	2879905	<0.03	<0.03	NA	< 0.03	103%	50%	140%	110%	50%	140%	113%	50%	140%
Benzo[k]fluoranthene	994	2879905	<0.02	<0.02	NA	< 0.02	92%	50%	140%	100%	50%	140%	105%	50%	140%
Benzo[a]pyrene	994	2879905	<0.03	<0.03	NA	< 0.03	110%	50%	140%	119%	50%	140%	116%	50%	140%
Indeno[1,2,3-cd]pyrene	994	2879905	<0.02	<0.02	NA	< 0.02	104%	50%	140%	102%	50%	140%	106%	50%	140%
Dibenzo[ah]anthracene	994	2879905	<0.005	<0.005	NA	< 0.005	107%	50%	140%	113%	50%	140%	115%	50%	140%
Benzo[ghi]perylene	994	2879905	<0.05	<0.05	NA	< 0.05	102%	50%	140%	105%	50%	140%	106%	50%	140%

Quality Assurance

CLIENT NAME: JACOBS

PROJECT: CE810600

SAMPLING SITE:

AGAT WORK ORDER: 21N791280

ATTENTION TO: Patrick Kalita

SAMPLED BY:

Trace Organics Analysis (Continued)

RPT Date: Oct 06, 2021			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE			MATRIX SPIKE			
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper

Comments: Duplicate NA: results are less than 5X the RDL and RDP will not be calculated.
The sample spikes and dups are not from the same sample ID.

Polyaromatic Hydrocarbon Analysis - Soil

Acenaphthene	3993	2879925	<0.005	<0.005	NA	< 0.005	108%	50%	140%	109%	50%	140%	111%	50%	140%
Acenaphthylene	3993	2879925	<0.005	<0.005	NA	< 0.005	106%	50%	140%	105%	50%	140%	108%	50%	140%
Anthracene	3993	2879925	<0.004	<0.004	NA	< 0.004	98%	50%	140%	105%	50%	140%	109%	50%	140%
Acridine	3993	2879925	<0.05	<0.05	NA	< 0.05	105%	50%	140%	116%	50%	140%	109%	50%	140%
Quinoline	3993	2879925	<0.05	<0.05	NA	< 0.05	126%	50%	140%	109%	50%	140%	100%	50%	140%
Naphthalene	3993	2879925	0.037	0.018	NA	< 0.005	115%	50%	140%	109%	50%	140%	102%	50%	140%
2-Methylnaphthalene	3993	2879925	0.038	0.021	NA	< 0.005	102%	50%	140%	103%	50%	140%	112%	50%	140%
Fluorene	3993	2879925	<0.02	<0.02	NA	< 0.01	106%	50%	140%	106%	50%	140%	109%	50%	140%
Phenanthrene	3993	2879925	<0.02	<0.02	NA	< 0.02	102%	50%	140%	108%	50%	140%	113%	50%	140%
Fluoranthene	3993	2879925	<0.01	<0.01	NA	< 0.01	100%	50%	140%	115%	50%	140%	115%	50%	140%
Pyrene	3993	2879925	<0.01	<0.01	NA	< 0.01	106%	50%	140%	119%	50%	140%	125%	50%	140%
Benzo[a]anthracene	3993	2879925	<0.02	<0.02	NA	< 0.02	97%	50%	140%	102%	50%	140%	110%	50%	140%
Chrysene	3993	2879925	<0.05	<0.05	NA	< 0.05	102%	50%	140%	103%	50%	140%	109%	50%	140%
Benzo[b+j]fluoranthene	3993	2879925	<0.03	<0.03	NA	< 0.03	96%	50%	140%	104%	50%	140%	103%	50%	140%
Benzo[k]fluoranthene	3993	2879925	<0.02	<0.02	NA	< 0.02	103%	50%	140%	98%	50%	140%	100%	50%	140%
Benzo[a]pyrene	3993	2879925	<0.03	<0.03	NA	< 0.03	96%	50%	140%	100%	50%	140%	100%	50%	140%
Indeno[1,2,3-cd]pyrene	3993	2879925	<0.02	<0.02	NA	< 0.02	70%	50%	140%	111%	50%	140%	118%	50%	140%
Dibenzo[ah]anthracene	3993	2879925	<0.005	<0.005	NA	< 0.005	73%	50%	140%	113%	50%	140%	117%	50%	140%
Benzo[ghi]perylene	3993	2879925	<0.05	<0.05	NA	< 0.05	74%	50%	140%	116%	50%	140%	119%	50%	140%

Comments: Duplicate NA: results are less than 5X the RDL and RDP will not be calculated.
The sample spikes and dups are not from the same sample ID.

Certified By: *Elena Gorobets*



Time Markers

AGAT WORK ORDER: 21N791280

PROJECT: CE810600

2910 12TH STREET NE
CALGARY, ALBERTA
CANADA T2E 7P7
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CLIENT NAME: JACOBS

ATTENTION TO: Patrick Kalita

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
2879861	PM-1-SB001-a	Soil	17-AUG-2021	19-AUG-2021

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

Parameter	Date Prepared	Date Analyzed	Initials
Benzene	24-AUG-2021	24-AUG-2021	CR
Toluene	24-AUG-2021	24-AUG-2021	CR
Ethylbenzene	24-AUG-2021	24-AUG-2021	CR
Xylenes	24-AUG-2021	24-AUG-2021	CR
C6 - C10 (F1)	24-AUG-2021	24-AUG-2021	CR
C6 - C10 (F1 minus BTEX)	24-AUG-2021	24-AUG-2021	CR
C10 - C16 (F2)	24-AUG-2021	25-AUG-2021	LP
C16 - C34 (F3)	24-AUG-2021	25-AUG-2021	LP
C34 - C50 (F4)	24-AUG-2021	25-AUG-2021	LP
Gravimetric Heavy Hydrocarbons	24-AUG-2021	25-AUG-2021	LP
Moisture Content	24-AUG-2021	25-AUG-2021	LP
Toluene-d8 (BTEX)	24-AUG-2021	24-AUG-2021	CR
o-Terphenyl (F2-F4)	24-AUG-2021	25-AUG-2021	LP

Polyaromatic Hydrocarbon Analysis - Soil

Parameter	Date Prepared	Date Analyzed	Initials
Acenaphthene	24-AUG-2021	26-AUG-2021	RT
Acenaphthylene	24-AUG-2021	26-AUG-2021	RT
Anthracene	24-AUG-2021	26-AUG-2021	RT
Acridine	24-AUG-2021	26-AUG-2021	RT
Quinoline	24-AUG-2021	26-AUG-2021	RT
Naphthalene	24-AUG-2021	26-AUG-2021	RT
2-Methylnaphthalene	24-AUG-2021	26-AUG-2021	RT
Fluorene	24-AUG-2021	26-AUG-2021	RT
Phenanthrene	24-AUG-2021	26-AUG-2021	RT
Fluoranthene	24-AUG-2021	26-AUG-2021	RT
Pyrene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]anthracene	24-AUG-2021	26-AUG-2021	RT
Chrysene	24-AUG-2021	26-AUG-2021	RT
Benzo[b+j]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[k]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]pyrene	24-AUG-2021	26-AUG-2021	RT
Indeno[1,2,3-cd]pyrene	24-AUG-2021	26-AUG-2021	RT
Dibenzo[ah]anthracene	24-AUG-2021	26-AUG-2021	RT
Benzo[ghi]perylene	24-AUG-2021	26-AUG-2021	RT
p-Terphenyl-d14 (PAH)	24-AUG-2021	26-AUG-2021	RT
p-Naphthalene-d8 (PAH)	24-AUG-2021	26-AUG-2021	RT
P_Pyrene-d10 (PAH)	24-AUG-2021	26-AUG-2021	RT
B[a]P TPE	26-AUG-2021	26-AUG-2021	SYS



Time Markers

AGAT WORK ORDER: 21N791280

PROJECT: CE810600

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CLIENT NAME: JACOBS

ATTENTION TO: Patrick Kalita

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
2879861	PM-1-SB001-a	Soil	17-AUG-2021	19-AUG-2021

Polyaromatic Hydrocarbon Analysis - Soil

Parameter	Date Prepared	Date Analyzed	Initials
IACR (Coarse Soil)	26-AUG-2021	26-AUG-2021	SYS
IACR (Fine Soil)	26-AUG-2021	26-AUG-2021	SYS

2879885	PM-1-SB001-b	Soil	17-AUG-2021	19-AUG-2021
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Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

Parameter	Date Prepared	Date Analyzed	Initials
Benzene	24-AUG-2021	24-AUG-2021	CR
Toluene	24-AUG-2021	24-AUG-2021	CR
Ethylbenzene	24-AUG-2021	24-AUG-2021	CR
Xylenes	24-AUG-2021	24-AUG-2021	CR
C6 - C10 (F1)	24-AUG-2021	24-AUG-2021	CR
C6 - C10 (F1 minus BTEX)	24-AUG-2021	24-AUG-2021	CR
C10 - C16 (F2)	24-AUG-2021	25-AUG-2021	LP
C16 - C34 (F3)	24-AUG-2021	25-AUG-2021	LP
C34 - C50 (F4)	24-AUG-2021	25-AUG-2021	LP
Gravimetric Heavy Hydrocarbons	24-AUG-2021	25-AUG-2021	LP
Moisture Content	24-AUG-2021	25-AUG-2021	LP
Toluene-d8 (BTEX)	24-AUG-2021	24-AUG-2021	CR
o-Terphenyl (F2-F4)	24-AUG-2021	25-AUG-2021	LP

Polyaromatic Hydrocarbon Analysis - Soil

Parameter	Date Prepared	Date Analyzed	Initials
Acenaphthene	24-AUG-2021	26-AUG-2021	RT
Acenaphthylene	24-AUG-2021	26-AUG-2021	RT
Anthracene	24-AUG-2021	26-AUG-2021	RT
Acridine	24-AUG-2021	26-AUG-2021	RT
Quinoline	24-AUG-2021	26-AUG-2021	RT
Naphthalene	24-AUG-2021	26-AUG-2021	RT
2-Methylnaphthalene	24-AUG-2021	26-AUG-2021	RT
Fluorene	24-AUG-2021	26-AUG-2021	RT
Phenanthrene	24-AUG-2021	26-AUG-2021	RT
Fluoranthene	24-AUG-2021	26-AUG-2021	RT
Pyrene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]anthracene	24-AUG-2021	26-AUG-2021	RT
Chrysene	24-AUG-2021	26-AUG-2021	RT
Benzo[b+j]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[k]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]pyrene	24-AUG-2021	26-AUG-2021	RT



Time Markers

AGAT WORK ORDER: 21N791280

PROJECT: CE810600

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CLIENT NAME: JACOBS

ATTENTION TO: Patrick Kalita

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
2879885	PM-1-SB001-b	Soil	17-AUG-2021	19-AUG-2021

Polyaromatic Hydrocarbon Analysis - Soil

Parameter	Date Prepared	Date Analyzed	Initials
Indeno[1,2,3-cd]pyrene	24-AUG-2021	26-AUG-2021	RT
Dibenzo[ah]anthracene	24-AUG-2021	26-AUG-2021	RT
Benzo[ghi]perylene	24-AUG-2021	26-AUG-2021	RT
p-Terphenyl-d14 (PAH)	24-AUG-2021	26-AUG-2021	RT
p-Naphthalene-d8 (PAH)	24-AUG-2021	26-AUG-2021	RT
P_Pyrene-d10 (PAH)	24-AUG-2021	26-AUG-2021	RT
B[a]P TPE	26-AUG-2021	26-AUG-2021	SYS
IACR (Coarse Soil)	26-AUG-2021	26-AUG-2021	SYS
IACR (Fine Soil)	26-AUG-2021	26-AUG-2021	SYS

2879886	PM-1-SB001-c	Soil	17-AUG-2021	19-AUG-2021
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Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

Parameter	Date Prepared	Date Analyzed	Initials
Benzene	24-AUG-2021	24-AUG-2021	CR
Toluene	24-AUG-2021	24-AUG-2021	CR
Ethylbenzene	24-AUG-2021	24-AUG-2021	CR
Xylenes	24-AUG-2021	24-AUG-2021	CR
C6 - C10 (F1)	24-AUG-2021	24-AUG-2021	CR
C6 - C10 (F1 minus BTEX)	24-AUG-2021	24-AUG-2021	CR
C10 - C16 (F2)	24-AUG-2021	25-AUG-2021	LP
C16 - C34 (F3)	24-AUG-2021	25-AUG-2021	LP
C34 - C50 (F4)	24-AUG-2021	25-AUG-2021	LP
Gravimetric Heavy Hydrocarbons	24-AUG-2021	25-AUG-2021	LP
Moisture Content	24-AUG-2021	25-AUG-2021	LP
Toluene-d8 (BTEX)	24-AUG-2021	24-AUG-2021	CR
o-Terphenyl (F2-F4)	24-AUG-2021	25-AUG-2021	LP

Polyaromatic Hydrocarbon Analysis - Soil

Parameter	Date Prepared	Date Analyzed	Initials
Acenaphthene	24-AUG-2021	26-AUG-2021	RT
Acenaphthylene	24-AUG-2021	26-AUG-2021	RT
Anthracene	24-AUG-2021	26-AUG-2021	RT
Acridine	24-AUG-2021	26-AUG-2021	RT
Quinoline	24-AUG-2021	26-AUG-2021	RT
Naphthalene	24-AUG-2021	26-AUG-2021	RT
2-Methylnaphthalene	24-AUG-2021	26-AUG-2021	RT
Fluorene	24-AUG-2021	26-AUG-2021	RT
Phenanthrene	24-AUG-2021	26-AUG-2021	RT



Time Markers

AGAT WORK ORDER: 21N791280

PROJECT: CE810600

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CLIENT NAME: JACOBS

ATTENTION TO: Patrick Kalita

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
2879886	PM-1-SB001-c	Soil	17-AUG-2021	19-AUG-2021

Polyaromatic Hydrocarbon Analysis - Soil

Parameter	Date Prepared	Date Analyzed	Initials
Fluoranthene	24-AUG-2021	26-AUG-2021	RT
Pyrene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]anthracene	24-AUG-2021	26-AUG-2021	RT
Chrysene	24-AUG-2021	26-AUG-2021	RT
Benzo[b+j]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[k]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]pyrene	24-AUG-2021	26-AUG-2021	RT
Indeno[1,2,3-cd]pyrene	24-AUG-2021	26-AUG-2021	RT
Dibenzo[ah]anthracene	24-AUG-2021	26-AUG-2021	RT
Benzo[ghi]perylene	24-AUG-2021	26-AUG-2021	RT
p-Terphenyl-d14 (PAH)	24-AUG-2021	26-AUG-2021	RT
p-Naphthalene-d8 (PAH)	24-AUG-2021	26-AUG-2021	RT
P_Pyrene-d10 (PAH)	24-AUG-2021	26-AUG-2021	RT
B[a]P TPE	26-AUG-2021	26-AUG-2021	SYS
IACR (Coarse Soil)	26-AUG-2021	26-AUG-2021	SYS
IACR (Fine Soil)	26-AUG-2021	26-AUG-2021	SYS

2879887	PM-1-SB001-d	Soil	17-AUG-2021	19-AUG-2021
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Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

Parameter	Date Prepared	Date Analyzed	Initials
Benzene	24-AUG-2021	24-AUG-2021	CR
Toluene	24-AUG-2021	24-AUG-2021	CR
Ethylbenzene	24-AUG-2021	24-AUG-2021	CR
Xylenes	24-AUG-2021	24-AUG-2021	CR
C6 - C10 (F1)	24-AUG-2021	24-AUG-2021	CR
C6 - C10 (F1 minus BTEX)	24-AUG-2021	24-AUG-2021	CR
C10 - C16 (F2)	24-AUG-2021	25-AUG-2021	LP
C16 - C34 (F3)	24-AUG-2021	25-AUG-2021	LP
C34 - C50 (F4)	24-AUG-2021	25-AUG-2021	LP
Gravimetric Heavy Hydrocarbons	24-AUG-2021	25-AUG-2021	LP
Moisture Content	24-AUG-2021	25-AUG-2021	LP
Toluene-d8 (BTEX)	24-AUG-2021	24-AUG-2021	CR
o-Terphenyl (F2-F4)	24-AUG-2021	25-AUG-2021	LP

Polyaromatic Hydrocarbon Analysis - Soil

Parameter	Date Prepared	Date Analyzed	Initials
Acenaphthene	24-AUG-2021	26-AUG-2021	RT
Acenaphthylene	24-AUG-2021	26-AUG-2021	RT



Time Markers

AGAT WORK ORDER: 21N791280

PROJECT: CE810600

2910 12TH STREET NE
CALGARY, ALBERTA
CANADA T2E 7P7
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FAX (403)735-2771
<http://www.agatlabs.com>

CLIENT NAME: JACOBS

ATTENTION TO: Patrick Kalita

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
2879887	PM-1-SB001-d	Soil	17-AUG-2021	19-AUG-2021

Polyaromatic Hydrocarbon Analysis - Soil

Parameter	Date Prepared	Date Analyzed	Initials
Anthracene	24-AUG-2021	26-AUG-2021	RT
Acridine	24-AUG-2021	26-AUG-2021	RT
Quinoline	24-AUG-2021	26-AUG-2021	RT
Naphthalene	24-AUG-2021	26-AUG-2021	RT
2-Methylnaphthalene	24-AUG-2021	26-AUG-2021	RT
Fluorene	24-AUG-2021	26-AUG-2021	RT
Phenanthrene	24-AUG-2021	26-AUG-2021	RT
Fluoranthene	24-AUG-2021	26-AUG-2021	RT
Pyrene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]anthracene	24-AUG-2021	26-AUG-2021	RT
Chrysene	24-AUG-2021	26-AUG-2021	RT
Benzo[b+j]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[k]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]pyrene	24-AUG-2021	26-AUG-2021	RT
Indeno[1,2,3-cd]pyrene	24-AUG-2021	26-AUG-2021	RT
Dibenzo[ah]anthracene	24-AUG-2021	26-AUG-2021	RT
Benzo[ghi]perylene	24-AUG-2021	26-AUG-2021	RT
p-Terphenyl-d14 (PAH)	24-AUG-2021	26-AUG-2021	RT
p-Naphthalene-d8 (PAH)	24-AUG-2021	26-AUG-2021	RT
P_Pyrene-d10 (PAH)	24-AUG-2021	26-AUG-2021	RT
B[a]P TPE	26-AUG-2021	26-AUG-2021	SYS
IACR (Coarse Soil)	26-AUG-2021	26-AUG-2021	SYS
IACR (Fine Soil)	26-AUG-2021	26-AUG-2021	SYS

2879888	PM-1-SB002-a	Soil	17-AUG-2021	19-AUG-2021
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Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

Parameter	Date Prepared	Date Analyzed	Initials
Benzene	24-AUG-2021	24-AUG-2021	CR
Toluene	24-AUG-2021	24-AUG-2021	CR
Ethylbenzene	24-AUG-2021	24-AUG-2021	CR
Xylenes	24-AUG-2021	24-AUG-2021	CR
C6 - C10 (F1)	24-AUG-2021	24-AUG-2021	CR
C6 - C10 (F1 minus BTEX)	24-AUG-2021	24-AUG-2021	CR
C10 - C16 (F2)	24-AUG-2021	25-AUG-2021	LP
C16 - C34 (F3)	24-AUG-2021	25-AUG-2021	LP
C34 - C50 (F4)	24-AUG-2021	25-AUG-2021	LP
Gravimetric Heavy Hydrocarbons	24-AUG-2021	25-AUG-2021	LP
Moisture Content	24-AUG-2021	25-AUG-2021	LP



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ATTENTION TO: Patrick Kalita

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
2879888	PM-1-SB002-a	Soil	17-AUG-2021	19-AUG-2021

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

Parameter	Date Prepared	Date Analyzed	Initials
Toluene-d8 (BTEX)	24-AUG-2021	24-AUG-2021	CR
o-Terphenyl (F2-F4)	24-AUG-2021	25-AUG-2021	LP

Polyaromatic Hydrocarbon Analysis - Soil

Parameter	Date Prepared	Date Analyzed	Initials
Acenaphthene	24-AUG-2021	26-AUG-2021	RT
Acenaphthylene	24-AUG-2021	26-AUG-2021	RT
Anthracene	24-AUG-2021	26-AUG-2021	RT
Acridine	24-AUG-2021	26-AUG-2021	RT
Quinoline	24-AUG-2021	26-AUG-2021	RT
Naphthalene	24-AUG-2021	26-AUG-2021	RT
2-Methylnaphthalene	24-AUG-2021	26-AUG-2021	RT
Fluorene	24-AUG-2021	26-AUG-2021	RT
Phenanthrene	24-AUG-2021	26-AUG-2021	RT
Fluoranthene	24-AUG-2021	26-AUG-2021	RT
Pyrene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]anthracene	24-AUG-2021	26-AUG-2021	RT
Chrysene	24-AUG-2021	26-AUG-2021	RT
Benzo[b+j]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[k]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]pyrene	24-AUG-2021	26-AUG-2021	RT
Indeno[1,2,3-cd]pyrene	24-AUG-2021	26-AUG-2021	RT
Dibenzo[ah]anthracene	24-AUG-2021	26-AUG-2021	RT
Benzo[ghi]perylene	24-AUG-2021	26-AUG-2021	RT
p-Terphenyl-d14 (PAH)	24-AUG-2021	26-AUG-2021	RT
p-Naphthalene-d8 (PAH)	24-AUG-2021	26-AUG-2021	RT
P_Pyrene-d10 (PAH)	24-AUG-2021	26-AUG-2021	RT
B[a]P TPE	26-AUG-2021	26-AUG-2021	SYS
IACR (Coarse Soil)	26-AUG-2021	26-AUG-2021	SYS
IACR (Fine Soil)	26-AUG-2021	26-AUG-2021	SYS

2879889	PM-1-SB002-b	Soil	17-AUG-2021	19-AUG-2021
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Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

Parameter	Date Prepared	Date Analyzed	Initials
Benzene	24-AUG-2021	24-AUG-2021	CR
Toluene	24-AUG-2021	24-AUG-2021	CR
Ethylbenzene	24-AUG-2021	24-AUG-2021	CR
Xylenes	24-AUG-2021	24-AUG-2021	CR



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Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
2879889	PM-1-SB002-b	Soil	17-AUG-2021	19-AUG-2021

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

Parameter	Date Prepared	Date Analyzed	Initials
C6 - C10 (F1)	24-AUG-2021	24-AUG-2021	CR
C6 - C10 (F1 minus BTEX)	24-AUG-2021	24-AUG-2021	CR
C10 - C16 (F2)	24-AUG-2021	25-AUG-2021	LP
C16 - C34 (F3)	24-AUG-2021	25-AUG-2021	LP
C34 - C50 (F4)	24-AUG-2021	25-AUG-2021	LP
Gravimetric Heavy Hydrocarbons	24-AUG-2021	25-AUG-2021	LP
Moisture Content	24-AUG-2021	25-AUG-2021	LP
Toluene-d8 (BTEX)	24-AUG-2021	24-AUG-2021	CR
o-Terphenyl (F2-F4)	24-AUG-2021	25-AUG-2021	LP

Polyaromatic Hydrocarbon Analysis - Soil

Parameter	Date Prepared	Date Analyzed	Initials
Acenaphthene	24-AUG-2021	26-AUG-2021	RT
Acenaphthylene	24-AUG-2021	26-AUG-2021	RT
Anthracene	24-AUG-2021	26-AUG-2021	RT
Acridine	24-AUG-2021	26-AUG-2021	RT
Quinoline	24-AUG-2021	26-AUG-2021	RT
Naphthalene	24-AUG-2021	26-AUG-2021	RT
2-Methylnaphthalene	24-AUG-2021	26-AUG-2021	RT
Fluorene	24-AUG-2021	26-AUG-2021	RT
Phenanthrene	24-AUG-2021	26-AUG-2021	RT
Fluoranthene	24-AUG-2021	26-AUG-2021	RT
Pyrene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]anthracene	24-AUG-2021	26-AUG-2021	RT
Chrysene	24-AUG-2021	26-AUG-2021	RT
Benzo[b+j]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[k]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]pyrene	24-AUG-2021	26-AUG-2021	RT
Indeno[1,2,3-cd]pyrene	24-AUG-2021	26-AUG-2021	RT
Dibenzo[ah]anthracene	24-AUG-2021	26-AUG-2021	RT
Benzo[ghi]perylene	24-AUG-2021	26-AUG-2021	RT
p-Terphenyl-d14 (PAH)	24-AUG-2021	26-AUG-2021	RT
p-Naphthalene-d8 (PAH)	24-AUG-2021	26-AUG-2021	RT
P_Pyrene-d10 (PAH)	24-AUG-2021	26-AUG-2021	RT
B[a]P TPE	26-AUG-2021	26-AUG-2021	SYS
IACR (Coarse Soil)	26-AUG-2021	26-AUG-2021	SYS
IACR (Fine Soil)	26-AUG-2021	26-AUG-2021	SYS

2879890	PM-1-SB002-c	Soil	17-AUG-2021	19-AUG-2021
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ATTENTION TO: Patrick Kalita

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
2879890	PM-1-SB002-c	Soil	17-AUG-2021	19-AUG-2021

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

Parameter	Date Prepared	Date Analyzed	Initials
Benzene	24-AUG-2021	24-AUG-2021	CR
Toluene	24-AUG-2021	24-AUG-2021	CR
Ethylbenzene	24-AUG-2021	24-AUG-2021	CR
Xylenes	24-AUG-2021	24-AUG-2021	CR
C6 - C10 (F1)	24-AUG-2021	24-AUG-2021	CR
C6 - C10 (F1 minus BTEX)	24-AUG-2021	24-AUG-2021	CR
C10 - C16 (F2)	24-AUG-2021	25-AUG-2021	LP
C16 - C34 (F3)	24-AUG-2021	25-AUG-2021	LP
C34 - C50 (F4)	24-AUG-2021	25-AUG-2021	LP
Gravimetric Heavy Hydrocarbons	24-AUG-2021	25-AUG-2021	LP
Moisture Content	24-AUG-2021	25-AUG-2021	LP
Toluene-d8 (BTEX)	24-AUG-2021	24-AUG-2021	CR
o-Terphenyl (F2-F4)	24-AUG-2021	25-AUG-2021	LP

Polyaromatic Hydrocarbon Analysis - Soil

Parameter	Date Prepared	Date Analyzed	Initials
Acenaphthene	24-AUG-2021	26-AUG-2021	RT
Acenaphthylene	24-AUG-2021	26-AUG-2021	RT
Anthracene	24-AUG-2021	26-AUG-2021	RT
Acridine	24-AUG-2021	26-AUG-2021	RT
Quinoline	24-AUG-2021	26-AUG-2021	RT
Naphthalene	24-AUG-2021	26-AUG-2021	RT
2-Methylnaphthalene	24-AUG-2021	26-AUG-2021	RT
Fluorene	24-AUG-2021	26-AUG-2021	RT
Phenanthrene	24-AUG-2021	26-AUG-2021	RT
Fluoranthene	24-AUG-2021	26-AUG-2021	RT
Pyrene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]anthracene	24-AUG-2021	26-AUG-2021	RT
Chrysene	24-AUG-2021	26-AUG-2021	RT
Benzo[b+j]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[k]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]pyrene	24-AUG-2021	26-AUG-2021	RT
Indeno[1,2,3-cd]pyrene	24-AUG-2021	26-AUG-2021	RT
Dibenzo[ah]anthracene	24-AUG-2021	26-AUG-2021	RT
Benzo[ghi]perylene	24-AUG-2021	26-AUG-2021	RT
p-Terphenyl-d14 (PAH)	24-AUG-2021	26-AUG-2021	RT
p-Naphthalene-d8 (PAH)	24-AUG-2021	26-AUG-2021	RT
P_Pyrene-d10 (PAH)	24-AUG-2021	26-AUG-2021	RT
B[a]P TPE	26-AUG-2021	26-AUG-2021	SYS



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Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
2879890	PM-1-SB002-c	Soil	17-AUG-2021	19-AUG-2021

Polyaromatic Hydrocarbon Analysis - Soil

Parameter	Date Prepared	Date Analyzed	Initials
IACR (Coarse Soil)	26-AUG-2021	26-AUG-2021	SYS
IACR (Fine Soil)	26-AUG-2021	26-AUG-2021	SYS

2879891	PM-1-SB002-d	Soil	17-AUG-2021	19-AUG-2021
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Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

Parameter	Date Prepared	Date Analyzed	Initials
Benzene	24-AUG-2021	24-AUG-2021	CR
Toluene	24-AUG-2021	24-AUG-2021	CR
Ethylbenzene	24-AUG-2021	24-AUG-2021	CR
Xylenes	24-AUG-2021	24-AUG-2021	CR
C6 - C10 (F1)	24-AUG-2021	24-AUG-2021	CR
C6 - C10 (F1 minus BTEX)	24-AUG-2021	24-AUG-2021	CR
C10 - C16 (F2)	24-AUG-2021	25-AUG-2021	LP
C16 - C34 (F3)	24-AUG-2021	25-AUG-2021	LP
C34 - C50 (F4)	24-AUG-2021	25-AUG-2021	LP
Gravimetric Heavy Hydrocarbons	24-AUG-2021	25-AUG-2021	LP
Moisture Content	24-AUG-2021	25-AUG-2021	LP
Toluene-d8 (BTEX)	24-AUG-2021	24-AUG-2021	CR
o-Terphenyl (F2-F4)	24-AUG-2021	25-AUG-2021	LP

Polyaromatic Hydrocarbon Analysis - Soil

Parameter	Date Prepared	Date Analyzed	Initials
Acenaphthene	24-AUG-2021	26-AUG-2021	RT
Acenaphthylene	24-AUG-2021	26-AUG-2021	RT
Anthracene	24-AUG-2021	26-AUG-2021	RT
Acridine	24-AUG-2021	26-AUG-2021	RT
Quinoline	24-AUG-2021	26-AUG-2021	RT
Naphthalene	24-AUG-2021	26-AUG-2021	RT
2-Methylnaphthalene	24-AUG-2021	26-AUG-2021	RT
Fluorene	24-AUG-2021	26-AUG-2021	RT
Phenanthrene	24-AUG-2021	26-AUG-2021	RT
Fluoranthene	24-AUG-2021	26-AUG-2021	RT
Pyrene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]anthracene	24-AUG-2021	26-AUG-2021	RT
Chrysene	24-AUG-2021	26-AUG-2021	RT
Benzo[b+j]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[k]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]pyrene	24-AUG-2021	26-AUG-2021	RT



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Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
2879891	PM-1-SB002-d	Soil	17-AUG-2021	19-AUG-2021

Polyaromatic Hydrocarbon Analysis - Soil

Parameter	Date Prepared	Date Analyzed	Initials
Indeno[1,2,3-cd]pyrene	24-AUG-2021	26-AUG-2021	RT
Dibenzo[ah]anthracene	24-AUG-2021	26-AUG-2021	RT
Benzo[ghi]perylene	24-AUG-2021	26-AUG-2021	RT
p-Terphenyl-d14 (PAH)	24-AUG-2021	26-AUG-2021	RT
p-Naphthalene-d8 (PAH)	24-AUG-2021	26-AUG-2021	RT
P_Pyrene-d10 (PAH)	24-AUG-2021	26-AUG-2021	RT
B[a]P TPE	26-AUG-2021	26-AUG-2021	SYS
IACR (Coarse Soil)	26-AUG-2021	26-AUG-2021	SYS
IACR (Fine Soil)	26-AUG-2021	26-AUG-2021	SYS

2879892	PM-1-SB003-a	Soil	17-AUG-2021	19-AUG-2021
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Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

Parameter	Date Prepared	Date Analyzed	Initials
Benzene	24-AUG-2021	24-AUG-2021	CR
Toluene	24-AUG-2021	24-AUG-2021	CR
Ethylbenzene	24-AUG-2021	24-AUG-2021	CR
Xylenes	24-AUG-2021	24-AUG-2021	CR
C6 - C10 (F1)	24-AUG-2021	24-AUG-2021	CR
C6 - C10 (F1 minus BTEX)	24-AUG-2021	24-AUG-2021	CR
C10 - C16 (F2)	24-AUG-2021	25-AUG-2021	LP
C16 - C34 (F3)	24-AUG-2021	25-AUG-2021	LP
C34 - C50 (F4)	24-AUG-2021	25-AUG-2021	LP
Gravimetric Heavy Hydrocarbons	24-AUG-2021	25-AUG-2021	LP
Moisture Content	24-AUG-2021	25-AUG-2021	LP
Toluene-d8 (BTEX)	24-AUG-2021	24-AUG-2021	CR
o-Terphenyl (F2-F4)	24-AUG-2021	25-AUG-2021	LP

Polyaromatic Hydrocarbon Analysis - Soil

Parameter	Date Prepared	Date Analyzed	Initials
Acenaphthene	24-AUG-2021	26-AUG-2021	RT
Acenaphthylene	24-AUG-2021	26-AUG-2021	RT
Anthracene	24-AUG-2021	26-AUG-2021	RT
Acridine	24-AUG-2021	26-AUG-2021	RT
Quinoline	24-AUG-2021	26-AUG-2021	RT
Naphthalene	24-AUG-2021	26-AUG-2021	RT
2-Methylnaphthalene	24-AUG-2021	26-AUG-2021	RT
Fluorene	24-AUG-2021	26-AUG-2021	RT
Phenanthrene	24-AUG-2021	26-AUG-2021	RT



Time Markers

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Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
2879892	PM-1-SB003-a	Soil	17-AUG-2021	19-AUG-2021

Polyaromatic Hydrocarbon Analysis - Soil

Parameter	Date Prepared	Date Analyzed	Initials
Fluoranthene	24-AUG-2021	26-AUG-2021	RT
Pyrene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]anthracene	24-AUG-2021	26-AUG-2021	RT
Chrysene	24-AUG-2021	26-AUG-2021	RT
Benzo[b+j]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[k]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]pyrene	24-AUG-2021	26-AUG-2021	RT
Indeno[1,2,3-cd]pyrene	24-AUG-2021	26-AUG-2021	RT
Dibenzo[ah]anthracene	24-AUG-2021	26-AUG-2021	RT
Benzo[ghi]perylene	24-AUG-2021	26-AUG-2021	RT
p-Terphenyl-d14 (PAH)	24-AUG-2021	26-AUG-2021	RT
p-Naphthalene-d8 (PAH)	24-AUG-2021	26-AUG-2021	RT
P_Pyrene-d10 (PAH)	24-AUG-2021	26-AUG-2021	RT
B[a]P TPE	26-AUG-2021	26-AUG-2021	SYS
IACR (Coarse Soil)	26-AUG-2021	26-AUG-2021	SYS
IACR (Fine Soil)	26-AUG-2021	26-AUG-2021	SYS

2879893	PM-1-SB003-b	Soil	17-AUG-2021	19-AUG-2021
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Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

Parameter	Date Prepared	Date Analyzed	Initials
Benzene	24-AUG-2021	24-AUG-2021	CR
Toluene	24-AUG-2021	24-AUG-2021	CR
Ethylbenzene	24-AUG-2021	24-AUG-2021	CR
Xylenes	24-AUG-2021	24-AUG-2021	CR
C6 - C10 (F1)	24-AUG-2021	24-AUG-2021	CR
C6 - C10 (F1 minus BTEX)	24-AUG-2021	24-AUG-2021	CR
C10 - C16 (F2)	24-AUG-2021	25-AUG-2021	LP
C16 - C34 (F3)	24-AUG-2021	25-AUG-2021	LP
C34 - C50 (F4)	24-AUG-2021	25-AUG-2021	LP
Gravimetric Heavy Hydrocarbons	24-AUG-2021	25-AUG-2021	LP
Moisture Content	24-AUG-2021	25-AUG-2021	LP
Toluene-d8 (BTEX)	24-AUG-2021	24-AUG-2021	CR
o-Terphenyl (F2-F4)	24-AUG-2021	25-AUG-2021	LP

Polyaromatic Hydrocarbon Analysis - Soil

Parameter	Date Prepared	Date Analyzed	Initials
Acenaphthene	24-AUG-2021	26-AUG-2021	RT
Acenaphthylene	24-AUG-2021	26-AUG-2021	RT



Time Markers

AGAT WORK ORDER: 21N791280

PROJECT: CE810600

2910 12TH STREET NE
CALGARY, ALBERTA
CANADA T2E 7P7
TEL (403)735-2005
FAX (403)735-2771
<http://www.agatlabs.com>

CLIENT NAME: JACOBS

ATTENTION TO: Patrick Kalita

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
2879893	PM-1-SB003-b	Soil	17-AUG-2021	19-AUG-2021

Polyaromatic Hydrocarbon Analysis - Soil

Parameter	Date Prepared	Date Analyzed	Initials
Anthracene	24-AUG-2021	26-AUG-2021	RT
Acridine	24-AUG-2021	26-AUG-2021	RT
Quinoline	24-AUG-2021	26-AUG-2021	RT
Naphthalene	24-AUG-2021	26-AUG-2021	RT
2-Methylnaphthalene	24-AUG-2021	26-AUG-2021	RT
Fluorene	24-AUG-2021	26-AUG-2021	RT
Phenanthrene	24-AUG-2021	26-AUG-2021	RT
Fluoranthene	24-AUG-2021	26-AUG-2021	RT
Pyrene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]anthracene	24-AUG-2021	26-AUG-2021	RT
Chrysene	24-AUG-2021	26-AUG-2021	RT
Benzo[b+j]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[k]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]pyrene	24-AUG-2021	26-AUG-2021	RT
Indeno[1,2,3-cd]pyrene	24-AUG-2021	26-AUG-2021	RT
Dibenzo[ah]anthracene	24-AUG-2021	26-AUG-2021	RT
Benzo[ghi]perylene	24-AUG-2021	26-AUG-2021	RT
p-Terphenyl-d14 (PAH)	24-AUG-2021	26-AUG-2021	RT
p-Naphthalene-d8 (PAH)	24-AUG-2021	26-AUG-2021	RT
P_Pyrene-d10 (PAH)	24-AUG-2021	26-AUG-2021	RT
B[a]P TPE	26-AUG-2021	26-AUG-2021	SYS
IACR (Coarse Soil)	26-AUG-2021	26-AUG-2021	SYS
IACR (Fine Soil)	26-AUG-2021	26-AUG-2021	SYS

2879894	PM-1-SB003-c	Soil	17-AUG-2021	19-AUG-2021
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Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

Parameter	Date Prepared	Date Analyzed	Initials
Benzene	24-AUG-2021	24-AUG-2021	CR
Toluene	24-AUG-2021	24-AUG-2021	CR
Ethylbenzene	24-AUG-2021	24-AUG-2021	CR
Xylenes	24-AUG-2021	24-AUG-2021	CR
C6 - C10 (F1)	24-AUG-2021	24-AUG-2021	CR
C6 - C10 (F1 minus BTEX)	24-AUG-2021	24-AUG-2021	CR
C10 - C16 (F2)	24-AUG-2021	25-AUG-2021	LP
C16 - C34 (F3)	24-AUG-2021	25-AUG-2021	LP
C34 - C50 (F4)	24-AUG-2021	25-AUG-2021	LP
Gravimetric Heavy Hydrocarbons	24-AUG-2021	25-AUG-2021	LP
Moisture Content	24-AUG-2021	25-AUG-2021	LP



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ATTENTION TO: Patrick Kalita

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
2879894	PM-1-SB003-c	Soil	17-AUG-2021	19-AUG-2021

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

Parameter	Date Prepared	Date Analyzed	Initials
Toluene-d8 (BTEX)	24-AUG-2021	24-AUG-2021	CR
o-Terphenyl (F2-F4)	24-AUG-2021	25-AUG-2021	LP

Polyaromatic Hydrocarbon Analysis - Soil

Parameter	Date Prepared	Date Analyzed	Initials
Acenaphthene	24-AUG-2021	26-AUG-2021	RT
Acenaphthylene	24-AUG-2021	26-AUG-2021	RT
Anthracene	24-AUG-2021	26-AUG-2021	RT
Acridine	24-AUG-2021	26-AUG-2021	RT
Quinoline	24-AUG-2021	26-AUG-2021	RT
Naphthalene	24-AUG-2021	26-AUG-2021	RT
2-Methylnaphthalene	24-AUG-2021	26-AUG-2021	RT
Fluorene	24-AUG-2021	26-AUG-2021	RT
Phenanthrene	24-AUG-2021	26-AUG-2021	RT
Fluoranthene	24-AUG-2021	26-AUG-2021	RT
Pyrene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]anthracene	24-AUG-2021	26-AUG-2021	RT
Chrysene	24-AUG-2021	26-AUG-2021	RT
Benzo[b+j]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[k]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]pyrene	24-AUG-2021	26-AUG-2021	RT
Indeno[1,2,3-cd]pyrene	24-AUG-2021	26-AUG-2021	RT
Dibenzo[ah]anthracene	24-AUG-2021	26-AUG-2021	RT
Benzo[ghi]perylene	24-AUG-2021	26-AUG-2021	RT
p-Terphenyl-d14 (PAH)	24-AUG-2021	26-AUG-2021	RT
p-Naphthalene-d8 (PAH)	24-AUG-2021	26-AUG-2021	RT
P_Pyrene-d10 (PAH)	24-AUG-2021	26-AUG-2021	RT
B[a]P TPE	26-AUG-2021	26-AUG-2021	SYS
IACR (Coarse Soil)	26-AUG-2021	26-AUG-2021	SYS
IACR (Fine Soil)	26-AUG-2021	26-AUG-2021	SYS

2879895	PM-1-SB003-d	Soil	17-AUG-2021	19-AUG-2021
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Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

Parameter	Date Prepared	Date Analyzed	Initials
Benzene	24-AUG-2021	24-AUG-2021	CR
Toluene	24-AUG-2021	24-AUG-2021	CR
Ethylbenzene	24-AUG-2021	24-AUG-2021	CR
Xylenes	24-AUG-2021	24-AUG-2021	CR



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Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
2879895	PM-1-SB003-d	Soil	17-AUG-2021	19-AUG-2021

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

Parameter	Date Prepared	Date Analyzed	Initials
C6 - C10 (F1)	24-AUG-2021	24-AUG-2021	CR
C6 - C10 (F1 minus BTEX)	24-AUG-2021	24-AUG-2021	CR
C10 - C16 (F2)	24-AUG-2021	25-AUG-2021	LP
C16 - C34 (F3)	24-AUG-2021	25-AUG-2021	LP
C34 - C50 (F4)	24-AUG-2021	25-AUG-2021	LP
Gravimetric Heavy Hydrocarbons	24-AUG-2021	25-AUG-2021	LP
Moisture Content	24-AUG-2021	25-AUG-2021	LP
Toluene-d8 (BTEX)	24-AUG-2021	24-AUG-2021	CR
o-Terphenyl (F2-F4)	24-AUG-2021	25-AUG-2021	LP

Polyaromatic Hydrocarbon Analysis - Soil

Parameter	Date Prepared	Date Analyzed	Initials
Acenaphthene	24-AUG-2021	26-AUG-2021	RT
Acenaphthylene	24-AUG-2021	26-AUG-2021	RT
Anthracene	24-AUG-2021	26-AUG-2021	RT
Acridine	24-AUG-2021	26-AUG-2021	RT
Quinoline	24-AUG-2021	26-AUG-2021	RT
Naphthalene	24-AUG-2021	26-AUG-2021	RT
2-Methylnaphthalene	24-AUG-2021	26-AUG-2021	RT
Fluorene	24-AUG-2021	26-AUG-2021	RT
Phenanthrene	24-AUG-2021	26-AUG-2021	RT
Fluoranthene	24-AUG-2021	26-AUG-2021	RT
Pyrene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]anthracene	24-AUG-2021	26-AUG-2021	RT
Chrysene	24-AUG-2021	26-AUG-2021	RT
Benzo[b+j]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[k]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]pyrene	24-AUG-2021	26-AUG-2021	RT
Indeno[1,2,3-cd]pyrene	24-AUG-2021	26-AUG-2021	RT
Dibenzo[ah]anthracene	24-AUG-2021	26-AUG-2021	RT
Benzo[ghi]perylene	24-AUG-2021	26-AUG-2021	RT
p-Terphenyl-d14 (PAH)	24-AUG-2021	26-AUG-2021	RT
p-Naphthalene-d8 (PAH)	24-AUG-2021	26-AUG-2021	RT
P_Pyrene-d10 (PAH)	24-AUG-2021	26-AUG-2021	RT
B[a]P TPE	26-AUG-2021	26-AUG-2021	SYS
IACR (Coarse Soil)	26-AUG-2021	26-AUG-2021	SYS
IACR (Fine Soil)	26-AUG-2021	26-AUG-2021	SYS

2879896	PM-1-SB004-a	Soil	17-AUG-2021	19-AUG-2021
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Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
2879896	PM-1-SB004-a	Soil	17-AUG-2021	19-AUG-2021

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

Parameter	Date Prepared	Date Analyzed	Initials
Benzene	24-AUG-2021	24-AUG-2021	CR
Toluene	24-AUG-2021	24-AUG-2021	CR
Ethylbenzene	24-AUG-2021	24-AUG-2021	CR
Xylenes	24-AUG-2021	24-AUG-2021	CR
C6 - C10 (F1)	24-AUG-2021	24-AUG-2021	CR
C6 - C10 (F1 minus BTEX)	24-AUG-2021	24-AUG-2021	CR
C10 - C16 (F2)	24-AUG-2021	25-AUG-2021	LP
C16 - C34 (F3)	24-AUG-2021	25-AUG-2021	LP
C34 - C50 (F4)	24-AUG-2021	25-AUG-2021	LP
Gravimetric Heavy Hydrocarbons	24-AUG-2021	25-AUG-2021	LP
Moisture Content	24-AUG-2021	25-AUG-2021	LP
Toluene-d8 (BTEX)	24-AUG-2021	24-AUG-2021	CR
o-Terphenyl (F2-F4)	24-AUG-2021	25-AUG-2021	LP

Polyaromatic Hydrocarbon Analysis - Soil

Parameter	Date Prepared	Date Analyzed	Initials
Acenaphthene	24-AUG-2021	26-AUG-2021	RT
Acenaphthylene	24-AUG-2021	26-AUG-2021	RT
Anthracene	24-AUG-2021	26-AUG-2021	RT
Acridine	24-AUG-2021	26-AUG-2021	RT
Quinoline	24-AUG-2021	26-AUG-2021	RT
Naphthalene	24-AUG-2021	26-AUG-2021	RT
2-Methylnaphthalene	24-AUG-2021	26-AUG-2021	RT
Fluorene	24-AUG-2021	26-AUG-2021	RT
Phenanthrene	24-AUG-2021	26-AUG-2021	RT
Fluoranthene	24-AUG-2021	26-AUG-2021	RT
Pyrene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]anthracene	24-AUG-2021	26-AUG-2021	RT
Chrysene	24-AUG-2021	26-AUG-2021	RT
Benzo[b+j]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[k]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]pyrene	24-AUG-2021	26-AUG-2021	RT
Indeno[1,2,3-cd]pyrene	24-AUG-2021	26-AUG-2021	RT
Dibenzo[ah]anthracene	24-AUG-2021	26-AUG-2021	RT
Benzo[ghi]perylene	24-AUG-2021	26-AUG-2021	RT
p-Terphenyl-d14 (PAH)	24-AUG-2021	26-AUG-2021	RT
p-Naphthalene-d8 (PAH)	24-AUG-2021	26-AUG-2021	RT
P_Pyrene-d10 (PAH)	24-AUG-2021	26-AUG-2021	RT
B[a]P TPE	26-AUG-2021	26-AUG-2021	SYS



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Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
2879896	PM-1-SB004-a	Soil	17-AUG-2021	19-AUG-2021

Polyaromatic Hydrocarbon Analysis - Soil

Parameter	Date Prepared	Date Analyzed	Initials
IACR (Coarse Soil)	26-AUG-2021	26-AUG-2021	SYS
IACR (Fine Soil)	26-AUG-2021	26-AUG-2021	SYS

2879897	PM-1-SB004-b	Soil	17-AUG-2021	19-AUG-2021
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Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

Parameter	Date Prepared	Date Analyzed	Initials
Benzene	24-AUG-2021	24-AUG-2021	CR
Toluene	24-AUG-2021	24-AUG-2021	CR
Ethylbenzene	24-AUG-2021	24-AUG-2021	CR
Xylenes	24-AUG-2021	24-AUG-2021	CR
C6 - C10 (F1)	24-AUG-2021	24-AUG-2021	CR
C6 - C10 (F1 minus BTEX)	24-AUG-2021	24-AUG-2021	CR
C10 - C16 (F2)	24-AUG-2021	25-AUG-2021	LP
C16 - C34 (F3)	24-AUG-2021	25-AUG-2021	LP
C34 - C50 (F4)	24-AUG-2021	25-AUG-2021	LP
Gravimetric Heavy Hydrocarbons	24-AUG-2021	25-AUG-2021	LP
Moisture Content	24-AUG-2021	25-AUG-2021	LP
Toluene-d8 (BTEX)	24-AUG-2021	24-AUG-2021	CR
o-Terphenyl (F2-F4)	24-AUG-2021	25-AUG-2021	LP

Polyaromatic Hydrocarbon Analysis - Soil

Parameter	Date Prepared	Date Analyzed	Initials
Acenaphthene	24-AUG-2021	26-AUG-2021	RT
Acenaphthylene	24-AUG-2021	26-AUG-2021	RT
Anthracene	24-AUG-2021	26-AUG-2021	RT
Acridine	24-AUG-2021	26-AUG-2021	RT
Quinoline	24-AUG-2021	26-AUG-2021	RT
Naphthalene	24-AUG-2021	26-AUG-2021	RT
2-Methylnaphthalene	24-AUG-2021	26-AUG-2021	RT
Fluorene	24-AUG-2021	26-AUG-2021	RT
Phenanthrene	24-AUG-2021	26-AUG-2021	RT
Fluoranthene	24-AUG-2021	26-AUG-2021	RT
Pyrene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]anthracene	24-AUG-2021	26-AUG-2021	RT
Chrysene	24-AUG-2021	26-AUG-2021	RT
Benzo[b+j]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[k]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]pyrene	24-AUG-2021	26-AUG-2021	RT



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Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
2879897	PM-1-SB004-b	Soil	17-AUG-2021	19-AUG-2021

Polyaromatic Hydrocarbon Analysis - Soil

Parameter	Date Prepared	Date Analyzed	Initials
Indeno[1,2,3-cd]pyrene	24-AUG-2021	26-AUG-2021	RT
Dibenzo[ah]anthracene	24-AUG-2021	26-AUG-2021	RT
Benzo[ghi]perylene	24-AUG-2021	26-AUG-2021	RT
p-Terphenyl-d14 (PAH)	24-AUG-2021	26-AUG-2021	RT
p-Naphthalene-d8 (PAH)	24-AUG-2021	26-AUG-2021	RT
P_Pyrene-d10 (PAH)	24-AUG-2021	26-AUG-2021	RT
B[a]P TPE	26-AUG-2021	26-AUG-2021	SYS
IACR (Coarse Soil)	26-AUG-2021	26-AUG-2021	SYS
IACR (Fine Soil)	26-AUG-2021	26-AUG-2021	SYS

2879898	PM-1-SB004-c	Soil	17-AUG-2021	19-AUG-2021
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Nutrients Package 2

Parameter	Date Prepared	Date Analyzed	Initials
Available Nitrate (NO3-N)	27-AUG-2021	27-AUG-2021	AH
Available Phosphorus - P	27-AUG-2021	27-AUG-2021	MH
Available Potassium	27-AUG-2021	27-AUG-2021	IP
Available Sulfur (SO4-S)	27-AUG-2021	27-AUG-2021	IP

Particle Size by Sieve

Parameter	Date Prepared	Date Analyzed	Initials
Sieve Analysis - 75 microns	05-OCT-2021	05-OCT-2021	AZ

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

Parameter	Date Prepared	Date Analyzed	Initials
Benzene	24-AUG-2021	24-AUG-2021	CR
Toluene	24-AUG-2021	24-AUG-2021	CR
Ethylbenzene	24-AUG-2021	24-AUG-2021	CR
Xylenes	24-AUG-2021	24-AUG-2021	CR
C6 - C10 (F1)	24-AUG-2021	24-AUG-2021	CR
C6 - C10 (F1 minus BTEX)	24-AUG-2021	24-AUG-2021	CR
C10 - C16 (F2)	24-AUG-2021	25-AUG-2021	LP
C16 - C34 (F3)	24-AUG-2021	25-AUG-2021	LP
C34 - C50 (F4)	24-AUG-2021	25-AUG-2021	LP
Gravimetric Heavy Hydrocarbons	24-AUG-2021	25-AUG-2021	LP
Moisture Content	24-AUG-2021	25-AUG-2021	LP
Toluene-d8 (BTEX)	24-AUG-2021	24-AUG-2021	CR
o-Terphenyl (F2-F4)	24-AUG-2021	25-AUG-2021	LP



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CLIENT NAME: JACOBS

ATTENTION TO: Patrick Kalita

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
2879898	PM-1-SB004-c	Soil	17-AUG-2021	19-AUG-2021

Polyaromatic Hydrocarbon Analysis - Soil

Parameter	Date Prepared	Date Analyzed	Initials
Acenaphthene	24-AUG-2021	26-AUG-2021	RT
Acenaphthylene	24-AUG-2021	26-AUG-2021	RT
Anthracene	24-AUG-2021	26-AUG-2021	RT
Acridine	24-AUG-2021	26-AUG-2021	RT
Quinoline	24-AUG-2021	26-AUG-2021	RT
Naphthalene	24-AUG-2021	26-AUG-2021	RT
2-Methylnaphthalene	24-AUG-2021	26-AUG-2021	RT
Fluorene	24-AUG-2021	26-AUG-2021	RT
Phenanthrene	24-AUG-2021	26-AUG-2021	RT
Fluoranthene	24-AUG-2021	26-AUG-2021	RT
Pyrene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]anthracene	24-AUG-2021	26-AUG-2021	RT
Chrysene	24-AUG-2021	26-AUG-2021	RT
Benzo[b+j]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[k]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]pyrene	24-AUG-2021	26-AUG-2021	RT
Indeno[1,2,3-cd]pyrene	24-AUG-2021	26-AUG-2021	RT
Dibenzo[ah]anthracene	24-AUG-2021	26-AUG-2021	RT
Benzo[ghi]perylene	24-AUG-2021	26-AUG-2021	RT
p-Terphenyl-d14 (PAH)	24-AUG-2021	26-AUG-2021	RT
p-Naphthalene-d8 (PAH)	24-AUG-2021	26-AUG-2021	RT
P_Pyrene-d10 (PAH)	24-AUG-2021	26-AUG-2021	RT
B[a]P TPE	26-AUG-2021	26-AUG-2021	SYS
IACR (Coarse Soil)	26-AUG-2021	26-AUG-2021	SYS
IACR (Fine Soil)	26-AUG-2021	26-AUG-2021	SYS

Soil Analysis - Alkalinity, Bulk Density, Moisture, pH (Sat. Paste)

Parameter	Date Prepared	Date Analyzed	Initials
Bicarbonate, Soluble	31-AUG-2021	31-AUG-2021	KT
Carbonate, Soluble	31-AUG-2021	31-AUG-2021	KT
Bulk Density, Crude - Wet (As Recieved Soil)	26-AUG-2021	26-AUG-2021	SS
Moisture Content (Wet Weight)**	25-AUG-2021	26-AUG-2021	JB
pH (Saturated Paste)	27-AUG-2021	27-AUG-2021	AG

Soil Analysis - Lime Requirement

Parameter	Date Prepared	Date Analyzed	Initials
Lime Requirement to pH 6.5**	27-AUG-2021	27-AUG-2021	JB
Lime Requirement @ pH 7.0**	27-AUG-2021	27-AUG-2021	JB



Time Markers

AGAT WORK ORDER: 21N791280

PROJECT: CE810600

2910 12TH STREET NE
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CANADA T2E 7P7
TEL (403)735-2005
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<http://www.agatlabs.com>

CLIENT NAME: JACOBS

ATTENTION TO: Patrick Kalita

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
2879898	PM-1-SB004-c	Soil	17-AUG-2021	19-AUG-2021

Soil Analysis - Total Organic Carbon (W-B Wet Oxidation)

Parameter	Date Prepared	Date Analyzed	Initials
Total Organic Carbon	26-AUG-2021	26-AUG-2021	NN

2879899	PM-1-SB004-d	Soil	17-AUG-2021	19-AUG-2021
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Nutrients Package 2

Parameter	Date Prepared	Date Analyzed	Initials
Available Nitrate (NO3-N)	27-AUG-2021	27-AUG-2021	AH
Available Phosphorus - P	27-AUG-2021	27-AUG-2021	MH
Available Potassium	27-AUG-2021	27-AUG-2021	IP
Available Sulfur (SO4-S)	27-AUG-2021	27-AUG-2021	IP

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

Parameter	Date Prepared	Date Analyzed	Initials
Benzene	24-AUG-2021	24-AUG-2021	CR
Toluene	24-AUG-2021	24-AUG-2021	CR
Ethylbenzene	24-AUG-2021	24-AUG-2021	CR
Xylenes	24-AUG-2021	24-AUG-2021	CR
C6 - C10 (F1)	24-AUG-2021	24-AUG-2021	CR
C6 - C10 (F1 minus BTEX)	24-AUG-2021	24-AUG-2021	CR
C10 - C16 (F2)	24-AUG-2021	25-AUG-2021	LP
C16 - C34 (F3)	24-AUG-2021	25-AUG-2021	LP
C34 - C50 (F4)	24-AUG-2021	25-AUG-2021	LP
Gravimetric Heavy Hydrocarbons	24-AUG-2021	25-AUG-2021	LP
Moisture Content	24-AUG-2021	25-AUG-2021	LP
Toluene-d8 (BTEX)	24-AUG-2021	24-AUG-2021	CR
o-Terphenyl (F2-F4)	24-AUG-2021	25-AUG-2021	LP

Polyaromatic Hydrocarbon Analysis - Soil

Parameter	Date Prepared	Date Analyzed	Initials
Acenaphthene	24-AUG-2021	26-AUG-2021	RT
Acenaphthylene	24-AUG-2021	26-AUG-2021	RT
Anthracene	24-AUG-2021	26-AUG-2021	RT
Acridine	24-AUG-2021	26-AUG-2021	RT
Quinoline	24-AUG-2021	26-AUG-2021	RT
Naphthalene	24-AUG-2021	26-AUG-2021	RT
2-Methylnaphthalene	24-AUG-2021	26-AUG-2021	RT
Fluorene	24-AUG-2021	26-AUG-2021	RT
Phenanthrene	24-AUG-2021	26-AUG-2021	RT
Fluoranthene	24-AUG-2021	26-AUG-2021	RT



Time Markers

AGAT WORK ORDER: 21N791280

PROJECT: CE810600

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<http://www.agatlabs.com>

CLIENT NAME: JACOBS

ATTENTION TO: Patrick Kalita

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
2879899	PM-1-SB004-d	Soil	17-AUG-2021	19-AUG-2021

Polyaromatic Hydrocarbon Analysis - Soil

Parameter	Date Prepared	Date Analyzed	Initials
Pyrene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]anthracene	24-AUG-2021	26-AUG-2021	RT
Chrysene	24-AUG-2021	26-AUG-2021	RT
Benzo[b+j]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[k]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]pyrene	24-AUG-2021	26-AUG-2021	RT
Indeno[1,2,3-cd]pyrene	24-AUG-2021	26-AUG-2021	RT
Dibenzo[ah]anthracene	24-AUG-2021	26-AUG-2021	RT
Benzo[ghi]perylene	24-AUG-2021	26-AUG-2021	RT
p-Terphenyl-d14 (PAH)	24-AUG-2021	26-AUG-2021	RT
p-Naphthalene-d8 (PAH)	24-AUG-2021	26-AUG-2021	RT
P_Pyrene-d10 (PAH)	24-AUG-2021	26-AUG-2021	RT
B[a]P TPE	26-AUG-2021	26-AUG-2021	SYS
IACR (Coarse Soil)	26-AUG-2021	26-AUG-2021	SYS
IACR (Fine Soil)	26-AUG-2021	26-AUG-2021	SYS

Soil Analysis - Alkalinity, Bulk Density, Moisture, pH (Sat. Paste)

Parameter	Date Prepared	Date Analyzed	Initials
Bicarbonate, Soluble	31-AUG-2021	31-AUG-2021	KT
Carbonate, Soluble	31-AUG-2021	31-AUG-2021	KT
Bulk Density, Crude - Wet (As Recieved Soil)	26-AUG-2021	26-AUG-2021	SS
Moisture Content (Wet Weight)**	25-AUG-2021	26-AUG-2021	JB
pH (Saturated Paste)	27-AUG-2021	27-AUG-2021	AG

Soil Analysis - Lime Requirement

Parameter	Date Prepared	Date Analyzed	Initials
Lime Requirement to pH 6.5**	27-AUG-2021	27-AUG-2021	JB
Lime Requirement @ pH 7.0**	27-AUG-2021	27-AUG-2021	JB

Soil Analysis - Total Organic Carbon (W-B Wet Oxidation)

Parameter	Date Prepared	Date Analyzed	Initials
Total Organic Carbon	26-AUG-2021	26-AUG-2021	NN

2879900	PM-1-SB004-e	Soil	17-AUG-2021	19-AUG-2021
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Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

Parameter	Date Prepared	Date Analyzed	Initials
Benzene	24-AUG-2021	24-AUG-2021	CR
Toluene	24-AUG-2021	24-AUG-2021	CR



Time Markers

AGAT WORK ORDER: 21N791280

PROJECT: CE810600

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CLIENT NAME: JACOBS

ATTENTION TO: Patrick Kalita

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
2879900	PM-1-SB004-e	Soil	17-AUG-2021	19-AUG-2021

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

Parameter	Date Prepared	Date Analyzed	Initials
Ethylbenzene	24-AUG-2021	24-AUG-2021	CR
Xylenes	24-AUG-2021	24-AUG-2021	CR
C6 - C10 (F1)	24-AUG-2021	24-AUG-2021	CR
C6 - C10 (F1 minus BTEX)	24-AUG-2021	24-AUG-2021	CR
C10 - C16 (F2)	24-AUG-2021	25-AUG-2021	LP
C16 - C34 (F3)	24-AUG-2021	25-AUG-2021	LP
C34 - C50 (F4)	24-AUG-2021	25-AUG-2021	LP
Gravimetric Heavy Hydrocarbons	24-AUG-2021	25-AUG-2021	LP
Moisture Content	24-AUG-2021	25-AUG-2021	LP
Toluene-d8 (BTEX)	24-AUG-2021	24-AUG-2021	CR
o-Terphenyl (F2-F4)	24-AUG-2021	25-AUG-2021	LP

Polyaromatic Hydrocarbon Analysis - Soil

Parameter	Date Prepared	Date Analyzed	Initials
Acenaphthene	24-AUG-2021	26-AUG-2021	RT
Acenaphthylene	24-AUG-2021	26-AUG-2021	RT
Anthracene	24-AUG-2021	26-AUG-2021	RT
Acridine	24-AUG-2021	26-AUG-2021	RT
Quinoline	24-AUG-2021	26-AUG-2021	RT
Naphthalene	24-AUG-2021	26-AUG-2021	RT
2-Methylnaphthalene	24-AUG-2021	26-AUG-2021	RT
Fluorene	24-AUG-2021	26-AUG-2021	RT
Phenanthrene	24-AUG-2021	26-AUG-2021	RT
Fluoranthene	24-AUG-2021	26-AUG-2021	RT
Pyrene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]anthracene	24-AUG-2021	26-AUG-2021	RT
Chrysene	24-AUG-2021	26-AUG-2021	RT
Benzo[b+j]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[k]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]pyrene	24-AUG-2021	26-AUG-2021	RT
Indeno[1,2,3-cd]pyrene	24-AUG-2021	26-AUG-2021	RT
Dibenzo[ah]anthracene	24-AUG-2021	26-AUG-2021	RT
Benzo[ghi]perylene	24-AUG-2021	26-AUG-2021	RT
p-Terphenyl-d14 (PAH)	24-AUG-2021	26-AUG-2021	RT
p-Naphthalene-d8 (PAH)	24-AUG-2021	26-AUG-2021	RT
P_Pyrene-d10 (PAH)	24-AUG-2021	26-AUG-2021	RT
B[a]P TPE	26-AUG-2021	26-AUG-2021	SYS
IACR (Coarse Soil)	26-AUG-2021	26-AUG-2021	SYS
IACR (Fine Soil)	26-AUG-2021	26-AUG-2021	SYS



Time Markers

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CLIENT NAME: JACOBS

ATTENTION TO: Patrick Kalita

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
2879901	PM-1-SB004-f	Soil	17-AUG-2021	19-AUG-2021

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

Parameter	Date Prepared	Date Analyzed	Initials
Benzene	24-AUG-2021	24-AUG-2021	CR
Toluene	24-AUG-2021	24-AUG-2021	CR
Ethylbenzene	24-AUG-2021	24-AUG-2021	CR
Xylenes	24-AUG-2021	24-AUG-2021	CR
C6 - C10 (F1)	24-AUG-2021	24-AUG-2021	CR
C6 - C10 (F1 minus BTEX)	24-AUG-2021	24-AUG-2021	CR
C10 - C16 (F2)	24-AUG-2021	25-AUG-2021	LP
C16 - C34 (F3)	24-AUG-2021	25-AUG-2021	LP
C34 - C50 (F4)	24-AUG-2021	25-AUG-2021	LP
Gravimetric Heavy Hydrocarbons	24-AUG-2021	25-AUG-2021	LP
Moisture Content	24-AUG-2021	25-AUG-2021	LP
Toluene-d8 (BTEX)	24-AUG-2021	24-AUG-2021	CR
o-Terphenyl (F2-F4)	24-AUG-2021	25-AUG-2021	LP

Polyaromatic Hydrocarbon Analysis - Soil

Parameter	Date Prepared	Date Analyzed	Initials
Acenaphthene	24-AUG-2021	26-AUG-2021	RT
Acenaphthylene	24-AUG-2021	26-AUG-2021	RT
Anthracene	24-AUG-2021	26-AUG-2021	RT
Acridine	24-AUG-2021	26-AUG-2021	RT
Quinoline	24-AUG-2021	26-AUG-2021	RT
Naphthalene	24-AUG-2021	26-AUG-2021	RT
2-Methylnaphthalene	24-AUG-2021	26-AUG-2021	RT
Fluorene	24-AUG-2021	26-AUG-2021	RT
Phenanthrene	24-AUG-2021	26-AUG-2021	RT
Fluoranthene	24-AUG-2021	26-AUG-2021	RT
Pyrene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]anthracene	24-AUG-2021	26-AUG-2021	RT
Chrysene	24-AUG-2021	26-AUG-2021	RT
Benzo[b+j]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[k]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]pyrene	24-AUG-2021	26-AUG-2021	RT
Indeno[1,2,3-cd]pyrene	24-AUG-2021	26-AUG-2021	RT
Dibenzo[ah]anthracene	24-AUG-2021	26-AUG-2021	RT
Benzo[ghi]perylene	24-AUG-2021	26-AUG-2021	RT
p-Terphenyl-d14 (PAH)	24-AUG-2021	26-AUG-2021	RT
p-Naphthalene-d8 (PAH)	24-AUG-2021	26-AUG-2021	RT
P_Pyrene-d10 (PAH)	24-AUG-2021	26-AUG-2021	RT



Time Markers

AGAT WORK ORDER: 21N791280

PROJECT: CE810600

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CLIENT NAME: JACOBS

ATTENTION TO: Patrick Kalita

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
2879901	PM-1-SB004-f	Soil	17-AUG-2021	19-AUG-2021

Polyaromatic Hydrocarbon Analysis - Soil

Parameter	Date Prepared	Date Analyzed	Initials
B[a]P TPE	26-AUG-2021	26-AUG-2021	SYS
IACR (Coarse Soil)	26-AUG-2021	26-AUG-2021	SYS
IACR (Fine Soil)	26-AUG-2021	26-AUG-2021	SYS

2879902	PM-1-SB005-a	Soil	17-AUG-2021	19-AUG-2021
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Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

Parameter	Date Prepared	Date Analyzed	Initials
Benzene	24-AUG-2021	24-AUG-2021	CR
Toluene	24-AUG-2021	24-AUG-2021	CR
Ethylbenzene	24-AUG-2021	24-AUG-2021	CR
Xylenes	24-AUG-2021	24-AUG-2021	CR
C6 - C10 (F1)	24-AUG-2021	24-AUG-2021	CR
C6 - C10 (F1 minus BTEX)	24-AUG-2021	24-AUG-2021	CR
C10 - C16 (F2)	24-AUG-2021	25-AUG-2021	LP
C16 - C34 (F3)	24-AUG-2021	25-AUG-2021	LP
C34 - C50 (F4)	24-AUG-2021	25-AUG-2021	LP
Gravimetric Heavy Hydrocarbons	24-AUG-2021	25-AUG-2021	LP
Moisture Content	24-AUG-2021	25-AUG-2021	LP
Toluene-d8 (BTEX)	24-AUG-2021	24-AUG-2021	CR
o-Terphenyl (F2-F4)	24-AUG-2021	25-AUG-2021	LP

Polyaromatic Hydrocarbon Analysis - Soil

Parameter	Date Prepared	Date Analyzed	Initials
Acenaphthene	24-AUG-2021	26-AUG-2021	RT
Acenaphthylene	24-AUG-2021	26-AUG-2021	RT
Anthracene	24-AUG-2021	26-AUG-2021	RT
Acridine	24-AUG-2021	26-AUG-2021	RT
Quinoline	24-AUG-2021	26-AUG-2021	RT
Naphthalene	24-AUG-2021	26-AUG-2021	RT
2-Methylnaphthalene	24-AUG-2021	26-AUG-2021	RT
Fluorene	24-AUG-2021	26-AUG-2021	RT
Phenanthrene	24-AUG-2021	26-AUG-2021	RT
Fluoranthene	24-AUG-2021	26-AUG-2021	RT
Pyrene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]anthracene	24-AUG-2021	26-AUG-2021	RT
Chrysene	24-AUG-2021	26-AUG-2021	RT
Benzo[b+j]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[k]fluoranthene	24-AUG-2021	26-AUG-2021	RT



Time Markers

AGAT WORK ORDER: 21N791280

PROJECT: CE810600

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CLIENT NAME: JACOBS

ATTENTION TO: Patrick Kalita

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
2879902	PM-1-SB005-a	Soil	17-AUG-2021	19-AUG-2021

Polyaromatic Hydrocarbon Analysis - Soil

Parameter	Date Prepared	Date Analyzed	Initials
Benzo[a]pyrene	24-AUG-2021	26-AUG-2021	RT
Indeno[1,2,3-cd]pyrene	24-AUG-2021	26-AUG-2021	RT
Dibenzo[ah]anthracene	24-AUG-2021	26-AUG-2021	RT
Benzo[ghi]perylene	24-AUG-2021	26-AUG-2021	RT
p-Terphenyl-d14 (PAH)	24-AUG-2021	26-AUG-2021	RT
p-Naphthalene-d8 (PAH)	24-AUG-2021	26-AUG-2021	RT
P_Pyrene-d10 (PAH)	24-AUG-2021	26-AUG-2021	RT
B[a]P TPE	26-AUG-2021	26-AUG-2021	SYS
IACR (Coarse Soil)	26-AUG-2021	26-AUG-2021	SYS
IACR (Fine Soil)	26-AUG-2021	26-AUG-2021	SYS

2879903	PM-1-SB005-b	Soil	17-AUG-2021	19-AUG-2021
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Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

Parameter	Date Prepared	Date Analyzed	Initials
Benzene	24-AUG-2021	24-AUG-2021	CR
Toluene	24-AUG-2021	24-AUG-2021	CR
Ethylbenzene	24-AUG-2021	24-AUG-2021	CR
Xylenes	24-AUG-2021	24-AUG-2021	CR
C6 - C10 (F1)	24-AUG-2021	24-AUG-2021	CR
C6 - C10 (F1 minus BTEX)	24-AUG-2021	24-AUG-2021	CR
C10 - C16 (F2)	24-AUG-2021	25-AUG-2021	LP
C16 - C34 (F3)	24-AUG-2021	25-AUG-2021	LP
C34 - C50 (F4)	24-AUG-2021	25-AUG-2021	LP
Gravimetric Heavy Hydrocarbons	24-AUG-2021	25-AUG-2021	LP
Moisture Content	24-AUG-2021	25-AUG-2021	LP
Toluene-d8 (BTEX)	24-AUG-2021	24-AUG-2021	CR
o-Terphenyl (F2-F4)	24-AUG-2021	25-AUG-2021	LP

Polyaromatic Hydrocarbon Analysis - Soil

Parameter	Date Prepared	Date Analyzed	Initials
Acenaphthene	24-AUG-2021	26-AUG-2021	RT
Acenaphthylene	24-AUG-2021	26-AUG-2021	RT
Anthracene	24-AUG-2021	26-AUG-2021	RT
Acridine	24-AUG-2021	26-AUG-2021	RT
Quinoline	24-AUG-2021	26-AUG-2021	RT
Naphthalene	24-AUG-2021	26-AUG-2021	RT
2-Methylnaphthalene	24-AUG-2021	26-AUG-2021	RT
Fluorene	24-AUG-2021	26-AUG-2021	RT



Time Markers

AGAT WORK ORDER: 21N791280

PROJECT: CE810600

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CLIENT NAME: JACOBS

ATTENTION TO: Patrick Kalita

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
2879903	PM-1-SB005-b	Soil	17-AUG-2021	19-AUG-2021

Polyaromatic Hydrocarbon Analysis - Soil

Parameter	Date Prepared	Date Analyzed	Initials
Phenanthrene	24-AUG-2021	26-AUG-2021	RT
Fluoranthene	24-AUG-2021	26-AUG-2021	RT
Pyrene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]anthracene	24-AUG-2021	26-AUG-2021	RT
Chrysene	24-AUG-2021	26-AUG-2021	RT
Benzo[b+j]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[k]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]pyrene	24-AUG-2021	26-AUG-2021	RT
Indeno[1,2,3-cd]pyrene	24-AUG-2021	26-AUG-2021	RT
Dibenzo[ah]anthracene	24-AUG-2021	26-AUG-2021	RT
Benzo[ghi]perylene	24-AUG-2021	26-AUG-2021	RT
p-Terphenyl-d14 (PAH)	24-AUG-2021	26-AUG-2021	RT
p-Naphthalene-d8 (PAH)	24-AUG-2021	26-AUG-2021	RT
P_Pyrene-d10 (PAH)	24-AUG-2021	26-AUG-2021	RT
B[a]P TPE	26-AUG-2021	26-AUG-2021	SYS
IACR (Coarse Soil)	26-AUG-2021	26-AUG-2021	SYS
IACR (Fine Soil)	26-AUG-2021	26-AUG-2021	SYS

2879904	PM-1-SB005-c	Soil	17-AUG-2021	19-AUG-2021
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Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

Parameter	Date Prepared	Date Analyzed	Initials
Benzene	24-AUG-2021	24-AUG-2021	CR
Toluene	24-AUG-2021	24-AUG-2021	CR
Ethylbenzene	24-AUG-2021	24-AUG-2021	CR
Xylenes	24-AUG-2021	24-AUG-2021	CR
C6 - C10 (F1)	24-AUG-2021	24-AUG-2021	CR
C6 - C10 (F1 minus BTEX)	24-AUG-2021	24-AUG-2021	CR
C10 - C16 (F2)	24-AUG-2021	25-AUG-2021	LP
C16 - C34 (F3)	24-AUG-2021	25-AUG-2021	LP
C34 - C50 (F4)	24-AUG-2021	25-AUG-2021	LP
Gravimetric Heavy Hydrocarbons	24-AUG-2021	25-AUG-2021	LP
Moisture Content	24-AUG-2021	25-AUG-2021	LP
Toluene-d8 (BTEX)	24-AUG-2021	24-AUG-2021	CR
o-Terphenyl (F2-F4)	24-AUG-2021	25-AUG-2021	LP

Polyaromatic Hydrocarbon Analysis - Soil

Parameter	Date Prepared	Date Analyzed	Initials
Acenaphthene	24-AUG-2021	26-AUG-2021	RT



Time Markers

AGAT WORK ORDER: 21N791280

PROJECT: CE810600

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CLIENT NAME: JACOBS

ATTENTION TO: Patrick Kalita

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
2879904	PM-1-SB005-c	Soil	17-AUG-2021	19-AUG-2021

Polyaromatic Hydrocarbon Analysis - Soil

Parameter	Date Prepared	Date Analyzed	Initials
Acenaphthylene	24-AUG-2021	26-AUG-2021	RT
Anthracene	24-AUG-2021	26-AUG-2021	RT
Acridine	24-AUG-2021	26-AUG-2021	RT
Quinoline	24-AUG-2021	26-AUG-2021	RT
Naphthalene	24-AUG-2021	26-AUG-2021	RT
2-Methylnaphthalene	24-AUG-2021	26-AUG-2021	RT
Fluorene	24-AUG-2021	26-AUG-2021	RT
Phenanthrene	24-AUG-2021	26-AUG-2021	RT
Fluoranthene	24-AUG-2021	26-AUG-2021	RT
Pyrene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]anthracene	24-AUG-2021	26-AUG-2021	RT
Chrysene	24-AUG-2021	26-AUG-2021	RT
Benzo[b+j]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[k]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]pyrene	24-AUG-2021	26-AUG-2021	RT
Indeno[1,2,3-cd]pyrene	24-AUG-2021	26-AUG-2021	RT
Dibenzo[ah]anthracene	24-AUG-2021	26-AUG-2021	RT
Benzo[ghi]perylene	24-AUG-2021	26-AUG-2021	RT
p-Terphenyl-d14 (PAH)	24-AUG-2021	26-AUG-2021	RT
p-Naphthalene-d8 (PAH)	24-AUG-2021	26-AUG-2021	RT
P_Pyrene-d10 (PAH)	24-AUG-2021	26-AUG-2021	RT
B[a]P TPE	26-AUG-2021	26-AUG-2021	SYS
IACR (Coarse Soil)	26-AUG-2021	26-AUG-2021	SYS
IACR (Fine Soil)	26-AUG-2021	26-AUG-2021	SYS

2879905	PM-1-SB005-d	Soil	17-AUG-2021	19-AUG-2021
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Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

Parameter	Date Prepared	Date Analyzed	Initials
Benzene	24-AUG-2021	24-AUG-2021	CR
Toluene	24-AUG-2021	24-AUG-2021	CR
Ethylbenzene	24-AUG-2021	24-AUG-2021	CR
Xylenes	24-AUG-2021	24-AUG-2021	CR
C6 - C10 (F1)	24-AUG-2021	24-AUG-2021	CR
C6 - C10 (F1 minus BTEX)	24-AUG-2021	24-AUG-2021	CR
C10 - C16 (F2)	24-AUG-2021	25-AUG-2021	LP
C16 - C34 (F3)	24-AUG-2021	25-AUG-2021	LP
C34 - C50 (F4)	24-AUG-2021	25-AUG-2021	LP
Gravimetric Heavy Hydrocarbons	24-AUG-2021	25-AUG-2021	LP



Time Markers

AGAT WORK ORDER: 21N791280

PROJECT: CE810600

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<http://www.agatlabs.com>

CLIENT NAME: JACOBS

ATTENTION TO: Patrick Kalita

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
2879905	PM-1-SB005-d	Soil	17-AUG-2021	19-AUG-2021

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

Parameter	Date Prepared	Date Analyzed	Initials
Moisture Content	24-AUG-2021	25-AUG-2021	LP
Toluene-d8 (BTEX)	24-AUG-2021	24-AUG-2021	CR
o-Terphenyl (F2-F4)	24-AUG-2021	25-AUG-2021	LP

Polyaromatic Hydrocarbon Analysis - Soil

Parameter	Date Prepared	Date Analyzed	Initials
Acenaphthene	24-AUG-2021	26-AUG-2021	RT
Acenaphthylene	24-AUG-2021	26-AUG-2021	RT
Anthracene	24-AUG-2021	26-AUG-2021	RT
Acridine	24-AUG-2021	26-AUG-2021	RT
Quinoline	24-AUG-2021	26-AUG-2021	RT
Naphthalene	24-AUG-2021	26-AUG-2021	RT
2-Methylnaphthalene	24-AUG-2021	26-AUG-2021	RT
Fluorene	24-AUG-2021	26-AUG-2021	RT
Phenanthrene	24-AUG-2021	26-AUG-2021	RT
Fluoranthene	24-AUG-2021	26-AUG-2021	RT
Pyrene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]anthracene	24-AUG-2021	26-AUG-2021	RT
Chrysene	24-AUG-2021	26-AUG-2021	RT
Benzo[b+j]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[k]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]pyrene	24-AUG-2021	26-AUG-2021	RT
Indeno[1,2,3-cd]pyrene	24-AUG-2021	26-AUG-2021	RT
Dibenzo[ah]anthracene	24-AUG-2021	26-AUG-2021	RT
Benzo[ghi]perylene	24-AUG-2021	26-AUG-2021	RT
p-Terphenyl-d14 (PAH)	24-AUG-2021	26-AUG-2021	RT
p-Naphthalene-d8 (PAH)	24-AUG-2021	26-AUG-2021	RT
P_Pyrene-d10 (PAH)	24-AUG-2021	26-AUG-2021	RT
B[a]P TPE	26-AUG-2021	26-AUG-2021	SYS
IACR (Coarse Soil)	26-AUG-2021	26-AUG-2021	SYS
IACR (Fine Soil)	26-AUG-2021	26-AUG-2021	SYS

2879906	PM-1-SB005-e	Soil	17-AUG-2021	19-AUG-2021
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Nutrients Package 2

Parameter	Date Prepared	Date Analyzed	Initials
Available Nitrate (NO3-N)	27-AUG-2021	27-AUG-2021	AH
Available Phosphorus - P	27-AUG-2021	27-AUG-2021	MH
Available Potassium	27-AUG-2021	27-AUG-2021	IP



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CLIENT NAME: JACOBS

ATTENTION TO: Patrick Kalita

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
2879906	PM-1-SB005-e	Soil	17-AUG-2021	19-AUG-2021

Nutrients Package 2

Parameter	Date Prepared	Date Analyzed	Initials
Available Sulfur (SO4-S)	27-AUG-2021	27-AUG-2021	IP

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

Parameter	Date Prepared	Date Analyzed	Initials
Benzene	24-AUG-2021	24-AUG-2021	CR
Toluene	24-AUG-2021	24-AUG-2021	CR
Ethylbenzene	24-AUG-2021	24-AUG-2021	CR
Xylenes	24-AUG-2021	24-AUG-2021	CR
C6 - C10 (F1)	24-AUG-2021	24-AUG-2021	CR
C6 - C10 (F1 minus BTEX)	24-AUG-2021	24-AUG-2021	CR
C10 - C16 (F2)	24-AUG-2021	25-AUG-2021	LP
C16 - C34 (F3)	24-AUG-2021	25-AUG-2021	LP
C34 - C50 (F4)	24-AUG-2021	25-AUG-2021	LP
Gravimetric Heavy Hydrocarbons	24-AUG-2021	25-AUG-2021	LP
Moisture Content	24-AUG-2021	25-AUG-2021	LP
Toluene-d8 (BTEX)	24-AUG-2021	24-AUG-2021	CR
o-Terphenyl (F2-F4)	24-AUG-2021	25-AUG-2021	LP

Polyaromatic Hydrocarbon Analysis - Soil

Parameter	Date Prepared	Date Analyzed	Initials
Acenaphthene	24-AUG-2021	26-AUG-2021	RT
Acenaphthylene	24-AUG-2021	26-AUG-2021	RT
Anthracene	24-AUG-2021	26-AUG-2021	RT
Acridine	24-AUG-2021	26-AUG-2021	RT
Quinoline	24-AUG-2021	26-AUG-2021	RT
Naphthalene	24-AUG-2021	26-AUG-2021	RT
2-Methylnaphthalene	24-AUG-2021	26-AUG-2021	RT
Fluorene	24-AUG-2021	26-AUG-2021	RT
Phenanthrene	24-AUG-2021	26-AUG-2021	RT
Fluoranthene	24-AUG-2021	26-AUG-2021	RT
Pyrene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]anthracene	24-AUG-2021	26-AUG-2021	RT
Chrysene	24-AUG-2021	26-AUG-2021	RT
Benzo[b+j]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[k]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]pyrene	24-AUG-2021	26-AUG-2021	RT
Indeno[1,2,3-cd]pyrene	24-AUG-2021	26-AUG-2021	RT
Dibenzo[ah]anthracene	24-AUG-2021	26-AUG-2021	RT
Benzo[ghi]perylene	24-AUG-2021	26-AUG-2021	RT



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CLIENT NAME: JACOBS

ATTENTION TO: Patrick Kalita

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
2879906	PM-1-SB005-e	Soil	17-AUG-2021	19-AUG-2021

Polyaromatic Hydrocarbon Analysis - Soil

Parameter	Date Prepared	Date Analyzed	Initials
p-Terphenyl-d14 (PAH)	24-AUG-2021	26-AUG-2021	RT
p-Naphthalene-d8 (PAH)	24-AUG-2021	26-AUG-2021	RT
P_Pyrene-d10 (PAH)	24-AUG-2021	26-AUG-2021	RT
B[a]P TPE	26-AUG-2021	26-AUG-2021	SYS
IACR (Coarse Soil)	26-AUG-2021	26-AUG-2021	SYS
IACR (Fine Soil)	26-AUG-2021	26-AUG-2021	SYS

Soil Analysis - Alkalinity, Bulk Density, Moisture, pH (Sat. Paste)

Parameter	Date Prepared	Date Analyzed	Initials
Bicarbonate, Soluble	31-AUG-2021	31-AUG-2021	KT
Carbonate, Soluble	31-AUG-2021	31-AUG-2021	KT
Bulk Density, Crude - Wet (As Recieved Soil)	26-AUG-2021	26-AUG-2021	SS
Moisture Content (Wet Weight)**	25-AUG-2021	26-AUG-2021	JB
pH (Saturated Paste)	27-AUG-2021	27-AUG-2021	AG

Soil Analysis - Lime Requirement

Parameter	Date Prepared	Date Analyzed	Initials
Lime Requirement to pH 6.5**	27-AUG-2021	27-AUG-2021	JB
Lime Requirement @ pH 7.0**	27-AUG-2021	27-AUG-2021	JB

Soil Analysis - Total Organic Carbon (W-B Wet Oxidation)

Parameter	Date Prepared	Date Analyzed	Initials
Total Organic Carbon	26-AUG-2021	26-AUG-2021	NN

2879907	PM-1-SB006-a	Soil	17-AUG-2021	19-AUG-2021
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Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

Parameter	Date Prepared	Date Analyzed	Initials
Benzene	24-AUG-2021	24-AUG-2021	CR
Toluene	24-AUG-2021	24-AUG-2021	CR
Ethylbenzene	24-AUG-2021	24-AUG-2021	CR
Xylenes	24-AUG-2021	24-AUG-2021	CR
C6 - C10 (F1)	24-AUG-2021	24-AUG-2021	CR
C6 - C10 (F1 minus BTEX)	24-AUG-2021	24-AUG-2021	CR
C10 - C16 (F2)	24-AUG-2021	25-AUG-2021	LP
C16 - C34 (F3)	24-AUG-2021	25-AUG-2021	LP
C34 - C50 (F4)	24-AUG-2021	25-AUG-2021	LP
Gravimetric Heavy Hydrocarbons	24-AUG-2021	25-AUG-2021	LP
Moisture Content	24-AUG-2021	25-AUG-2021	LP



Time Markers

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CLIENT NAME: JACOBS

ATTENTION TO: Patrick Kalita

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
2879907	PM-1-SB006-a	Soil	17-AUG-2021	19-AUG-2021

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

Parameter	Date Prepared	Date Analyzed	Initials
Toluene-d8 (BTEX)	24-AUG-2021	24-AUG-2021	CR
o-Terphenyl (F2-F4)	24-AUG-2021	25-AUG-2021	LP

Polyaromatic Hydrocarbon Analysis - Soil

Parameter	Date Prepared	Date Analyzed	Initials
Acenaphthene	24-AUG-2021	26-AUG-2021	RT
Acenaphthylene	24-AUG-2021	26-AUG-2021	RT
Anthracene	24-AUG-2021	26-AUG-2021	RT
Acridine	24-AUG-2021	26-AUG-2021	RT
Quinoline	24-AUG-2021	26-AUG-2021	RT
Naphthalene	24-AUG-2021	26-AUG-2021	RT
2-Methylnaphthalene	24-AUG-2021	26-AUG-2021	RT
Fluorene	24-AUG-2021	26-AUG-2021	RT
Phenanthrene	24-AUG-2021	26-AUG-2021	RT
Fluoranthene	24-AUG-2021	26-AUG-2021	RT
Pyrene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]anthracene	24-AUG-2021	26-AUG-2021	RT
Chrysene	24-AUG-2021	26-AUG-2021	RT
Benzo[b+j]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[k]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]pyrene	24-AUG-2021	26-AUG-2021	RT
Indeno[1,2,3-cd]pyrene	24-AUG-2021	26-AUG-2021	RT
Dibenzo[ah]anthracene	24-AUG-2021	26-AUG-2021	RT
Benzo[ghi]perylene	24-AUG-2021	26-AUG-2021	RT
p-Terphenyl-d14 (PAH)	24-AUG-2021	26-AUG-2021	RT
p-Naphthalene-d8 (PAH)	24-AUG-2021	26-AUG-2021	RT
P_Pyrene-d10 (PAH)	24-AUG-2021	26-AUG-2021	RT
B[a]P TPE	26-AUG-2021	26-AUG-2021	SYS
IACR (Coarse Soil)	26-AUG-2021	26-AUG-2021	SYS
IACR (Fine Soil)	26-AUG-2021	26-AUG-2021	SYS

2879908	PM-1-SB006-b	Soil	18-AUG-2021	19-AUG-2021
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Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

Parameter	Date Prepared	Date Analyzed	Initials
Benzene	24-AUG-2021	24-AUG-2021	CR
Toluene	24-AUG-2021	24-AUG-2021	CR
Ethylbenzene	24-AUG-2021	24-AUG-2021	CR
Xylenes	24-AUG-2021	24-AUG-2021	CR



Time Markers

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CLIENT NAME: JACOBS

ATTENTION TO: Patrick Kalita

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
2879908	PM-1-SB006-b	Soil	18-AUG-2021	19-AUG-2021

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

Parameter	Date Prepared	Date Analyzed	Initials
C6 - C10 (F1)	24-AUG-2021	24-AUG-2021	CR
C6 - C10 (F1 minus BTEX)	24-AUG-2021	24-AUG-2021	CR
C10 - C16 (F2)	24-AUG-2021	25-AUG-2021	LP
C16 - C34 (F3)	24-AUG-2021	25-AUG-2021	LP
C34 - C50 (F4)	24-AUG-2021	25-AUG-2021	LP
Gravimetric Heavy Hydrocarbons	24-AUG-2021	25-AUG-2021	LP
Moisture Content	24-AUG-2021	25-AUG-2021	LP
Toluene-d8 (BTEX)	24-AUG-2021	24-AUG-2021	CR
o-Terphenyl (F2-F4)	24-AUG-2021	25-AUG-2021	LP

Polyaromatic Hydrocarbon Analysis - Soil

Parameter	Date Prepared	Date Analyzed	Initials
Acenaphthene	24-AUG-2021	26-AUG-2021	RT
Acenaphthylene	24-AUG-2021	26-AUG-2021	RT
Anthracene	24-AUG-2021	26-AUG-2021	RT
Acridine	24-AUG-2021	26-AUG-2021	RT
Quinoline	24-AUG-2021	26-AUG-2021	RT
Naphthalene	24-AUG-2021	26-AUG-2021	RT
2-Methylnaphthalene	24-AUG-2021	26-AUG-2021	RT
Fluorene	24-AUG-2021	26-AUG-2021	RT
Phenanthrene	24-AUG-2021	26-AUG-2021	RT
Fluoranthene	24-AUG-2021	26-AUG-2021	RT
Pyrene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]anthracene	24-AUG-2021	26-AUG-2021	RT
Chrysene	24-AUG-2021	26-AUG-2021	RT
Benzo[b+j]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[k]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]pyrene	24-AUG-2021	26-AUG-2021	RT
Indeno[1,2,3-cd]pyrene	24-AUG-2021	26-AUG-2021	RT
Dibenzo[ah]anthracene	24-AUG-2021	26-AUG-2021	RT
Benzo[ghi]perylene	24-AUG-2021	26-AUG-2021	RT
p-Terphenyl-d14 (PAH)	24-AUG-2021	26-AUG-2021	RT
p-Naphthalene-d8 (PAH)	24-AUG-2021	26-AUG-2021	RT
P_Pyrene-d10 (PAH)	24-AUG-2021	26-AUG-2021	RT
B[a]P TPE	26-AUG-2021	26-AUG-2021	SYS
IACR (Coarse Soil)	26-AUG-2021	26-AUG-2021	SYS
IACR (Fine Soil)	26-AUG-2021	26-AUG-2021	SYS

2879909	PM-1-SB006-c	Soil	18-AUG-2021	19-AUG-2021
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Time Markers

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CLIENT NAME: JACOBS

ATTENTION TO: Patrick Kalita

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
2879909	PM-1-SB006-c	Soil	18-AUG-2021	19-AUG-2021

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

Parameter	Date Prepared	Date Analyzed	Initials
Benzene	24-AUG-2021	24-AUG-2021	CR
Toluene	24-AUG-2021	24-AUG-2021	CR
Ethylbenzene	24-AUG-2021	24-AUG-2021	CR
Xylenes	24-AUG-2021	24-AUG-2021	CR
C6 - C10 (F1)	24-AUG-2021	24-AUG-2021	CR
C6 - C10 (F1 minus BTEX)	24-AUG-2021	24-AUG-2021	CR
C10 - C16 (F2)	24-AUG-2021	25-AUG-2021	LP
C16 - C34 (F3)	24-AUG-2021	25-AUG-2021	LP
C34 - C50 (F4)	24-AUG-2021	25-AUG-2021	LP
Gravimetric Heavy Hydrocarbons	24-AUG-2021	25-AUG-2021	LP
Moisture Content	24-AUG-2021	25-AUG-2021	LP
Toluene-d8 (BTEX)	24-AUG-2021	24-AUG-2021	CR
o-Terphenyl (F2-F4)	24-AUG-2021	25-AUG-2021	LP

Polyaromatic Hydrocarbon Analysis - Soil

Parameter	Date Prepared	Date Analyzed	Initials
Acenaphthene	24-AUG-2021	26-AUG-2021	RT
Acenaphthylene	24-AUG-2021	26-AUG-2021	RT
Anthracene	24-AUG-2021	26-AUG-2021	RT
Acridine	24-AUG-2021	26-AUG-2021	RT
Quinoline	24-AUG-2021	26-AUG-2021	RT
Naphthalene	24-AUG-2021	26-AUG-2021	RT
2-Methylnaphthalene	24-AUG-2021	26-AUG-2021	RT
Fluorene	24-AUG-2021	26-AUG-2021	RT
Phenanthrene	24-AUG-2021	26-AUG-2021	RT
Fluoranthene	24-AUG-2021	26-AUG-2021	RT
Pyrene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]anthracene	24-AUG-2021	26-AUG-2021	RT
Chrysene	24-AUG-2021	26-AUG-2021	RT
Benzo[b+j]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[k]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]pyrene	24-AUG-2021	26-AUG-2021	RT
Indeno[1,2,3-cd]pyrene	24-AUG-2021	26-AUG-2021	RT
Dibenzo[ah]anthracene	24-AUG-2021	26-AUG-2021	RT
Benzo[ghi]perylene	24-AUG-2021	26-AUG-2021	RT
p-Terphenyl-d14 (PAH)	24-AUG-2021	26-AUG-2021	RT
p-Naphthalene-d8 (PAH)	24-AUG-2021	26-AUG-2021	RT
P_Pyrene-d10 (PAH)	24-AUG-2021	26-AUG-2021	RT
B[a]P TPE	26-AUG-2021	26-AUG-2021	SYS



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Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
2879909	PM-1-SB006-c	Soil	18-AUG-2021	19-AUG-2021

Polyaromatic Hydrocarbon Analysis - Soil

Parameter	Date Prepared	Date Analyzed	Initials
IACR (Coarse Soil)	26-AUG-2021	26-AUG-2021	SYS
IACR (Fine Soil)	26-AUG-2021	26-AUG-2021	SYS

2879910	PM-1-SB006-d	Soil	18-AUG-2021	19-AUG-2021
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Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

Parameter	Date Prepared	Date Analyzed	Initials
Benzene	24-AUG-2021	24-AUG-2021	CR
Toluene	24-AUG-2021	24-AUG-2021	CR
Ethylbenzene	24-AUG-2021	24-AUG-2021	CR
Xylenes	24-AUG-2021	24-AUG-2021	CR
C6 - C10 (F1)	24-AUG-2021	24-AUG-2021	CR
C6 - C10 (F1 minus BTEX)	24-AUG-2021	24-AUG-2021	CR
C10 - C16 (F2)	24-AUG-2021	25-AUG-2021	LP
C16 - C34 (F3)	24-AUG-2021	25-AUG-2021	LP
C34 - C50 (F4)	24-AUG-2021	25-AUG-2021	LP
Gravimetric Heavy Hydrocarbons	24-AUG-2021	25-AUG-2021	LP
Moisture Content	24-AUG-2021	25-AUG-2021	LP
Toluene-d8 (BTEX)	24-AUG-2021	24-AUG-2021	CR
o-Terphenyl (F2-F4)	24-AUG-2021	25-AUG-2021	LP

Polyaromatic Hydrocarbon Analysis - Soil

Parameter	Date Prepared	Date Analyzed	Initials
Acenaphthene	24-AUG-2021	26-AUG-2021	RT
Acenaphthylene	24-AUG-2021	26-AUG-2021	RT
Anthracene	24-AUG-2021	26-AUG-2021	RT
Acridine	24-AUG-2021	26-AUG-2021	RT
Quinoline	24-AUG-2021	26-AUG-2021	RT
Naphthalene	24-AUG-2021	26-AUG-2021	RT
2-Methylnaphthalene	24-AUG-2021	26-AUG-2021	RT
Fluorene	24-AUG-2021	26-AUG-2021	RT
Phenanthrene	24-AUG-2021	26-AUG-2021	RT
Fluoranthene	24-AUG-2021	26-AUG-2021	RT
Pyrene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]anthracene	24-AUG-2021	26-AUG-2021	RT
Chrysene	24-AUG-2021	26-AUG-2021	RT
Benzo[b+j]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[k]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]pyrene	24-AUG-2021	26-AUG-2021	RT



Time Markers

AGAT WORK ORDER: 21N791280

PROJECT: CE810600

2910 12TH STREET NE
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CLIENT NAME: JACOBS

ATTENTION TO: Patrick Kalita

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
2879910	PM-1-SB006-d	Soil	18-AUG-2021	19-AUG-2021

Polyaromatic Hydrocarbon Analysis - Soil

Parameter	Date Prepared	Date Analyzed	Initials
Indeno[1,2,3-cd]pyrene	24-AUG-2021	26-AUG-2021	RT
Dibenzo[ah]anthracene	24-AUG-2021	26-AUG-2021	RT
Benzo[ghi]perylene	24-AUG-2021	26-AUG-2021	RT
p-Terphenyl-d14 (PAH)	24-AUG-2021	26-AUG-2021	RT
p-Naphthalene-d8 (PAH)	24-AUG-2021	26-AUG-2021	RT
P_Pyrene-d10 (PAH)	24-AUG-2021	26-AUG-2021	RT
B[a]P TPE	26-AUG-2021	26-AUG-2021	SYS
IACR (Coarse Soil)	26-AUG-2021	26-AUG-2021	SYS
IACR (Fine Soil)	26-AUG-2021	26-AUG-2021	SYS

2879911	PM-1-SB006-e	Soil	18-AUG-2021	19-AUG-2021
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Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

Parameter	Date Prepared	Date Analyzed	Initials
Benzene	24-AUG-2021	24-AUG-2021	CR
Toluene	24-AUG-2021	24-AUG-2021	CR
Ethylbenzene	24-AUG-2021	24-AUG-2021	CR
Xylenes	24-AUG-2021	24-AUG-2021	CR
C6 - C10 (F1)	24-AUG-2021	24-AUG-2021	CR
C6 - C10 (F1 minus BTEX)	24-AUG-2021	24-AUG-2021	CR
C10 - C16 (F2)	24-AUG-2021	25-AUG-2021	LP
C16 - C34 (F3)	24-AUG-2021	25-AUG-2021	LP
C34 - C50 (F4)	24-AUG-2021	25-AUG-2021	LP
Gravimetric Heavy Hydrocarbons	24-AUG-2021	25-AUG-2021	LP
Moisture Content	24-AUG-2021	25-AUG-2021	LP
Toluene-d8 (BTEX)	24-AUG-2021	24-AUG-2021	CR
o-Terphenyl (F2-F4)	24-AUG-2021	25-AUG-2021	LP

Polyaromatic Hydrocarbon Analysis - Soil

Parameter	Date Prepared	Date Analyzed	Initials
Acenaphthene	24-AUG-2021	26-AUG-2021	RT
Acenaphthylene	24-AUG-2021	26-AUG-2021	RT
Anthracene	24-AUG-2021	26-AUG-2021	RT
Acridine	24-AUG-2021	26-AUG-2021	RT
Quinoline	24-AUG-2021	26-AUG-2021	RT
Naphthalene	24-AUG-2021	26-AUG-2021	RT
2-Methylnaphthalene	24-AUG-2021	26-AUG-2021	RT
Fluorene	24-AUG-2021	26-AUG-2021	RT
Phenanthrene	24-AUG-2021	26-AUG-2021	RT



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CLIENT NAME: JACOBS

ATTENTION TO: Patrick Kalita

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
2879911	PM-1-SB006-e	Soil	18-AUG-2021	19-AUG-2021

Polyaromatic Hydrocarbon Analysis - Soil

Parameter	Date Prepared	Date Analyzed	Initials
Fluoranthene	24-AUG-2021	26-AUG-2021	RT
Pyrene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]anthracene	24-AUG-2021	26-AUG-2021	RT
Chrysene	24-AUG-2021	26-AUG-2021	RT
Benzo[b+j]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[k]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]pyrene	24-AUG-2021	26-AUG-2021	RT
Indeno[1,2,3-cd]pyrene	24-AUG-2021	26-AUG-2021	RT
Dibenzo[ah]anthracene	24-AUG-2021	26-AUG-2021	RT
Benzo[ghi]perylene	24-AUG-2021	26-AUG-2021	RT
p-Terphenyl-d14 (PAH)	24-AUG-2021	26-AUG-2021	RT
p-Naphthalene-d8 (PAH)	24-AUG-2021	26-AUG-2021	RT
P_Pyrene-d10 (PAH)	24-AUG-2021	26-AUG-2021	RT
B[a]P TPE	26-AUG-2021	26-AUG-2021	SYS
IACR (Coarse Soil)	26-AUG-2021	26-AUG-2021	SYS
IACR (Fine Soil)	26-AUG-2021	26-AUG-2021	SYS

2879912	PM-1-SB007-a	Soil	18-AUG-2021	19-AUG-2021
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Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

Parameter	Date Prepared	Date Analyzed	Initials
Benzene	24-AUG-2021	24-AUG-2021	CR
Toluene	24-AUG-2021	24-AUG-2021	CR
Ethylbenzene	24-AUG-2021	24-AUG-2021	CR
Xylenes	24-AUG-2021	24-AUG-2021	CR
C6 - C10 (F1)	24-AUG-2021	24-AUG-2021	CR
C6 - C10 (F1 minus BTEX)	24-AUG-2021	24-AUG-2021	CR
C10 - C16 (F2)	24-AUG-2021	25-AUG-2021	LP
C16 - C34 (F3)	24-AUG-2021	25-AUG-2021	LP
C34 - C50 (F4)	24-AUG-2021	25-AUG-2021	LP
Gravimetric Heavy Hydrocarbons	24-AUG-2021	25-AUG-2021	LP
Moisture Content	24-AUG-2021	25-AUG-2021	LP
Toluene-d8 (BTEX)	24-AUG-2021	24-AUG-2021	CR
o-Terphenyl (F2-F4)	24-AUG-2021	25-AUG-2021	LP

Polyaromatic Hydrocarbon Analysis - Soil

Parameter	Date Prepared	Date Analyzed	Initials
Acenaphthene	24-AUG-2021	26-AUG-2021	RT
Acenaphthylene	24-AUG-2021	26-AUG-2021	RT



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CLIENT NAME: JACOBS

ATTENTION TO: Patrick Kalita

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
2879912	PM-1-SB007-a	Soil	18-AUG-2021	19-AUG-2021

Polyaromatic Hydrocarbon Analysis - Soil

Parameter	Date Prepared	Date Analyzed	Initials
Anthracene	24-AUG-2021	26-AUG-2021	RT
Acridine	24-AUG-2021	26-AUG-2021	RT
Quinoline	24-AUG-2021	26-AUG-2021	RT
Naphthalene	24-AUG-2021	26-AUG-2021	RT
2-Methylnaphthalene	24-AUG-2021	26-AUG-2021	RT
Fluorene	24-AUG-2021	26-AUG-2021	RT
Phenanthrene	24-AUG-2021	26-AUG-2021	RT
Fluoranthene	24-AUG-2021	26-AUG-2021	RT
Pyrene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]anthracene	24-AUG-2021	26-AUG-2021	RT
Chrysene	24-AUG-2021	26-AUG-2021	RT
Benzo[b+j]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[k]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]pyrene	24-AUG-2021	26-AUG-2021	RT
Indeno[1,2,3-cd]pyrene	24-AUG-2021	26-AUG-2021	RT
Dibenzo[ah]anthracene	24-AUG-2021	26-AUG-2021	RT
Benzo[ghi]perylene	24-AUG-2021	26-AUG-2021	RT
p-Terphenyl-d14 (PAH)	24-AUG-2021	26-AUG-2021	RT
p-Naphthalene-d8 (PAH)	24-AUG-2021	26-AUG-2021	RT
P_Pyrene-d10 (PAH)	24-AUG-2021	26-AUG-2021	RT
B[a]P TPE	26-AUG-2021	26-AUG-2021	SYS
IACR (Coarse Soil)	26-AUG-2021	26-AUG-2021	SYS
IACR (Fine Soil)	26-AUG-2021	26-AUG-2021	SYS

2879913	PM-1-SB007-b	Soil	18-AUG-2021	19-AUG-2021
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Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

Parameter	Date Prepared	Date Analyzed	Initials
Benzene	24-AUG-2021	24-AUG-2021	CR
Toluene	24-AUG-2021	24-AUG-2021	CR
Ethylbenzene	24-AUG-2021	24-AUG-2021	CR
Xylenes	24-AUG-2021	24-AUG-2021	CR
C6 - C10 (F1)	24-AUG-2021	24-AUG-2021	CR
C6 - C10 (F1 minus BTEX)	24-AUG-2021	24-AUG-2021	CR
C10 - C16 (F2)	24-AUG-2021	25-AUG-2021	LP
C16 - C34 (F3)	24-AUG-2021	25-AUG-2021	LP
C34 - C50 (F4)	24-AUG-2021	25-AUG-2021	LP
Gravimetric Heavy Hydrocarbons	24-AUG-2021	25-AUG-2021	LP
Moisture Content	24-AUG-2021	25-AUG-2021	LP



Time Markers

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CLIENT NAME: JACOBS

ATTENTION TO: Patrick Kalita

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
2879913	PM-1-SB007-b	Soil	18-AUG-2021	19-AUG-2021

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

Parameter	Date Prepared	Date Analyzed	Initials
Toluene-d8 (BTEX)	24-AUG-2021	24-AUG-2021	CR
o-Terphenyl (F2-F4)	24-AUG-2021	25-AUG-2021	LP

Polyaromatic Hydrocarbon Analysis - Soil

Parameter	Date Prepared	Date Analyzed	Initials
Acenaphthene	24-AUG-2021	26-AUG-2021	RT
Acenaphthylene	24-AUG-2021	26-AUG-2021	RT
Anthracene	24-AUG-2021	26-AUG-2021	RT
Acridine	24-AUG-2021	26-AUG-2021	RT
Quinoline	24-AUG-2021	26-AUG-2021	RT
Naphthalene	24-AUG-2021	26-AUG-2021	RT
2-Methylnaphthalene	24-AUG-2021	26-AUG-2021	RT
Fluorene	24-AUG-2021	26-AUG-2021	RT
Phenanthrene	24-AUG-2021	26-AUG-2021	RT
Fluoranthene	24-AUG-2021	26-AUG-2021	RT
Pyrene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]anthracene	24-AUG-2021	26-AUG-2021	RT
Chrysene	24-AUG-2021	26-AUG-2021	RT
Benzo[b+j]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[k]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]pyrene	24-AUG-2021	26-AUG-2021	RT
Indeno[1,2,3-cd]pyrene	24-AUG-2021	26-AUG-2021	RT
Dibenzo[ah]anthracene	24-AUG-2021	26-AUG-2021	RT
Benzo[ghi]perylene	24-AUG-2021	26-AUG-2021	RT
p-Terphenyl-d14 (PAH)	24-AUG-2021	26-AUG-2021	RT
p-Naphthalene-d8 (PAH)	24-AUG-2021	26-AUG-2021	RT
P_Pyrene-d10 (PAH)	24-AUG-2021	26-AUG-2021	RT
B[a]P TPE	26-AUG-2021	26-AUG-2021	SYS
IACR (Coarse Soil)	26-AUG-2021	26-AUG-2021	SYS
IACR (Fine Soil)	26-AUG-2021	26-AUG-2021	SYS

2879914	PM-1-SB007-c	Soil	18-AUG-2021	19-AUG-2021
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Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

Parameter	Date Prepared	Date Analyzed	Initials
Benzene	24-AUG-2021	24-AUG-2021	CR
Toluene	24-AUG-2021	24-AUG-2021	CR
Ethylbenzene	24-AUG-2021	24-AUG-2021	CR
Xylenes	24-AUG-2021	24-AUG-2021	CR



Time Markers

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Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
2879914	PM-1-SB007-c	Soil	18-AUG-2021	19-AUG-2021

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

Parameter	Date Prepared	Date Analyzed	Initials
C6 - C10 (F1)	24-AUG-2021	24-AUG-2021	CR
C6 - C10 (F1 minus BTEX)	24-AUG-2021	24-AUG-2021	CR
C10 - C16 (F2)	24-AUG-2021	25-AUG-2021	LP
C16 - C34 (F3)	24-AUG-2021	25-AUG-2021	LP
C34 - C50 (F4)	24-AUG-2021	25-AUG-2021	LP
Gravimetric Heavy Hydrocarbons	24-AUG-2021	25-AUG-2021	LP
Moisture Content	24-AUG-2021	25-AUG-2021	LP
Toluene-d8 (BTEX)	24-AUG-2021	24-AUG-2021	CR
o-Terphenyl (F2-F4)	24-AUG-2021	25-AUG-2021	LP

Polyaromatic Hydrocarbon Analysis - Soil

Parameter	Date Prepared	Date Analyzed	Initials
Acenaphthene	24-AUG-2021	26-AUG-2021	RT
Acenaphthylene	24-AUG-2021	26-AUG-2021	RT
Anthracene	24-AUG-2021	26-AUG-2021	RT
Acridine	24-AUG-2021	26-AUG-2021	RT
Quinoline	24-AUG-2021	26-AUG-2021	RT
Naphthalene	24-AUG-2021	26-AUG-2021	RT
2-Methylnaphthalene	24-AUG-2021	26-AUG-2021	RT
Fluorene	24-AUG-2021	26-AUG-2021	RT
Phenanthrene	24-AUG-2021	26-AUG-2021	RT
Fluoranthene	24-AUG-2021	26-AUG-2021	RT
Pyrene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]anthracene	24-AUG-2021	26-AUG-2021	RT
Chrysene	24-AUG-2021	26-AUG-2021	RT
Benzo[b+j]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[k]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]pyrene	24-AUG-2021	26-AUG-2021	RT
Indeno[1,2,3-cd]pyrene	24-AUG-2021	26-AUG-2021	RT
Dibenzo[ah]anthracene	24-AUG-2021	26-AUG-2021	RT
Benzo[ghi]perylene	24-AUG-2021	26-AUG-2021	RT
p-Terphenyl-d14 (PAH)	24-AUG-2021	26-AUG-2021	RT
p-Naphthalene-d8 (PAH)	24-AUG-2021	26-AUG-2021	RT
P_Pyrene-d10 (PAH)	24-AUG-2021	26-AUG-2021	RT
B[a]P TPE	26-AUG-2021	26-AUG-2021	SYS
IACR (Coarse Soil)	26-AUG-2021	26-AUG-2021	SYS
IACR (Fine Soil)	26-AUG-2021	26-AUG-2021	SYS

2879915	PM-1-SB007-d	Soil	18-AUG-2021	19-AUG-2021
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Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
2879915	PM-1-SB007-d	Soil	18-AUG-2021	19-AUG-2021

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

Parameter	Date Prepared	Date Analyzed	Initials
Benzene	24-AUG-2021	24-AUG-2021	CR
Toluene	24-AUG-2021	24-AUG-2021	CR
Ethylbenzene	24-AUG-2021	24-AUG-2021	CR
Xylenes	24-AUG-2021	24-AUG-2021	CR
C6 - C10 (F1)	24-AUG-2021	24-AUG-2021	CR
C6 - C10 (F1 minus BTEX)	24-AUG-2021	24-AUG-2021	CR
C10 - C16 (F2)	24-AUG-2021	25-AUG-2021	LP
C16 - C34 (F3)	24-AUG-2021	25-AUG-2021	LP
C34 - C50 (F4)	24-AUG-2021	25-AUG-2021	LP
Gravimetric Heavy Hydrocarbons	24-AUG-2021	25-AUG-2021	LP
Moisture Content	24-AUG-2021	25-AUG-2021	LP
Toluene-d8 (BTEX)	24-AUG-2021	24-AUG-2021	CR
o-Terphenyl (F2-F4)	24-AUG-2021	25-AUG-2021	LP

Polyaromatic Hydrocarbon Analysis - Soil

Parameter	Date Prepared	Date Analyzed	Initials
Acenaphthene	24-AUG-2021	26-AUG-2021	RT
Acenaphthylene	24-AUG-2021	26-AUG-2021	RT
Anthracene	24-AUG-2021	26-AUG-2021	RT
Acridine	24-AUG-2021	26-AUG-2021	RT
Quinoline	24-AUG-2021	26-AUG-2021	RT
Naphthalene	24-AUG-2021	26-AUG-2021	RT
2-Methylnaphthalene	24-AUG-2021	26-AUG-2021	RT
Fluorene	24-AUG-2021	26-AUG-2021	RT
Phenanthrene	24-AUG-2021	26-AUG-2021	RT
Fluoranthene	24-AUG-2021	26-AUG-2021	RT
Pyrene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]anthracene	24-AUG-2021	26-AUG-2021	RT
Chrysene	24-AUG-2021	26-AUG-2021	RT
Benzo[b+j]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[k]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]pyrene	24-AUG-2021	26-AUG-2021	RT
Indeno[1,2,3-cd]pyrene	24-AUG-2021	26-AUG-2021	RT
Dibenzo[ah]anthracene	24-AUG-2021	26-AUG-2021	RT
Benzo[ghi]perylene	24-AUG-2021	26-AUG-2021	RT
p-Terphenyl-d14 (PAH)	24-AUG-2021	26-AUG-2021	RT
p-Naphthalene-d8 (PAH)	24-AUG-2021	26-AUG-2021	RT
P_Pyrene-d10 (PAH)	24-AUG-2021	26-AUG-2021	RT
B[a]P TPE	26-AUG-2021	26-AUG-2021	SYS



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Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
2879915	PM-1-SB007-d	Soil	18-AUG-2021	19-AUG-2021

Polyaromatic Hydrocarbon Analysis - Soil

Parameter	Date Prepared	Date Analyzed	Initials
IACR (Coarse Soil)	26-AUG-2021	26-AUG-2021	SYS
IACR (Fine Soil)	26-AUG-2021	26-AUG-2021	SYS

2879916	PM-1-SB007-e	Soil	18-AUG-2021	19-AUG-2021
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Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

Parameter	Date Prepared	Date Analyzed	Initials
Benzene	24-AUG-2021	24-AUG-2021	CR
Toluene	24-AUG-2021	24-AUG-2021	CR
Ethylbenzene	24-AUG-2021	24-AUG-2021	CR
Xylenes	24-AUG-2021	24-AUG-2021	CR
C6 - C10 (F1)	24-AUG-2021	24-AUG-2021	CR
C6 - C10 (F1 minus BTEX)	24-AUG-2021	24-AUG-2021	CR
C10 - C16 (F2)	24-AUG-2021	25-AUG-2021	LP
C16 - C34 (F3)	24-AUG-2021	25-AUG-2021	LP
C34 - C50 (F4)	24-AUG-2021	25-AUG-2021	LP
Gravimetric Heavy Hydrocarbons	24-AUG-2021	25-AUG-2021	LP
Moisture Content	24-AUG-2021	25-AUG-2021	LP
Toluene-d8 (BTEX)	24-AUG-2021	24-AUG-2021	CR
o-Terphenyl (F2-F4)	24-AUG-2021	25-AUG-2021	LP

Polyaromatic Hydrocarbon Analysis - Soil

Parameter	Date Prepared	Date Analyzed	Initials
Acenaphthene	24-AUG-2021	26-AUG-2021	RT
Acenaphthylene	24-AUG-2021	26-AUG-2021	RT
Anthracene	24-AUG-2021	26-AUG-2021	RT
Acridine	24-AUG-2021	26-AUG-2021	RT
Quinoline	24-AUG-2021	26-AUG-2021	RT
Naphthalene	24-AUG-2021	26-AUG-2021	RT
2-Methylnaphthalene	24-AUG-2021	26-AUG-2021	RT
Fluorene	24-AUG-2021	26-AUG-2021	RT
Phenanthrene	24-AUG-2021	26-AUG-2021	RT
Fluoranthene	24-AUG-2021	26-AUG-2021	RT
Pyrene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]anthracene	24-AUG-2021	26-AUG-2021	RT
Chrysene	24-AUG-2021	26-AUG-2021	RT
Benzo[b+j]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[k]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]pyrene	24-AUG-2021	26-AUG-2021	RT



Time Markers

AGAT WORK ORDER: 21N791280

PROJECT: CE810600

2910 12TH STREET NE
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<http://www.agatlabs.com>

CLIENT NAME: JACOBS

ATTENTION TO: Patrick Kalita

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
2879916	PM-1-SB007-e	Soil	18-AUG-2021	19-AUG-2021

Polyaromatic Hydrocarbon Analysis - Soil

Parameter	Date Prepared	Date Analyzed	Initials
Indeno[1,2,3-cd]pyrene	24-AUG-2021	26-AUG-2021	RT
Dibenzo[ah]anthracene	24-AUG-2021	26-AUG-2021	RT
Benzo[ghi]perylene	24-AUG-2021	26-AUG-2021	RT
p-Terphenyl-d14 (PAH)	24-AUG-2021	26-AUG-2021	RT
p-Naphthalene-d8 (PAH)	24-AUG-2021	26-AUG-2021	RT
P_Pyrene-d10 (PAH)	24-AUG-2021	26-AUG-2021	RT
B[a]P TPE	26-AUG-2021	26-AUG-2021	SYS
IACR (Coarse Soil)	26-AUG-2021	26-AUG-2021	SYS
IACR (Fine Soil)	26-AUG-2021	26-AUG-2021	SYS

2879917	PM-1-SB011-a	Soil	18-AUG-2021	19-AUG-2021
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Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

Parameter	Date Prepared	Date Analyzed	Initials
Benzene	24-AUG-2021	24-AUG-2021	CR
Toluene	24-AUG-2021	24-AUG-2021	CR
Ethylbenzene	24-AUG-2021	24-AUG-2021	CR
Xylenes	24-AUG-2021	24-AUG-2021	CR
C6 - C10 (F1)	24-AUG-2021	24-AUG-2021	CR
C6 - C10 (F1 minus BTEX)	24-AUG-2021	24-AUG-2021	CR
C10 - C16 (F2)	24-AUG-2021	25-AUG-2021	LP
C16 - C34 (F3)	24-AUG-2021	25-AUG-2021	LP
C34 - C50 (F4)	24-AUG-2021	25-AUG-2021	LP
Gravimetric Heavy Hydrocarbons	24-AUG-2021	25-AUG-2021	LP
Moisture Content	24-AUG-2021	25-AUG-2021	LP
Toluene-d8 (BTEX)	24-AUG-2021	24-AUG-2021	CR
o-Terphenyl (F2-F4)	24-AUG-2021	25-AUG-2021	LP

Polyaromatic Hydrocarbon Analysis - Soil

Parameter	Date Prepared	Date Analyzed	Initials
Acenaphthene	24-AUG-2021	26-AUG-2021	RT
Acenaphthylene	24-AUG-2021	26-AUG-2021	RT
Anthracene	24-AUG-2021	26-AUG-2021	RT
Acridine	24-AUG-2021	26-AUG-2021	RT
Quinoline	24-AUG-2021	26-AUG-2021	RT
Naphthalene	24-AUG-2021	26-AUG-2021	RT
2-Methylnaphthalene	24-AUG-2021	26-AUG-2021	RT
Fluorene	24-AUG-2021	26-AUG-2021	RT
Phenanthrene	24-AUG-2021	26-AUG-2021	RT



Time Markers

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CLIENT NAME: JACOBS

ATTENTION TO: Patrick Kalita

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
2879917	PM-1-SB011-a	Soil	18-AUG-2021	19-AUG-2021

Polyaromatic Hydrocarbon Analysis - Soil

Parameter	Date Prepared	Date Analyzed	Initials
Fluoranthene	24-AUG-2021	26-AUG-2021	RT
Pyrene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]anthracene	24-AUG-2021	26-AUG-2021	RT
Chrysene	24-AUG-2021	26-AUG-2021	RT
Benzo[b+j]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[k]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]pyrene	24-AUG-2021	26-AUG-2021	RT
Indeno[1,2,3-cd]pyrene	24-AUG-2021	26-AUG-2021	RT
Dibenzo[ah]anthracene	24-AUG-2021	26-AUG-2021	RT
Benzo[ghi]perylene	24-AUG-2021	26-AUG-2021	RT
p-Terphenyl-d14 (PAH)	24-AUG-2021	26-AUG-2021	RT
p-Naphthalene-d8 (PAH)	24-AUG-2021	26-AUG-2021	RT
P_Pyrene-d10 (PAH)	24-AUG-2021	26-AUG-2021	RT
B[a]P TPE	26-AUG-2021	26-AUG-2021	SYS
IACR (Coarse Soil)	26-AUG-2021	26-AUG-2021	SYS
IACR (Fine Soil)	26-AUG-2021	26-AUG-2021	SYS

2879918	PM-1-SB011-b	Soil	18-AUG-2021	19-AUG-2021
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Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

Parameter	Date Prepared	Date Analyzed	Initials
Benzene	24-AUG-2021	24-AUG-2021	CR
Toluene	24-AUG-2021	24-AUG-2021	CR
Ethylbenzene	24-AUG-2021	24-AUG-2021	CR
Xylenes	24-AUG-2021	24-AUG-2021	CR
C6 - C10 (F1)	24-AUG-2021	24-AUG-2021	CR
C6 - C10 (F1 minus BTEX)	24-AUG-2021	24-AUG-2021	CR
C10 - C16 (F2)	24-AUG-2021	25-AUG-2021	LP
C16 - C34 (F3)	24-AUG-2021	25-AUG-2021	LP
C34 - C50 (F4)	24-AUG-2021	25-AUG-2021	LP
Gravimetric Heavy Hydrocarbons	24-AUG-2021	25-AUG-2021	LP
Moisture Content	24-AUG-2021	25-AUG-2021	LP
Toluene-d8 (BTEX)	24-AUG-2021	24-AUG-2021	CR
o-Terphenyl (F2-F4)	24-AUG-2021	25-AUG-2021	LP

Polyaromatic Hydrocarbon Analysis - Soil

Parameter	Date Prepared	Date Analyzed	Initials
Acenaphthene	24-AUG-2021	26-AUG-2021	RT
Acenaphthylene	24-AUG-2021	26-AUG-2021	RT



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CLIENT NAME: JACOBS

ATTENTION TO: Patrick Kalita

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
2879918	PM-1-SB011-b	Soil	18-AUG-2021	19-AUG-2021

Polyaromatic Hydrocarbon Analysis - Soil

Parameter	Date Prepared	Date Analyzed	Initials
Anthracene	24-AUG-2021	26-AUG-2021	RT
Acridine	24-AUG-2021	26-AUG-2021	RT
Quinoline	24-AUG-2021	26-AUG-2021	RT
Naphthalene	24-AUG-2021	26-AUG-2021	RT
2-Methylnaphthalene	24-AUG-2021	26-AUG-2021	RT
Fluorene	24-AUG-2021	26-AUG-2021	RT
Phenanthrene	24-AUG-2021	26-AUG-2021	RT
Fluoranthene	24-AUG-2021	26-AUG-2021	RT
Pyrene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]anthracene	24-AUG-2021	26-AUG-2021	RT
Chrysene	24-AUG-2021	26-AUG-2021	RT
Benzo[b+j]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[k]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]pyrene	24-AUG-2021	26-AUG-2021	RT
Indeno[1,2,3-cd]pyrene	24-AUG-2021	26-AUG-2021	RT
Dibenzo[ah]anthracene	24-AUG-2021	26-AUG-2021	RT
Benzo[ghi]perylene	24-AUG-2021	26-AUG-2021	RT
p-Terphenyl-d14 (PAH)	24-AUG-2021	26-AUG-2021	RT
p-Naphthalene-d8 (PAH)	24-AUG-2021	26-AUG-2021	RT
P_Pyrene-d10 (PAH)	24-AUG-2021	26-AUG-2021	RT
B[a]P TPE	26-AUG-2021	26-AUG-2021	SYS
IACR (Coarse Soil)	26-AUG-2021	26-AUG-2021	SYS
IACR (Fine Soil)	26-AUG-2021	26-AUG-2021	SYS

2879919	PM-1-SB011-c	Soil	18-AUG-2021	19-AUG-2021
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Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

Parameter	Date Prepared	Date Analyzed	Initials
Benzene	24-AUG-2021	24-AUG-2021	CR
Toluene	24-AUG-2021	24-AUG-2021	CR
Ethylbenzene	24-AUG-2021	24-AUG-2021	CR
Xylenes	24-AUG-2021	24-AUG-2021	CR
C6 - C10 (F1)	24-AUG-2021	24-AUG-2021	CR
C6 - C10 (F1 minus BTEX)	24-AUG-2021	24-AUG-2021	CR
C10 - C16 (F2)	24-AUG-2021	25-AUG-2021	LP
C16 - C34 (F3)	24-AUG-2021	25-AUG-2021	LP
C34 - C50 (F4)	24-AUG-2021	25-AUG-2021	LP
Gravimetric Heavy Hydrocarbons	24-AUG-2021	25-AUG-2021	LP
Moisture Content	24-AUG-2021	25-AUG-2021	LP



Time Markers

AGAT WORK ORDER: 21N791280

PROJECT: CE810600

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CLIENT NAME: JACOBS

ATTENTION TO: Patrick Kalita

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
2879919	PM-1-SB011-c	Soil	18-AUG-2021	19-AUG-2021

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

Parameter	Date Prepared	Date Analyzed	Initials
Toluene-d8 (BTEX)	24-AUG-2021	24-AUG-2021	CR
o-Terphenyl (F2-F4)	24-AUG-2021	25-AUG-2021	LP

Polyaromatic Hydrocarbon Analysis - Soil

Parameter	Date Prepared	Date Analyzed	Initials
Acenaphthene	24-AUG-2021	26-AUG-2021	RT
Acenaphthylene	24-AUG-2021	26-AUG-2021	RT
Anthracene	24-AUG-2021	26-AUG-2021	RT
Acridine	24-AUG-2021	26-AUG-2021	RT
Quinoline	24-AUG-2021	26-AUG-2021	RT
Naphthalene	24-AUG-2021	26-AUG-2021	RT
2-Methylnaphthalene	24-AUG-2021	26-AUG-2021	RT
Fluorene	24-AUG-2021	26-AUG-2021	RT
Phenanthrene	24-AUG-2021	26-AUG-2021	RT
Fluoranthene	24-AUG-2021	26-AUG-2021	RT
Pyrene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]anthracene	24-AUG-2021	26-AUG-2021	RT
Chrysene	24-AUG-2021	26-AUG-2021	RT
Benzo[b+j]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[k]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]pyrene	24-AUG-2021	26-AUG-2021	RT
Indeno[1,2,3-cd]pyrene	24-AUG-2021	26-AUG-2021	RT
Dibenzo[ah]anthracene	24-AUG-2021	26-AUG-2021	RT
Benzo[ghi]perylene	24-AUG-2021	26-AUG-2021	RT
p-Terphenyl-d14 (PAH)	24-AUG-2021	26-AUG-2021	RT
p-Naphthalene-d8 (PAH)	24-AUG-2021	26-AUG-2021	RT
P_Pyrene-d10 (PAH)	24-AUG-2021	26-AUG-2021	RT
B[a]P TPE	26-AUG-2021	26-AUG-2021	SYS
IACR (Coarse Soil)	26-AUG-2021	26-AUG-2021	SYS
IACR (Fine Soil)	26-AUG-2021	26-AUG-2021	SYS

2879920	PM-1-SB011-d	Soil	18-AUG-2021	19-AUG-2021
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Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

Parameter	Date Prepared	Date Analyzed	Initials
Benzene	24-AUG-2021	24-AUG-2021	CR
Toluene	24-AUG-2021	24-AUG-2021	CR
Ethylbenzene	24-AUG-2021	24-AUG-2021	CR
Xylenes	24-AUG-2021	24-AUG-2021	CR



Time Markers

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CLIENT NAME: JACOBS

ATTENTION TO: Patrick Kalita

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
2879920	PM-1-SB011-d	Soil	18-AUG-2021	19-AUG-2021

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

Parameter	Date Prepared	Date Analyzed	Initials
C6 - C10 (F1)	24-AUG-2021	24-AUG-2021	CR
C6 - C10 (F1 minus BTEX)	24-AUG-2021	24-AUG-2021	CR
C10 - C16 (F2)	24-AUG-2021	25-AUG-2021	LP
C16 - C34 (F3)	24-AUG-2021	25-AUG-2021	LP
C34 - C50 (F4)	24-AUG-2021	25-AUG-2021	LP
Gravimetric Heavy Hydrocarbons	24-AUG-2021	25-AUG-2021	LP
Moisture Content	24-AUG-2021	25-AUG-2021	LP
Toluene-d8 (BTEX)	24-AUG-2021	24-AUG-2021	CR
o-Terphenyl (F2-F4)	24-AUG-2021	25-AUG-2021	LP

Polyaromatic Hydrocarbon Analysis - Soil

Parameter	Date Prepared	Date Analyzed	Initials
Acenaphthene	24-AUG-2021	26-AUG-2021	RT
Acenaphthylene	24-AUG-2021	26-AUG-2021	RT
Anthracene	24-AUG-2021	26-AUG-2021	RT
Acridine	24-AUG-2021	26-AUG-2021	RT
Quinoline	24-AUG-2021	26-AUG-2021	RT
Naphthalene	24-AUG-2021	26-AUG-2021	RT
2-Methylnaphthalene	24-AUG-2021	26-AUG-2021	RT
Fluorene	24-AUG-2021	26-AUG-2021	RT
Phenanthrene	24-AUG-2021	26-AUG-2021	RT
Fluoranthene	24-AUG-2021	26-AUG-2021	RT
Pyrene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]anthracene	24-AUG-2021	26-AUG-2021	RT
Chrysene	24-AUG-2021	26-AUG-2021	RT
Benzo[b+j]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[k]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]pyrene	24-AUG-2021	26-AUG-2021	RT
Indeno[1,2,3-cd]pyrene	24-AUG-2021	26-AUG-2021	RT
Dibenzo[ah]anthracene	24-AUG-2021	26-AUG-2021	RT
Benzo[ghi]perylene	24-AUG-2021	26-AUG-2021	RT
p-Terphenyl-d14 (PAH)	24-AUG-2021	26-AUG-2021	RT
p-Naphthalene-d8 (PAH)	24-AUG-2021	26-AUG-2021	RT
P_Pyrene-d10 (PAH)	24-AUG-2021	26-AUG-2021	RT
B[a]P TPE	26-AUG-2021	26-AUG-2021	SYS
IACR (Coarse Soil)	26-AUG-2021	26-AUG-2021	SYS
IACR (Fine Soil)	26-AUG-2021	26-AUG-2021	SYS

2879921	PM-1-SB008-a	Soil	18-AUG-2021	19-AUG-2021
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CLIENT NAME: JACOBS

ATTENTION TO: Patrick Kalita

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
2879921	PM-1-SB008-a	Soil	18-AUG-2021	19-AUG-2021

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

Parameter	Date Prepared	Date Analyzed	Initials
Benzene	24-AUG-2021	24-AUG-2021	CR
Toluene	24-AUG-2021	24-AUG-2021	CR
Ethylbenzene	24-AUG-2021	24-AUG-2021	CR
Xylenes	24-AUG-2021	24-AUG-2021	CR
C6 - C10 (F1)	24-AUG-2021	24-AUG-2021	CR
C6 - C10 (F1 minus BTEX)	24-AUG-2021	24-AUG-2021	CR
C10 - C16 (F2)	24-AUG-2021	25-AUG-2021	LP
C16 - C34 (F3)	24-AUG-2021	25-AUG-2021	LP
C34 - C50 (F4)	24-AUG-2021	25-AUG-2021	LP
Gravimetric Heavy Hydrocarbons	24-AUG-2021	25-AUG-2021	LP
Moisture Content	24-AUG-2021	25-AUG-2021	LP
Toluene-d8 (BTEX)	24-AUG-2021	24-AUG-2021	CR
o-Terphenyl (F2-F4)	24-AUG-2021	25-AUG-2021	LP

Polyaromatic Hydrocarbon Analysis - Soil

Parameter	Date Prepared	Date Analyzed	Initials
Acenaphthene	24-AUG-2021	26-AUG-2021	RT
Acenaphthylene	24-AUG-2021	26-AUG-2021	RT
Anthracene	24-AUG-2021	26-AUG-2021	RT
Acridine	24-AUG-2021	26-AUG-2021	RT
Quinoline	24-AUG-2021	26-AUG-2021	RT
Naphthalene	24-AUG-2021	26-AUG-2021	RT
2-Methylnaphthalene	24-AUG-2021	26-AUG-2021	RT
Fluorene	24-AUG-2021	26-AUG-2021	RT
Phenanthrene	24-AUG-2021	26-AUG-2021	RT
Fluoranthene	24-AUG-2021	26-AUG-2021	RT
Pyrene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]anthracene	24-AUG-2021	26-AUG-2021	RT
Chrysene	24-AUG-2021	26-AUG-2021	RT
Benzo[b+j]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[k]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]pyrene	24-AUG-2021	26-AUG-2021	RT
Indeno[1,2,3-cd]pyrene	24-AUG-2021	26-AUG-2021	RT
Dibenzo[ah]anthracene	24-AUG-2021	26-AUG-2021	RT
Benzo[ghi]perylene	24-AUG-2021	26-AUG-2021	RT
p-Terphenyl-d14 (PAH)	24-AUG-2021	26-AUG-2021	RT
p-Naphthalene-d8 (PAH)	24-AUG-2021	26-AUG-2021	RT
P_Pyrene-d10 (PAH)	24-AUG-2021	26-AUG-2021	RT
B[a]P TPE	26-AUG-2021	26-AUG-2021	SYS



Time Markers

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CLIENT NAME: JACOBS

ATTENTION TO: Patrick Kalita

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
2879921	PM-1-SB008-a	Soil	18-AUG-2021	19-AUG-2021

Polyaromatic Hydrocarbon Analysis - Soil

Parameter	Date Prepared	Date Analyzed	Initials
IACR (Coarse Soil)	26-AUG-2021	26-AUG-2021	SYS
IACR (Fine Soil)	26-AUG-2021	26-AUG-2021	SYS

2879922	PM-1-SB008-b	Soil	18-AUG-2021	19-AUG-2021
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Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

Parameter	Date Prepared	Date Analyzed	Initials
Benzene	24-AUG-2021	24-AUG-2021	CR
Toluene	24-AUG-2021	24-AUG-2021	CR
Ethylbenzene	24-AUG-2021	24-AUG-2021	CR
Xylenes	24-AUG-2021	24-AUG-2021	CR
C6 - C10 (F1)	24-AUG-2021	24-AUG-2021	CR
C6 - C10 (F1 minus BTEX)	24-AUG-2021	24-AUG-2021	CR
C10 - C16 (F2)	24-AUG-2021	25-AUG-2021	LP
C16 - C34 (F3)	24-AUG-2021	25-AUG-2021	LP
C34 - C50 (F4)	24-AUG-2021	25-AUG-2021	LP
Gravimetric Heavy Hydrocarbons	24-AUG-2021	25-AUG-2021	LP
Moisture Content	24-AUG-2021	25-AUG-2021	LP
Toluene-d8 (BTEX)	24-AUG-2021	24-AUG-2021	CR
o-Terphenyl (F2-F4)	24-AUG-2021	25-AUG-2021	LP

Polyaromatic Hydrocarbon Analysis - Soil

Parameter	Date Prepared	Date Analyzed	Initials
Acenaphthene	24-AUG-2021	26-AUG-2021	RT
Acenaphthylene	24-AUG-2021	26-AUG-2021	RT
Anthracene	24-AUG-2021	26-AUG-2021	RT
Acridine	24-AUG-2021	26-AUG-2021	RT
Quinoline	24-AUG-2021	26-AUG-2021	RT
Naphthalene	24-AUG-2021	26-AUG-2021	RT
2-Methylnaphthalene	24-AUG-2021	26-AUG-2021	RT
Fluorene	24-AUG-2021	26-AUG-2021	RT
Phenanthrene	24-AUG-2021	26-AUG-2021	RT
Fluoranthene	24-AUG-2021	26-AUG-2021	RT
Pyrene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]anthracene	24-AUG-2021	26-AUG-2021	RT
Chrysene	24-AUG-2021	26-AUG-2021	RT
Benzo[b+j]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[k]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]pyrene	24-AUG-2021	26-AUG-2021	RT



Time Markers

AGAT WORK ORDER: 21N791280

PROJECT: CE810600

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CLIENT NAME: JACOBS

ATTENTION TO: Patrick Kalita

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
2879922	PM-1-SB008-b	Soil	18-AUG-2021	19-AUG-2021

Polyaromatic Hydrocarbon Analysis - Soil

Parameter	Date Prepared	Date Analyzed	Initials
Indeno[1,2,3-cd]pyrene	24-AUG-2021	26-AUG-2021	RT
Dibenzo[ah]anthracene	24-AUG-2021	26-AUG-2021	RT
Benzo[ghi]perylene	24-AUG-2021	26-AUG-2021	RT
p-Terphenyl-d14 (PAH)	24-AUG-2021	26-AUG-2021	RT
p-Naphthalene-d8 (PAH)	24-AUG-2021	26-AUG-2021	RT
P_Pyrene-d10 (PAH)	24-AUG-2021	26-AUG-2021	RT
B[a]P TPE	26-AUG-2021	26-AUG-2021	SYS
IACR (Coarse Soil)	26-AUG-2021	26-AUG-2021	SYS
IACR (Fine Soil)	26-AUG-2021	26-AUG-2021	SYS

2879923	PM-1-SB008-c	Soil	18-AUG-2021	19-AUG-2021
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Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

Parameter	Date Prepared	Date Analyzed	Initials
Benzene	24-AUG-2021	24-AUG-2021	CR
Toluene	24-AUG-2021	24-AUG-2021	CR
Ethylbenzene	24-AUG-2021	24-AUG-2021	CR
Xylenes	24-AUG-2021	24-AUG-2021	CR
C6 - C10 (F1)	24-AUG-2021	24-AUG-2021	CR
C6 - C10 (F1 minus BTEX)	24-AUG-2021	24-AUG-2021	CR
C10 - C16 (F2)	24-AUG-2021	25-AUG-2021	LP
C16 - C34 (F3)	24-AUG-2021	25-AUG-2021	LP
C34 - C50 (F4)	24-AUG-2021	25-AUG-2021	LP
Gravimetric Heavy Hydrocarbons	24-AUG-2021	25-AUG-2021	LP
Moisture Content	24-AUG-2021	25-AUG-2021	LP
Toluene-d8 (BTEX)	24-AUG-2021	24-AUG-2021	CR
o-Terphenyl (F2-F4)	24-AUG-2021	25-AUG-2021	LP

Polyaromatic Hydrocarbon Analysis - Soil

Parameter	Date Prepared	Date Analyzed	Initials
Acenaphthene	24-AUG-2021	26-AUG-2021	RT
Acenaphthylene	24-AUG-2021	26-AUG-2021	RT
Anthracene	24-AUG-2021	26-AUG-2021	RT
Acridine	24-AUG-2021	26-AUG-2021	RT
Quinoline	24-AUG-2021	26-AUG-2021	RT
Naphthalene	24-AUG-2021	26-AUG-2021	RT
2-Methylnaphthalene	24-AUG-2021	26-AUG-2021	RT
Fluorene	24-AUG-2021	26-AUG-2021	RT
Phenanthrene	24-AUG-2021	26-AUG-2021	RT



Time Markers

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CLIENT NAME: JACOBS

ATTENTION TO: Patrick Kalita

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
2879923	PM-1-SB008-c	Soil	18-AUG-2021	19-AUG-2021

Polyaromatic Hydrocarbon Analysis - Soil

Parameter	Date Prepared	Date Analyzed	Initials
Fluoranthene	24-AUG-2021	26-AUG-2021	RT
Pyrene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]anthracene	24-AUG-2021	26-AUG-2021	RT
Chrysene	24-AUG-2021	26-AUG-2021	RT
Benzo[b+j]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[k]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]pyrene	24-AUG-2021	26-AUG-2021	RT
Indeno[1,2,3-cd]pyrene	24-AUG-2021	26-AUG-2021	RT
Dibenzo[ah]anthracene	24-AUG-2021	26-AUG-2021	RT
Benzo[ghi]perylene	24-AUG-2021	26-AUG-2021	RT
p-Terphenyl-d14 (PAH)	24-AUG-2021	26-AUG-2021	RT
p-Naphthalene-d8 (PAH)	24-AUG-2021	26-AUG-2021	RT
P_Pyrene-d10 (PAH)	24-AUG-2021	26-AUG-2021	RT
B[a]P TPE	26-AUG-2021	26-AUG-2021	SYS
IACR (Coarse Soil)	26-AUG-2021	26-AUG-2021	SYS
IACR (Fine Soil)	26-AUG-2021	26-AUG-2021	SYS

2879924	PM-1-SB008-d	Soil	18-AUG-2021	19-AUG-2021
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Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

Parameter	Date Prepared	Date Analyzed	Initials
Benzene	24-AUG-2021	25-AUG-2021	OM
Toluene	24-AUG-2021	25-AUG-2021	OM
Ethylbenzene	24-AUG-2021	25-AUG-2021	OM
Xylenes	24-AUG-2021	25-AUG-2021	OM
C6 - C10 (F1)	24-AUG-2021	25-AUG-2021	OM
C6 - C10 (F1 minus BTEX)	24-AUG-2021	25-AUG-2021	OM
C10 - C16 (F2)	24-AUG-2021	26-AUG-2021	OP
C16 - C34 (F3)	24-AUG-2021	26-AUG-2021	OP
C34 - C50 (F4)	24-AUG-2021	26-AUG-2021	OP
Gravimetric Heavy Hydrocarbons	24-AUG-2021	26-AUG-2021	OP
Moisture Content	24-AUG-2021	26-AUG-2021	OP
Toluene-d8 (BTEX)	24-AUG-2021	25-AUG-2021	OM
o-Terphenyl (F2-F4)	24-AUG-2021	26-AUG-2021	OP

Polyaromatic Hydrocarbon Analysis - Soil

Parameter	Date Prepared	Date Analyzed	Initials
Acenaphthene	24-AUG-2021	26-AUG-2021	RT
Acenaphthylene	24-AUG-2021	26-AUG-2021	RT



Time Markers

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ATTENTION TO: Patrick Kalita

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
2879924	PM-1-SB008-d	Soil	18-AUG-2021	19-AUG-2021

Polyaromatic Hydrocarbon Analysis - Soil

Parameter	Date Prepared	Date Analyzed	Initials
Anthracene	24-AUG-2021	26-AUG-2021	RT
Acridine	24-AUG-2021	26-AUG-2021	RT
Quinoline	24-AUG-2021	26-AUG-2021	RT
Naphthalene	24-AUG-2021	26-AUG-2021	RT
2-Methylnaphthalene	24-AUG-2021	26-AUG-2021	RT
Fluorene	24-AUG-2021	26-AUG-2021	RT
Phenanthrene	24-AUG-2021	26-AUG-2021	RT
Fluoranthene	24-AUG-2021	26-AUG-2021	RT
Pyrene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]anthracene	24-AUG-2021	26-AUG-2021	RT
Chrysene	24-AUG-2021	26-AUG-2021	RT
Benzo[b+j]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[k]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]pyrene	24-AUG-2021	26-AUG-2021	RT
Indeno[1,2,3-cd]pyrene	24-AUG-2021	26-AUG-2021	RT
Dibenzo[ah]anthracene	24-AUG-2021	26-AUG-2021	RT
Benzo[ghi]perylene	24-AUG-2021	26-AUG-2021	RT
p-Terphenyl-d14 (PAH)	24-AUG-2021	26-AUG-2021	RT
p-Naphthalene-d8 (PAH)	24-AUG-2021	26-AUG-2021	RT
P_Pyrene-d10 (PAH)	24-AUG-2021	26-AUG-2021	RT
B[a]P TPE	26-AUG-2021	26-AUG-2021	SYS
IACR (Coarse Soil)	26-AUG-2021	26-AUG-2021	SYS
IACR (Fine Soil)	26-AUG-2021	26-AUG-2021	SYS

2879925	PM-1-SB008-e	Soil	18-AUG-2021	19-AUG-2021
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Nutrients Package 2

Parameter	Date Prepared	Date Analyzed	Initials
Available Nitrate (NO3-N)	27-AUG-2021	27-AUG-2021	AH
Available Phosphorus - P	27-AUG-2021	27-AUG-2021	MH
Available Potassium	27-AUG-2021	27-AUG-2021	IP
Available Sulfur (SO4-S)	27-AUG-2021	27-AUG-2021	IP

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

Parameter	Date Prepared	Date Analyzed	Initials
Benzene	24-AUG-2021	25-AUG-2021	OM
Toluene	24-AUG-2021	25-AUG-2021	OM
Ethylbenzene	24-AUG-2021	25-AUG-2021	OM
Xylenes	24-AUG-2021	25-AUG-2021	OM



Time Markers

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Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
2879925	PM-1-SB008-e	Soil	18-AUG-2021	19-AUG-2021

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

Parameter	Date Prepared	Date Analyzed	Initials
C6 - C10 (F1)	24-AUG-2021	25-AUG-2021	OM
C6 - C10 (F1 minus BTEX)	24-AUG-2021	25-AUG-2021	OM
C10 - C16 (F2)	24-AUG-2021	26-AUG-2021	OP
C16 - C34 (F3)	24-AUG-2021	26-AUG-2021	OP
C34 - C50 (F4)	24-AUG-2021	26-AUG-2021	OP
Gravimetric Heavy Hydrocarbons	24-AUG-2021	26-AUG-2021	OP
Moisture Content	24-AUG-2021	26-AUG-2021	OP
Toluene-d8 (BTEX)	24-AUG-2021	25-AUG-2021	OM
o-Terphenyl (F2-F4)	24-AUG-2021	26-AUG-2021	OP

Polyaromatic Hydrocarbon Analysis - Soil

Parameter	Date Prepared	Date Analyzed	Initials
Acenaphthene	24-AUG-2021	26-AUG-2021	RT
Acenaphthylene	24-AUG-2021	26-AUG-2021	RT
Anthracene	24-AUG-2021	26-AUG-2021	RT
Acridine	24-AUG-2021	26-AUG-2021	RT
Quinoline	24-AUG-2021	26-AUG-2021	RT
Naphthalene	24-AUG-2021	26-AUG-2021	RT
2-Methylnaphthalene	24-AUG-2021	26-AUG-2021	RT
Fluorene	24-AUG-2021	26-AUG-2021	RT
Phenanthrene	24-AUG-2021	26-AUG-2021	RT
Fluoranthene	24-AUG-2021	26-AUG-2021	RT
Pyrene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]anthracene	24-AUG-2021	26-AUG-2021	RT
Chrysene	24-AUG-2021	26-AUG-2021	RT
Benzo[b+j]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[k]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]pyrene	24-AUG-2021	26-AUG-2021	RT
Indeno[1,2,3-cd]pyrene	24-AUG-2021	26-AUG-2021	RT
Dibenzo[ah]anthracene	24-AUG-2021	26-AUG-2021	RT
Benzo[ghi]perylene	24-AUG-2021	26-AUG-2021	RT
p-Terphenyl-d14 (PAH)	24-AUG-2021	26-AUG-2021	RT
p-Naphthalene-d8 (PAH)	24-AUG-2021	26-AUG-2021	RT
P_Pyrene-d10 (PAH)	24-AUG-2021	26-AUG-2021	RT
B[a]P TPE	26-AUG-2021	26-AUG-2021	SYS
IACR (Coarse Soil)	26-AUG-2021	26-AUG-2021	SYS
IACR (Fine Soil)	26-AUG-2021	26-AUG-2021	SYS

Soil Analysis - Alkalinity, Bulk Density, Moisture, pH (Sat. Paste)



Time Markers

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CLIENT NAME: JACOBS

ATTENTION TO: Patrick Kalita

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
2879925	PM-1-SB008-e	Soil	18-AUG-2021	19-AUG-2021

Soil Analysis - Alkalinity, Bulk Density, Moisture, pH (Sat. Paste)

Parameter	Date Prepared	Date Analyzed	Initials
Bicarbonate, Soluble	31-AUG-2021	31-AUG-2021	KT
Carbonate, Soluble	31-AUG-2021	31-AUG-2021	KT
Bulk Density, Crude - Wet (As Recieved Soil)	26-AUG-2021	26-AUG-2021	SS
Moisture Content (Wet Weight)**	25-AUG-2021	26-AUG-2021	JB
pH (Saturated Paste)	27-AUG-2021	27-AUG-2021	AG

Soil Analysis - Lime Requirement

Parameter	Date Prepared	Date Analyzed	Initials
Lime Requirement to pH 6.5**	27-AUG-2021	27-AUG-2021	JB
Lime Requirement @ pH 7.0**	27-AUG-2021	27-AUG-2021	JB

Soil Analysis - Total Organic Carbon (W-B Wet Oxidation)

Parameter	Date Prepared	Date Analyzed	Initials
Total Organic Carbon	26-AUG-2021	26-AUG-2021	NN

2879926	PM-1-SB041-a	Soil	18-AUG-2021	19-AUG-2021
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Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

Parameter	Date Prepared	Date Analyzed	Initials
Benzene	24-AUG-2021	25-AUG-2021	OM
Toluene	24-AUG-2021	25-AUG-2021	OM
Ethylbenzene	24-AUG-2021	25-AUG-2021	OM
Xylenes	24-AUG-2021	25-AUG-2021	OM
C6 - C10 (F1)	24-AUG-2021	25-AUG-2021	OM
C6 - C10 (F1 minus BTEX)	24-AUG-2021	25-AUG-2021	OM
C10 - C16 (F2)	24-AUG-2021	26-AUG-2021	OP
C16 - C34 (F3)	24-AUG-2021	26-AUG-2021	OP
C34 - C50 (F4)	24-AUG-2021	26-AUG-2021	OP
Gravimetric Heavy Hydrocarbons	24-AUG-2021	26-AUG-2021	OP
Moisture Content	24-AUG-2021	26-AUG-2021	OP
Toluene-d8 (BTEX)	24-AUG-2021	25-AUG-2021	OM
o-Terphenyl (F2-F4)	24-AUG-2021	26-AUG-2021	OP

Polyaromatic Hydrocarbon Analysis - Soil

Parameter	Date Prepared	Date Analyzed	Initials
Acenaphthene	24-AUG-2021	26-AUG-2021	RT
Acenaphthylene	24-AUG-2021	26-AUG-2021	RT
Anthracene	24-AUG-2021	26-AUG-2021	RT
Acridine	24-AUG-2021	26-AUG-2021	RT



Time Markers

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CLIENT NAME: JACOBS

ATTENTION TO: Patrick Kalita

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
2879926	PM-1-SB041-a	Soil	18-AUG-2021	19-AUG-2021

Polyaromatic Hydrocarbon Analysis - Soil

Parameter	Date Prepared	Date Analyzed	Initials
Quinoline	24-AUG-2021	26-AUG-2021	RT
Naphthalene	24-AUG-2021	26-AUG-2021	RT
2-Methylnaphthalene	24-AUG-2021	26-AUG-2021	RT
Fluorene	24-AUG-2021	26-AUG-2021	RT
Phenanthrene	24-AUG-2021	26-AUG-2021	RT
Fluoranthene	24-AUG-2021	26-AUG-2021	RT
Pyrene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]anthracene	24-AUG-2021	26-AUG-2021	RT
Chrysene	24-AUG-2021	26-AUG-2021	RT
Benzo[b+j]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[k]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]pyrene	24-AUG-2021	26-AUG-2021	RT
Indeno[1,2,3-cd]pyrene	24-AUG-2021	26-AUG-2021	RT
Dibenzo[ah]anthracene	24-AUG-2021	26-AUG-2021	RT
Benzo[ghi]perylene	24-AUG-2021	26-AUG-2021	RT
p-Terphenyl-d14 (PAH)	24-AUG-2021	26-AUG-2021	RT
p-Naphthalene-d8 (PAH)	24-AUG-2021	26-AUG-2021	RT
P_Pyrene-d10 (PAH)	24-AUG-2021	26-AUG-2021	RT
B[a]P TPE	26-AUG-2021	26-AUG-2021	SYS
IACR (Coarse Soil)	26-AUG-2021	26-AUG-2021	SYS
IACR (Fine Soil)	26-AUG-2021	26-AUG-2021	SYS

2879927	PM-1-SB041-b	Soil	18-AUG-2021	19-AUG-2021
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Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

Parameter	Date Prepared	Date Analyzed	Initials
Benzene	24-AUG-2021	25-AUG-2021	OM
Toluene	24-AUG-2021	25-AUG-2021	OM
Ethylbenzene	24-AUG-2021	25-AUG-2021	OM
Xylenes	24-AUG-2021	25-AUG-2021	OM
C6 - C10 (F1)	24-AUG-2021	25-AUG-2021	OM
C6 - C10 (F1 minus BTEX)	24-AUG-2021	25-AUG-2021	OM
C10 - C16 (F2)	24-AUG-2021	26-AUG-2021	OP
C16 - C34 (F3)	24-AUG-2021	26-AUG-2021	OP
C34 - C50 (F4)	24-AUG-2021	26-AUG-2021	OP
Gravimetric Heavy Hydrocarbons	24-AUG-2021	26-AUG-2021	OP
Moisture Content	24-AUG-2021	26-AUG-2021	OP
Toluene-d8 (BTEX)	24-AUG-2021	25-AUG-2021	OM
o-Terphenyl (F2-F4)	24-AUG-2021	26-AUG-2021	OP



Time Markers

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CLIENT NAME: JACOBS

ATTENTION TO: Patrick Kalita

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
2879927	PM-1-SB041-b	Soil	18-AUG-2021	19-AUG-2021

Polyaromatic Hydrocarbon Analysis - Soil

Parameter	Date Prepared	Date Analyzed	Initials
Acenaphthene	24-AUG-2021	26-AUG-2021	RT
Acenaphthylene	24-AUG-2021	26-AUG-2021	RT
Anthracene	24-AUG-2021	26-AUG-2021	RT
Acridine	24-AUG-2021	26-AUG-2021	RT
Quinoline	24-AUG-2021	26-AUG-2021	RT
Naphthalene	24-AUG-2021	26-AUG-2021	RT
2-Methylnaphthalene	24-AUG-2021	26-AUG-2021	RT
Fluorene	24-AUG-2021	26-AUG-2021	RT
Phenanthrene	24-AUG-2021	26-AUG-2021	RT
Fluoranthene	24-AUG-2021	26-AUG-2021	RT
Pyrene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]anthracene	24-AUG-2021	26-AUG-2021	RT
Chrysene	24-AUG-2021	26-AUG-2021	RT
Benzo[b+j]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[k]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]pyrene	24-AUG-2021	26-AUG-2021	RT
Indeno[1,2,3-cd]pyrene	24-AUG-2021	26-AUG-2021	RT
Dibenzo[ah]anthracene	24-AUG-2021	26-AUG-2021	RT
Benzo[ghi]perylene	24-AUG-2021	26-AUG-2021	RT
p-Terphenyl-d14 (PAH)	24-AUG-2021	26-AUG-2021	RT
p-Naphthalene-d8 (PAH)	24-AUG-2021	26-AUG-2021	RT
P_Pyrene-d10 (PAH)	24-AUG-2021	26-AUG-2021	RT
B[a]P TPE	26-AUG-2021	26-AUG-2021	SYS
IACR (Coarse Soil)	26-AUG-2021	26-AUG-2021	SYS
IACR (Fine Soil)	26-AUG-2021	26-AUG-2021	SYS

2879928	PM-1-SB041-c	Soil	18-AUG-2021	19-AUG-2021
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Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

Parameter	Date Prepared	Date Analyzed	Initials
Benzene	24-AUG-2021	25-AUG-2021	OM
Toluene	24-AUG-2021	25-AUG-2021	OM
Ethylbenzene	24-AUG-2021	25-AUG-2021	OM
Xylenes	24-AUG-2021	25-AUG-2021	OM
C6 - C10 (F1)	24-AUG-2021	25-AUG-2021	OM
C6 - C10 (F1 minus BTEX)	24-AUG-2021	25-AUG-2021	OM
C10 - C16 (F2)	24-AUG-2021	26-AUG-2021	OP
C16 - C34 (F3)	24-AUG-2021	26-AUG-2021	OP
C34 - C50 (F4)	24-AUG-2021	26-AUG-2021	OP



Time Markers

AGAT WORK ORDER: 21N791280

PROJECT: CE810600

2910 12TH STREET NE
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<http://www.agatlabs.com>

CLIENT NAME: JACOBS

ATTENTION TO: Patrick Kalita

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
2879928	PM-1-SB041-c	Soil	18-AUG-2021	19-AUG-2021

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

Parameter	Date Prepared	Date Analyzed	Initials
Gravimetric Heavy Hydrocarbons	24-AUG-2021	26-AUG-2021	OP
Moisture Content	24-AUG-2021	26-AUG-2021	OP
Toluene-d8 (BTEX)	24-AUG-2021	25-AUG-2021	OM
o-Terphenyl (F2-F4)	24-AUG-2021	26-AUG-2021	OP

Polyaromatic Hydrocarbon Analysis - Soil

Parameter	Date Prepared	Date Analyzed	Initials
Acenaphthene	24-AUG-2021	26-AUG-2021	RT
Acenaphthylene	24-AUG-2021	26-AUG-2021	RT
Anthracene	24-AUG-2021	26-AUG-2021	RT
Acridine	24-AUG-2021	26-AUG-2021	RT
Quinoline	24-AUG-2021	26-AUG-2021	RT
Naphthalene	24-AUG-2021	26-AUG-2021	RT
2-Methylnaphthalene	24-AUG-2021	26-AUG-2021	RT
Fluorene	24-AUG-2021	26-AUG-2021	RT
Phenanthrene	24-AUG-2021	26-AUG-2021	RT
Fluoranthene	24-AUG-2021	26-AUG-2021	RT
Pyrene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]anthracene	24-AUG-2021	26-AUG-2021	RT
Chrysene	24-AUG-2021	26-AUG-2021	RT
Benzo[b+j]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[k]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]pyrene	24-AUG-2021	26-AUG-2021	RT
Indeno[1,2,3-cd]pyrene	24-AUG-2021	26-AUG-2021	RT
Dibenzo[ah]anthracene	24-AUG-2021	26-AUG-2021	RT
Benzo[ghi]perylene	24-AUG-2021	26-AUG-2021	RT
p-Terphenyl-d14 (PAH)	24-AUG-2021	26-AUG-2021	RT
p-Naphthalene-d8 (PAH)	24-AUG-2021	26-AUG-2021	RT
P_Pyrene-d10 (PAH)	24-AUG-2021	26-AUG-2021	RT
B[a]P TPE	26-AUG-2021	26-AUG-2021	SYS
IACR (Coarse Soil)	26-AUG-2021	26-AUG-2021	SYS
IACR (Fine Soil)	26-AUG-2021	26-AUG-2021	SYS

2879929	PM-1-SB041-d	Soil	18-AUG-2021	19-AUG-2021
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Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Non-Methanol Field Stabilized)

Parameter	Date Prepared	Date Analyzed	Initials
Benzene	24-AUG-2021	25-AUG-2021	OM
Toluene	24-AUG-2021	25-AUG-2021	OM



Time Markers

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CLIENT NAME: JACOBS

ATTENTION TO: Patrick Kalita

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
2879929	PM-1-SB041-d	Soil	18-AUG-2021	19-AUG-2021

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Non-Methanol Field Stabilized)

Parameter	Date Prepared	Date Analyzed	Initials
Ethylbenzene	24-AUG-2021	25-AUG-2021	OM
Xylenes	24-AUG-2021	25-AUG-2021	OM
C6 - C10 (F1)	24-AUG-2021	25-AUG-2021	OM
C6 - C10 (F1 minus BTEX)	24-AUG-2021	25-AUG-2021	OM
C10 - C16 (F2)	24-AUG-2021	26-AUG-2021	OP
C16 - C34 (F3)	24-AUG-2021	26-AUG-2021	OP
C34 - C50 (F4)	24-AUG-2021	26-AUG-2021	OP
Gravimetric Heavy Hydrocarbons	24-AUG-2021	26-AUG-2021	OP
Moisture Content	24-AUG-2021	26-AUG-2021	OP
Toluene-d8 (BTEX)	24-AUG-2021	25-AUG-2021	OM
o-Terphenyl (F2-F4)	24-AUG-2021	26-AUG-2021	OP

Polyaromatic Hydrocarbon Analysis - Soil

Parameter	Date Prepared	Date Analyzed	Initials
Acenaphthene	24-AUG-2021	26-AUG-2021	RT
Acenaphthylene	24-AUG-2021	26-AUG-2021	RT
Anthracene	24-AUG-2021	26-AUG-2021	RT
Acridine	24-AUG-2021	26-AUG-2021	RT
Quinoline	24-AUG-2021	26-AUG-2021	RT
Naphthalene	24-AUG-2021	26-AUG-2021	RT
2-Methylnaphthalene	24-AUG-2021	26-AUG-2021	RT
Fluorene	24-AUG-2021	26-AUG-2021	RT
Phenanthrene	24-AUG-2021	26-AUG-2021	RT
Fluoranthene	24-AUG-2021	26-AUG-2021	RT
Pyrene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]anthracene	24-AUG-2021	26-AUG-2021	RT
Chrysene	24-AUG-2021	26-AUG-2021	RT
Benzo[b+j]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[k]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]pyrene	24-AUG-2021	26-AUG-2021	RT
Indeno[1,2,3-cd]pyrene	24-AUG-2021	26-AUG-2021	RT
Dibenzo[ah]anthracene	24-AUG-2021	26-AUG-2021	RT
Benzo[ghi]perylene	24-AUG-2021	26-AUG-2021	RT
p-Terphenyl-d14 (PAH)	24-AUG-2021	26-AUG-2021	RT
p-Naphthalene-d8 (PAH)	24-AUG-2021	26-AUG-2021	RT
P_Pyrene-d10 (PAH)	24-AUG-2021	26-AUG-2021	RT
B[a]P TPE	26-AUG-2021	26-AUG-2021	SYS
IACR (Coarse Soil)	26-AUG-2021	26-AUG-2021	SYS
IACR (Fine Soil)	26-AUG-2021	26-AUG-2021	SYS



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CLIENT NAME: JACOBS

ATTENTION TO: Patrick Kalita

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
2879930	PM-1-SB009-a	Soil	18-AUG-2021	19-AUG-2021

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

Parameter	Date Prepared	Date Analyzed	Initials
Benzene	24-AUG-2021	25-AUG-2021	OM
Toluene	24-AUG-2021	25-AUG-2021	OM
Ethylbenzene	24-AUG-2021	25-AUG-2021	OM
Xylenes	24-AUG-2021	25-AUG-2021	OM
C6 - C10 (F1)	24-AUG-2021	25-AUG-2021	OM
C6 - C10 (F1 minus BTEX)	24-AUG-2021	25-AUG-2021	OM
C10 - C16 (F2)	24-AUG-2021	26-AUG-2021	OP
C16 - C34 (F3)	24-AUG-2021	26-AUG-2021	OP
C34 - C50 (F4)	24-AUG-2021	26-AUG-2021	OP
Gravimetric Heavy Hydrocarbons	24-AUG-2021	26-AUG-2021	OP
Moisture Content	24-AUG-2021	26-AUG-2021	OP
Toluene-d8 (BTEX)	24-AUG-2021	25-AUG-2021	OM
o-Terphenyl (F2-F4)	24-AUG-2021	26-AUG-2021	OP

Polyaromatic Hydrocarbon Analysis - Soil

Parameter	Date Prepared	Date Analyzed	Initials
Acenaphthene	24-AUG-2021	26-AUG-2021	RT
Acenaphthylene	24-AUG-2021	26-AUG-2021	RT
Anthracene	24-AUG-2021	26-AUG-2021	RT
Acridine	24-AUG-2021	26-AUG-2021	RT
Quinoline	24-AUG-2021	26-AUG-2021	RT
Naphthalene	24-AUG-2021	26-AUG-2021	RT
2-Methylnaphthalene	24-AUG-2021	26-AUG-2021	RT
Fluorene	24-AUG-2021	26-AUG-2021	RT
Phenanthrene	24-AUG-2021	26-AUG-2021	RT
Fluoranthene	24-AUG-2021	26-AUG-2021	RT
Pyrene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]anthracene	24-AUG-2021	26-AUG-2021	RT
Chrysene	24-AUG-2021	26-AUG-2021	RT
Benzo[b+j]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[k]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]pyrene	24-AUG-2021	26-AUG-2021	RT
Indeno[1,2,3-cd]pyrene	24-AUG-2021	26-AUG-2021	RT
Dibenzo[ah]anthracene	24-AUG-2021	26-AUG-2021	RT
Benzo[ghi]perylene	24-AUG-2021	26-AUG-2021	RT
p-Terphenyl-d14 (PAH)	24-AUG-2021	26-AUG-2021	RT
p-Naphthalene-d8 (PAH)	24-AUG-2021	26-AUG-2021	RT
P_Pyrene-d10 (PAH)	24-AUG-2021	26-AUG-2021	RT



Time Markers

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CLIENT NAME: JACOBS

ATTENTION TO: Patrick Kalita

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
2879930	PM-1-SB009-a	Soil	18-AUG-2021	19-AUG-2021

Polyaromatic Hydrocarbon Analysis - Soil

Parameter	Date Prepared	Date Analyzed	Initials
B[a]P TPE	26-AUG-2021	26-AUG-2021	SYS
IACR (Coarse Soil)	26-AUG-2021	26-AUG-2021	SYS
IACR (Fine Soil)	26-AUG-2021	26-AUG-2021	SYS

2879931	PM-1-SB009-b	Soil	18-AUG-2021	19-AUG-2021
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Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

Parameter	Date Prepared	Date Analyzed	Initials
Benzene	24-AUG-2021	25-AUG-2021	OM
Toluene	24-AUG-2021	25-AUG-2021	OM
Ethylbenzene	24-AUG-2021	25-AUG-2021	OM
Xylenes	24-AUG-2021	25-AUG-2021	OM
C6 - C10 (F1)	24-AUG-2021	25-AUG-2021	OM
C6 - C10 (F1 minus BTEX)	24-AUG-2021	25-AUG-2021	OM
C10 - C16 (F2)	24-AUG-2021	26-AUG-2021	OP
C16 - C34 (F3)	24-AUG-2021	26-AUG-2021	OP
C34 - C50 (F4)	24-AUG-2021	26-AUG-2021	OP
Gravimetric Heavy Hydrocarbons	24-AUG-2021	26-AUG-2021	OP
Moisture Content	24-AUG-2021	26-AUG-2021	OP
Toluene-d8 (BTEX)	24-AUG-2021	25-AUG-2021	OM
o-Terphenyl (F2-F4)	24-AUG-2021	26-AUG-2021	OP

Polyaromatic Hydrocarbon Analysis - Soil

Parameter	Date Prepared	Date Analyzed	Initials
Acenaphthene	24-AUG-2021	26-AUG-2021	RT
Acenaphthylene	24-AUG-2021	26-AUG-2021	RT
Anthracene	24-AUG-2021	26-AUG-2021	RT
Acridine	24-AUG-2021	26-AUG-2021	RT
Quinoline	24-AUG-2021	26-AUG-2021	RT
Naphthalene	24-AUG-2021	26-AUG-2021	RT
2-Methylnaphthalene	24-AUG-2021	26-AUG-2021	RT
Fluorene	24-AUG-2021	26-AUG-2021	RT
Phenanthrene	24-AUG-2021	26-AUG-2021	RT
Fluoranthene	24-AUG-2021	26-AUG-2021	RT
Pyrene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]anthracene	24-AUG-2021	26-AUG-2021	RT
Chrysene	24-AUG-2021	26-AUG-2021	RT
Benzo[b+j]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[k]fluoranthene	24-AUG-2021	26-AUG-2021	RT



Time Markers

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CLIENT NAME: JACOBS

ATTENTION TO: Patrick Kalita

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
2879931	PM-1-SB009-b	Soil	18-AUG-2021	19-AUG-2021

Polyaromatic Hydrocarbon Analysis - Soil

Parameter	Date Prepared	Date Analyzed	Initials
Benzo[a]pyrene	24-AUG-2021	26-AUG-2021	RT
Indeno[1,2,3-cd]pyrene	24-AUG-2021	26-AUG-2021	RT
Dibenzo[ah]anthracene	24-AUG-2021	26-AUG-2021	RT
Benzo[ghi]perylene	24-AUG-2021	26-AUG-2021	RT
p-Terphenyl-d14 (PAH)	24-AUG-2021	26-AUG-2021	RT
p-Naphthalene-d8 (PAH)	24-AUG-2021	26-AUG-2021	RT
P_Pyrene-d10 (PAH)	24-AUG-2021	26-AUG-2021	RT
B[a]P TPE	26-AUG-2021	26-AUG-2021	SYS
IACR (Coarse Soil)	26-AUG-2021	26-AUG-2021	SYS
IACR (Fine Soil)	26-AUG-2021	26-AUG-2021	SYS

2879932	PM-1-SB009-c	Soil	18-AUG-2021	19-AUG-2021
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Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

Parameter	Date Prepared	Date Analyzed	Initials
Benzene	24-AUG-2021	25-AUG-2021	OM
Toluene	24-AUG-2021	25-AUG-2021	OM
Ethylbenzene	24-AUG-2021	25-AUG-2021	OM
Xylenes	24-AUG-2021	25-AUG-2021	OM
C6 - C10 (F1)	24-AUG-2021	25-AUG-2021	OM
C6 - C10 (F1 minus BTEX)	24-AUG-2021	25-AUG-2021	OM
C10 - C16 (F2)	24-AUG-2021	26-AUG-2021	OP
C16 - C34 (F3)	24-AUG-2021	26-AUG-2021	OP
C34 - C50 (F4)	24-AUG-2021	26-AUG-2021	OP
Gravimetric Heavy Hydrocarbons	24-AUG-2021	26-AUG-2021	OP
Moisture Content	24-AUG-2021	26-AUG-2021	OP
Toluene-d8 (BTEX)	24-AUG-2021	25-AUG-2021	OM
o-Terphenyl (F2-F4)	24-AUG-2021	26-AUG-2021	OP

Polyaromatic Hydrocarbon Analysis - Soil

Parameter	Date Prepared	Date Analyzed	Initials
Acenaphthene	24-AUG-2021	26-AUG-2021	RT
Acenaphthylene	24-AUG-2021	26-AUG-2021	RT
Anthracene	24-AUG-2021	26-AUG-2021	RT
Acridine	24-AUG-2021	26-AUG-2021	RT
Quinoline	24-AUG-2021	26-AUG-2021	RT
Naphthalene	24-AUG-2021	26-AUG-2021	RT
2-Methylnaphthalene	24-AUG-2021	26-AUG-2021	RT
Fluorene	24-AUG-2021	26-AUG-2021	RT



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ATTENTION TO: Patrick Kalita

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
2879932	PM-1-SB009-c	Soil	18-AUG-2021	19-AUG-2021

Polyaromatic Hydrocarbon Analysis - Soil

Parameter	Date Prepared	Date Analyzed	Initials
Phenanthrene	24-AUG-2021	26-AUG-2021	RT
Fluoranthene	24-AUG-2021	26-AUG-2021	RT
Pyrene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]anthracene	24-AUG-2021	26-AUG-2021	RT
Chrysene	24-AUG-2021	26-AUG-2021	RT
Benzo[b+j]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[k]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]pyrene	24-AUG-2021	26-AUG-2021	RT
Indeno[1,2,3-cd]pyrene	24-AUG-2021	26-AUG-2021	RT
Dibenzo[ah]anthracene	24-AUG-2021	26-AUG-2021	RT
Benzo[ghi]perylene	24-AUG-2021	26-AUG-2021	RT
p-Terphenyl-d14 (PAH)	24-AUG-2021	26-AUG-2021	RT
p-Naphthalene-d8 (PAH)	24-AUG-2021	26-AUG-2021	RT
P_Pyrene-d10 (PAH)	24-AUG-2021	26-AUG-2021	RT
B[a]P TPE	26-AUG-2021	26-AUG-2021	SYS
IACR (Coarse Soil)	26-AUG-2021	26-AUG-2021	SYS
IACR (Fine Soil)	26-AUG-2021	26-AUG-2021	SYS

2879933	DUP-1	Soil	18-AUG-2021	19-AUG-2021
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Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

Parameter	Date Prepared	Date Analyzed	Initials
Benzene	24-AUG-2021	25-AUG-2021	OM
Toluene	24-AUG-2021	25-AUG-2021	OM
Ethylbenzene	24-AUG-2021	25-AUG-2021	OM
Xylenes	24-AUG-2021	25-AUG-2021	OM
C6 - C10 (F1)	24-AUG-2021	25-AUG-2021	OM
C6 - C10 (F1 minus BTEX)	24-AUG-2021	25-AUG-2021	OM
C10 - C16 (F2)	24-AUG-2021	26-AUG-2021	OP
C16 - C34 (F3)	24-AUG-2021	26-AUG-2021	OP
C34 - C50 (F4)	24-AUG-2021	26-AUG-2021	OP
Gravimetric Heavy Hydrocarbons	24-AUG-2021	26-AUG-2021	OP
Moisture Content	24-AUG-2021	26-AUG-2021	OP
Toluene-d8 (BTEX)	24-AUG-2021	25-AUG-2021	OM
o-Terphenyl (F2-F4)	24-AUG-2021	26-AUG-2021	OP

Polyaromatic Hydrocarbon Analysis - Soil

Parameter	Date Prepared	Date Analyzed	Initials
Acenaphthene	24-AUG-2021	26-AUG-2021	RT



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ATTENTION TO: Patrick Kalita

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
2879933	DUP-1	Soil	18-AUG-2021	19-AUG-2021

Polyaromatic Hydrocarbon Analysis - Soil

Parameter	Date Prepared	Date Analyzed	Initials
Acenaphthylene	24-AUG-2021	26-AUG-2021	RT
Anthracene	24-AUG-2021	26-AUG-2021	RT
Acridine	24-AUG-2021	26-AUG-2021	RT
Quinoline	24-AUG-2021	26-AUG-2021	RT
Naphthalene	24-AUG-2021	26-AUG-2021	RT
2-Methylnaphthalene	24-AUG-2021	26-AUG-2021	RT
Fluorene	24-AUG-2021	26-AUG-2021	RT
Phenanthrene	24-AUG-2021	26-AUG-2021	RT
Fluoranthene	24-AUG-2021	26-AUG-2021	RT
Pyrene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]anthracene	24-AUG-2021	26-AUG-2021	RT
Chrysene	24-AUG-2021	26-AUG-2021	RT
Benzo[b+j]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[k]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]pyrene	24-AUG-2021	26-AUG-2021	RT
Indeno[1,2,3-cd]pyrene	24-AUG-2021	26-AUG-2021	RT
Dibenzo[ah]anthracene	24-AUG-2021	26-AUG-2021	RT
Benzo[ghi]perylene	24-AUG-2021	26-AUG-2021	RT
p-Terphenyl-d14 (PAH)	24-AUG-2021	26-AUG-2021	RT
p-Naphthalene-d8 (PAH)	24-AUG-2021	26-AUG-2021	RT
P_Pyrene-d10 (PAH)	24-AUG-2021	26-AUG-2021	RT
B[a]P TPE	26-AUG-2021	26-AUG-2021	SYS
IACR (Coarse Soil)	26-AUG-2021	26-AUG-2021	SYS
IACR (Fine Soil)	26-AUG-2021	26-AUG-2021	SYS

2879935	DUP-2	Soil	18-AUG-2021	19-AUG-2021
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Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

Parameter	Date Prepared	Date Analyzed	Initials
Benzene	24-AUG-2021	25-AUG-2021	OM
Toluene	24-AUG-2021	25-AUG-2021	OM
Ethylbenzene	24-AUG-2021	25-AUG-2021	OM
Xylenes	24-AUG-2021	25-AUG-2021	OM
C6 - C10 (F1)	24-AUG-2021	25-AUG-2021	OM
C6 - C10 (F1 minus BTEX)	24-AUG-2021	25-AUG-2021	OM
C10 - C16 (F2)	24-AUG-2021	26-AUG-2021	OP
C16 - C34 (F3)	24-AUG-2021	26-AUG-2021	OP
C34 - C50 (F4)	24-AUG-2021	26-AUG-2021	OP
Gravimetric Heavy Hydrocarbons	24-AUG-2021	26-AUG-2021	OP



Time Markers

AGAT WORK ORDER: 21N791280

PROJECT: CE810600

2910 12TH STREET NE
CALGARY, ALBERTA
CANADA T2E 7P7
TEL (403)735-2005
FAX (403)735-2771
<http://www.agatlabs.com>

CLIENT NAME: JACOBS

ATTENTION TO: Patrick Kalita

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
2879935	DUP-2	Soil	18-AUG-2021	19-AUG-2021

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

Parameter	Date Prepared	Date Analyzed	Initials
Moisture Content	24-AUG-2021	26-AUG-2021	OP
Toluene-d8 (BTEX)	24-AUG-2021	25-AUG-2021	OM
o-Terphenyl (F2-F4)	24-AUG-2021	26-AUG-2021	OP

Polyaromatic Hydrocarbon Analysis - Soil

Parameter	Date Prepared	Date Analyzed	Initials
Acenaphthene	24-AUG-2021	26-AUG-2021	RT
Acenaphthylene	24-AUG-2021	26-AUG-2021	RT
Anthracene	24-AUG-2021	26-AUG-2021	RT
Acridine	24-AUG-2021	26-AUG-2021	RT
Quinoline	24-AUG-2021	26-AUG-2021	RT
Naphthalene	24-AUG-2021	26-AUG-2021	RT
2-Methylnaphthalene	24-AUG-2021	26-AUG-2021	RT
Fluorene	24-AUG-2021	26-AUG-2021	RT
Phenanthrene	24-AUG-2021	26-AUG-2021	RT
Fluoranthene	24-AUG-2021	26-AUG-2021	RT
Pyrene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]anthracene	24-AUG-2021	26-AUG-2021	RT
Chrysene	24-AUG-2021	26-AUG-2021	RT
Benzo[b+j]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[k]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]pyrene	24-AUG-2021	26-AUG-2021	RT
Indeno[1,2,3-cd]pyrene	24-AUG-2021	26-AUG-2021	RT
Dibenzo[ah]anthracene	24-AUG-2021	26-AUG-2021	RT
Benzo[ghi]perylene	24-AUG-2021	26-AUG-2021	RT
p-Terphenyl-d14 (PAH)	24-AUG-2021	26-AUG-2021	RT
p-Naphthalene-d8 (PAH)	24-AUG-2021	26-AUG-2021	RT
P_Pyrene-d10 (PAH)	24-AUG-2021	26-AUG-2021	RT
B[a]P TPE	26-AUG-2021	26-AUG-2021	SYS
IACR (Coarse Soil)	26-AUG-2021	26-AUG-2021	SYS
IACR (Fine Soil)	26-AUG-2021	26-AUG-2021	SYS

2879936	DUP-3	Soil	18-AUG-2021	19-AUG-2021
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Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

Parameter	Date Prepared	Date Analyzed	Initials
Benzene	24-AUG-2021	25-AUG-2021	OM
Toluene	24-AUG-2021	25-AUG-2021	OM
Ethylbenzene	24-AUG-2021	25-AUG-2021	OM



Time Markers

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CLIENT NAME: JACOBS

ATTENTION TO: Patrick Kalita

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
2879936	DUP-3	Soil	18-AUG-2021	19-AUG-2021

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

Parameter	Date Prepared	Date Analyzed	Initials
Xylenes	24-AUG-2021	25-AUG-2021	OM
C6 - C10 (F1)	24-AUG-2021	25-AUG-2021	OM
C6 - C10 (F1 minus BTEX)	24-AUG-2021	25-AUG-2021	OM
C10 - C16 (F2)	24-AUG-2021	26-AUG-2021	OP
C16 - C34 (F3)	24-AUG-2021	26-AUG-2021	OP
C34 - C50 (F4)	24-AUG-2021	26-AUG-2021	OP
Gravimetric Heavy Hydrocarbons	24-AUG-2021	26-AUG-2021	OP
Moisture Content	24-AUG-2021	26-AUG-2021	OP
Toluene-d8 (BTEX)	24-AUG-2021	25-AUG-2021	OM
o-Terphenyl (F2-F4)	24-AUG-2021	26-AUG-2021	OP

Polyaromatic Hydrocarbon Analysis - Soil

Parameter	Date Prepared	Date Analyzed	Initials
Acenaphthene	24-AUG-2021	26-AUG-2021	RT
Acenaphthylene	24-AUG-2021	26-AUG-2021	RT
Anthracene	24-AUG-2021	26-AUG-2021	RT
Acridine	24-AUG-2021	26-AUG-2021	RT
Quinoline	24-AUG-2021	26-AUG-2021	RT
Naphthalene	24-AUG-2021	26-AUG-2021	RT
2-Methylnaphthalene	24-AUG-2021	26-AUG-2021	RT
Fluorene	24-AUG-2021	26-AUG-2021	RT
Phenanthrene	24-AUG-2021	26-AUG-2021	RT
Fluoranthene	24-AUG-2021	26-AUG-2021	RT
Pyrene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]anthracene	24-AUG-2021	26-AUG-2021	RT
Chrysene	24-AUG-2021	26-AUG-2021	RT
Benzo[b+j]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[k]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]pyrene	24-AUG-2021	26-AUG-2021	RT
Indeno[1,2,3-cd]pyrene	24-AUG-2021	26-AUG-2021	RT
Dibenzo[ah]anthracene	24-AUG-2021	26-AUG-2021	RT
Benzo[ghi]perylene	24-AUG-2021	26-AUG-2021	RT
p-Terphenyl-d14 (PAH)	24-AUG-2021	26-AUG-2021	RT
p-Naphthalene-d8 (PAH)	24-AUG-2021	26-AUG-2021	RT
P_Pyrene-d10 (PAH)	24-AUG-2021	26-AUG-2021	RT
B[a]P TPE	26-AUG-2021	26-AUG-2021	SYS
IACR (Coarse Soil)	26-AUG-2021	26-AUG-2021	SYS
IACR (Fine Soil)	26-AUG-2021	26-AUG-2021	SYS



Time Markers

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PROJECT: CE810600

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CLIENT NAME: JACOBS

ATTENTION TO: Patrick Kalita

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
2879937	DUP-4	Soil	18-AUG-2021	19-AUG-2021

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

Parameter	Date Prepared	Date Analyzed	Initials
Benzene	24-AUG-2021	25-AUG-2021	OM
Toluene	24-AUG-2021	25-AUG-2021	OM
Ethylbenzene	24-AUG-2021	25-AUG-2021	OM
Xylenes	24-AUG-2021	25-AUG-2021	OM
C6 - C10 (F1)	24-AUG-2021	25-AUG-2021	OM
C6 - C10 (F1 minus BTEX)	24-AUG-2021	25-AUG-2021	OM
C10 - C16 (F2)	24-AUG-2021	26-AUG-2021	OP
C16 - C34 (F3)	24-AUG-2021	26-AUG-2021	OP
C34 - C50 (F4)	24-AUG-2021	26-AUG-2021	OP
Gravimetric Heavy Hydrocarbons	24-AUG-2021	26-AUG-2021	OP
Moisture Content	24-AUG-2021	26-AUG-2021	OP
Toluene-d8 (BTEX)	24-AUG-2021	25-AUG-2021	OM
o-Terphenyl (F2-F4)	24-AUG-2021	26-AUG-2021	OP

Polyaromatic Hydrocarbon Analysis - Soil

Parameter	Date Prepared	Date Analyzed	Initials
Acenaphthene	24-AUG-2021	26-AUG-2021	RT
Acenaphthylene	24-AUG-2021	26-AUG-2021	RT
Anthracene	24-AUG-2021	26-AUG-2021	RT
Acridine	24-AUG-2021	26-AUG-2021	RT
Quinoline	24-AUG-2021	26-AUG-2021	RT
Naphthalene	24-AUG-2021	26-AUG-2021	RT
2-Methylnaphthalene	24-AUG-2021	26-AUG-2021	RT
Fluorene	24-AUG-2021	26-AUG-2021	RT
Phenanthrene	24-AUG-2021	26-AUG-2021	RT
Fluoranthene	24-AUG-2021	26-AUG-2021	RT
Pyrene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]anthracene	24-AUG-2021	26-AUG-2021	RT
Chrysene	24-AUG-2021	26-AUG-2021	RT
Benzo[b+j]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[k]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]pyrene	24-AUG-2021	26-AUG-2021	RT
Indeno[1,2,3-cd]pyrene	24-AUG-2021	26-AUG-2021	RT
Dibenzo[ah]anthracene	24-AUG-2021	26-AUG-2021	RT
Benzo[ghi]perylene	24-AUG-2021	26-AUG-2021	RT
p-Terphenyl-d14 (PAH)	24-AUG-2021	26-AUG-2021	RT
p-Naphthalene-d8 (PAH)	24-AUG-2021	26-AUG-2021	RT
P_Pyrene-d10 (PAH)	24-AUG-2021	26-AUG-2021	RT
B[a]P TPE	26-AUG-2021	26-AUG-2021	SYS



Time Markers

AGAT WORK ORDER: 21N791280

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<http://www.agatlabs.com>

CLIENT NAME: JACOBS

ATTENTION TO: Patrick Kalita

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
2879937	DUP-4	Soil	18-AUG-2021	19-AUG-2021

Polyaromatic Hydrocarbon Analysis - Soil

Parameter	Date Prepared	Date Analyzed	Initials
IACR (Coarse Soil)	26-AUG-2021	26-AUG-2021	SYS
IACR (Fine Soil)	26-AUG-2021	26-AUG-2021	SYS

2879938	DUP-5	Soil	18-AUG-2021	19-AUG-2021
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Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

Parameter	Date Prepared	Date Analyzed	Initials
Benzene	24-AUG-2021	25-AUG-2021	OM
Toluene	24-AUG-2021	25-AUG-2021	OM
Ethylbenzene	24-AUG-2021	25-AUG-2021	OM
Xylenes	24-AUG-2021	25-AUG-2021	OM
C6 - C10 (F1)	24-AUG-2021	25-AUG-2021	OM
C6 - C10 (F1 minus BTEX)	24-AUG-2021	25-AUG-2021	OM
C10 - C16 (F2)	24-AUG-2021	26-AUG-2021	OP
C16 - C34 (F3)	24-AUG-2021	26-AUG-2021	OP
C34 - C50 (F4)	24-AUG-2021	26-AUG-2021	OP
Gravimetric Heavy Hydrocarbons	24-AUG-2021	26-AUG-2021	OP
Moisture Content	24-AUG-2021	26-AUG-2021	OP
Toluene-d8 (BTEX)	24-AUG-2021	25-AUG-2021	OM
o-Terphenyl (F2-F4)	24-AUG-2021	26-AUG-2021	OP

Polyaromatic Hydrocarbon Analysis - Soil

Parameter	Date Prepared	Date Analyzed	Initials
Acenaphthene	24-AUG-2021	26-AUG-2021	RT
Acenaphthylene	24-AUG-2021	26-AUG-2021	RT
Anthracene	24-AUG-2021	26-AUG-2021	RT
Acridine	24-AUG-2021	26-AUG-2021	RT
Quinoline	24-AUG-2021	26-AUG-2021	RT
Naphthalene	24-AUG-2021	26-AUG-2021	RT
2-Methylnaphthalene	24-AUG-2021	26-AUG-2021	RT
Fluorene	24-AUG-2021	26-AUG-2021	RT
Phenanthrene	24-AUG-2021	26-AUG-2021	RT
Fluoranthene	24-AUG-2021	26-AUG-2021	RT
Pyrene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]anthracene	24-AUG-2021	26-AUG-2021	RT
Chrysene	24-AUG-2021	26-AUG-2021	RT
Benzo[b+j]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[k]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]pyrene	24-AUG-2021	26-AUG-2021	RT



Time Markers

AGAT WORK ORDER: 21N791280

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CLIENT NAME: JACOBS

ATTENTION TO: Patrick Kalita

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
2879938	DUP-5	Soil	18-AUG-2021	19-AUG-2021

Polyaromatic Hydrocarbon Analysis - Soil

Parameter	Date Prepared	Date Analyzed	Initials
Indeno[1,2,3-cd]pyrene	24-AUG-2021	26-AUG-2021	RT
Dibenzo[ah]anthracene	24-AUG-2021	26-AUG-2021	RT
Benzo[ghi]perylene	24-AUG-2021	26-AUG-2021	RT
p-Terphenyl-d14 (PAH)	24-AUG-2021	26-AUG-2021	RT
p-Naphthalene-d8 (PAH)	24-AUG-2021	26-AUG-2021	RT
P_Pyrene-d10 (PAH)	24-AUG-2021	26-AUG-2021	RT
B[a]P TPE	26-AUG-2021	26-AUG-2021	SYS
IACR (Coarse Soil)	26-AUG-2021	26-AUG-2021	SYS
IACR (Fine Soil)	26-AUG-2021	26-AUG-2021	SYS

2879939	DUP-6	Soil	18-AUG-2021	19-AUG-2021
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Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

Parameter	Date Prepared	Date Analyzed	Initials
Benzene	24-AUG-2021	25-AUG-2021	OM
Toluene	24-AUG-2021	25-AUG-2021	OM
Ethylbenzene	24-AUG-2021	25-AUG-2021	OM
Xylenes	24-AUG-2021	25-AUG-2021	OM
C6 - C10 (F1)	24-AUG-2021	25-AUG-2021	OM
C6 - C10 (F1 minus BTEX)	24-AUG-2021	25-AUG-2021	OM
C10 - C16 (F2)	24-AUG-2021	26-AUG-2021	OP
C16 - C34 (F3)	24-AUG-2021	26-AUG-2021	OP
C34 - C50 (F4)	24-AUG-2021	26-AUG-2021	OP
Gravimetric Heavy Hydrocarbons	24-AUG-2021	26-AUG-2021	OP
Moisture Content	24-AUG-2021	26-AUG-2021	OP
Toluene-d8 (BTEX)	24-AUG-2021	25-AUG-2021	OM
o-Terphenyl (F2-F4)	24-AUG-2021	26-AUG-2021	OP

Polyaromatic Hydrocarbon Analysis - Soil

Parameter	Date Prepared	Date Analyzed	Initials
Acenaphthene	24-AUG-2021	26-AUG-2021	RT
Acenaphthylene	24-AUG-2021	26-AUG-2021	RT
Anthracene	24-AUG-2021	26-AUG-2021	RT
Acridine	24-AUG-2021	26-AUG-2021	RT
Quinoline	24-AUG-2021	26-AUG-2021	RT
Naphthalene	24-AUG-2021	26-AUG-2021	RT
2-Methylnaphthalene	24-AUG-2021	26-AUG-2021	RT
Fluorene	24-AUG-2021	26-AUG-2021	RT
Phenanthrene	24-AUG-2021	26-AUG-2021	RT



Time Markers

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PROJECT: CE810600

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CLIENT NAME: JACOBS

ATTENTION TO: Patrick Kalita

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
2879939	DUP-6	Soil	18-AUG-2021	19-AUG-2021

Polyaromatic Hydrocarbon Analysis - Soil

Parameter	Date Prepared	Date Analyzed	Initials
Fluoranthene	24-AUG-2021	26-AUG-2021	RT
Pyrene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]anthracene	24-AUG-2021	26-AUG-2021	RT
Chrysene	24-AUG-2021	26-AUG-2021	RT
Benzo[b+j]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[k]fluoranthene	24-AUG-2021	26-AUG-2021	RT
Benzo[a]pyrene	24-AUG-2021	26-AUG-2021	RT
Indeno[1,2,3-cd]pyrene	24-AUG-2021	26-AUG-2021	RT
Dibenzo[ah]anthracene	24-AUG-2021	26-AUG-2021	RT
Benzo[ghi]perylene	24-AUG-2021	26-AUG-2021	RT
p-Terphenyl-d14 (PAH)	24-AUG-2021	26-AUG-2021	RT
p-Naphthalene-d8 (PAH)	24-AUG-2021	26-AUG-2021	RT
P_Pyrene-d10 (PAH)	24-AUG-2021	26-AUG-2021	RT
B[a]P TPE	26-AUG-2021	26-AUG-2021	SYS
IACR (Coarse Soil)	26-AUG-2021	26-AUG-2021	SYS
IACR (Fine Soil)	26-AUG-2021	26-AUG-2021	SYS

Method Summary

CLIENT NAME: JACOBS

PROJECT: CE810600

SAMPLING SITE:

AGAT WORK ORDER: 21N791280

ATTENTION TO: Patrick Kalita

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Soil Analysis			
Available Nitrate (NO ₃ -N)	SOIL-0110; INOR-401-0120; SOIL-0130; INST-0540	ALBERTA AGRICULTURE 1988, EPA 353.2	DISCRETE ANALYZER
Available Phosphorus - P	SOIL-0110; INOR-401-0120; SOIL-0130; INST-0530	SHEPPARD 2007, ALBERTA AGRICULTURE 1988	DISCRETE ANALYZER
Available Potassium	SOIL 0110; SOIL 0120; SOIL 0131; INST 0140	SHEPPARD 2007, ALBERTA AGRICULTURE 1988	ICP/OES
Available Sulfur (SO ₄ -S)	SOIL 0110; SOIL 0120; SOIL 0131; INST 0140	SHEPPARD 2007, KOWALENKO 1993	ICP-OES
Sieve Analysis - 75 microns	SOIL 0540; SOIL 0110	KROETSCH 2007; SHEPPARD 2007	SIEVE
Bicarbonate, Soluble		CARTER & GREGORICH 2007	PC TITRATE
Carbonate, Soluble		CARTER & GREGORICH 2007	PC TITRATE
Bulk Density, Crude - Wet (As Recieved Soil)	SOIL-0220	BLAKE, Methods of Soil Analysis, SSSA, 1986	GRAVIMETRIC
Moisture Content (Wet Weight)**	SOIL-0310	SOIL SAMPLING & METHODS OF ANALYSIS, CARTER, 2008	GRAVIMETRIC
pH (Saturated Paste)	SOIL-0110; INOR-401-0120; INST-0110	SHEPPARD 2007; MILLER 2007 ; SM 4500 H+	PH METER
Lime Requirement to pH 6.5**	SOIL 0250	CARTER & GREGORICH 2007	PH METER
Lime Requirement @ pH 7.0**	SOIL 250	ASA 12-3.4.5	N/A
Total Organic Carbon	SOIL 0480; SOIL 0110; SOIL 0120	Organic Carbon, SSSA, 1996 & Skjemstad 2008	SPECTROPHOTOMETER

Method Summary

CLIENT NAME: JACOBS

AGAT WORK ORDER: 21N791280

PROJECT: CE810600

ATTENTION TO: Patrick Kalita

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Benzene	TO-0543	EPA SW-846 5021 & 8260	GC/MS
Toluene	TO-0543	EPA SW-846 5021 & 8260	GC/MS
Ethylbenzene	TO-0543	EPA SW-846 5021 & 8260	GC/MS
Xylenes	TO-0543	EPA SW-846 5021 & 8260	GC/MS
C6 - C10 (F1)	TO-0543	CCME Tier 1 Method	GC/FID
C6 - C10 (F1 minus BTEX)	TO-0543	CCME Tier 1 Method	GC/FID
C10 - C16 (F2)	TO-0560	CCME Tier 1 Method	GC/FID
C16 - C34 (F3)	TO-0560	CCME Tier 1 Method	GC/FID
C34 - C50 (F4)	TO-0560	CCME Tier 1 Method	GC/FID
Gravimetric Heavy Hydrocarbons	TO-0560	CCME Tier 1 Method	GC/FID
Moisture Content	TO-0560	CCME Tier 1 Method	GC/FID
Toluene-d8 (BTEX)	TO-0543	EPA SW-846 5021 & 8260	GC/MS
o-Terphenyl (F2-F4)	TO 0560	CCME Tier 1 Method	GC/FID
Acenaphthene	TO 0210	EPA SW-846 3570 & 8270	GC/MS
Acenaphthylene	TO 0210	EPA SW-846 3570 & 8270	GC/MS
Anthracene	TO 0210	EPA SW-846 3570 & 8270	GC/MS
Acridine	TO 0210	EPA SW-846 3570 & 8270	GC/MS
Quinoline	TO 0210	EPA SW-846 3570 & 8270	GC/MS
Naphthalene	TO 0210	EPA SW-846 3570 & 8270	GC/MS
2-Methylnaphthalene	TO 0210	EPA SW-846 3570 & 8270	GC/MS
Fluorene	TO 0210	EPA SW-846 3570 & 8270	GC/MS
Phenanthrene	TO 0210	EPA SW-846 3570 & 8270	GC/MS
Fluoranthene	TO 0210	EPA SW-846 3570 & 8270	GC/MS
Pyrene	TO 0210	EPA SW-846 3570 & 8270	GC/MS
Benzo[a]anthracene	TO 0210	EPA SW-846 3570 & 8270	GC/MS
Chrysene	TO 0210	EPA SW-846 3570 & 8270	GC/MS
Benzo[b+j]fluoranthene	TO 0210	EPA SW-846 3570 & 8270	GC/MS
Benzo[k]fluoranthene	TO 0210	EPA SW-846 3570 & 8270	GC/MS
Benzo[a]pyrene	TO 0210	EPA SW-846 3570 & 8270	GC/MS
Indeno[1,2,3-cd]pyrene	TO 0210	EPA SW-846 3570 & 8270	GC/MS
Dibenzo[ah]anthracene	TO 0210	EPA SW-846 3570 & 8270	GC/MS
Benzo[ghi]perylene	TO 0210	EPA SW-846 3570 & 8270	GC/MS
p-Terphenyl-d14 (PAH)	TO 0210	EPA SW-846 3570 & 8270	GC/MS
p-Naphthalene-d8 (PAH)	TO-0210	EPA SW-846 3570 & 8270	GC/MS
P_Pyrene-d10 (PAH)	TO-0210	EPA SW-846 3570 & 8270	GC/MS
B[a]P TPE		CCME	GC/MS
IACR (Coarse Soil)		CCME	GC/MS
IACR (Fine Soil)		CCME	GC/MS



AGAT

Laboratories

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Laboratory Use Only

Arrival Temperature: 2°CAGAT Job Number: 21N791280Date and Time: 21-AUG '21 AM 9:04

Chain of Custody Record

Emergency Support Services Hotline **1-855-AGAT 245 (1-855-242-8245)**

Report Information

Company: Jacobs
 Contact: Patrick Kalita
 Address: _____
 Phone: 567-990-9758 Fax: _____
 LSD: _____
 Client Project #: CE810600

Report Information

1. Name: _____
 Email: _____
 2. Name: _____
 Email: _____
 3. Name: _____
 Email: _____

Report Format

☐ Single
☐ Sample per Page

☐ Multiple
☐ Samples per Page

Turnaround Time Required (TAT)

Regular TAT 0.5 to 7 business days

Rush TAT ☐ Less than 24 hours
☐ 24 to 48 hours
☐ 48 to 72 hours

Date Required: _____

RUSH TAT REQUESTS
 UPON SELECTING A
 RUSH TAT, THE CLIENT
 ACCEPTS THAT A
 RUSH SURCHARGE
 WILL BE ADDED
 TO THE INVOICE.
 SEE BACK FOR
 SURCHARGE.

Invoice To

Same Yes / No

Company: Jacobs
 Contact: _____
 Address: _____
 Phone: _____ Fax: _____
 PO/AFE#: _____

Requirements (Selection may impact detection limits)

☒ CCME ☐ AB Tier 1 ☐ BC CSR
☐ Agricultural ☐ Agricultural ☐ AW
☐ Industrial ☐ Industrial ☐ IW
☐ Residential/Park ☐ Residential/Park ☐ LW
☐ Commercial ☐ Commercial ☐ DW
☐ Drinking Water ☐ Natural Area
☐ FWAL ☐ AB Surface Water
☐ Other
☐ D50 (Drilling) ☐ SPIGEC

LABORATORY USE (LAB ID #)	SAMPLE IDENTIFICATION	SAMPLE MATRIX	DATE/TIME SAMPLED	COMMENTS - SITE SAMPLE INFO. SAMPLE CONTAINMENT	# OF CONTAINERS	Detailed	CCME BTEX	Soil Metals	Water Metals	Routine	AB Class	BC Landfill	D50 Detailed	Microtox	BTEXS/V	F	F	P	HOLD FOR 60 DAYS	PRESERVED	CONTAMINATED
787986	PM-1-SB001-a	Soil	Aug 17/21		4											X	X	X			
85	↓ -b	↓	↓		5											X	X	X			
86	↓ -c	↓	↓		5											X	X	X			
87	↓ -d	↓	↓		5											X	X	X			
88	PM-1-SB002-a				5											X	X	X			
89	↓ -b	↓	↓		5											X	X	X			
90	↓ -c	↓	↓		5											X	X	X			
91	↓ -d	↓	↓		5											X	X	X			
92	PM-1-SB003-a				5											X	X	X			
93	PM-1-SB003-b				5											X	X	X			

Samples Relinquished By (Print Name and Sign): [Signature]Date/Time: Aug 18/21 18:00Samples Received By (Print Name and Sign): Robert Smith(Anupam)Date/Time: Aug 19/21 8:00

Pink Copy - Client

Page _____ of _____

Samples Relinquished By (Print Name and Sign): _____

Date/Time: _____

Samples Received By (Print Name and Sign): AnthonyDate/Time: Aug 21/2021

Yellow Copy - AGAT

Nº: AB

White Copy - AGAT

051963

Samples Relinquished By (Print Name and Sign): _____

Date/Time: _____

Samples Received By (Print Name and Sign): _____

Date/Time: _____



AGAT

Laboratories

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Laboratory Use Only

Arrival Temperature: 2°CAGAT Job Number: 2UN791280Date and Time: 21-AUG '21 09:10A

Chain of Custody Record

Emergency Support Services Hotline **1-855-AGAT 245 (1-855-242-8245)**

Report Information

Company: Jacobs
 Contact: Patrick Kelita
 Address: _____
 Phone: 587-910-9798 Fax: _____
 LSD: _____
 Client Project #: _____

Report Information

1. Name: _____
 Email: _____
 2. Name: _____
 Email: _____
 3. Name: _____
 Email: _____

Report Format

☐ Single Sample per Page
☐ Multiple Samples per Page

Turnaround Time Required (TAT)

Regular TAT ☒ 5 to 7 business days

Rush TAT ☐ Less than 24 hours
☐ 24 to 48 hours
☐ 48 to 72 hours

Date Required: _____

RUSH TAT REQUESTS
 UPON SELECTING A
 RUSH TAT, THE CLIENT
 ACCEPTS THAT A
 RUSH SURCHARGE
 WILL BE ADDED
 TO THE INVOICE.
 SEE BACK FOR
 SURCHARGE.

Invoice To

Same Yes ☒ / No

Company: Jacobs
 Contact: _____
 Address: _____
 Phone: _____ Fax: _____
 PO/A/E#: _____

Requirements (Selection may impact detection limits)

☒ CCME ☐ AB Tier 1 ☐ BC CSR
☐ Agricultural ☐ Agricultural ☐ AW
☐ Industrial ☐ Industrial ☐ IW
☐ Residential/Park ☐ Residential/Park ☐ LW
☐ Commercial ☐ Commercial ☐ DW
☐ Drinking Water ☐ Natural Area
☐ FWAL ☐ AB Surface Water
☐ Other ☐ SPIGEC
☐ D50 (Drilling)

LABORATORY USE (LAB ID #)	SAMPLE IDENTIFICATION	SAMPLE MATRIX	DATE/TIME SAMPLED	COMMENTS - SITE SAMPLE INFO. SAMPLE CONTAINMENT	# OF CONTAINERS	Detailed	CCME BTEX	Soil Metals	Water Metals	Routine Water	AB Class	BC Landfill	D50 Detailed	Microtox	BTEX/VPH/EPH	FI-F4 BTEX PAH	PH, Moisture, bulk density, TOC, Aik, Alkalinity, Line Log. - pH buffer	HOLD FOR 60 DAYS	PRESERVED	CONTAMINATED
2819894	PM-SB003 - c	Soil	Aug 17/21		4															
95	PM-SB003 - d				4															
96	PM-SB004 - a				4															
97	- b				4															
98	- c				4															
99	- d				4															
900	- e				4															
01	- f				4															
02	PM-SB005 - a				4															
03	- b				4															
04	- c				4															

Samples Relinquished By (Print Name and Sign): [Signature]Date/Time: Aug 18/21Samples Received By (Print Name and Sign): Robert Smith

(dropbox)

Date/Time: Aug 19/21 8:00Samples Relinquished By (Print Name and Sign): [Signature]Date/Time: 1800Samples Received By (Print Name and Sign): AnthonyDate/Time: Aug 21, 2021

Samples Relinquished By (Print Name and Sign): _____

Date/Time: _____

Samples Received By (Print Name and Sign): _____

Date/Time: _____

Pink Copy - Client

Yellow Copy - AGAT

White Copy - AGAT

Page _____ of _____

Nº: AB

051962



AGAT

Laboratories

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Laboratory Use Only

Arrival Temperature: 20°CAGAT Job Number: 21N791280Date and Time: 21-AUG '21 AM 9:04

Chain of Custody Record

Emergency Support Services Hotline **1-855-AGAT 245 (1-855-242-8245)**

Report Information

Company: Jacobs
 Contact: Patrick Kalita
 Address: _____
 Phone: 587-990-9758 Fax: _____
 LSD: _____
 Client Project #: CE810600

Report Information

1. Name: _____
 Email: _____
 2. Name: _____
 Email: _____
 3. Name: _____
 Email: _____

Report Format

☐ Single Sample per Page
☐ Multiple Samples per Page

Turnaround Time Required (TAT)

Regular TAT ☒ 5 to 7 business days

Rush TAT ☐ Less than 24 hours
☐ 24 to 48 hours
☐ 48 to 72 hours

Date Required: _____

RUSH TAT REQUESTS
 UPON SELECTING A RUSH TAT, THE CLIENT ACCEPTS THAT A RUSH SURCHARGE WILL BE ADDED TO THE INVOICE. SEE BACK FOR SURCHARGE.

Invoice To

Same ☒ Yes / No

Company: Jacobs
 Contact: _____
 Address: _____
 Phone: _____ Fax: _____
 PO/A/E#: _____

Requirements (Selection may impact detection limits)

☒ CCME ☐ AB Tier 1 ☐ BC CSR
☐ Agricultural ☐ Agricultural ☐ AW
☐ Industrial ☐ Industrial ☐ IW
☐ Residential/Park ☐ Residential/Park ☐ LW
☐ Commercial ☐ Commercial ☐ DW
☐ Drinking Water ☐ Natural Area
☐ FWAL ☐ AB Surface Water
☐ Other
☐ D50 (Drilling) ☐ SPIGEC

LABORATORY USE (LAB ID #)	SAMPLE IDENTIFICATION	SAMPLE MATRIX	DATE/TIME SAMPLED	COMMENTS - SITE SAMPLE INFO. SAMPLE CONTAINMENT	# OF CONTAINERS	Detailed Soil Salinity (Saturated Paste)	CCME BTEX/F1-F4	Soil Metals ☐ HWS-B ☐ Cr ⁶ ☐ Hg	Water Metals ☐ Dissolved ☐ Total ☐ Hg ☐ Cr ⁶	Routine Water Potability	AB Class 2 Landfill	BC Landfill	D50 Detailed Soil Salinity (As Received)	Microtox	BTEX/VPH/EPH ☐ LEPA/HEPH ☐	F1-F4	BTEX	PAHs	pH, Moisture, bulk density, Toc, Aik, Nutrients	Line log - pH buffer	HOLD FOR 60 DAYS	PRESERVED (Y/N)	CONTAMINATED/HAZARDOUS (Y/N)
28 AUG 06	PM-SB005 -d	Soil	Aug 17/21		4																		
07	PM-1-SB006 -a		Aug 17/21		45																		
08					4																		
09					4																		
10					4																		
11					4																		
12					4																		
13	PM-1-SB007 -a				4																		
14					4																		
15					4																		

Samples Relinquished By (Print Name and Sign): <u>[Signature]</u>	Date/Time: <u>Aug 18/21 1500</u>	Samples Received By (Print Name and Sign): <u>Robert Smith (drop)</u>	Date/Time: <u>Aug 19/21 800</u>	Pink Copy - Client	Page _____ of _____
Samples Relinquished By (Print Name and Sign): <u>[Signature]</u>	Date/Time: <u>Aug 21/21</u>	Samples Received By (Print Name and Sign): <u>Anthony</u>	Date/Time: <u>Aug 21/21</u>	Yellow Copy - AGAT	Nº: AB
Samples Relinquished By (Print Name and Sign): _____	Date/Time: _____	Samples Received By (Print Name and Sign): _____	Date/Time: _____	White Copy - AGAT	051961



AGAT

Laboratories

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Arrival Temperature: 2°CAGAT Job Number: 21W791280Date and Time: 21-AUG '21 AM 9:04

Chain of Custody Record

Emergency Support Services Hotline **1-855-AGAT 245 (1-855-242-8245)**

Report Information

Company: Jacobs
Contact: Patrice Kalita
Address: _____
Phone: 587-990-9758 Fax: _____
LSD: _____
Client Project #: _____

Report Information

1. Name: _____
Email: _____
2. Name: _____
Email: _____
3. Name: _____
Email: _____

Report Format

Single
☐ Sample per Page
Multiple
☐ Samples per Page

Turnaround Time Required (TAT)

Regular TAT ☒ 5 to 7 business days

Rush TAT ☐ Less than 24 hours
☐ 24 to 48 hours
☐ 48 to 72 hours

Date Required: _____

RUSH TAT REQUESTS
UPON SELECTING A
RUSH TAT, THE CLIENT
ACCEPTS THAT A
RUSH SURCHARGE
WILL BE ADDED
TO THE INVOICE.
SEE BACK FOR
SURCHARGE.

Invoice To

Same Yes / No 6

Company: _____
Contact: _____
Address: _____
Phone: _____ Fax: _____
PO/AFE#: _____

Requirements (Selection may impact detection limits)

☐ CCME ☐ AB Tier 1 ☐ BC CSR
☐ Agricultural ☐ Agricultural ☐ AW
☐ Industrial ☐ Industrial ☐ IW
☐ Residential/Park ☐ Residential/Park ☐ LW
☐ Commercial ☐ Commercial ☐ DW
☐ Drinking Water ☐ Natural Area
☐ FWAL ☐ AB Surface Water
☐ Other
☐ D50 (Drilling) ☐ SPIGEC

LABORATORY USE (LAB ID #)	SAMPLE IDENTIFICATION	SAMPLE MATRIX	DATE/TIME SAMPLED	COMMENTS - SITE SAMPLE INFO. SAMPLE CONTAINMENT	# OF CONTAINERS	Detailed Soil Salinity (Saturated Paste)	CCME BTEX/F1-F4	Soil Metals ☐ HWS-B ☐ Cr ⁶ ☐ Hg	Water Metals ☐ Dissolved ☐ Total ☐ Hg ☐ Cr ⁶	Routine Water Potability	AB Class 2 Landfill	BC Landfill	D50 Detailed Soil Salinity (As Received)	Microtox	BTEX/VPH/EPH ☐ LEPA/HEPH ☐	F1-F4	BTEX	PAH	PH, Moisture, bulk density, TSS, Fik, Nutrients	Lab Reg - pit buffer	HOLD FOR 60 DAYS	PRESERVED (Y/N)	CONTAMINATED/HAZARDOUS (Y/N)
287916	PM-1-SB007-e	Soil	Aug 18/21		4												X	X	X				
17	PM-1-SB011-a				4												X	X	X				
18					4												X	X	X				
19					4												X	X	X				
20					4												X	X	X				
21	PM-1-SB008-a				4												X	X	X				
22					4												X	X	X				
23					4												X	X	X				
24					4												X	X	X				
25					4												X	X	X				
26					4												X	X	X				
27					4												X	X	X				
28					4												X	X	X				
29	PM-1-SB041-a				4												X	X	X				

Samples Relinquished By (Print Name and Sign):

Samples Relinquished By (Print Name and Sign):

Samples Relinquished By (Print Name and Sign):

Date/Time

Date/Time

Date/Time

Samples Received By (Print Name and Sign):

Samples Received By (Print Name and Sign):

Samples Received By (Print Name and Sign):

Date/Time

Date/Time

Date/Time

Pink Copy - Client

Yellow Copy - AGAT

White Copy - AGAT

Page ____ of ____

N^o: AB**051964**



Laboratory Use Only

Arrival Temperature: 2°C

AGAT Job Number: 21N791280

Date and Time: 21-AUG '21 09:04

Chain of Custody Record

Emergency Support Services Hotline **1-855-AGAT 245 (1-855-242-8245)**

Report Information

Company: Jacobs
Contact: Patrick Kulita
Address: _____
Phone: 587-990-9788 Fax: _____
LSD: _____
Client Project #: CE810600

Report Information

1. Name: _____
Email: _____
2. Name: _____
Email: _____
3. Name: _____
Email: _____

Report Format

☐ Single Sample per Page
☐ Multiple Samples per Page

Turnaround Time Required (TAT)

Regular TAT ☒ 5 to 7 business days

Rush TAT ☐ Less than 24 hours

☐ 24 to 48 hours

☐ 48 to 72 hours

Date Required: _____

RUSH TAT REQUESTS
UPON SELECTING A
RUSH TAT, THE CLIENT
ACCEPTS THAT A
RUSH SURCHARGE
WILL BE ADDED
TO THE INVOICE.
SEE BACK FOR
SURCHARGE

Invoice To

Same Yes / No

Company: _____
Contact: _____
Address: _____
Phone: _____ Fax: _____
PO/A/E#: _____

Requirements (Selection may impact detection limits)

☒ CCME ☐ AB Tier 1 ☐ BC CSR
☐ Agricultural ☐ Agricultural ☐ AW
☐ Industrial ☐ Industrial ☐ IW
☐ Residential/Park ☐ Residential/Park ☐ LW
☐ Commercial ☐ Commercial ☐ DW
☐ Drinking Water ☐ Natural Area
☐ FWAL ☐ AB Surface Water
☐ Other
☐ D50 (Drilling) ☐ SPIGEC

LABORATORY USE (LAB ID #)	SAMPLE IDENTIFICATION	SAMPLE MATRIX	DATE/TIME SAMPLED	COMMENTS - SITE SAMPLE INFO. SAMPLE CONTAINMENT	# OF CON	Detailed	CCME BT	Soil Meta	Water M	Routine	AB Class	BC Landf	D50 Deta	Microtox	BTEXs/V	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
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Samples Relinquished By (Print Name and Sign): [Signature]

Date/Time: Aug 18/21 18:00

Samples Received By (Print Name and Sign): Robert Smith

Date/Time: Aug 19/21 8:00

Pink Copy - Client

Page _____ of _____

Samples Relinquished By (Print Name and Sign): [Signature]

Date/Time: Aug 2/2021

Samples Received By (Print Name and Sign): Anthony

Date/Time: Aug 2/2021

Yellow Copy - AGAT

White Copy- AGAT

Nº: AB

051965

Phone: 403-735-2005
Fax: 403-735-2771
Toll free: 800-661-7174
environmental.agatlabs.com

1. $\frac{1}{2} \frac{d}{dt} \int_{\mathbb{R}^n} |\nabla u|^2 dx = \int_{\mathbb{R}^n} u \Delta u dx$
 2. $\frac{1}{2} \frac{d}{dt} \int_{\mathbb{R}^n} |\nabla u|^2 dx = - \int_{\mathbb{R}^n} |\nabla u|^2 dx$
 3. $\frac{1}{2} \frac{d}{dt} \int_{\mathbb{R}^n} |\nabla u|^2 dx = - \int_{\mathbb{R}^n} |\nabla u|^2 dx$
 4. $\frac{1}{2} \frac{d}{dt} \int_{\mathbb{R}^n} |\nabla u|^2 dx = - \int_{\mathbb{R}^n} |\nabla u|^2 dx$
 5. $\frac{1}{2} \frac{d}{dt} \int_{\mathbb{R}^n} |\nabla u|^2 dx = - \int_{\mathbb{R}^n} |\nabla u|^2 dx$
 6. $\frac{1}{2} \frac{d}{dt} \int_{\mathbb{R}^n} |\nabla u|^2 dx = - \int_{\mathbb{R}^n} |\nabla u|^2 dx$
 7. $\frac{1}{2} \frac{d}{dt} \int_{\mathbb{R}^n} |\nabla u|^2 dx = - \int_{\mathbb{R}^n} |\nabla u|^2 dx$
 8. $\frac{1}{2} \frac{d}{dt} \int_{\mathbb{R}^n} |\nabla u|^2 dx = - \int_{\mathbb{R}^n} |\nabla u|^2 dx$
 9. $\frac{1}{2} \frac{d}{dt} \int_{\mathbb{R}^n} |\nabla u|^2 dx = - \int_{\mathbb{R}^n} |\nabla u|^2 dx$
 10. $\frac{1}{2} \frac{d}{dt} \int_{\mathbb{R}^n} |\nabla u|^2 dx = - \int_{\mathbb{R}^n} |\nabla u|^2 dx$

20C

Upon filling out this section, client accepts that surcharges will be attached to this analysis. If NOT completed, regular TAT will be default.

- ☐ Less than 24 hours (200%)
- ☐ 24 to 48 hours (100 %)
- ☐ 48 to 72 hours (50%)

LABORATORY USE ONLY

Date and Time:

Arrival temperature: 21791280
AGAT Job Number: 21791280

Company: Jacobs
Contact: Patrick Kulita
Address: Calgary
Postal Code: _____
Phone: _____ Fax: _____
LSD: _____
Client Project #: CE810600

1. Name: _____
Email: _____

2. Name: _____
Email: _____

☐ Single Sample per page

☐ Multiple Samples per page

☐ Excel Format Included

Company: _____
Contact: _____
Address: _____
Postal Code: _____
Phone: _____ Fax: _____
PO/AFE #: _____

- ☒ **CCME**
 - ☐ Agricultural
 - ☐ Residential/Park
 - ☐ Commercial
 - ☐ Industrial
 - ☐ Drinking Water
 - ☐ FWAL
- ☐ **AB Tier 1**
 - ☐ Natural Area
 - ☐ Agricultural
 - ☐ Residential/Park
 - ☐ Commercial
 - ☐ Industrial
- ☐ **Other**
 - ☐ BC CSR
 - ☐ D50 (Drilling)
 - ☐ SPIGEC

[illegible]

RECEIVING BASICS - Shipping

Company/Consultant: Jacobs

Courier: Prepaid Collect

Waybill#

Branch: EDM GP FN FM RD VAN LYD FSJ EST Other:

If multiple sites were submitted at once: Yes No

Custody Seal Intact: Yes No NA

TAT: <24hr 24-48hr 48-72hr Reg Other

Cooler Quantity:

TIME SENSITIVE ISSUES - Shipping

ALREADY EXCEEDED HOLD TIME? Yes No

Inorganic Tests (Please Circle): Mibi , BOD , Nitrate/Nitrite , Turbidity , Microtox , Ortho PO4 , Tedlar Bag , Residual Chlorine , Chlorophyll* , Chloroamines*

Earliest Expiry:

Hydrocarbons: Earliest Expiry

SAMPLE INTEGRITY - Shipping

Hazardous Samples: YES NO Precaution Taken:

Legal Samples: Yes NO

International Samples: Yes NO

Tape Sealed: Yes NO

Coolant Used: Icepack Bagged Ice Free Ice Free Water None

Temperature (Bottles/Jars only) N/A if only Soil Bags Received 044796

FROZEN (Please Circle if samples received Frozen)

1 (Bottle/Jar) 12 + 8 + 11 = 10 °C 2 (Bottle/Jar) 10 + 9 + 12 = 10 °C

3 (Bottle/Jar) 9 + 9 + 11 = 16 °C 4 (Bottle/Jar) 10 + 9 + 7 = 9 °C

5 (Bottle/Jar) + + = °C 6 (Bottle/Jar) + + = °C

7 (Bottle/Jar) + + = °C 8 (Bottle/Jar) + + = °C

9 (Bottle/Jar) + + = °C 10 (Bottle/Jar) + + = °C

(If more than 10 coolers are received use another sheet of paper and attach)

LOGISTICS USE ONLY

Workorder No:

Samples Damaged: Yes No If YES why?

No Bubble Wrap Frozen Courier

Other:

Account Project Manager: have they been notified of the above issues: Yes No

Whom spoken to: Date/Time:

CPM Initial

General Comments:

COURIER: WAYBILL#:

WHERE IS IT SENT:

GP Burnaby Calgary

* Subcontracted Analysis (See CPM)



051961-64
0103199
044396



AGAT Laboratories

SAMPLE INTEGRITY RECEIPT FORM

RECEIVING BASICS - Shipping

Company/Consultant: Jacobs
Courier: Tarvo Prepaid Collect
Waybill# _____
Branch: EDM GP FN FM RD VAN LYD FSJ EST SASK Other: _____
If multiple sites were submitted at once: Yes No
Custody Seal Intact: Yes No NA
TAT: <24hr 24-48hr 48-72hr Reg Other _____
Cooler Quantity: 4

TIME SENSITIVE ISSUES - Shipping

ALREADY EXCEEDED HOLD TIME? Yes No
Inorganic Tests (Please Circle): Mibi , BOD , Nitrate/Nitrite , Turbidity , Color , Microtox , Ortho PO4 , Tedlar Bag , Residual Chlorine , Chlorophyll* , Chloroamines*
Earliest Expiry: _____
Hydrocarbons: Earliest Expiry 07 methanol vials

SAMPLE INTEGRITY - Shipping

Hazardous Samples: YES NO Precaution Taken: _____
Legal Samples: Yes No
International Samples: Yes No
Tape Sealed: Yes No
Coolant Used: Icepack Bagged Ice Free Ice Free Water None

Temperature (Bottles/Jars only) N/A if only Soil Bags Received

FROZEN (Please Circle if samples received Frozen)

1 (Bottle/Jar) 1 + 2 + 3 = 2 °C 2 (Bottle/Jar) 3 + 2 + 4 = 3 °C
3 (Bottle/Jar) 3 + 2 + 1 = 2 °C 4 (Bottle/Jar) 1 + 1 + 1 = 1 °C
5 (Bottle/Jar) _____ + _____ + _____ = _____ °C 6 (Bottle/Jar) _____ + _____ + _____ = _____ °C
7 (Bottle/Jar) _____ + _____ + _____ = _____ °C 8 (Bottle/Jar) _____ + _____ + _____ = _____ °C
9 (Bottle/Jar) _____ + _____ + _____ = _____ °C 10 (Bottle/Jar) _____ + _____ + _____ = _____ °C
(If more than 10 coolers are received use another sheet of paper and attach)

LOGISTICS USE ONLY

Workorder No: 21N791280
Samples Damaged: Yes No If YES why?
No Bubble Wrap Frozen Courier
Other: _____
Account Project Manager: _____ have they been notified of the above issues: Yes No
Whom spoken to: _____ Date/Time: _____
CPM Initial _____
General Comments: _____

* Subcontracted Analysis (See CPM)

CLIENT NAME: JACOBS
UNIT 150, 205 QUARRY PARK BLVD SE
CALGARY, AB T2C 3E7
403-258-6411

ATTENTION TO: Patrick Kalita

PROJECT: CE810600

AGAT WORK ORDER: 21N791282

TRACE ORGANICS REVIEWED BY: Thao Dang, Laboratory Supervisor

DATE REPORTED: Aug 26, 2021

PAGES (INCLUDING COVER): 13

VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (403) 735-2005

*Notes

Disclaimer:

- All work conducted herein has been done using accepted standard protocols, and generally accepted practices and methods. AGAT test methods may incorporate modifications from the specified reference methods to improve performance.
- All samples will be disposed of within 30 days after receipt unless a Long Term Storage Agreement is signed and returned. Some specialty analysis may be exempt, please contact your Client Project Manager for details.
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- This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
- The test results reported herewith relate only to the samples as received by the laboratory.
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- All reportable information as specified by ISO/IEC 17025:2017 is available from AGAT Laboratories upon request.



Certificate of Analysis

AGAT WORK ORDER: 21N791282

PROJECT: CE810600

2910 12TH STREET NE
CALGARY, ALBERTA
CANADA T2E 7P7
TEL (403)735-2005
FAX (403)735-2771
<http://www.agatlabs.com>

CLIENT NAME: JACOBS

SAMPLING SITE:

ATTENTION TO: Patrick Kalita

SAMPLED BY:

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2021-08-19

DATE REPORTED: 2021-08-26

		SAMPLE DESCRIPTION:		TB-1
		SAMPLE TYPE:		Soil
		DATE SAMPLED:		2021-08-18
Parameter	Unit	G / S	RDL	2879962
Benzene	mg/kg		0.005	<0.005
Toluene	mg/kg		0.05	<0.05
Ethylbenzene	mg/kg		0.01	<0.01
Xylenes	mg/kg		0.05	<0.05
C6 - C10 (F1)	mg/kg		10	<10
C6 - C10 (F1 minus BTEX)	mg/kg		10	<10
C10 - C16 (F2)	mg/kg		10	<10
C16 - C34 (F3)	mg/kg		10	<10
C34 - C50 (F4)	mg/kg		10	<10
Gravimetric Heavy Hydrocarbons	mg/kg		1000	N/A
Moisture Content	%		1.00	<1
Surrogate	Unit	Acceptable Limits		
Toluene-d8 (BTEX)	%		60-140	82
o-Terphenyl (F2-F4)	%		60-140	122

Certified By:



AGAT Laboratories

Certificate of Analysis

AGAT WORK ORDER: 21N791282

PROJECT: CE810600

2910 12TH STREET NE
CALGARY, ALBERTA
CANADA T2E 7P7
TEL (403)735-2005
FAX (403)735-2771
<http://www.agatlabs.com>

CLIENT NAME: JACOBS

SAMPLING SITE:

ATTENTION TO: Patrick Kalita

SAMPLED BY:

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2021-08-19

DATE REPORTED: 2021-08-26

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

2879962

Results are based on the dry weight of the sample.

The C6-C10 (F1) fraction is calculated using toluene response factor.

The C10 - C16 (F2), C16 - C34 (F3), and C34 - C50 (F4) fractions are calculated using the average response factor for n-C10, n-C16, and n-C34.

Gravimetric Heavy Hydrocarbons (F4g) are not included in and cannot be added to the Total C6-C50 and are only determined if the chromatogram of the C34 - C50 hydrocarbons indicates that hydrocarbons >C50 are present.

Quality control data is available upon request.

Assistance in the interpretation of data is available upon request.

This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.

nC6 and nC10 response factors are within 30% of Toluene response factor.

nC10, nC16 and nC34 response factors are within 10% of their average.

C50 response factor is within 70% of nC10 + nC16 + nC34 average.

Linearity is within 15%.

The chromatogram returned to baseline by the retention time of nC50.

C6 - C10 (F1 minus BTEX) is a calculated parameter. The calculated value is F1 minus BTEX. The calculated parameter is non-accredited. The parameters that are components of the calculation are accredited.

C>10 - C16 (F2- Napthalene) is a calculated parameter. The calculated value is F2 - Napthalene (if requested). The calculated parameter is non-accredited. The parameters that are components of the calculation are accredited.

C>16 - C34 (F3-PAH) is a calculated parameter. The calculated value is F3-PAH (if requested). The calculated parameter is non-accredited. The parameters that are components of the calculation are accredited.

Xylenes is a calculated parameter. The calculated value is the sum of m&p-Xylenes + o-Xylene. The calculated parameter is non-accredited. The parameters that are components of the calculation are accredited.

Extraction and holding times were met for this sample.

Analysis performed at AGAT Calgary (unless marked by *)

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 21N791282

PROJECT: CE810600

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CALGARY, ALBERTA
CANADA T2E 7P7
TEL (403)735-2005
FAX (403)735-2771
<http://www.agatlabs.com>

CLIENT NAME: JACOBS

SAMPLING SITE:

ATTENTION TO: Patrick Kalita

SAMPLED BY:

Polyaromatic Hydrocarbon Analysis - Soil

DATE RECEIVED: 2021-08-19

DATE REPORTED: 2021-08-26

		SAMPLE DESCRIPTION:		TB-1
		SAMPLE TYPE:		Soil
		DATE SAMPLED:		2021-08-18
Parameter	Unit	G / S	RDL	2879962
Acenaphthene	mg/kg		0.005	<0.005
Acenaphthylene	mg/kg		0.005	<0.005
Anthracene	mg/kg		0.004	<0.004
Acridine	mg/kg		0.05	<0.05
Quinoline	mg/kg		0.05	<0.05
Naphthalene	mg/kg		0.005	<0.005
2-Methylnaphthalene	mg/kg		0.005	<0.005
Fluorene	mg/kg		0.01	<0.01
Phenanthrene	mg/kg		0.02	<0.02
Fluoranthene	mg/kg		0.01	<0.01
Pyrene	mg/kg		0.01	<0.01
Benzo[a]anthracene	mg/kg		0.02	<0.02
Chrysene	mg/kg		0.05	<0.05
Benzo[b+j]fluoranthene	mg/kg		0.03	<0.03
Benzo[k]fluoranthene	mg/kg		0.02	<0.02
Benzo[a]pyrene	mg/kg		0.03	<0.03
Indeno[1,2,3-cd]pyrene	mg/kg		0.02	<0.02
Dibenzo[ah]anthracene	mg/kg		0.005	<0.005
Benzo[ghi]perylene	mg/kg		0.05	<0.05
B[a]P TPE	mg/kg		0.0225	0.0225
IACR (Coarse Soil)			0.0136	0.0136
IACR (Fine Soil)			0.0259	0.0259
Surrogate	Unit	Acceptable Limits		
p-Terphenyl-d14 (PAH)	%	50-140	104	
p-Naphthalene-d8 (PAH)	%	50-150	88	
P_Pyrene-d10 (PAH)	%	50-150	121	

Certified By:



AGAT Laboratories

Certificate of Analysis

AGAT WORK ORDER: 21N791282

PROJECT: CE810600

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TEL (403)735-2005
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<http://www.agatlabs.com>

CLIENT NAME: JACOBS

SAMPLING SITE:

ATTENTION TO: Patrick Kalita

SAMPLED BY:

Polyaromatic Hydrocarbon Analysis - Soil

DATE RECEIVED: 2021-08-19

DATE REPORTED: 2021-08-26

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

2879962

Results are based on the dry weight of the sample.

Based on GC/MS target ion analysis.

Isomers Benzo(b)fluoranthene and Benzo(j)fluoranthene have the same GC retention time and are reported as the sum based on the Benzo(b)fluoranthene response.

B[a]P TPE, IACR (Coarse) and IACR (Fine) are calculated parameters. They are calculated according to the Alberta Tier 1 Soil and Groundwater Remediation Guidelines, January 10, 2019. Note that if the analysis returns non-detects for a parameter, 1/2 the detection limit is entered into the formulas. As per the Guidance Manual for Environmental Site Characterization in Support of Environmental and Human Health Risk Assessment Volume 4 Analytical Methods (2016).

Analysis performed at AGAT Calgary (unless marked by *)

Certified By:

Quality Assurance

CLIENT NAME: JACOBS

PROJECT: CE810600

SAMPLING SITE:

AGAT WORK ORDER: 21N791282

ATTENTION TO: Patrick Kalita

SAMPLED BY:

Trace Organics Analysis

RPT Date: Aug 26, 2021			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE			MATRIX SPIKE			
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper

Polyaromatic Hydrocarbon Analysis - Soil

Acenaphthene	992	2849344	<0.005	<0.005	NA	< 0.005	103%	50%	140%	105%	50%	140%	100%	50%	140%
Acenaphthylene	992	2849344	<0.005	<0.005	NA	< 0.005	105%	50%	140%	105%	50%	140%	101%	50%	140%
Anthracene	992	2849344	<0.004	<0.004	NA	< 0.004	99%	50%	140%	110%	50%	140%	103%	50%	140%
Acridine	992	2849344	<0.05	<0.05	NA	< 0.05	99%	50%	140%	121%	50%	140%	96%	50%	140%
Quinoline	992	2849344	<0.05	<0.05	NA	< 0.05	124%	50%	140%	121%	50%	140%	100%	50%	140%
Naphthalene	992	2849344	<0.005	<0.005	NA	< 0.005	109%	50%	140%	109%	50%	140%	105%	50%	140%
2-Methylnaphthalene	992	2849344	<0.005	<0.005	NA	< 0.005	96%	50%	140%	96%	50%	140%	95%	50%	140%
Fluorene	992	2849344	<0.02	<0.02	NA	< 0.01	108%	50%	140%	102%	50%	140%	97%	50%	140%
Phenanthrene	992	2849344	<0.02	<0.02	NA	< 0.02	97%	50%	140%	106%	50%	140%	99%	50%	140%
Fluoranthene	992	2849344	<0.01	<0.01	NA	< 0.01	104%	50%	140%	122%	50%	140%	115%	50%	140%
Pyrene	992	2849344	<0.01	<0.01	NA	< 0.01	104%	50%	140%	109%	50%	140%	101%	50%	140%
Benzo[a]anthracene	992	2849344	<0.02	<0.02	NA	< 0.02	105%	50%	140%	113%	50%	140%	106%	50%	140%
Chrysene	992	2849344	<0.05	<0.05	NA	< 0.05	97%	50%	140%	104%	50%	140%	99%	50%	140%
Benzo[b+j]fluoranthene	992	2849344	<0.03	<0.03	NA	< 0.03	103%	50%	140%	112%	50%	140%	106%	50%	140%
Benzo[k]fluoranthene	992	2849344	<0.02	<0.02	NA	< 0.02	92%	50%	140%	108%	50%	140%	103%	50%	140%
Benzo[a]pyrene	992	2849344	<0.03	<0.03	NA	< 0.03	110%	50%	140%	117%	50%	140%	110%	50%	140%
Indeno[1,2,3-cd]pyrene	992	2849344	<0.02	<0.02	NA	< 0.02	104%	50%	140%	99%	50%	140%	123%	50%	140%
Dibenzo[ah]anthracene	992	2849344	<0.005	<0.005	NA	< 0.005	107%	50%	140%	109%	50%	140%	105%	50%	140%
Benzo[ghi]perylene	992	2849344	<0.05	<0.05	NA	< 0.05	102%	50%	140%	109%	50%	140%	104%	50%	140%

Comments: Duplicate NA: results are less than 5X the RDL and RDP will not be calculated.
The sample spikes and dups are not from the same sample ID.

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

Benzene	3459	2878691	<0.005	<0.005	NA	< 0.005	95%	60%	140%	86%	60%	140%	100%	60%	140%
Toluene	3459	2878691	<0.05	<0.05	NA	< 0.05	92%	60%	140%	98%	60%	140%	100%	60%	140%
Ethylbenzene	3459	2878691	<0.01	<0.01	NA	< 0.01	82%	60%	140%	102%	60%	140%	85%	60%	140%
Xylenes	3459	2878691	<0.05	<0.05	NA	< 0.05	88%	60%	140%	102%	60%	140%	84%	60%	140%
C6 - C10 (F1)	3459	2878691	<10	<10	NA	< 10	104%	60%	140%	103%	60%	140%	90%	60%	140%
C10 - C16 (F2)	99	2880066	<10	<10	NA	< 10	107%	60%	140%	108%	60%	140%	109%	60%	140%
C16 - C34 (F3)	99	2880066	<10	<10	NA	< 10	112%	60%	140%	109%	60%	140%	110%	60%	140%
C34 - C50 (F4)	99	2880066	<10	<10	NA	< 10	114%	60%	140%	107%	60%	140%	110%	60%	140%

Comments: Duplicate NA: results are less than 5X the RDL and RDP will not be calculated.
The sample spikes and dups are not from the same sample ID.

Certified By: 



Time Markers

AGAT WORK ORDER: 21N791282

PROJECT: CE810600

2910 12TH STREET NE
CALGARY, ALBERTA
CANADA T2E 7P7
TEL (403)735-2005
FAX (403)735-2771
<http://www.agatlabs.com>

CLIENT NAME: JACOBS

ATTENTION TO: Patrick Kalita

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
2879962	TB-1	Soil	18-AUG-2021	19-AUG-2021

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

Parameter	Date Prepared	Date Analyzed	Initials
Benzene	25-AUG-2021	25-AUG-2021	CR
Toluene	25-AUG-2021	25-AUG-2021	CR
Ethylbenzene	25-AUG-2021	25-AUG-2021	CR
Xylenes	25-AUG-2021	25-AUG-2021	CR
C6 - C10 (F1)	25-AUG-2021	25-AUG-2021	CR
C6 - C10 (F1 minus BTEX)	25-AUG-2021	25-AUG-2021	CR
C10 - C16 (F2)	25-AUG-2021	26-AUG-2021	OP
C16 - C34 (F3)	25-AUG-2021	26-AUG-2021	OP
C34 - C50 (F4)	25-AUG-2021	26-AUG-2021	OP
Gravimetric Heavy Hydrocarbons	25-AUG-2021	26-AUG-2021	OP
Moisture Content	25-AUG-2021	26-AUG-2021	OP
Toluene-d8 (BTEX)	25-AUG-2021	25-AUG-2021	CR
o-Terphenyl (F2-F4)	25-AUG-2021	26-AUG-2021	OP

Polyaromatic Hydrocarbon Analysis - Soil

Parameter	Date Prepared	Date Analyzed	Initials
Acenaphthene	25-AUG-2021	25-AUG-2021	TD
Acenaphthylene	25-AUG-2021	25-AUG-2021	TD
Anthracene	25-AUG-2021	25-AUG-2021	TD
Acridine	25-AUG-2021	25-AUG-2021	TD
Quinoline	25-AUG-2021	25-AUG-2021	TD
Naphthalene	25-AUG-2021	25-AUG-2021	TD
2-Methylnaphthalene	25-AUG-2021	25-AUG-2021	TD
Fluorene	25-AUG-2021	25-AUG-2021	TD
Phenanthrene	25-AUG-2021	25-AUG-2021	TD
Fluoranthene	25-AUG-2021	25-AUG-2021	TD
Pyrene	25-AUG-2021	25-AUG-2021	TD
Benzo[a]anthracene	25-AUG-2021	25-AUG-2021	TD
Chrysene	25-AUG-2021	25-AUG-2021	TD
Benzo[b+j]fluoranthene	25-AUG-2021	25-AUG-2021	TD
Benzo[k]fluoranthene	25-AUG-2021	25-AUG-2021	TD
Benzo[a]pyrene	25-AUG-2021	25-AUG-2021	TD
Indeno[1,2,3-cd]pyrene	25-AUG-2021	25-AUG-2021	TD
Dibenzo[ah]anthracene	25-AUG-2021	25-AUG-2021	TD
Benzo[ghi]perylene	25-AUG-2021	25-AUG-2021	TD
p-Terphenyl-d14 (PAH)	25-AUG-2021	25-AUG-2021	TD
p-Naphthalene-d8 (PAH)	25-AUG-2021	25-AUG-2021	TD
P_Pyrene-d10 (PAH)	25-AUG-2021	25-AUG-2021	TD
B[a]P TPE	25-AUG-2021	25-AUG-2021	SYS



AGAT Laboratories

Time Markers

AGAT WORK ORDER: 21N791282

PROJECT: CE810600

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CLIENT NAME: JACOBS

ATTENTION TO: Patrick Kalita

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
2879962	TB-1	Soil	18-AUG-2021	19-AUG-2021

Polyaromatic Hydrocarbon Analysis - Soil

Parameter	Date Prepared	Date Analyzed	Initials
IACR (Coarse Soil)	25-AUG-2021	25-AUG-2021	SYS
IACR (Fine Soil)	25-AUG-2021	25-AUG-2021	SYS

Method Summary

CLIENT NAME: JACOBS

AGAT WORK ORDER: 21N791282

PROJECT: CE810600

ATTENTION TO: Patrick Kalita

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Benzene	TO-0543	EPA SW-846 5021 & 8260	GC/MS
Toluene	TO-0543	EPA SW-846 5021 & 8260	GC/MS
Ethylbenzene	TO-0543	EPA SW-846 5021 & 8260	GC/MS
Xylenes	TO-0543	EPA SW-846 5021 & 8260	GC/MS
C6 - C10 (F1)	TO-0543	CCME Tier 1 Method	GC/FID
C6 - C10 (F1 minus BTEX)	TO-0543	CCME Tier 1 Method	GC/FID
C10 - C16 (F2)	TO-0560	CCME Tier 1 Method	GC/FID
C16 - C34 (F3)	TO-0560	CCME Tier 1 Method	GC/FID
C34 - C50 (F4)	TO-0560	CCME Tier 1 Method	GC/FID
Gravimetric Heavy Hydrocarbons	TO-0560	CCME Tier 1 Method	GC/FID
Moisture Content	TO-0560	CCME Tier 1 Method	GC/FID
Toluene-d8 (BTEX)	TO-0543	EPA SW-846 5021 & 8260	GC/MS
o-Terphenyl (F2-F4)	TO 0560	CCME Tier 1 Method	GC/FID
Acenaphthene	TO 0210	EPA SW-846 3570 & 8270	GC/MS
Acenaphthylene	TO 0210	EPA SW-846 3570 & 8270	GC/MS
Anthracene	TO 0210	EPA SW-846 3570 & 8270	GC/MS
Acridine	TO 0210	EPA SW-846 3570 & 8270	GC/MS
Quinoline	TO 0210	EPA SW-846 3570 & 8270	GC/MS
Naphthalene	TO 0210	EPA SW-846 3570 & 8270	GC/MS
2-Methylnaphthalene	TO 0210	EPA SW-846 3570 & 8270	GC/MS
Fluorene	TO 0210	EPA SW-846 3570 & 8270	GC/MS
Phenanthrene	TO 0210	EPA SW-846 3570 & 8270	GC/MS
Fluoranthene	TO 0210	EPA SW-846 3570 & 8270	GC/MS
Pyrene	TO 0210	EPA SW-846 3570 & 8270	GC/MS
Benzo[a]anthracene	TO 0210	EPA SW-846 3570 & 8270	GC/MS
Chrysene	TO 0210	EPA SW-846 3570 & 8270	GC/MS
Benzo[b+j]fluoranthene	TO 0210	EPA SW-846 3570 & 8270	GC/MS
Benzo[k]fluoranthene	TO 0210	EPA SW-846 3570 & 8270	GC/MS
Benzo[a]pyrene	TO 0210	EPA SW-846 3570 & 8270	GC/MS
Indeno[1,2,3-cd]pyrene	TO 0210	EPA SW-846 3570 & 8270	GC/MS
Dibenzo[ah]anthracene	TO 0210	EPA SW-846 3570 & 8270	GC/MS
Benzo[ghi]perylene	TO 0210	EPA SW-846 3570 & 8270	GC/MS
p-Terphenyl-d14 (PAH)	TO 0210	EPA SW-846 3570 & 8270	GC/MS
p-Naphthalene-d8 (PAH)	TO-0210	EPA SW-846 3570 & 8270	GC/MS
P_Pyrene-d10 (PAH)	TO-0210	EPA SW-846 3570 & 8270	GC/MS
B[a]P TPE		CCME	GC/MS
IACR (Coarse Soil)		CCME	GC/MS
IACR (Fine Soil)		CCME	GC/MS

RECEIVING BASICS - Shipping

Company/Consultant: Jacobs

Courier: Prepaid Collect

Waybill#

Branch: EDM GP (FN) FM RD VAN LYD FSJ EST Other:

If multiple sites were submitted at once: (Yes) No

Custody Seal Intact: Yes No (NA)

TAT: <24hr 24-48hr 48-72hr (Reg) Other

Cooler Quantity:

TIME SENSITIVE ISSUES - Shipping

ALREADY EXCEEDED HOLD TIME? Yes (No)

Inorganic Tests (Please Circle): Mibi , BOD , Nitrate/Nitrite , Turbidity , Microtox , Ortho PO4 , Tedlar Bag , Residual Chlorine , Chlorophyll* , Chloroamines*

Earliest Expiry:

Hydrocarbons: Earliest Expiry

SAMPLE INTEGRITY - Shipping

Hazardous Samples: YES (NO) Precaution Taken:

Legal Samples: Yes (No)

International Samples: Yes (No)

Tape Sealed: Yes (No)

Coolant Used: (Icepack) Bagged Ice Free Ice Free Water None

Temperature (Bottles/Jars only) N/A if only Soil Bags Received 044396

FROZEN (Please Circle if samples received Frozen)

1 (Bottle/Jar) 12 + 8 + 11 = 10 °C 2 (Bottle/Jar) 10 + 9 + 12 = 10 °C

3 (Bottle/Jar) 9 + 9 + 11 = 10 °C 4 (Bottle/Jar) 10 + 9 + 7 = 9 °C

5 (Bottle/Jar) + + = °C 6 (Bottle/Jar) + + = °C

7 (Bottle/Jar) + + = °C 8 (Bottle/Jar) + + = °C

9 (Bottle/Jar) + + = °C 10 (Bottle/Jar) + + = °C

(If more than 10 coolers are received use another sheet of paper and attach)

LOGISTICS USE ONLY

Workorder No:

Samples Damaged: Yes No If YES why?

No Bubble Wrap Frozen Courier

Other:

Account Project Manager: have they been notified of the above issues: Yes No

Whom spoken to: Date/Time:

CPM Initial

General Comments:

COURIER: WAYBILL#:

WHERE IS IT SENT:

GP Burnaby Calgary

RECEIVING BASICS - Shipping

Company/Consultant: JACOBS
 Courier: Rosenau ☒ Prepaid ☐ Collect
 Waybill# 250037411
 Branch: EDM GP FN FM RD VAN LYD ☒ FSJ EST SASK Other: _____
 If multiple sites were submitted at once: ☒ Yes ☐ No
 Custody Seal Intact: Yes No ☒ NA
 TAT: <24hr 24-48hr 48-72hr ☒ Reg Other _____
 Cooler Quantity: 5

TIME SENSITIVE ISSUES - Shipping

ALREADY EXCEEDED HOLD TIME? Yes No
 Inorganic Tests (Please Circle): Mihi , BOD , Nitrate/Nitrite , Turbidity , Color , Microtox , Ortho PO4 , Tedlar Bag , Residual Chlorine , Chlorophyll* , Chloroamines*
 Earliest Expiry: _____
 Hydrocarbons: Earliest Expiry _____

SAMPLE INTEGRITY - Shipping

Hazardous Samples: YES ☒ NO ☐ Precaution Taken: _____
 Legal Samples: Yes ☒ No ☐
 International Samples: Yes ☒ No ☐
 Tape Sealed: Yes ☒ No ☐
 Coolant Used: Icepack ☒ Bagged Ice ☐ Free Ice ☐ Free Water ☐ None

Temperature (Bottles/Jars only) N/A if only Soil Bags Received

FROZEN (Please Circle if samples received Frozen)

1 (Bottle/Jar) 19 + 19 + 20 = 19°C 2 (Bottle/Jar) 98 + 89.96 = 94°C
 3 (Bottle/Jar) 68.61 + 10 = 7.8°C 4 (Bottle/Jar) 92.96 + 98 = 95°C
 5 (Bottle/Jar) 7.9 + 58 + 10 = 7.9°C 6 (Bottle/Jar) _____ °C
 7 (Bottle/Jar) _____ °C 8 (Bottle/Jar) _____ °C
 9 (Bottle/Jar) _____ °C 10 (Bottle/Jar) _____ °C
 (If more than 10 coolers are received use another sheet of paper and attach)

LOGISTICS USE ONLY

Workorder No: _____
 Samples Damaged: Yes No If YES why?
 No Bubble Wrap Frozen Courier
 Other: _____
 Account Project Manager: _____ have they been notified of the above issues: Yes No
 Whom spoken to: _____ Date/Time: _____
 CPM Initial _____
 General Comments: _____

 Sent to: 2910 Burnaby Edm 6310 OTHER: _____
 Courier: Jacoo Waybill: _____

* Subcontracted Analysis (See CPM)



AGAT Laboratories

SAMPLE INTEGRITY RECEIPT FORM

RECEIVING BASICS - Shipping

Company/Consultant: Jacobs
Courier: Jarod Prepaid Collect
Waybill# _____
Branch: EDM GP FN FM RD VAN LYD FSJ EST SASK Other: _____
If multiple sites were submitted at once: Yes ☒ No ☐
Custody Seal Intact: Yes ☐ No ☒ NA ☐
TAT: <24hr 24-48hr 48-72hr ☒ Reg ☐ Other _____
Cooler Quantity: 1

TIME SENSITIVE ISSUES - Shipping

ALREADY EXCEEDED HOLD TIME? Yes ☒ No ☐
Inorganic Tests (Please Circle): Mibi , BOD , Nitrate/Nitrite , Turbidity , Color , Microtox , Ortho PO4 , Tedlar Bag , Residual Chlorine , Chlorophyll* , Chloroamines*
Earliest Expiry: _____
Hydrocarbons: Earliest Expiry 10/ methanol vials

SAMPLE INTEGRITY - Shipping

Hazardous Samples: YES ☒ NO ☐ Precaution Taken: _____
Legal Samples: Yes ☒ No ☐
International Samples: Yes ☒ No ☐
Tape Sealed: Yes ☒ No ☐
Coolant Used: Icepack ☒ Bagged Ice ☐ Free Ice ☐ Free Water ☐ None ☐

Temperature (Bottles/Jars only) N/A if only Soil Bags Received

FROZEN (Please Circle if samples received Frozen)

1 (Bottle/Jar) 3.7 + 3.7 = 3.7 °C 2 (Bottle/Jar) _____ + _____ = _____ °C
3 (Bottle/Jar) _____ + _____ = _____ °C 4 (Bottle/Jar) _____ + _____ = _____ °C
5 (Bottle/Jar) _____ + _____ = _____ °C 6 (Bottle/Jar) _____ + _____ = _____ °C
7 (Bottle/Jar) _____ + _____ = _____ °C 8 (Bottle/Jar) _____ + _____ = _____ °C
9 (Bottle/Jar) _____ + _____ = _____ °C 10 (Bottle/Jar) _____ + _____ = _____ °C
(If more than 10 coolers are received use another sheet of paper and attach)

LOGISTICS USE ONLY

Workorder No: 21N791282

Samples Damaged: Yes ☒ No ☐ If YES why?

No Bubble Wrap Frozen Courier

Other: _____

Account Project Manager: _____ have they been notified of the above issues: Yes ☒ No ☐

Whom spoken to: _____ Date/Time: _____

CPM Initial _____

General Comments: _____

* Subcontracted Analysis (See CPM)

CLIENT NAME: JACOBS
UNIT 150, 205 QUARRY PARK BLVD SE
CALGARY, AB T2C 3E7
403-258-6411

ATTENTION TO: Patrick Kalita

PROJECT: Soil Samples

AGAT WORK ORDER: 21N793815

SOIL ANALYSIS REVIEWED BY: Veritas Sagoe, Lab Technician

TRACE ORGANICS REVIEWED BY: Thao Dang, Laboratory Supervisor

DATE REPORTED: May 08, 2023

PAGES (INCLUDING COVER): 28

VERSION*: 5

Should you require any information regarding this analysis please contact your client services representative at (403) 735-2005

*Notes

VERSION 5: Supersedes Version 4: Pesticides data/ package has been removed on sample IDs: 839,758,759,760. Updated report with date for sample IDs: 2903751, 2903754, 2903755, 2903756, 2903757, 2903758, 2903759, 2903760, 2903761, 2903762, 2903763, 2903764, 2903765, 2903801, 2903802, 2903803, 2903804, 2903805, and 2903806 included. 01JUN23 MGU

Supersedes version 3. Revised report to only show data from PM-9, DUP9 & TB-2 samples ID's: 2903807 2903808 2903809 2903810 2903811 2903830 2903831 2903832 2903833 2903834 2903835 2903836 2903837 2903838 2903839 2903847 (PM-9-SB028a PM-9-SB028b PM-9-SB028c PM-9-SB028d PM-9-SB029a PM-9-SB029b PM-9-SB029c PM-9-SB029d PM-9-SB029e DUP9 PM9-SB030a PM9-SB030b PM9-SB030c PM9-SB030d PM9-SS4 TB-2) (Jan 12/22 GH)

Supersedes Version 2: OC Pesticides data for samples 2903758, 2903759, 2903760, and 2903839 have been removed. 26OCT21 MGU

Supersedes Version 1: Additional Glyphosate, Sterilant Scan, and Total Organic Halides (TOX) data for samples 2903758, 2903759, 2903760, 2903839 included. 7OCT21 MGU

Disclaimer:

- All work conducted herein has been done using accepted standard protocols, and generally accepted practices and methods. AGAT test methods may incorporate modifications from the specified reference methods to improve performance.
- All samples will be disposed of within 30 days after receipt unless a Long Term Storage Agreement is signed and returned. Some specialty analysis may be exempt, please contact your Client Project Manager for details.
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- This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
- The test results reported herewith relate only to the samples as received by the laboratory.
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- All reportable information as specified by ISO/IEC 17025:2017 is available from AGAT Laboratories upon request.
- For environmental samples in the Province of Quebec: The analysis is performed on and results apply to samples as received. A temperature above 6°C upon receipt, as indicated in the Sample Reception Notification (SRN), could indicate the integrity of the samples has been compromised if the delay between sampling and submission to the laboratory could not be minimized.



AGAT Laboratories

Certificate of Analysis

AGAT WORK ORDER: 21N793815

PROJECT: Soil Samples

2910 12TH STREET NE
CALGARY, ALBERTA
CANADA T2E 7P7
TEL (403)735-2005
FAX (403)735-2771
<http://www.agatlabs.com>

CLIENT NAME: JACOBS

SAMPLING SITE:

ATTENTION TO: Patrick Kalita

SAMPLED BY:

Landfill - British Columbia CCS (SWEP)

DATE RECEIVED: 2021-08-26

DATE REPORTED: 2023-05-08

		SAMPLE DESCRIPTION:		PM-1-SS-3
		SAMPLE TYPE:		Soil
		DATE SAMPLED:		2021-08-21
Parameter	Unit	G / S	RDL	2903760
pH (1:1 Extraction)	pH Units		N/A	7.52
Free Liquid	Pos/Neg		N/A	Negative
Arsenic - Leachate (SWEP)	mg/L		0.5	<0.5
Barium - Leachate (SWEP)	mg/L		0.5	<0.5
Boron - Leachate (SWEP)	mg/L		0.5	<0.5
Cadmium - Leachate (SWEP)	mg/L		0.5	<0.5
Chromium - Leachate (SWEP)	mg/L		0.5	<0.5
Copper - Leachate (SWEP)	mg/L		0.5	<0.5
Lead - Leachate (SWEP)	mg/L		0.5	<0.5
Mercury - Leachate (SWEP)	mg/L		0.1	<0.1
Selenium - Leachate (SWEP)	mg/L		0.5	<0.5
Silver - Leachate (SWEP)	mg/L		0.5	<0.5
Uranium - Leachate (SWEP)	mg/L		0.5	<0.5
Zinc - Leachate (SWEP)	mg/L		0.5	<0.5
Fluoride - Leachate (SWEP)	mg/L		0.5	0.7
Nitrate, Leachate (SWEP)	mg/L		0.5	0.7
Nitrite, Leachate (SWEP)	mg/L		0.5	<0.5
Cyanide - SWEP Leachate	mg/L		0.002	<0.002

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

2903760 Analysis based on 'as received'.

Analysis performed at AGAT Calgary (unless marked by *)

Certified By:



AGAT Laboratories

Certificate of Analysis

AGAT WORK ORDER: 21N793815

PROJECT: Soil Samples

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CANADA T2E 7P7
TEL (403)735-2005
FAX (403)735-2771
<http://www.agatlabs.com>

CLIENT NAME: JACOBS

SAMPLING SITE:

ATTENTION TO: Patrick Kalita

SAMPLED BY:

Nutrients Package 2

DATE RECEIVED: 2021-08-26

DATE REPORTED: 2023-05-08

SAMPLE DESCRIPTION: PM-1-SS-3

SAMPLE TYPE: Soil

DATE SAMPLED: 2021-08-21

G / S RDL 2903760

Parameter	Unit	G / S	RDL	2903760
Available Nitrate (NO3-N)	mg/kg		5	<5
Available Phosphorus - P	mg/kg		1	2
Available Potassium	mg/kg		8	219
Available Sulfur (SO4-S)	mg/kg		3	16

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

2903760 Analysis based on dry weight.

Available Nitrate-N is a calculated parameter. The calculated value is the difference of Available Nitrate plus Nitrite and Available Nitrite reported as N. The calculated parameter is non-accredited. The parameters that are components of the calculation are accredited.

Analysis performed at AGAT Calgary (unless marked by *)

Certified By:



AGAT Laboratories

Certificate of Analysis

AGAT WORK ORDER: 21N793815

PROJECT: Soil Samples

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FAX (403)735-2771
<http://www.agatlabs.com>

CLIENT NAME: JACOBS

SAMPLING SITE:

ATTENTION TO: Patrick Kalita

SAMPLED BY:

Soil Analysis - Lime Requirement

DATE RECEIVED: 2021-08-26

DATE REPORTED: 2023-05-08

SAMPLE DESCRIPTION: PM-1-SS-3

SAMPLE TYPE: Soil

DATE SAMPLED: 2021-08-21

Parameter	Unit	G / S	RDL	2903760
Lime Requirement to pH 6.5**	tonnes/ha		N/A	<6.5
Lime Requirement @ pH 7.0**	tonnes/ha		N/A	2.46

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

2903760 **Non-accredited test. Inquire with lab for details.

Analysis performed at AGAT Calgary (unless marked by *)

Certified By:



AGAT Laboratories

Certificate of Analysis

AGAT WORK ORDER: 21N793815

PROJECT: Soil Samples

2910 12TH STREET NE
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FAX (403)735-2771
<http://www.agatlabs.com>

CLIENT NAME: JACOBS

SAMPLING SITE:

ATTENTION TO: Patrick Kalita

SAMPLED BY:

Soil Analysis - Total Organic Carbon (W-B Wet Oxidation)

DATE RECEIVED: 2021-08-26

DATE REPORTED: 2023-05-08

SAMPLE DESCRIPTION: PM-1-SS-3

SAMPLE TYPE: Soil

DATE SAMPLED: 2021-08-21

Parameter	Unit	G / S	RDL	2903760
Total Organic Carbon	%		0.15	3.69
Fraction Organic Carbon in Soil			0.0015	0.0369

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

Analysis performed at AGAT Calgary (unless marked by *)

Certified By:



AGAT Laboratories

Certificate of Analysis

AGAT WORK ORDER: 21N793815

PROJECT: Soil Samples

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FAX (403)735-2771
<http://www.agatlabs.com>

CLIENT NAME: JACOBS

SAMPLING SITE:

ATTENTION TO: Patrick Kalita

SAMPLED BY:

Soil Analysis - pH, Moisture, Bulk Density, Alkalinity

DATE RECEIVED: 2021-08-26

DATE REPORTED: 2023-05-08

		SAMPLE DESCRIPTION:		PM-1-SS-3
		SAMPLE TYPE:		Soil
		DATE SAMPLED:		2021-08-21
Parameter	Unit	G / S	RDL	2903760
pH (Saturated Paste)	NA		N/A	7.56
Moisture Content (Wet Weight)**	%		0.01	24.7
Bulk Density, Crude - Wet (As Recieved Soil)	kg/m3		N/A	1780
Carbonate, Soluble	mg/L		5	<5
Bicarbonate, Soluble	mg/L		5	232
Grinding				Complete

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

Certified By:



AGAT Laboratories

Certificate of Analysis

AGAT WORK ORDER: 21N793815

PROJECT: Soil Samples

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CLIENT NAME: JACOBS

SAMPLING SITE:

ATTENTION TO: Patrick Kalita

SAMPLED BY:

Glyphosate in Soil

DATE RECEIVED: 2021-08-26

DATE REPORTED: 2023-05-08

		SAMPLE DESCRIPTION:		PM-1-SS-1	PM-1-SS-2	PM-1-SS-3
		SAMPLE TYPE:		Soil	Soil	Soil
		DATE SAMPLED:		2021-08-21	2021-08-21	2021-08-21
Parameter	Unit	G / S	RDL	2903758	2903759	2903760
Glyphosate	mg/kg	0.03	0.22	0.06	<0.03	

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

2903758-2903760 Analysis by HPLC/UV.

Sample holding time exceeded.

Analysis performed at AGAT Calgary (unless marked by *)

Certified By:



AGAT Laboratories

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AGAT WORK ORDER: 21N793815

PROJECT: Soil Samples

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<http://www.agatlabs.com>

CLIENT NAME: JACOBS

SAMPLING SITE:

ATTENTION TO: Patrick Kalita

SAMPLED BY:

Landfill - British Columbia CCS Silverberry - Basic (Non- Methanol Field Stabilized)

DATE RECEIVED: 2021-08-26

DATE REPORTED: 2023-05-08

		SAMPLE DESCRIPTION:		PM-1-SS-3
		SAMPLE TYPE:		Soil
		DATE SAMPLED:		2021-08-21
Parameter	Unit	G / S	RDL	2903760
Benzene	mg/kg		0.005	<0.005
Toluene	mg/kg		0.05	<0.05
Ethylbenzene	mg/kg		0.01	0.02
Xylenes	mg/kg		0.05	1.32
Oil and Grease, SWOG	%		0.2	0.7
Oil and Grease, SWOG with SGT	%		0.2	0.6
Flash Point °C	°C		NA	>100
Benzene - Leachable	mg/L		0.005	<0.005
Toluene - Leachable	mg/L		0.005	<0.005
Ethylbenzene - Leachable	mg/L		0.005	<0.005
Xylenes - Leachable	mg/L		0.005	0.005
Total BTEX	mg/kg		0.05	1.34
Surrogate	Unit	Acceptable Limits		
Toluene-d8 (BTEX-Leachable)	%	50-150		114

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

2903760

Flashpoint corrected to Sea Level.

Zero Headspace Extraction for Leachable BTEX.

In-house procedure modified from EPA 1311. Samples transferred directly into extraction fluid and then sealed in ZHE.

Xylenes – Leachable is a calculated parameter. The calculated value is the sum of m&p-Xylenes - Leachable + o-Xylene – Leachable. The calculated parameter is non-accredited. The parameters that are components of the calculation are accredited.

Xylenes is a calculated parameter. The calculated value is the sum of m&p-Xylenes + o-Xylene. The calculated parameter is non-accredited. The parameters that are components of the calculation are accredited.

Analysis performed at AGAT Calgary (unless marked by *)

Certified By:



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Certificate of Analysis

AGAT WORK ORDER: 21N793815

PROJECT: Soil Samples

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<http://www.agatlabs.com>

CLIENT NAME: JACOBS

SAMPLING SITE:

ATTENTION TO: Patrick Kalita

SAMPLED BY:

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2021-08-26

DATE REPORTED: 2023-05-08

		SAMPLE DESCRIPTION:		PM-1-SB042a	PM-1-SB042b	PM-1-SB042c	PM-1-SB042d	PM-1-SB042e	PM-1-SS-1	PM-1-SS-2	PM-1-SS-3
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2021-08-21	2021-08-21	2021-08-21	2021-08-21	2021-08-21	2021-08-21	2021-08-21	2021-08-21
Parameter	Unit	G / S	RDL	2903751	2903754	2903755	2903756	2903757	2903758	2903759	2903760
Benzene	mg/kg	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Toluene	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ethylbenzene	mg/kg	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02
Xylenes	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.32
C6 - C10 (F1)	mg/kg	10	<10	<10	<10	<10	<10	<10	<10	<10	250
C6 - C10 (F1 minus BTEX)	mg/kg	10	<10	<10	<10	<10	<10	<10	<10	<10	250
C10 - C16 (F2)	mg/kg	10	<10	<10	<10	<10	<10	<10	6180	10300	16300
C16 - C34 (F3)	mg/kg	10	32	35	33	48	37	4630	7010	12000	
C34 - C50 (F4)	mg/kg	10	16	19	16	21	16	47	164	3060	
Gravimetric Heavy Hydrocarbons	mg/kg	1000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Moisture Content	%	1.00	20	14	21	22	22	43	21	26	
Surrogate	Unit	Acceptable Limits									
Toluene-d8 (BTEX)	%	60-140	86	80	78	72	72	74	62	74	
o-Terphenyl (F2-F4)	%	60-140	111	110	111	113	111	107	92	81	

Certified By:



AGAT Laboratories

Certificate of Analysis

AGAT WORK ORDER: 21N793815

PROJECT: Soil Samples

2910 12TH STREET NE
CALGARY, ALBERTA
CANADA T2E 7P7
TEL (403)735-2005
FAX (403)735-2771
<http://www.agatlabs.com>

CLIENT NAME: JACOBS

SAMPLING SITE:

ATTENTION TO: Patrick Kalita

SAMPLED BY:

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2021-08-26

DATE REPORTED: 2023-05-08

		SAMPLE DESCRIPTION:		PM-1-SB010a	PM-1-SB010b	PM-1-SB010c	PM-1-SB010d	PM-1-SB043a	PM-1-SB043b	PM-1-SB043c	PM-1-SB038a
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2021-08-21	2021-08-21	2021-08-21	2021-08-21	2021-08-21	2021-08-21	2021-08-21	2021-08-21
Parameter	Unit	G / S	RDL	2903761	2903762	2903763	2903764	2903765	2903800	2903801	2903802
Benzene	mg/kg	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Toluene	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ethylbenzene	mg/kg	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Xylenes	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
C6 - C10 (F1)	mg/kg	10	<10	<10	<10	<10	<10	<10	<10	<10	<10
C6 - C10 (F1 minus BTEX)	mg/kg	10	<10	<10	<10	<10	<10	<10	<10	<10	<10
C10 - C16 (F2)	mg/kg	10	28	<10	<10	<10	<10	<10	<10	<10	<10
C16 - C34 (F3)	mg/kg	10	72	80	58	33	87	45	66	41	
C34 - C50 (F4)	mg/kg	10	28	32	23	13	44	21	29	18	
Gravimetric Heavy Hydrocarbons	mg/kg	1000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Moisture Content	%	1.00	22	22	23	12	19	21	22	19	
Surrogate	Unit	Acceptable Limits									
Toluene-d8 (BTEX)	%	60-140	85	62	70	74	74	66	66	68	
o-Terphenyl (F2-F4)	%	60-140	112	109	110	107	110	109	110	108	

Certified By:



AGAT Laboratories

Certificate of Analysis

AGAT WORK ORDER: 21N793815

PROJECT: Soil Samples

2910 12TH STREET NE
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CANADA T2E 7P7
TEL (403)735-2005
FAX (403)735-2771
<http://www.agatlabs.com>

CLIENT NAME: JACOBS

SAMPLING SITE:

ATTENTION TO: Patrick Kalita

SAMPLED BY:

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2021-08-26

DATE REPORTED: 2023-05-08

		SAMPLE DESCRIPTION:		PM-1-SB038b	PM-1-SB038c	DUP7	DUP8
		SAMPLE TYPE:		Soil	Soil	Soil	Soil
		DATE SAMPLED:		2021-08-21	2021-08-21	2021-08-21	2021-08-21
Parameter	Unit	G / S	RDL	2903803	2903804	2903805	2903806
Benzene	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005
Toluene	mg/kg		0.05	0.06	<0.05	<0.05	<0.05
Ethylbenzene	mg/kg		0.01	<0.01	<0.01	<0.01	<0.01
Xylenes	mg/kg		0.05	<0.05	<0.05	<0.05	<0.05
C6 - C10 (F1)	mg/kg		10	<10	<10	<10	<10
C6 - C10 (F1 minus BTEX)	mg/kg		10	<10	<10	<10	<10
C10 - C16 (F2)	mg/kg		10	<10	<10	<10	<10
C16 - C34 (F3)	mg/kg		10	32	38	75	59
C34 - C50 (F4)	mg/kg		10	16	15	34	33
Gravimetric Heavy Hydrocarbons	mg/kg		1000	N/A	N/A	N/A	N/A
Moisture Content	%		1.00	25	15	22	21
Surrogate	Unit	Acceptable Limits					
Toluene-d8 (BTEX)	%		60-140	89	76	85	66
o-Terphenyl (F2-F4)	%		60-140	112	106	116	114

Certified By:



AGAT Laboratories

Certificate of Analysis

AGAT WORK ORDER: 21N793815

PROJECT: Soil Samples

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CANADA T2E 7P7
TEL (403)735-2005
FAX (403)735-2771
<http://www.agatlabs.com>

CLIENT NAME: JACOBS

SAMPLING SITE:

ATTENTION TO: Patrick Kalita

SAMPLED BY:

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

DATE RECEIVED: 2021-08-26

DATE REPORTED: 2023-05-08

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

2903751-2903806 Results are based on the dry weight of the sample.

The C6-C10 (F1) fraction is calculated using toluene response factor.

The C10 - C16 (F2), C16 - C34 (F3), and C34 - C50 (F4) fractions are calculated using the average response factor for n-C10, n-C16, and n-C34.

Gravimetric Heavy Hydrocarbons (F4g) are not included in and cannot be added to the Total C6-C50 and are only determined if the chromatogram of the C34 - C50 hydrocarbons indicates that hydrocarbons >C50 are present.

Quality control data is available upon request.

Assistance in the interpretation of data is available upon request.

This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.

nC6 and nC10 response factors are within 30% of Toluene response factor.

nC10, nC16 and nC34 response factors are within 10% of their average.

C50 response factor is within 70% of nC10 + nC16 + nC34 average.

Linearity is within 15%.

The chromatogram returned to baseline by the retention time of nC50.

C6 - C10 (F1 minus BTEX) is a calculated parameter. The calculated value is F1 minus BTEX. The calculated parameter is non-accredited. The parameters that are components of the calculation are accredited.

C>10 - C16 (F2- Napthalene) is a calculated parameter. The calculated value is F2 - Napthalene (if requested). The calculated parameter is non-accredited. The parameters that are components of the calculation are accredited.

C>16 - C34 (F3-PAH) is a calculated parameter. The calculated value is F3-PAH (if requested). The calculated parameter is non-accredited. The parameters that are components of the calculation are accredited.

Xylenes is a calculated parameter. The calculated value is the sum of m&p-Xylenes + o-Xylene. The calculated parameter is non-accredited. The parameters that are components of the calculation are accredited.

Extraction and holding times were met for this sample.

Analysis performed at AGAT Calgary (unless marked by *)

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 21N793815

PROJECT: Soil Samples

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FAX (403)735-2771
<http://www.agatlabs.com>

CLIENT NAME: JACOBS

SAMPLING SITE:

ATTENTION TO: Patrick Kalita

SAMPLED BY:

Polyaromatic Hydrocarbon Analysis - Soil

DATE RECEIVED: 2021-08-26

DATE REPORTED: 2023-05-08

		SAMPLE DESCRIPTION:		PM-1-SB042a	PM-1-SB042b	PM-1-SB042c	PM-1-SB042d	PM-1-SB042e	PM-1-SS-1	PM-1-SS-2	PM-1-SS-3
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2021-08-21	2021-08-21	2021-08-21	2021-08-21	2021-08-21	2021-08-21	2021-08-21	2021-08-21
Parameter	Unit	G / S	RDL	2903751	2903754	2903755	2903756	2903757	2903758	2903759	2903760
Acenaphthene	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Acenaphthylene	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Anthracene	mg/kg		0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Acridine	mg/kg		0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Quinoline	mg/kg		0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Naphthalene	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.082	1.39
2-Methylnaphthalene	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.007	0.038	1.31
Fluorene	mg/kg		0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Phenanthrene	mg/kg		0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Fluoranthene	mg/kg		0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Pyrene	mg/kg		0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.03	0.05	0.06
Benzo[a]anthracene	mg/kg		0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Chrysene	mg/kg		0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo[b+j]fluoranthene	mg/kg		0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Benzo[k]fluoranthene	mg/kg		0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Benzo[a]pyrene	mg/kg		0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Indeno[1,2,3-cd]pyrene	mg/kg		0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Dibenzo[ah]anthracene	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Benzo[ghi]perylene	mg/kg		0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
B[a]P TPE	mg/kg		0.0225	0.0225	0.0225	0.0225	0.0225	0.0225	0.0225	0.0225	0.0225
IACR (Coarse Soil)			0.0136	0.0136	0.0136	0.0136	0.0136	0.0136	0.0136	0.0136	0.0136
IACR (Fine Soil)			0.0259	0.0259	0.0259	0.0259	0.0259	0.0259	0.0259	0.0259	0.0259
Surrogate	Unit	Acceptable Limits									
p-Terphenyl-d14 (PAH)	%	50-140		115	110	122	111	109	74	92	88
p-Naphthalene-d8 (PAH)	%	50-150		98	98	106	103	102	67	86	99
P_Pyrene-d10 (PAH)	%	50-150		122	117	136	122	121	76	98	96

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 21N793815

PROJECT: Soil Samples

2910 12TH STREET NE
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CLIENT NAME: JACOBS

SAMPLING SITE:

ATTENTION TO: Patrick Kalita

SAMPLED BY:

Polyaromatic Hydrocarbon Analysis - Soil

DATE RECEIVED: 2021-08-26

DATE REPORTED: 2023-05-08

		SAMPLE DESCRIPTION:		PM-1-SB010a	PM-1-SB010b	PM-1-SB010c	PM-1-SB010d	PM-1-SB043a	PM-1-SB043b	PM-1-SB043c	PM-1-SB038a
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2021-08-21	2021-08-21	2021-08-21	2021-08-21	2021-08-21	2021-08-21	2021-08-21	2021-08-21
Parameter	Unit	G / S	RDL	2903761	2903762	2903763	2903764	2903765	2903800	2903801	2903802
Acenaphthene	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Acenaphthylene	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Anthracene	mg/kg		0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Acridine	mg/kg		0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Quinoline	mg/kg		0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Naphthalene	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2-Methylnaphthalene	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Fluorene	mg/kg		0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Phenanthrene	mg/kg		0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Fluoranthene	mg/kg		0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Pyrene	mg/kg		0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Benzo[a]anthracene	mg/kg		0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Chrysene	mg/kg		0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo[b+j]fluoranthene	mg/kg		0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Benzo[k]fluoranthene	mg/kg		0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Benzo[a]pyrene	mg/kg		0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Indeno[1,2,3-cd]pyrene	mg/kg		0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Dibenzo[ah]anthracene	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Benzo[ghi]perylene	mg/kg		0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
B[a]P TPE	mg/kg		0.0225	0.0225	0.0225	0.0225	0.0225	0.0225	0.0225	0.0225	0.0225
IACR (Coarse Soil)			0.0136	0.0136	0.0136	0.0136	0.0136	0.0136	0.0136	0.0136	0.0136
IACR (Fine Soil)			0.0259	0.0259	0.0259	0.0259	0.0259	0.0259	0.0259	0.0259	0.0259
Surrogate	Unit	Acceptable Limits									
p-Terphenyl-d14 (PAH)	%	50-140		117	108	123	113	114	111	107	116
p-Naphthalene-d8 (PAH)	%	50-150		97	98	107	99	97	96	93	103
P_Pyrene-d10 (PAH)	%	50-150		128	123	133	131	127	124	118	131

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 21N793815

PROJECT: Soil Samples

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CLIENT NAME: JACOBS

SAMPLING SITE:

ATTENTION TO: Patrick Kalita

SAMPLED BY:

Polyaromatic Hydrocarbon Analysis - Soil

DATE RECEIVED: 2021-08-26

DATE REPORTED: 2023-05-08

		SAMPLE DESCRIPTION:		PM-1-SB038b	PM-1-SB038c	DUP7	DUP8
		SAMPLE TYPE:		Soil	Soil	Soil	Soil
		DATE SAMPLED:		2021-08-21	2021-08-21	2021-08-21	2021-08-21
Parameter	Unit	G / S	RDL	2903803	2903804	2903805	2903806
Acenaphthene	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005
Acenaphthylene	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005
Anthracene	mg/kg		0.004	<0.004	<0.004	<0.004	<0.004
Acridine	mg/kg		0.05	<0.05	<0.05	<0.05	<0.05
Quinoline	mg/kg		0.05	<0.05	<0.05	<0.05	<0.05
Naphthalene	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005
2-Methylnaphthalene	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005
Fluorene	mg/kg		0.01	<0.02	<0.02	<0.02	<0.02
Phenanthrene	mg/kg		0.02	<0.02	<0.02	<0.02	<0.02
Fluoranthene	mg/kg		0.01	<0.01	<0.01	<0.01	<0.01
Pyrene	mg/kg		0.01	<0.01	<0.01	<0.01	<0.01
Benzo[a]anthracene	mg/kg		0.02	<0.02	<0.02	<0.02	<0.02
Chrysene	mg/kg		0.05	<0.05	<0.05	<0.05	<0.05
Benzo[b+j]fluoranthene	mg/kg		0.03	<0.03	<0.03	<0.03	<0.03
Benzo[k]fluoranthene	mg/kg		0.02	<0.02	<0.02	<0.02	<0.02
Benzo[a]pyrene	mg/kg		0.03	<0.03	<0.03	<0.03	<0.03
Indeno[1,2,3-cd]pyrene	mg/kg		0.02	<0.02	<0.02	<0.02	<0.02
Dibenzo[ah]anthracene	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005
Benzo[ghi]perylene	mg/kg		0.05	<0.05	<0.05	<0.05	<0.05
B[a]P TPE	mg/kg		0.0225	0.0225	0.0225	0.0225	0.0225
IACR (Coarse Soil)			0.0136	0.0136	0.0136	0.0136	0.0136
IACR (Fine Soil)			0.0259	0.0259	0.0259	0.0259	0.0259
Surrogate	Unit	Acceptable Limits					
p-Terphenyl-d14 (PAH)	%	50-140	115	111	115	106	
p-Naphthalene-d8 (PAH)	%	50-150	99	97	102	94	
P_Pyrene-d10 (PAH)	%	50-150	131	122	131	117	

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AGAT Laboratories

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AGAT WORK ORDER: 21N793815

PROJECT: Soil Samples

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CLIENT NAME: JACOBS

SAMPLING SITE:

ATTENTION TO: Patrick Kalita

SAMPLED BY:

Polyaromatic Hydrocarbon Analysis - Soil

DATE RECEIVED: 2021-08-26

DATE REPORTED: 2023-05-08

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

2903751-2903806 Results are based on the dry weight of the sample.

Based on GC/MS target ion analysis.

Isomers Benzo(b)fluoranthene and Benzo(j)fluoranthene have the same GC retention time and are reported as the sum based on the Benzo(b)fluoranthene response.

B[a]P TPE, IACR (Coarse) and IACR (Fine) are calculated parameters. They are calculated according to the Alberta Tier 1 Soil and Groundwater Remediation Guidelines, January 10, 2019. Note that if the analysis returns non-detects for a parameter, 1/2 the detection limit is entered into the formulas. As per the Guidance Manual for Environmental Site Characterization in Support of Environmental and Human Health Risk Assessment Volume 4 Analytical Methods (2016).

Analysis performed at AGAT Calgary (unless marked by *)

Certified By:



AGAT Laboratories

Certificate of Analysis

AGAT WORK ORDER: 21N793815

PROJECT: Soil Samples

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CLIENT NAME: JACOBS

SAMPLING SITE:

ATTENTION TO: Patrick Kalita

SAMPLED BY:

Sterilant Analysis - Soil

DATE RECEIVED: 2021-08-26

DATE REPORTED: 2023-05-08

		SAMPLE DESCRIPTION:		PM-1-SS-1	PM-1-SS-2	PM-1-SS-3
		SAMPLE TYPE:		Soil	Soil	Soil
		DATE SAMPLED:		2021-08-21	2021-08-21	2021-08-21
Parameter	Unit	G / S	RDL	2903758	2903759	2903760
Diuron	mg/kg		0.03	0.06	0.05	0.51
Tebuthiuron	mg/kg		0.041	<0.041	<0.041	<0.041
Simazine	mg/kg		0.028	<0.028	<0.028	<0.028
Atrazine	mg/kg		0.0081	<0.0081	<0.0081	0.322
Bromacil	mg/kg		0.008	0.247	0.0821	0.128
Linuron	mg/kg		0.045	<0.045	<0.045	<0.045
Surrogate	Unit	Acceptable Limits				
Propanil	%	50-140		103	108	108

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard
2903758-2903760 Based on sample dry weight.

Sample holding time exceeded.

Analysis performed at AGAT Calgary (unless marked by *)

Certified By:



AGAT Laboratories

Certificate of Analysis

AGAT WORK ORDER: 21N793815

PROJECT: Soil Samples

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CLIENT NAME: JACOBS

SAMPLING SITE:

ATTENTION TO: Patrick Kalita

SAMPLED BY:

Total Extractable Organic Halides - Soil

DATE RECEIVED: 2021-08-26

DATE REPORTED: 2023-05-08

		SAMPLE DESCRIPTION:		PM-1-SS-1	PM-1-SS-2	PM-1-SS-3
		SAMPLE TYPE:		Soil	Soil	Soil
		DATE SAMPLED:		2021-08-21	2021-08-21	2021-08-21
Parameter	Unit	G / S	RDL	2903758	2903759	2903760
Extractable Organic Halides	µg/g	5	<5	<5	<5	<5

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

2903758-2903760 Results are based on the dry weight of the sample.
Total extractable organic halides reported as chloride.

Non-accredited test. Inquire with lab for details.

Sample holding time exceeded.

Analysis performed at AGAT Calgary (unless marked by *)

Certified By:

Quality Assurance

CLIENT NAME: JACOBS

PROJECT: Soil Samples

SAMPLING SITE:

AGAT WORK ORDER: 21N793815

ATTENTION TO: Patrick Kalita

SAMPLED BY:

Soil Analysis

RPT Date: May 08, 2023			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Landfill - British Columbia CCS (SWEP)															
pH (1:1 Extraction)	2057	3760	7.52	7.54	0.3%	N/A	100%	90%	110%						
Free Liquid	2057	3760	Negative	Negative	NA	N/A									
Arsenic - Leachate (SWEP)	2903760	2903760	<0.5	<0.5	NA	< 0.5	106%	80%	120%	92%	80%	120%	104%	80%	120%
Barium - Leachate (SWEP)	2903760	2903760	<0.5	<0.5	NA	< 0.5	104%	80%	120%	98%	80%	120%	NA	80%	120%
Boron - Leachate (SWEP)	2903760	2903760	<0.5	<0.5	NA	< 0.5	106%	80%	120%	114%	80%	120%	NA	80%	120%
Cadmium - Leachate (SWEP)	2903760	2903760	<0.5	<0.5	NA	< 0.5	103%	80%	120%	94%	80%	120%	92%	80%	120%
Chromium - Leachate (SWEP)	2903760	2903760	<0.5	<0.5	NA	< 0.5	107%	80%	120%	99%	80%	120%	98%	80%	120%
Copper - Leachate (SWEP)	2903760	2903760	<0.5	<0.5	NA	< 0.5	102%	80%	120%	102%	80%	120%	103%	80%	120%
Lead - Leachate (SWEP)	2903760	2903760	<0.5	<0.5	NA	< 0.5	101%	80%	120%	92%	80%	120%	93%	80%	120%
Mercury - Leachate (SWEP)	2903760	2903760	<0.1	<0.1	NA	< 0.1	97%	80%	120%	94%	80%	120%	94%	80%	120%
Selenium - Leachate (SWEP)	2903760	2903760	<0.5	<0.5	NA	< 0.5	109%	80%	120%	119%	80%	120%	89%	80%	120%
Silver - Leachate (SWEP)	2903760	2903760	<0.5	<0.5	NA	< 0.5	97%	80%	120%	95%	80%	120%	80%	80%	120%
Uranium - Leachate (SWEP)	2903760	2903760	<0.5	<0.5	NA	< 0.5	104%	80%	120%	83%	80%	120%	87%	80%	120%
Zinc - Leachate (SWEP)	2903760	2903760	<0.5	<0.5	NA	< 0.5	104%	80%	120%	98%	80%	120%	93%	80%	120%
Fluoride - Leachate (SWEP)	2903760	2903760	0.7	0.7	NA	< 0.5	107%	80%	120%	92%	80%	120%	NA	80%	120%
Nitrate, Leachate (SWEP)	2903760	2903760	0.7	0.7	NA	< 0.5	95%	80%	120%	95%	80%	120%	100%	80%	120%
Nitrite, Leachate (SWEP)	2903760	2903760	<0.5	<0.5	NA	< 0.5	95%	80%	120%	93%	80%	120%	99%	80%	120%

Comments: Matrix spike NA: Spike level < native concentration. Matrix spike acceptance limits do not apply and are not calculated.
Duplicate NA: results are less than 5X the RDL and RDP will not be calculated.

Soil Analysis - Total Organic Carbon (W-B Wet Oxidation)

Total Organic Carbon	2903760	2903760	3.69	3.63	1.6%	< 0.15	88%	80%	120%				85%	80%	120%
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Comments: Matrix spike NA: Spike level < native concentration. Matrix spike acceptance limits do not apply and are not calculated.
Duplicate NA: results are less than 5X the RDL and RDP will not be calculated.

Nutrients Package 2

Available Nitrate (NO ₃ -N)	1	2648917	36	35	2.8%	< 5	100%	80%	120%				101%	80%	120%
Available Phosphorus - P	2903760	2903760	2	2	100.0%	< 1	108%	80%	120%	108%	80%	120%	115%	80%	120%
Available Potassium	2903760	2903760	219	217	0.9%	< 8	97%	80%	120%	90%	80%	120%	NA	80%	120%
Available Sulfur (SO ₄ -S)	2903760	2903760	16	16	1.0%	< 3	81%	80%	120%	102%	80%	120%	NA	80%	120%

Comments: Matrix spike NA: Spike level < native concentration. Matrix spike acceptance limits do not apply and are not calculated.
Duplicate NA: results are less than 5X the RDL and RDP will not be calculated.

Soil Analysis - Lime Requirement

Lime Requirement to pH 6.5**	888	5564	<6.5	<6.5	NA	N/A									
Lime Requirement @ pH 7.0**	888	5564	<7.0	<7.0	NA	N/A									

Comments: Duplicate NA: results are less than 5X the RDL and RDP will not be calculated.

Soil Analysis - pH, Moisture, Bulk Density, Alkalinity

AGAT QUALITY ASSURANCE REPORT (V5)

Page 19 of 28

AGAT Laboratories is accredited to ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA) and/or Standards Council of Canada (SCC) for specific tests listed on the scope of accreditation. AGAT Laboratories (Mississauga) is also accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA) for specific drinking water tests. Accreditations are location and parameter specific. A complete listing of parameters for each location is available from www.cala.ca and/or www.scc.ca. The tests in this report may not necessarily be included in the scope of accreditation. RPDs calculated using raw data. The RPD may not be reflective of duplicate values shown, due to rounding of final results.

Results relate only to the items tested. Results apply to samples as received.

Quality Assurance

CLIENT NAME: JACOBS

PROJECT: Soil Samples

SAMPLING SITE:

AGAT WORK ORDER: 21N793815

ATTENTION TO: Patrick Kalita

SAMPLED BY:

Soil Analysis (Continued)

RPT Date: May 08, 2023			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
pH (Saturated Paste)	2905548	5548	7.31	7.35	0.5%	N/A	98%	90%	110%						
Moisture Content (Wet Weight)**	3365	0725	41.0	41.2	0.5%	< 0.01									
Bulk Density, Crude - Wet (As Recieved Soil)	2903760	3760	1779	1771	0.5%	N/A	98%	80%	120%						
Carbonate, Soluble	2364		108	105	2.8%	< 5		80%	120%		80%	120%		80%	120%
Bicarbonate, Soluble	2364		24	33	NA	< 5		80%	120%		80%	120%		80%	120%

Comments: If the RPD value is NA, the results of the duplicates are under 5X the RDL and will not be calculated.

Certified By:



Quality Assurance

CLIENT NAME: JACOBS

PROJECT: Soil Samples

SAMPLING SITE:

AGAT WORK ORDER: 21N793815

ATTENTION TO: Patrick Kalita

SAMPLED BY:

Trace Organics Analysis

RPT Date: May 08, 2023			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper

Landfill - British Columbia CCS Silverberry - Basic (Non- Methanol Field Stabilized)

Oil and Grease, SWOG	200	2845602	<0.2	<0.2	NA	< 0.2				104%	70%	130%			
Flash Point °C	3237	butanol	35	35	0.0%		100%	80%	120%						
Benzene - Leachable	3467	2905939	<0.005	<0.005	NA	< 0.005	96%	70%	130%	91%	70%	130%	119%	60%	140%
Toluene - Leachable	3467	2905939	<0.005	<0.005	NA	< 0.005	88%	70%	130%	89%	70%	130%	102%	60%	140%
Ethylbenzene - Leachable	3467	2905939	<0.005	<0.005	NA	< 0.005	91%	70%	130%	92%	70%	130%	90%	60%	140%
Xylenes - Leachable	3467	2905939	<0.005	<0.005	NA	< 0.005	90%	70%	130%	92%	70%	130%	110%	60%	140%
Flash point (Pensky-Martens Closed Cup)	3237	butanol	35	35	0.0%		100%	80%	120%						

Comments: Duplicate NA: results are less than 5X the RDL and RDP will not be calculated.
The sample spikes and dups are not from the same sample ID.

Polyaromatic Hydrocarbon Analysis - Soil

Acenaphthene	1001	2903754	<0.005	<0.005	NA	< 0.005	98%	50%	140%	132%	50%	140%	103%	50%	140%
Acenaphthylene	1001	2903754	<0.005	<0.005	NA	< 0.005	94%	50%	140%	123%	50%	140%	98%	50%	140%
Anthracene	1001	2903754	<0.004	<0.004	NA	< 0.004	92%	50%	140%	130%	50%	140%	102%	50%	140%
Acridine	1001	2903754	<0.05	<0.05	NA	< 0.05	94%	50%	140%	120%	50%	140%	99%	50%	140%
Quinoline	1001	2903754	<0.05	<0.05	NA	< 0.05	123%	50%	140%	130%	50%	140%	107%	50%	140%
Naphthalene	1001	2903754	<0.005	<0.005	NA	< 0.005	106%	50%	140%	134%	50%	140%	107%	50%	140%
2-Methylnaphthalene	1001	2903754	<0.005	<0.005	NA	< 0.005	92%	50%	140%	116%	50%	140%	95%	50%	140%
Fluorene	1001	2903754	<0.02	<0.02	NA	< 0.01	106%	50%	140%	134%	50%	140%	106%	50%	140%
Phenanthrene	1001	2903754	<0.02	<0.02	NA	< 0.02	95%	50%	140%	132%	50%	140%	100%	50%	140%
Fluoranthene	1001	2903754	<0.01	<0.01	NA	< 0.01	103%	50%	140%	134%	50%	140%	123%	50%	140%
Pyrene	1001	2903754	<0.01	<0.01	NA	< 0.01	105%	50%	140%	133%	50%	140%	105%	50%	140%
Benzo[a]anthracene	1001	2903754	<0.02	<0.02	NA	< 0.02	91%	50%	140%	133%	50%	140%	110%	50%	140%
Chrysene	1001	2903754	<0.05	<0.05	NA	< 0.05	105%	50%	140%	119%	50%	140%	91%	50%	140%
Benzo[b+j]fluoranthene	1001	2903754	<0.03	<0.03	NA	< 0.03	83%	50%	140%	133%	50%	140%	112%	50%	140%
Benzo[k]fluoranthene	1001	2903754	<0.02	<0.02	NA	< 0.02	93%	50%	140%	129%	50%	140%	105%	50%	140%
Benzo[a]pyrene	1001	2903754	<0.03	<0.03	NA	< 0.03	98%	50%	140%	128%	50%	140%	103%	50%	140%
Indeno[1,2,3-cd]pyrene	1001	2903754	<0.02	<0.02	NA	< 0.02	73%	50%	140%	132%	50%	140%	114%	50%	140%
Dibenzo[ah]anthracene	1001	2903754	<0.005	<0.005	NA	< 0.005	80%	50%	140%	132%	50%	140%	107%	50%	140%
Benzo[ghi]perylene	1001	2903754	<0.05	<0.05	NA	< 0.05	84%	50%	140%	135%	50%	140%	109%	50%	140%

Comments: Duplicate NA: results are less than 5X the RDL and RDP will not be calculated.
The sample spikes and dups are not from the same sample ID.

Polyaromatic Hydrocarbon Analysis - Soil

Acenaphthene	1002	2903808	<0.005	<0.005	NA	< 0.005	98%	50%	140%	122%	50%	140%	108%	50%	140%
Acenaphthylene	1002	2903808	<0.005	<0.005	NA	< 0.005	94%	50%	140%	128%	50%	140%	113%	50%	140%
Anthracene	1002	2903808	<0.004	<0.004	NA	< 0.004	92%	50%	140%	132%	50%	140%	113%	50%	140%
Acridine	1002	2903808	<0.05	<0.05	NA	< 0.05	94%	50%	140%	119%	50%	140%	96%	50%	140%
Quinoline	1002	2903808	<0.05	<0.05	NA	< 0.05	123%	50%	140%	127%	50%	140%	115%	50%	140%
Naphthalene	1002	2903808	<0.005	<0.005	NA	< 0.005	106%	50%	140%	127%	50%	140%	111%	50%	140%

AGAT QUALITY ASSURANCE REPORT (V5)

Page 21 of 28

AGAT Laboratories is accredited to ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA) and/or Standards Council of Canada (SCC) for specific tests listed on the scope of accreditation. AGAT Laboratories (Mississauga) is also accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA) for specific drinking water tests. Accreditations are location and parameter specific. A complete listing of parameters for each location is available from www.cala.ca and/or www.scc.ca. The tests in this report may not necessarily be included in the scope of accreditation. RPDs calculated using raw data. The RPD may not be reflective of duplicate values shown, due to rounding of final results.

Results relate only to the items tested. Results apply to samples as received.

Quality Assurance

CLIENT NAME: JACOBS

PROJECT: Soil Samples

SAMPLING SITE:

AGAT WORK ORDER: 21N793815

ATTENTION TO: Patrick Kalita

SAMPLED BY:

Trace Organics Analysis (Continued)

RPT Date: May 08, 2023			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
2-Methylnaphthalene	1002	2903808	<0.005	<0.005	NA	< 0.005	92%	50%	140%	112%	50%	140%	103%	50%	140%
Fluorene	1002	2903808	<0.02	<0.02	NA	< 0.01	106%	50%	140%	126%	50%	140%	114%	50%	140%
Phenanthrene	1002	2903808	<0.02	<0.02	NA	< 0.02	95%	50%	140%	119%	50%	140%	103%	50%	140%
Fluoranthene	1002	2903808	<0.01	<0.01	NA	< 0.01	103%	50%	140%	136%	50%	140%	128%	50%	140%
Pyrene	1002	2903808	<0.01	<0.01	NA	< 0.01	105%	50%	140%	127%	50%	140%	108%	50%	140%
Benzo[a]anthracene	1002	2903808	<0.02	<0.02	NA	< 0.02	91%	50%	140%	136%	50%	140%	126%	50%	140%
Chrysene	1002	2903808	<0.05	<0.05	NA	< 0.05	105%	50%	140%	120%	50%	140%	102%	50%	140%
Benzo[b+j]fluoranthene	1002	2903808	<0.03	<0.03	NA	< 0.03	83%	50%	140%	136%	50%	140%	119%	50%	140%
Benzo[k]fluoranthene	1002	2903808	<0.02	<0.02	NA	< 0.02	93%	50%	140%	123%	50%	140%	106%	50%	140%
Benzo[a]pyrene	1002	2903808	<0.03	<0.03	NA	< 0.03	98%	50%	140%	137%	50%	140%	125%	50%	140%
Indeno[1,2,3-cd]pyrene	1002	2903808	<0.02	<0.02	NA	< 0.02	73%	50%	140%	136%	50%	140%	132%	50%	140%
Dibenzo[ah]anthracene	1002	2903808	<0.005	<0.005	NA	< 0.005	80%	50%	140%	138%	50%	140%	122%	50%	140%
Benzo[ghi]perylene	1002	2903808	<0.05	<0.05	NA	< 0.05	84%	50%	140%	134%	50%	140%	114%	50%	140%

Comments: Duplicate NA: results are less than 5X the RDL and RDP will not be calculated.
The sample spikes and dups are not from the same sample ID.

British Columbia CSR - VPH,LEPH,HEPH - Soil

VH (S C6-10)	3467	2903808	<10	<10	NA	< 10	82%	60%	140%	87%	60%	140%	87%	60%	140%
EPH (S C10-19)	101	2903808	10	<10	NA	< 10	106%	60%	140%	117%	60%	140%	122%	60%	140%
EPH (S C19-C32)	101	2903808	32	27	NA	< 10	107%	60%	140%	121%	60%	140%	125%	60%	140%
Naphthalene	1002	2903808	<0.005	<0.005	NA	< 0.005	106%	50%	140%	127%	50%	140%	111%	50%	140%
2-Methylnaphthalene	1002	2903808	<0.005	<0.005	NA	< 0.005	92%	50%	140%	112%	50%	140%	103%	50%	140%
1-Methylnaphthalene	1002	2903808	<0.005	<0.005	NA	< 0.005	103%	50%	140%	118%	50%	140%	105%	50%	140%
Quinoline	1002	2903808	<0.05	<0.05	NA	< 0.05	123%	50%	140%	127%	50%	140%	115%	50%	140%
Acenaphthylene	1002	2903808	<0.005	<0.005	NA	< 0.005	94%	50%	140%	128%	50%	140%	113%	50%	140%
Acenaphthene	1002	2903808	<0.005	<0.005	NA	< 0.005	98%	50%	140%	122%	50%	140%	108%	50%	140%
Fluorene	1002	2903808	<0.02	<0.02	NA	< 0.02	106%	50%	140%	126%	50%	140%	114%	50%	140%
Phenanthrene	1002	2903808	<0.02	<0.02	NA	< 0.02	95%	50%	140%	119%	50%	140%	103%	50%	140%
Anthracene	1002	2903808	<0.004	<0.004	NA	< 0.004	92%	50%	140%	132%	50%	140%	113%	50%	140%
Fluoranthene	1002	2903808	<0.01	<0.01	NA	< 0.01	103%	50%	140%	136%	50%	140%	128%	50%	140%
Acridine	1002	2903808	<0.05	<0.05	NA	< 0.05	94%	50%	140%	119%	50%	140%	96%	50%	140%
Pyrene	1002	2903808	<0.01	<0.01	NA	< 0.01	105%	50%	140%	127%	50%	140%	108%	50%	140%
Benzo[a]anthracene	1002	2903808	<0.02	<0.02	NA	< 0.02	91%	50%	140%	136%	50%	140%	126%	50%	140%
Benzo(b+j)fluoranthene	1002	2903808	<0.03	<0.03	NA	< 0.03	83%	50%	140%	136%	50%	140%	119%	50%	140%
Chrysene	1002	2903808	<0.05	<0.05	NA	< 0.05	105%	50%	140%	120%	50%	140%	102%	50%	140%
Benzo[k]fluoranthene	1002	2903808	<0.02	<0.02	NA	< 0.02	93%	50%	140%	123%	50%	140%	106%	50%	140%
Benzo[a]pyrene	1002	2903808	<0.03	<0.03	NA	< 0.03	98%	50%	140%	137%	50%	140%	125%	50%	140%
Indeno(1,2,3-cd)pyrene	1002	2903808	<0.02	<0.02	NA	< 0.02	73%	50%	140%	136%	50%	140%	132%	50%	140%
Dibenzo[ah]anthracene	1002	2903808	<0.005	<0.005	NA	< 0.005	80%	50%	140%	138%	50%	140%	122%	50%	140%
Benzo(ghi)perylene	1002	2903808	<0.05	<0.05	NA	< 0.05	84%	50%	140%	134%	50%	140%	114%	50%	140%

Quality Assurance

CLIENT NAME: JACOBS

PROJECT: Soil Samples

SAMPLING SITE:

AGAT WORK ORDER: 21N793815

ATTENTION TO: Patrick Kalita

SAMPLED BY:

Trace Organics Analysis (Continued)

RPT Date: May 08, 2023			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE				
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper

Comments: Duplicate NA: results are less than 5X the RDL and RDP will not be calculated.
The sample spikes and dups are not from the same sample ID.

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

Benzene	3466	2903754	<0.005	<0.005	NA	< 0.005	101%	60%	140%	88%	60%	140%	97%	60%	140%
Toluene	3466	2903754	<0.05	<0.05	NA	< 0.05	91%	60%	140%	100%	60%	140%	103%	60%	140%
Ethylbenzene	3466	2903754	<0.01	<0.01	NA	< 0.01	83%	60%	140%	104%	60%	140%	100%	60%	140%
Xylenes	3466	2903754	<0.05	<0.05	NA	< 0.05	90%	60%	140%	106%	60%	140%	99%	60%	140%
C6 - C10 (F1)	3466	2903754	<10	<10	NA	< 10	83%	60%	140%	89%	60%	140%	99%	60%	140%
C10 - C16 (F2)	6413	2903754	<10	<10	NA	< 10	103%	60%	140%	108%	60%	140%	119%	60%	140%
C16 - C34 (F3)	6413	2903754	35	34	NA	< 10	107%	60%	140%	105%	60%	140%	114%	60%	140%
C34 - C50 (F4)	6413	2903754	19	17	NA	< 10	94%	60%	140%	92%	60%	140%	99%	60%	140%

Comments: Duplicate NA: results are less than 5X the RDL and RDP will not be calculated.
The sample spikes and dups are not from the same sample ID.

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

C10 - C16 (F2)	6414	2903808	<10	<10	0	< 10	101%	60%	140%	97%	60%	140%	109%	60%	140%
C16 - C34 (F3)	6414	2903808	30	28	7	< 10	104%	60%	140%	99%	60%	140%	109%	60%	140%
C34 - C50 (F4)	6414	2903808	15	15	0	< 10	99%	60%	140%	96%	60%	140%	107%	60%	140%

Comments: Duplicate NA: results are less than 5X the RDL and RDP will not be calculated.
The sample spikes and dups are not from the same sample ID.

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS) (Methanol Field Stabilized)

Benzene	3467	2903808	<0.005	<0.005	NA	< 0.005	99%	60%	140%	76%	60%	140%	74%	60%	140%
Toluene	3467	2903808	<0.05	<0.05	NA	< 0.05	89%	60%	140%	81%	60%	140%	78%	60%	140%
Ethylbenzene	3467	2903808	<0.01	<0.01	NA	< 0.01	81%	60%	140%	82%	60%	140%	73%	60%	140%
Xylenes	3467	2903808	<0.05	<0.05	NA	< 0.05	83%	60%	140%	83%	60%	140%	74%	60%	140%
C6 - C10 (F1)	3467	2903808	<10	<10	NA	< 10	82%	60%	140%	85%	60%	140%	87%	60%	140%

Comments: Duplicate NA: results are less than 5X the RDL and RDP will not be calculated.
The sample spikes and dups are not from the same sample ID.

British Columbia CSR - Extended Site Remediation Analysis - Soil

Benzene	6129	2920536	<0.005	<0.005	NA	< 0.005	96%	60%	140%	81%	60%	140%	77%	60%	140%
Toluene	6129	2920536	<0.05	<0.05	NA	< 0.05	100%	60%	140%	87%	60%	140%	77%	60%	140%
Ethylbenzene	6129	2920536	<0.01	<0.01	NA	< 0.01	101%	60%	140%	95%	60%	140%	82%	60%	140%
Xylenes	6129	2920536	<0.05	<0.05	NA	< 0.05	104%	60%	140%	92%	60%	140%	79%	60%	140%
Styrene	6129	2920536	<0.05	<0.05	NA	< 0.05	91%	60%	140%	118%	60%	140%	104%	60%	140%
VH (S C6-10)	6129	2920536	<10	<10	NA	< 10	107%	60%	140%	85%	60%	140%	85%	60%	140%
Naphthalene	1005	2910445	0.207	0.212	2	< 0.005	105%	50%	140%	107%	50%	140%	101%	50%	140%
2-Methylnaphthalene	1005	2910445	0.245	0.264	7	< 0.005	92%	50%	140%	94%	50%	140%	92%	50%	140%
1-Methylnaphthalene	1005	2910445	0.139	0.152	9	< 0.005	102%	50%	140%	100%	50%	140%	95%	50%	140%
Quinoline	1005	2910445	<0.05	<0.05	0	< 0.05	123%	50%	140%	126%	50%	140%	117%	50%	140%

Quality Assurance

CLIENT NAME: JACOBS

PROJECT: Soil Samples

SAMPLING SITE:

AGAT WORK ORDER: 21N793815

ATTENTION TO: Patrick Kalita

SAMPLED BY:

Trace Organics Analysis (Continued)

RPT Date: May 08, 2023			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Acenaphthylene	1005	2910445	<0.005	<0.005	0	< 0.005	106%	50%	140%	102%	50%	140%	100%	50%	140%
Acenaphthene	1005	2910445	<0.005	<0.005	0	< 0.005	101%	50%	140%	104%	50%	140%	100%	50%	140%
Fluorene	1005	2910445	<0.02	<0.02	0	< 0.02	111%	50%	140%	105%	50%	140%	104%	50%	140%
Phenanthrene	1005	2910445	<0.02	<0.02	0	< 0.02	95%	50%	140%	106%	50%	140%	100%	50%	140%
Anthracene	1005	2910445	<0.004	<0.004	0	< 0.004	104%	50%	140%	111%	50%	140%	103%	50%	140%
Fluoranthene	1005	2910445	0.01	0.01	0	< 0.01	113%	50%	140%	127%	50%	140%	126%	50%	140%
Acridine	1005	2910445	<0.05	<0.05	0	< 0.05	97%	50%	140%	113%	50%	140%	103%	50%	140%
Pyrene	1005	2910445	<0.01	<0.01	0	< 0.01	101%	50%	140%	107%	50%	140%	105%	50%	140%
Benzo[a]anthracene	1005	2910445	<0.02	<0.02	0	< 0.02	110%	50%	140%	118%	50%	140%	118%	50%	140%
Benzo(b+j)fluoranthene	1005	2910445	<0.03	<0.03	0	< 0.03	98%	50%	140%	116%	50%	140%	113%	50%	140%
Chrysene	1005	2910445	<0.05	<0.05	0	< 0.05	98%	50%	140%	101%	50%	140%	97%	50%	140%
Benzo[k]fluoranthene	1005	2910445	<0.02	<0.02	0	< 0.02	101%	50%	140%	102%	50%	140%	99%	50%	140%
Benzo[a]pyrene	1005	2910445	<0.03	<0.03	0	< 0.03	117%	50%	140%	114%	50%	140%	109%	50%	140%
Indeno(1,2,3-cd)pyrene	1005	2910445	<0.02	<0.02	0	< 0.02	102%	50%	140%	119%	50%	140%	111%	50%	140%
Dibenzo[ah]anthracene	1005	2910445	<0.005	<0.005	0	< 0.005	98%	50%	140%	102%	50%	140%	102%	50%	140%
Benzo(ghi)perylene	1005	2910445	<0.05	<0.05	0	< 0.05	90%	50%	140%	106%	50%	140%	102%	50%	140%

Comments: Duplicate NA: results are less than 5X the RDL and RDP will not be calculated.
The sample spikes and dups are not from the same sample ID.

Sterilant Analysis - Soil

Diuron	906	2903758	0.06	0.06	NA	< 0.03	96%	50%	140%	91%	50%	140%	87%	50%	140%
Tebuthiuron	906	2903758	<0.041	<0.041	NA	< 0.041	98%	50%	140%	92%	50%	140%	98%	50%	140%
Simazine	906	2903758	<0.028	<0.028	NA	< 0.028	103%	50%	140%	91%	50%	140%	95%	50%	140%
Atrazine	906	2903758	<0.0081	<0.0081	NA	< 0.0081	98%	50%	140%	90%	50%	140%	91%	50%	140%
Bromacil	906	2903758	0.247	0.238	3.7%	< 0.008	97%	50%	140%	93%	50%	140%	86%	50%	140%
Linuron	906	2903758	<0.045	<0.045	NA	< 0.045	101%	50%	140%	96%	50%	140%	101%	50%	140%

Comments: Duplicate NA: results are less than 5X the RDL and RDP will not be calculated.
The sample spikes and dups are not from the same sample ID.

Glyphosate in Soil

Glyphosate	706	2903758	0.22	0.22	0.0%	< 0.03	105%	50%	140%	103%	50%	140%	106%	50%	140%
------------	-----	---------	------	------	------	--------	------	-----	------	------	-----	------	------	-----	------

Comments: Duplicate NA: results are less than 5X the RDL and RDP will not be calculated.
The sample spikes and dups are not from the same sample ID.

Total Extractable Organic Halides - Soil

Extractable Organic Halides	524	3047663	<5	<5	NA	8	95%	80%	120%	88%	70%	130%	112%	50%	150%
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Comments: Duplicate NA: results are less than 5X the RDL and RDP will not be calculated.
The sample spikes and dups are not from the same sample ID.

Method Blank above RDL, but sample data accepted as all results are <RDL.

Quality Assurance

CLIENT NAME: JACOBS

PROJECT: Soil Samples

SAMPLING SITE:

AGAT WORK ORDER: 21N793815

ATTENTION TO: Patrick Kalita

SAMPLED BY:

Trace Organics Analysis (Continued)

RPT Date: May 08, 2023			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

Certified By:

Method Summary

CLIENT NAME: JACOBS

PROJECT: Soil Samples

SAMPLING SITE:

AGAT WORK ORDER: 21N793815

ATTENTION TO: Patrick Kalita

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Soil Analysis			
pH (1:1 Extraction)	SOIL-0110; INOR-401-0120; SOIL-0260	SHEPPARD 2007; MILLER 2007; SM 4500 H+	PH METER
Free Liquid	SOIL-0160	SW-846 Method 9095	pH METER
Arsenic - Leachate (SWEP)	SOIL-0650 & INST-0140	BC Hazardous Waste Regulations/SM3120B	ICP/OES
Barium - Leachate (SWEP)	SOIL-0650 & INST-0140	BC Hazardous Waste Regulations/SM3120B	ICP/OES
Boron - Leachate (SWEP)	SOIL-0650 & INST-0140	BC Hazardous Waste Regulations/SM3120B	ICP/OES
Cadmium - Leachate (SWEP)	SOIL-0650 & INST-0140	BC Hazardous Waste Regulations/SM3120B	ICP/OES
Chromium - Leachate (SWEP)	SOIL-0650 & INST-0140	BC Hazardous Waste Regulations/SM3120B	ICP/OES
Copper - Leachate (SWEP)	SOIL-0650 & INST-0140	BC Hazardous Waste Regulations/SM3120B	ICP/OES
Lead - Leachate (SWEP)	SOIL-0650 & INST-0140	BC Hazardous Waste Regulations/SM3120B	ICP/OES
Mercury - Leachate (SWEP)	SOIL-0650 & INST-0140	BC Hazardous Waste Regulations/SM3120B	ICP/OES
Selenium - Leachate (SWEP)	SOIL-0650 & INST-0140	BC Hazardous Waste Regulations/SM3120B	ICP/OES
Silver - Leachate (SWEP)	SOIL-0650 & INST-0140	BC Hazardous Waste Regulations/SM3120B	ICP/OES
Uranium - Leachate (SWEP)	SOIL-0650 & INST-0140	BC Hazardous Waste Regulations/SM3120B	ICP/OES
Zinc - Leachate (SWEP)	SOIL-0650 & INST-0140	BC Hazardous Waste Regulations/SM3120B	ICP/OES
Fluoride - Leachate (SWEP)	SOIL-0650 & INST-0150	BC Hazardous Waste Regulations/BC SW	ION CHROMATOGRAPH
Nitrate, Leachate (SWEP)	INST 0425	EPA SW 846-1311 BC SW	ION CHROMATOGRAPH
Nitrite, Leachate (SWEP)	INST 0425	EPA SW 846-1311 BC SW	ION CHROMATOGRAPH
Cyanide - SWEP Leachate	SOIL 0420; INST 0310	BC Laboratory Manual 2013	CONTINUOUS FLOW ANALYZER
Available Nitrate (NO ₃ -N)	SOIL-0110; INOR-401-0120; SOIL-0130; INST-0540	ALBERTA AGRICULTURE 1988, EPA 353.2	DISCRETE ANALYZER
Available Phosphorus - P	SOIL-0110; INOR-401-0120; SOIL-0130; INST-0530	SHEPPARD 2007, ALBERTA AGRICULTURE 1988	DISCRETE ANALYZER
Available Potassium	SOIL 0110; SOIL 0120; SOIL 0131; INST 0140	SHEPPARD 2007, ALBERTA AGRICULTURE 1988	ICP/OES
Available Sulfur (SO ₄ -S)	SOIL 0110; SOIL 0120; SOIL 0131; INST 0140	SHEPPARD 2007, KOWALENKO 1993	ICP-OES
Lime Requirement to pH 6.5**	SOIL 0250	CARTER & GREGORICH 2007	PH METER
Lime Requirement @ pH 7.0**	SOIL 250	ASA 12-3.4.5	N/A
Total Organic Carbon	SOIL 0480; SOIL 0110; SOIL 0120	Organic Carbon, SSSA, 1996 & Skjemstad 2008	SPECTROPHOTOMETER
pH (Saturated Paste)	SOIL-0110; INOR-401-0120; INST-0110	SHEPPARD 2007; MILLER 2007 ; SM 4500 H+	PH METER
Moisture Content (Wet Weight)**	SOIL-0310	SOIL SAMPLING & METHODS OF ANALYSIS, CARTER, 2008	GRAVIMETRIC
Bulk Density, Crude - Wet (As Received Soil)	SOIL-0220	BLAKE, Methods of Soil Analysis, SSSA, 1986	GRAVIMETRIC
Carbonate, Soluble		CARTER & GREGORICH 2007	PC TITRATE
Bicarbonate, Soluble		CARTER & GREGORICH 2007	PC TITRATE
Grinding	INOR-401-0120	NA	N/A

Method Summary

CLIENT NAME: JACOBS

AGAT WORK ORDER: 21N793815

PROJECT: Soil Samples

ATTENTION TO: Patrick Kalita

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Benzene	TO-0543	EPA SW-846 8260	GC/MS
Toluene	TO-0543	EPA SW-846 8260	GC/MS
Ethylbenzene	TO-0543	EPA SW-846 8260	GC/MS
Xylenes	TO-0543	EPA SW-846 8260	GC/MS
Styrene	TO-0543	EPA SW-846 8260	GC/MS
VH (S C6-10)	TO-0543	B.C. ENVIRONMENT	GC/FID
VPH	TO-0543	B.C. ENVIRONMENT	GC/MS/FID
EPH (S C10-19)	TO-0510	B.C. ENVIRONMENT	GC/FID
EPH (S C19-C32)	TO-0510	B.C. ENVIRONMENT	GC/FID
LEPH	TO-0510	B.C. ENVIRONMENT	GC/FID
HEPH	TO-0510	B.C. ENVIRONMENT	GC/FID
Naphthalene	TO-0210	EPA SW-846 3570 & 8270	GC/MS
2-Methylnaphthalene	TO-0210	EPA SW-846 3570 & 8270	GC/MS
1-Methylnaphthalene	TO-0210	EPA SW-846 3570 & 8270	GC/MS
Quinoline	TO-0210	EPA SW-846 3570/8270-S	GC/MS
Acenaphthylene	TO-0210	EPA SW-846 3570 & 8270	GC/MS
Acenaphthene	TO-0210	EPA SW-846 3570 & 8270	GC/MS
Fluorene	TO-0210	EPA SW-846 3570 & 8270	GC/MS
Phenanthrene	TO 0210	EPA SW-846 3570/8270	GC/MS
Anthracene	TO-0210	EPA SW-846 3570 & 8270	GC/MS
Fluoranthene	TO-0210	EPA SW-846 3570 & 8270	GC/MS
Acridine	TO-0210	EPA SW-846 3570 & 8270	GC/MS
Pyrene	TO 0210	EPA SW-846 3570/8270	GC/MS
Benzo[a]anthracene	TO-0210	EPA SW-846 3570/8270	GC/MS
Benzo(b+j)fluoranthene	TO-0210	EPA SW-846 3570 & 8270	GC/MS
Chrysene	TO-0210	EPA SW-846 3570 & 8270	GC/MS
Benzo[k]fluoranthene	TO-0210	EPA SW-846 3570 & 8270	GC/MS
Benzo[a]pyrene	TO-0210	EPA SW-846 3570 & 8270	GC/MS
Indeno(1,2,3-cd)pyrene	TO-0210	EPA SW-846 3570 & 8270	GC/MS
Dibenzo[ah]anthracene	TO-0210	EPA SW-846 3570 & 8270	GC/MS
Benzo(ghi)perylene	TO-0210	EPA SW-846 3570 & 8270	GC/MS
B[a]P TPE	TO-0210	CCME	GC/MS
IACR (Fine Soil)	TO-0210	CCME	GC/MS
IACR (Coarse Soil)	TO-0210	CCME	GC/MS
Moisture Content	TO-0510	B.C. ENVIRONMENT	GC/FID
Toluene-d8 (BTEX)	TO-0543	EPA SW-846 8260	GC/MS
o-Terphenyl (EPH)	TO-0510	B.C. ENVIRONMENT	GC/FID
p-Terphenyl-d14 (PAH)	TO 0210	EPA SW-846 3570/8270	GC/MS
p-Naphthalene-d8 (PAH)	TO-0210	EPA SW-846 3570 & 8270	GC/MS
P_Pyrene-d10 (PAH)	TO-0210	EPA SW-846 3570 & 8270	GC/MS
Glyphosate	TO-1320	"In house" developed method	HPLC
Benzene	TO-0543	EPA SW-846 5021 & 8260	GC/MS
Toluene	TO-0543	EPA SW-846 5021 & 8260	GC/MS
Ethylbenzene	TO-0543	EPA SW-846 5021 & 8260	GC/MS
Xylenes	TO-0543	EPA SW-846 5021 & 8260	GC/MS
Oil and Grease, SWOG	TO-3500	"In-House" method modified from BC Lab Manual	GRAVIMETRIC
Oil and Grease, SWOG with SGT	TO-3500	"In-House" method modified from BC Lab Manual	GRAVIMETRIC

Method Summary

CLIENT NAME: JACOBS

AGAT WORK ORDER: 21N793815

PROJECT: Soil Samples

ATTENTION TO: Patrick Kalita

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Flash Point °C	TO-2210	ASTM D93	CLOSED CUP
Benzene - Leachable	TO-0050	"In-House Leachate" & EPA SW-846 5021 & 8260	GC/MS
Toluene - Leachable	TO-0050	"In-House Leachate" & EPA SW-846 5021 & 8260	GC/MS
Ethylbenzene - Leachable	TO-0050	"In-House Leachate" & EPA SW-846 5021 & 8260	GC/MS
Xylenes - Leachable	TO-0050	"In-House Leachate" & EPA SW-846 5021 & 8260	GC/MS
Toluene-d8 (BTEX-Leachable)	TO-0050	"In-House Leachate" & EPA SW-846 5021 & 8260	GC/MS
C6 - C10 (F1)	TO-0543	CCME Tier 1 Method	GC/FID
C6 - C10 (F1 minus BTEX)	TO-0543	CCME Tier 1 Method	GC/FID
C10 - C16 (F2)	TO-0560	CCME Tier 1 Method	GC/FID
C16 - C34 (F3)	TO-0560	CCME Tier 1 Method	GC/FID
C34 - C50 (F4)	TO-0560	CCME Tier 1 Method	GC/FID
Gravimetric Heavy Hydrocarbons	TO-0560	CCME Tier 1 Method	GC/FID
Moisture Content	TO-0560	CCME Tier 1 Method	GC/FID
Toluene-d8 (BTEX)	TO-0543	EPA SW-846 5021 & 8260	GC/MS
o-Terphenyl (F2-F4)	TO 0560	CCME Tier 1 Method	GC/FID
Acenaphthene	TO 0210	EPA SW-846 3570 & 8270	GC/MS
Acenaphthylene	TO 0210	EPA SW-846 3570 & 8270	GC/MS
Anthracene	TO 0210	EPA SW-846 3570 & 8270	GC/MS
Acridine	TO 0210	EPA SW-846 3570 & 8270	GC/MS
Quinoline	TO 0210	EPA SW-846 3570 & 8270	GC/MS
Naphthalene	TO 0210	EPA SW-846 3570 & 8270	GC/MS
2-Methylnaphthalene	TO 0210	EPA SW-846 3570 & 8270	GC/MS
Fluorene	TO 0210	EPA SW-846 3570 & 8270	GC/MS
Phenanthrene	TO 0210	EPA SW-846 3570 & 8270	GC/MS
Fluoranthene	TO 0210	EPA SW-846 3570 & 8270	GC/MS
Pyrene	TO 0210	EPA SW-846 3570 & 8270	GC/MS
Benzo[a]anthracene	TO 0210	EPA SW-846 3570 & 8270	GC/MS
Chrysene	TO 0210	EPA SW-846 3570 & 8270	GC/MS
Benzo[b+j]fluoranthene	TO 0210	EPA SW-846 3570 & 8270	GC/MS
Benzo[k]fluoranthene	TO 0210	EPA SW-846 3570 & 8270	GC/MS
Benzo[a]pyrene	TO 0210	EPA SW-846 3570 & 8270	GC/MS
Indeno[1,2,3-cd]pyrene	TO 0210	EPA SW-846 3570 & 8270	GC/MS
Dibenzo[ah]anthracene	TO 0210	EPA SW-846 3570 & 8270	GC/MS
Benzo[ghi]perylene	TO 0210	EPA SW-846 3570 & 8270	GC/MS
p-Terphenyl-d14 (PAH)	TO 0210	EPA SW-846 3570 & 8270	GC/MS
B[a]P TPE		CCME	GC/MS
IACR (Coarse Soil)		CCME	GC/MS
IACR (Fine Soil)		CCME	GC/MS
Diuron	TO-1315	EPA SW 846 8321	HPLC
Tebuthiuron	TO-1315	EPA SW 846 8321	HPLC
Simazine	TO-1315	EPA SW 846 8321	HPLC
Atrazine	TO-1315	EPA SW 846 8321	HPLC
Bromacil	TO-1315	EPA SW 846 8321	HPLC
Linuron	TO-1315	EPA SW 846 8321	HPLC
Propanil	TO-1315	EPA SW 846 8321	HPLC
Extractable Organic Halides	TO-3504	"In house" method	IC/EC

Appendix D

Data Quality Evaluation

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Subject	Data Quality Evaluation of the Westcoast Pointed Mountain Pipeline Abandonment Project, Phase II Environmental Site Assessment, PM-1 Site, Kilometre Post 0.0, Northwest Territories
Attention	Westcoast Energy Inc. (Westcoast)
From	Jacobs Consultancy Canada Inc. (Jacobs)
Date	November 2, 2021

1. Introduction

The objective of this data quality evaluation (DQE) report is to assess the data quality of analytical results for soil samples collected from the Westcoast Pointed Mountain Pipeline PM-1 Site located at Kilometre Post (KP) 0.0 in the Northwest Territories. Jacobs collected soil samples on September 20, 2021 as well as between August 18 and 21, 2021.

Guidance for this DQE report came from professional judgment based on the United States Environmental Protection Agency (USEPA) Contract Laboratory National Functional Guidelines (NFG) for Inorganic Data Review, (USEPA 2017a), professional judgment based on the USEPA Contract Laboratory NFG for Organic Data Review (USEPA 2017b), and individual method requirements.

The analytical results were evaluated by using the criteria of precision, accuracy, representativeness, comparability and completeness (PARCC) as described in the USEPA guidance documents.

This report is intended as a general data quality assessment designed to summarize data issues.

2. Analytical Data

This DQE report covers 81 normal (N) soil samples, 8 field duplicate (FD) soil sample, 1 trip blank (TB) soil sample, and the associated laboratory quality control (QC) samples reported in four Certificates of Analysis (CoAs) listed as 20N654509, 21N791280, 21N791282, and 21N793815.

The samples were collected and delivered to the AGAT Laboratories Ltd. (AGAT) depot in Fort Nelson, British Columbia, and shipped to the AGAT laboratory in Calgary, Alberta. The samples were analyzed by one or more of the methods listed in Table 1.

Data Quality Evaluation of the Westcoast Pointed Mountain Pipeline Abandonment Project,
Phase II Environmental Site Assessment, PM-1 Site, Kilometre Post 0.0, Northwest Territories

Table 1. Analytical Parameters

Phase II Environmental Site Assessment, PM-1 Site, Kilometre Post 0.0, Northwest Territories

Method Name	Literature Reference	Analytical Technique
Available Nitrate (as nitrogen)	Alberta Agriculture 1988, EPA 353.2	Discrete Analyzer
Available Phosphorus	Sheppard 2007, Alberta Agriculture 1988	Discrete Analyzer
Available Potassium	Sheppard 2007, Alberta Agriculture 1988	ICP/OES
Available Sulphur (as Sulphur)	Sheppard 2007, Kowalenko 1993	ICP/OES
B[a]P TPE and IACR	CCME	GC/MS
Bicarbonate, Soluble	Carter & Gregorich 2007	PC Titrate
BTEX in Soil	EPA SW-846 8260 & 8015	GC/MS
BTEX Leachate	EPA SW-846 5021 & 8260	GC/MS
Bulk Density, Crude - Wet (As Received Soil)	Blake, Methods of Soil Analysis, SSSA, 1986	Gravimetric
Carbonate, Soluble	Carter & Gregorich 2007	PC Titrate
Cyanide Leachate (SWEP)	BC Laboratory Manual 2013	CFA
Extractable Organic Halide	"In house" developed method	IC
Flash point (Pensky-Martens Closed Cup)	ASTM D93 ST	Flashpoint
Fluoride - Leachate (SWEP)	BC Hazardous Waste Regulations/BC SW	IC
Free Liquid	EPA SW- 846-9095B	Paint Filter Test
Glyphosate	"In house" developed method	HPLC
Lime Requirement at pH 7.0	ASA 12-3.4.5	NA
Lime Requirement to pH 6.5	Carter & Gregorich 2007	pH Meter
Metals Leachate (SWEP)	BC Hazardous Waste Regulations/SM3120B	ICP/OES
Moisture Content (Wet Weight)	Soil Sampling & Methods of Analysis, Carter, 2008	Gravimetric
Nitrate and Nitrite Leachate (SWEP)	EPA SW 846-1311 BC SW	IC
Oil and Grease (SWOG, SGT)	AGAT method TO-3500, modified from BC Lab Manual	Gravimetric
PAH in Soil	EPA SW-846 3570 & 8270	GC/MS
pH (1:1 Water:Soil extraction)	Sheppard 2007; Miller 2007; SM4500-H+	pH Meter
pH (Saturated Paste)	Sheppard 2007; Miller 2007; SM 4500 H+	pH Meter
PHC F1-F4 in Soil	CCME Tier 1 Method	GC/FID
Sieve Analysis - 75 microns	Kroetsch 2007, Sheppard 2007	Sieve

Data Quality Evaluation of the Westcoast Pointed Mountain Pipeline Abandonment Project,
Phase II Environmental Site Assessment, PM-1 Site, Kilometre Post 0.0, Northwest Territories

Table 1. Analytical Parameters

Phase II Environmental Site Assessment, PM-1 Site, Kilometre Post 0.0, Northwest Territories

Method Name	Literature Reference	Analytical Technique
Soil Sterilants	EPA SW 846 8321	HPLC

Notes:

ASTM = ASTM International
B[a]P TPE = benzo(a)pyrene total potency equivalents
BC = British Columbia
BTEX = benzene, toluene, ethylbenzene, and xylenes
CCME = Canadian Council of Ministers of the Environment
CFA = continuous flow analysis
EPA = United States Environmental Protection Agency
F = fraction
FID = flame ionization detector
GC = gas chromatograph
GC/ECD = gas chromatography/electron capture detector
HPLC = high-pressure liquid chromatography

IACR = Index of Additive Cancer Risk
IC = ion chromatograph
ICP/OES = inductively coupled plasma/optical emissions spectroscopy
MS = mass spectrometer
PAH = polycyclic aromatic hydrocarbon
PC = personal computer
PHC = petroleum hydrocarbon
SGT = silica gel treated
SM = Standard Method
SSSA = Soil Science Society of America
SW = solid waste
SWEP = special waste extraction procedure
SWOG = special waste oil and grease

The CoA was assessed by reviewing the following: the chain-of-custody documentation, holding-time compliance, method blanks (MBs), reference material (RM) recoveries, matrix spike (MS) recoveries, method blank spike (MBS) recoveries, surrogate spike recoveries, laboratory duplicates (LDs), field QC samples, and laboratory general comments.

Data flags were assigned according to the USEPA NFG, substituting method requirements for those listed in the NFG. Multiple flags are routinely applied to specific sample method/matrix/analyte combinations, but there will only be one final flag. A final flag is applied to the data and is the most conservative of the applied validation flags. The final flag also includes matrix and blank sample impacts.

The data flags are those listed in the NFG and are defined as follows:

- J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
- R = The sample result was rejected because of deficiencies in the ability to analyze the sample and meet the QC criteria. The presence or absence of the analyte could not be verified. Data qualified "R" were not used in the decision-making process.
- U = The analyte was analyzed for but was not detected at a quantitation limit greater than the reported sample quantitation limit, or a detection in the samples was changed to a non-detected result, qualified "U" because of blank contamination.
- UJ = The analyte was not detected at a quantitation limit greater than the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

3. Findings

The following sections summarize the data validation and results requiring data qualifiers are listed in Table 2.

Data Quality Evaluation of the Westcoast Pointed Mountain Pipeline Abandonment Project,
Phase II Environmental Site Assessment, PM-1 Site, Kilometre Post 0.0, Northwest Territories

Table 2. Applicable Validation Flags

Phase II Environmental Site Assessment, PM-1 Site, Kilometre Post) 0.0, Northwest Territories

Certificate of Analysis	Sample Identification	Analyte	Result	Units	Validation Flag	Validation Reason
21N793815	PM-1-SS1	Glyphosate	0.22	mg/kg	J	HTX2
21N793815	PM-1-SS1	Simazine	< 0.028	mg/kg	R	HTX2
21N793815	PM-1-SS1	Atrazine	< 0.0081	mg/kg	R	HTX2
21N793815	PM-1-SS1	Bromacil	0.247	mg/kg	J	HTX2
21N793815	PM-1-SS1	Diuron	0.06	mg/kg	J	HTX2
21N793815	PM-1-SS1	Linuron	< 0.045	mg/kg	R	HTX2
21N793815	PM-1-SS1	Tebuthiuron	< 0.041	mg/kg	R	HTX2
21N793815	PM-1-SS1	Extractable Organic Halides	< 5	µg/g	R	HTX2
21N793815	PM-1-SS2	Glyphosate	0.06	mg/kg	J	HTX2
21N793815	PM-1-SS2	Simazine	< 0.028	mg/kg	R	HTX2
21N793815	PM-1-SS2	Atrazine	< 0.0081	mg/kg	R	HTX2
21N793815	PM-1-SS2	Bromacil	0.0821	mg/kg	J	HTX2
21N793815	PM-1-SS2	Diuron	0.05	mg/kg	J	HTX2
21N793815	PM-1-SS2	Linuron	< 0.045	mg/kg	R	HTX2
21N793815	PM-1-SS2	Tebuthiuron	< 0.041	mg/kg	R	HTX2
21N793815	PM-1-SS2	Extractable Organic Halides	< 5	µg/g	R	HTX2
21N793815	PM-1-SS3	Glyphosate	< 0.03	mg/kg	R	HTX2
21N793815	PM-1-SS3	Simazine	< 0.028	mg/kg	R	HTX2
21N793815	PM-1-SS3	Atrazine	0.322	mg/kg	J	HTX2
21N793815	PM-1-SS3	Bromacil	0.128	mg/kg	J	HTX2
21N793815	PM-1-SS3	Diuron	0.51	mg/kg	J	HTX2
21N793815	PM-1-SS3	Linuron	< 0.045	mg/kg	R	HTX2
21N793815	PM-1-SS3	Tebuthiuron	< 0.041	mg/kg	R	HTX2
21N793815	PM-1-SS3	Extractable Organic Halides	< 5	µg/g	R	HTX2

Notes:

< = less than

µg/g = microgram(s) per gram

HT = The analysis was completed past the recommended holding-time.

HTX2 = The analysis was completed past the recommended holding-time by a factor of 2.

mg/kg = milligram(s) per kilogram

3.1 Chain-of-Custody

The required procedures were followed, and the chain-of-custody forms were error-free and contained the appropriate information.

3.2 Holding-Time and Preservation

Method-recommended holding-time and preservation criteria were met, with the following exceptions:

- In CoA 21N793815, the glyphosate, soil sterilants, and extractable organic halides analyses were completed past the recommended holding-time by factor of two in samples PM-1-SS1, PM-1-SS2, and PM-1-SS3. The detected results were flagged "J" and should be considered estimated. The nondetect results were flagged "R", rejected, and cannot be used for Project decision-making.

3.3 Laboratory Quality Control Samples

3.3.1 Method Blanks

An MB is a clean matrix and is carried through the same analytical procedures as the environmental samples. MB samples were analyzed at the required frequency and were free of contaminants of potential concern.

3.3.2 Method Blank Spike

MBS samples are analyzed to assess the laboratory's performance to successfully recover target analytes from a control matrix on a purified sample material. Recovering the target analytes in the laboratory MBSs assesses whether the analytical procedure is in control and evaluates the laboratory capability to report unbiased measurement. Acceptance criteria were met.

3.3.3 Reference Materials

RM samples are materials of known composition, analyzed to assess the laboratory's performance to successfully recover target analytes. Recovering the target analytes in the RMs assesses whether the analytical procedure is in control and evaluates the laboratory's accuracy. Acceptance criteria were met.

3.3.4 Matrix Spike

MS samples were analyzed as required by the analytical methods to assess accuracy and to identify possible matrix effects associated with the samples. Only the "parent" samples are qualified for MS issues, but data users should take into consideration low spike recoveries when evaluating other sample locations. When samples from the site were selected for MS analyses, acceptance criteria were met.

3.3.5 Surrogate Recoveries

Surrogate spikes consist of organic compounds that are similar in chemical composition and behaviour to the target compounds, but which are not normally found in environmental samples. Surrogate compounds of a known concentration are added to each sample, and the recoveries are used to monitor laboratory performance and possible matrix interference. Surrogates were added to all samples for the methods requiring their use, and acceptance criteria were met.

3.3.6 Laboratory Duplicates

LD samples were analyzed as required by the analytical methods. In some cases, other Project samples were used to fulfill the laboratory's QC batch requirements. When samples from the site were used, precision criteria were met.

3.4 Field Quality Control Samples

3.4.1 Field Duplicate Samples

FD samples are replicate samples collected in the field and submitted to the laboratory for the same analyses as the parent sample. These results from these samples help to check the reproducibility of laboratory and field procedures. They may also indicate nonhomogeneity of the sampled materials. For each analyte in each field duplicate/parent sample pair, a relative percent difference (RPD) was calculated by using the following equation:

$$RPD = |S - D| / [(S + D) / 2] \times 100$$

Where:

D = field duplicate result

S = parent sample result

Each RPD was compared with a control limit based on the sample matrix: a maximum of 30 percent for water samples and 50 percent for soil samples. Calculated RPD values met the applicable acceptance criteria.

3.4.2 Field Blanks

FB samples are created in the field, using analyte-free material, and results are compared with the associated reportable detection limits (RDLs). All results were reported as being less than the RDLs.

3.4.3 Trip Blanks

TB samples are created by the laboratory, using analyte-free material, and accompany the field samples throughout the field investigation. TB results are compared with the associated RDLs. TB results were reported as being less than the RDLs.

3.4.4 General Comments

Soil sterilant analysis was requested; however, due to the laboratory error, the samples were analyzed beyond the recommended holding-time.

4. Overall Assessment

The goal of this assessment is to demonstrate that a sufficient number of representative samples was collected, and that the resulting analytical data can be used to support the decision-making process. The following summary highlights the PARCC findings for the previously defined events:

- Data precision was verified through the review of the laboratory data quality indicators that include FD and LD RPD calculations. All results met the applicable criteria. The precision was acceptable.

- Data accuracy was verified through the review of the MBS, RM, MS, and surrogate standard recoveries, as well as the evaluation of TB and MB data. MBs and TBs were free of contaminants of concern. The remaining laboratory QC sample results met the applicable control limits. The accuracy was acceptable.
- Data representativeness was verified through the sample's collection, storage, and preservation procedures and the verification of holding-time compliance. Analysis of glyphosate, soil sterilants, and extractable organic halides in three samples was completed past the recommended holding-time. However, the overall data representativeness was acceptable.
- Data comparability was verified through the use of standard USEPA analytical procedures and standard units for reporting. Results obtained are comparable to industry standards, in that the collection and analytical techniques followed approved, documented procedures. The data comparability was acceptable.
- Completeness is a measure of the number of valid measurements obtained in relation to the total number of measurements planned. Completeness is expressed as the percentage of valid or usable measurements compared with planned measurements. Valid data are defined as all data that are not rejected for Project use. All data were considered valid. The completeness goal of 95 percent was met for all methods and analytes. The data can be used for Project decisions.

5. References

U.S. Environmental Protection Agency (USEPA). 2017a. *Contract Laboratory National Functional Guidelines for Inorganic Superfund Data Methods Review*. January.

U.S. Environmental Protection Agency (USEPA). 2017b. *Contract Laboratory National Functional Guidelines for Organic Superfund Data Methods Review*. January.

Appendix E

Preliminary Conceptual Site Model

Appendix E. Preliminary Conceptual Site Model and Regulatory Framework

Table E-1. PM-1 Preliminary Conceptual Site Model and Regulatory Framework

Category	Sub-Category	Description	Result
Site Characteristics			
Land use	Onsite	Current: Industrial Future: Naturalized area	Guidelines for most conservative land use carried forward:
	Offsite (within 30 m of Site boundary)	The PM-1 Site is surrounded by a mix of oil and gas industrial land use and natural forested land in all directions.	CCME – residential/parkland
Site conditions	Soil stratigraphy	Results from boreholes advanced in the area around PM-1 indicate the subsoil to be predominantly silty clay to full depth of investigation. Sand, gravel, or fill was observed near surface (up to 0.75 mbgs) in 15 boreholes. A layer of sand and gravel at 2.0 to 2.5 mbgs (auger refusal) was encountered in PM-1-SB005 on the west side of the Site.	Based on the laboratory analytical and borehole logs, the soil is fine-grained. Although coarse-grained soil is encountered near surface, impacted soil predominates and is expected to control contaminant migration at the Site, even with the presence of sand lenses or coarser-grained inclusions.
	Grain size	Three particle size analysis tests were completed from boreholes PM_03, PM_07, and PM-1-SB004 which indicated the soil to be fine-grained.	
Other	Local hydrogeology – depth to groundwater, groundwater flow direction, hydraulic conductivity	Unknown; no monitoring wells were installed during investigation.	
	Preferential pathways – underground facilities, pipelines	The Pointed Mountain Pipeline exits the south end of Westcoast’s lease from the pigging barrel. A tie-in pipeline enters the Site from the north and a flare line exits the Site to the southeast. Paramount operates underground infrastructure immediately west of the PM-1 Site (pipeline and buried powerline connects to the infrastructure from the north). A buried power line is present between the generator building and exits the Site to the west (towards the Paramount infrastructure).	
Groundwater use	Onsite	None	
	Offsite (within 500 m)	None	
Surface Water	Drainage	The Site is poorly drained.	
	Onsite	None	
	Offsite (within 500 m)	A treed swamp is located approximately 72 m south of the Site. A treed swamp and wetland are located approximately One surface waterbody was observed approximately 355 m south of the Site. Two ponds were	

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Category	Sub-Category	Description	Result
		observed during the Phase I ESA approximately 130 and 280 m northeast of the PM-1 infrastructure. The ponds were suspected to be septic and process water holding ponds associated with the former gas plant infrastructure and were observed to be fenced and covered. As such, they are unlikely to support aquatic life, and are not considered potential receptors.	
Exposure Assessment			
Human Health Pathways			
Soil ingestion	Intake of contaminated soil is considered in the CCME residential/parkland guidelines.		Included in assessment
Soil dermal contact	Dermal contact is considered in the CCME residential/parkland guidelines.		Included in assessment
Vapour inhalation (indoor air)	Considered in the CCME residential/parkland guidelines. Based on the remoteness of the Site and the presence of existing and abandoned oil and gas infrastructure throughout the area, it is unlikely that any long-term inhabitable structures will be located at the Site that allow for human health risks via the vapour inhalation pathway.		Included in assessment
Protection of Potable groundwater	No domestic water wells were identified during a records search of the area around the PM-1 Site. The likelihood of any domestic groundwater use near the Site is considered low, given the absence of permanent residences and the ongoing oil and gas operations in the surrounding area. CCME provides guidelines for the drinking water pathway but provides no guidance regarding the conditions under which they should be applied. The only groundwater observed during the investigations was seepage in PM-1-SB002 at 1.95 mbgs and saturated sand and gravel at 2.0 to 2.5 mbgs in PM-1-SB005. Additional investigation would be required to fully exclude the protection of potable groundwater pathway at the PM-1 Site.		Included in assessment
Ecological Pathways			
Direct Soil Contact	CCME allows exclusion of this pathway for PHC F1 to F4 below certain depths, normally between 1.5 and 3.0 mbgs. Based on the shallow depth of investigation, this pathway is applicable.		Included in assessment
Nutrient Energy Cycling	Not applicable to any of the COPCs.		

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Category	Sub-Category	Description	Result
Protection of Groundwater for Aquatic Life		CCME freshwater aquatic life guidelines consider potential receptors within 300 m of a soil plume. This pathway cannot be excluded due to the wetland located less than 100 m south of the Site.	Included in assessment
Management Limit		Applicable to PHC F1 to F4 in soil under the CCME frameworks at depths at which the ecological direct soil contact pathway is eliminated.	Excluded from assessment; the ecological direct soil contact is applicable.

Sources:

Canada-Wide Standard for Petroleum Hydrocarbons (PHC) in Soil: Scientific Rationale

Canada-Wide Standard for Petroleum Hydrocarbons (PHC) in Soil: User Guidance

Notes:

CCME = Canadian Council of Ministers of the Environment

COPC = contaminant of potential concern

ESA = environmental site assessment

F = fraction(s)

m = metre(s)

mbgs = metre(s) below ground surface

Paramount = Paramount Resources Ltd.

PHC = petroleum hydrocarbon

PM-1 Site or the Site = the site area of aboveground infrastructure located at Kilometre Post 0.0, known as the PM-1 Site