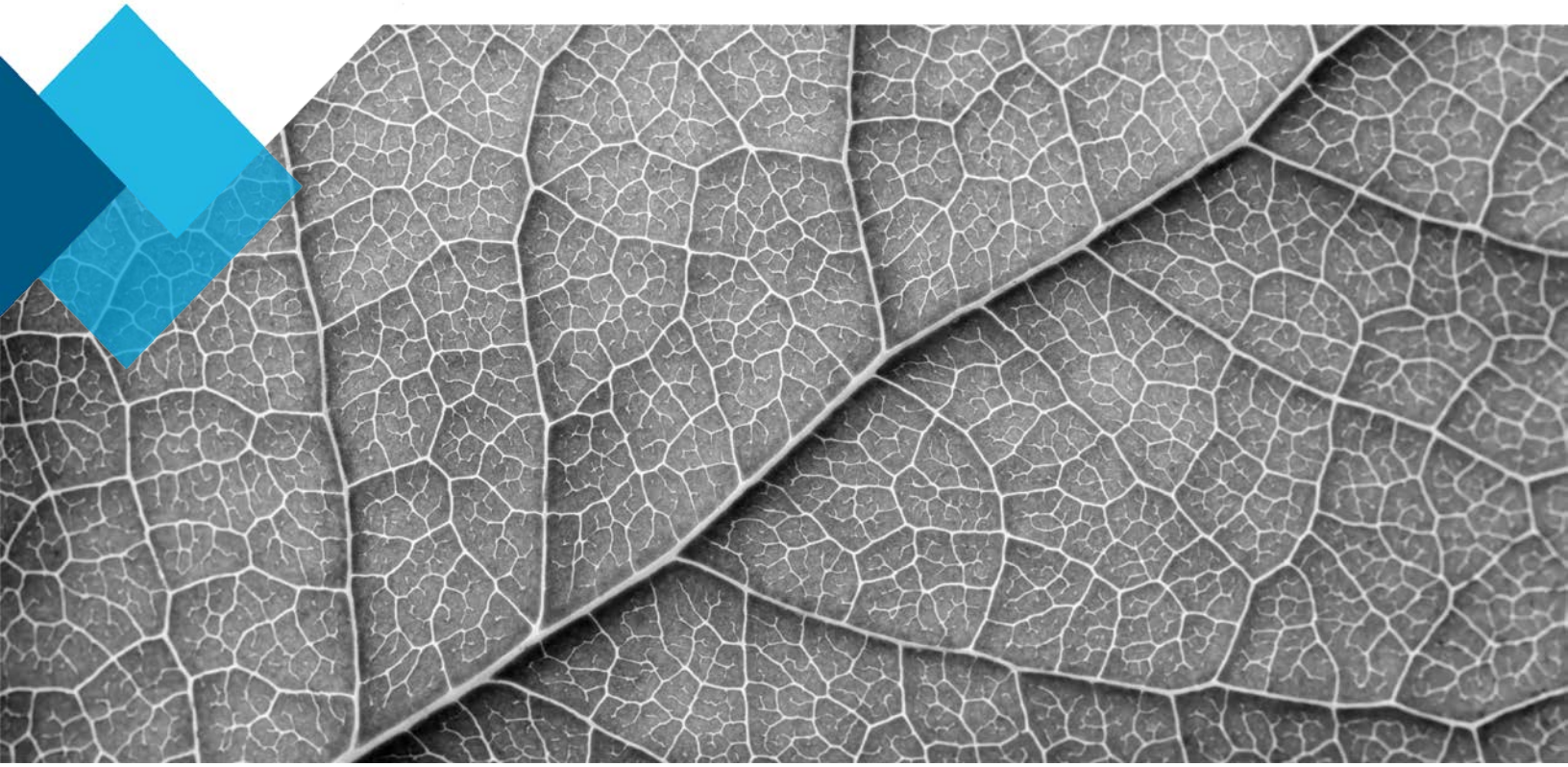
SNC·LAVALIN

Phase II Environmental Site Assessment

Saskatoon Former Transit Facility

City of Saskatoon



Environment & Geoscience

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Executive Summary

SNC-Lavalin Inc. (SNC-Lavalin) was retained by the City of Saskatoon (the City) to conduct a Phase II Environmental Site Assessment (ESA) at the former City Transit Facility properties, located in the vicinity of 321 Avenue C North, collectively referred to as "the Site".

A Phase I ESA and limited Phase II ESA were completed for the Site in the spring of 2014 by Pinter & Associates Ltd. (Pinter, 2014a,b). The investigations identified several substances of potential concern (SOPCs) in soil and groundwater at the Site, including petroleum hydrocarbons (PHCs) and lead, which were present in concentrations greater than the Saskatchewan Ministry of Environment (SMoE) environmental quality criteria.

From January 30, 2017 to February 7, 2017, and from June 7, 2017 to June 8, 2017 SNC-Lavalin personnel conducted a subsurface investigation of the soil and groundwater conditions at the Site. A total of 19 boreholes were drilled, 14 of which were completed as groundwater monitoring wells. These groundwater monitoring wells were monitored, developed, and sampled in February, 2017 and June 2017, and three wells were tested for hydraulic conductivities on February 6, 2017 and February 7, 2017.

Based on land use and Site stratigraphy, commercial standards for coarse-grained soil have been considered applicable for the assessment of soil and groundwater at the Site. In addition, residential standards have been applied to soil and groundwater results located within a 30 m buffer extending from the adjacent residential property boundaries. Guidance from the Endpoint Selection Standard (SMoE, 2016) and pertinent Site information were used to determine the applicable exposure pathways at the Site.

The significant field activities, observations and findings described above for the Phase II ESA conducted at the Site in 2017 can be summarized as follows:

- 19 boreholes were drilled at the Site, 14 of which were completed as groundwater monitoring wells;
- 41 soil samples were analyzed for one or more of the following parameters: grains size distribution, benzene, toluene, ethylbenzene and xylenes (BTEX), PHC fractions F1 to F4, lead, metals, polycyclic aromatic hydrocarbons (PAHs), volatile organic compounds (VOCs) and glycols;
- Concentrations of benzene and PHC fractions F1 to F3 in soil exceeded the applicable Saskatchewan Environmental Quality Standards (SEQS) in samples collected from boreholes 17-06, 17-08 and/or 17-09 at depths ranging from 0.6 metres (m) to 2.5 m below ground surface (bgs);
- The depths to groundwater measured in the monitored wells ranged from 2.15 m to 2.85 m below top of casing (btoc) in wells 17-10S and 17-13, respectively;
- Light non-aqueous phase liquid (LNAPL) was not detected in any of the monitored groundwater wells;
- 16 groundwater samples were analyzed for one or more of the following parameters: BTEX, PHC fractions F1 to F4, dissolved lead, dissolved metals, PAHs, VOCs and glycols;
- The concentration of PHC fraction F2 in groundwater exceeded the applicable SEQS in the sample collected from monitoring well 17-06; and
- Three groundwater monitoring well response tests were conducted with calculated hydraulic conductivity results ranging from 5.26E-07 metres per second (m/s) to 1.52E-06 m/s.

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Abbreviations and Acronyms

ALS	ALS Environmental, Saskatoon, Saskatchewan
Badger	Badger Daylighting Ltd.
bgs	below ground surface
BH	borehole
BTEX	benzene, toluene, ethylbenzene and xylenes
btoc	below top of casing
CAP	Corrective Action Plan
CCME	Canadian Council of Ministers of the Environment
CDED	Canadian Digital Elevation Data
CoC	chain of custody
CP	Canadian Pacific Railway
EC	Environment Canada
ESA	Environmental Site Assessment
FAL	freshwater aquatic life
FCSAP	Federal Contaminated Sites Action Plan
GPR	ground penetrating radar
HDPE	high density polyethylene
HVC	headspace vapour concentrations
Intercore	Intercore Environmental Services Ltd.
LEL	lower explosive limit
LNAPL	light non-aqueous phase liquid
m	metres
m/m	metre/metre
m/s	metres per second
Maxxam	Maxxam Analytics Inc.
Mobile Augers	Mobile Auger and Research Ltd.
PAH	polycyclic aromatic hydrocarbons
PHC	petroleum hydrocarbons
Pinter	Pinter & Associates Ltd.
ppm	parts per million
PVC	polyvinyl chloride
QA/QC	quality assurance/quality control
RDL	reported detection limit
RPD	Relative Percent Difference
SEQS	Saskatchewan Environmental Quality Standards
Shermco	Shermco Industries Canada
SNC-Lavalin	SNC-Lavalin Inc.
SMoE	Saskatchewan Ministry of Environment
SOPC	substances of potential concern
SSD	surficial stratified deposits
the City	City of Saskatoon
the Site	former City Transit Facility properties
VOC	volatile organic compounds
WSA	Water Security Agency

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1 Background

SNC-Lavalin Inc. (SNC-Lavalin) was retained by the City of Saskatoon (the City) to conduct a Phase II Environmental Site Assessment (ESA) at the former City Transit Facility properties, collectively referred to as "the Site", including:

- 321 Avenue C North, which consists of a former transit bus maintenance building in the southeast portion of the property and a parking lot and former bus storage area in the north portion;
- 301 - 24 Street West, which consists of a former administration building and bus storage barn;
- 230, 232 & 240 Avenue C North, which were used as parking lots for Saskatoon Transit employees; and
- 316 Avenue C North, which was used as a parking lot.

The Site is currently zoned for commercial land use, and the surrounding properties are a mixture of commercial and residential properties with single family or multiple family dwellings; a Canadian Pacific (CP) railway is adjacent to the Site to the southeast. The location of the Site within the City of Saskatoon is shown on Drawing 1. The Site and surrounding property land uses are shown on Drawing 2. A Site plan showing the general layout of Site infrastructure is included as Drawing 3.

A Phase I ESA and limited Phase II ESA were completed for the Site in the spring of 2014 by Pinter & Associates Ltd. (Pinter, 2014a,b). The investigations identified several substances of potential concern (SOPCs) in soil and groundwater at the Site, including petroleum hydrocarbons (PHCs) and lead, which were present in concentrations greater than the Saskatchewan Ministry of Environment (SMoE) environmental quality criteria. The 2014 ESA reports are available on the City's website at Saskatoon.ca/southcaswell.

On behalf of the City, SNC-Lavalin submitted two Historical Discovery Reports to SMoE on March 9, 2017 in accordance with the Discharge and Discovery Reporting chapter of the Saskatchewan Environmental Code. The reports were submitted in relation to lead impacts in soil discovered at 232 Avenue C North and PHC impacts in soil discovered at 321 Avenue C North, Saskatoon, Saskatchewan. The soil impacts were identified during the Phase II ESA conducted by SNC-Lavalin. The reports were jointly submitted for the Site under Submission Number 10024337. A historical Discharge Case (2017-03-21T08:00:00) was created by the Environmental Protection Branch of SMoE for the Site.

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2 Regulatory Framework

2.1 Saskatchewan Environmental Code

The soil and groundwater quality standards referenced in this report include:

- Saskatchewan Ministry of the Environment (SMoE) Saskatchewan Environmental Quality Standards (SEQS) (SMoE, 2017).

The SMoE SEQS came into force on June 1, 2015 under the Saskatchewan Environmental Code. Guidance from the SMoE Endpoint Selection Standard (SMoE, 2016) was used for exposure pathway elimination. Under the Saskatchewan Environmental Code, SMoE provides the option of implementing a risk-based approach to managing impacted sites using tiered endpoints, intended to be protective of human health and the environment. The three tiers are described below:

- Tier 1 endpoints for soil and groundwater are generic and specific to land use and soil grain size. Tier 1 endpoints require a basic understanding of a site and associated impacts. Tier 1 endpoints are developed using conservative assumptions and default parameters (concerning soil and groundwater characteristics) to protect sites across a broad sensitivity range. Tier 1 endpoints do not include all potential exposure scenarios and are mostly used on sites of low complexity and small scale.
- Tier 2 endpoints are specific to identified exposure scenarios and pathways. A Tier 2 assessment requires a detailed understanding of the receptors, pathways, and source characteristics and how to rationalize control of the exposure scenario. Using this approach, it may be possible to exclude or control exposure pathways at a site by placing or relying on engineering, physical and/or administrative controls. Tier 2 endpoints do not include all potential exposure scenarios, e.g., when SOPCs are located closer than 10 metres (m) to a surface water body.
- Tier 3 endpoints are derived following the completion of a site-specific human health or ecological risk assessment, and the development of a risk management plan by technical professionals competent in the field of human health and ecological risk assessment. A risk management plan outlines engineering, physical and/or administrative controls proposed to limit receptor exposure. Tier 3 would consider sensitive receptor endpoints, including species at risk or sensitive ecosystems, worker scenarios, etc., and site-specific pathways in addition to those considered in Tiers 1 and 2. If a land use does not fit within one of the four land use categories (agricultural, residential/parkland, commercial, industrial), then Tier 3 endpoints should be used.

For the purpose of this report, Tier 2 endpoints have been applied for soil and groundwater assessment at the Site.

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2.2 Endpoint Selection

Based on current land use and Site stratigraphy, commercial standards for coarse-grained soil have been considered applicable for the assessment of soil and groundwater at the Site. In addition, residential standards have been applied to soil and groundwater results located within a 30 m buffer extending from the adjacent residential property boundaries. The criteria referenced in this Phase II ESA are based on the current land use of the Site. The application of selected end points based on potential future land uses under redevelopment scenarios will be contemplated in the forthcoming Corrective Action Plan (CAP) for the Site.

Guidance from the Endpoint Selection Standard (SMoE, 2016) and pertinent Site information were used to determine the applicable exposure pathways at the Site. The following section evaluates the applicability of each Tier 2 exposure pathway.

2.2.1 Soil Ingestion and Dermal Contact

The direct soil contact pathways are protective of human receptors that may be exposed to impacted soils through soil ingestion and dermal contact. The primary routes of exposure for soil ingestion include the ingestion of suspended particulate matter and direct contact with the impacted media and subsequent hand to mouth activities. Routes of exposure for dermal contact include deposition of air-suspended particles on skin and direct contact of skin with soil. The human direct soil contact pathways for soil ingestion and dermal contact may be eliminated for PHCs in Saskatchewan for soil located >1.5 m below ground surface (bgs) (“subsoil”) if physical, engineering and/or administrative controls are present or established to reduce the risk of direct soil contact (SMoE, 2016). Similarly, Health Canada (2010) and the Canadian Council of Ministers of the Environment (CCME, 2006) adopt a depth of 1.5 m as a default for defining surface soils which predominantly contribute to direct exposure.

The dermal contact and soil ingestion pathways are considered applicable for surface soil (≤1.5 m bgs) at the Site. The presence of 1.5 m of overburden surface soil at the Site is considered a sufficient physical control to limit human receptor exposure to SOPCs present in subsoil. As such, the human direct soil contact exposure pathways are considered eliminated for soil located >1.5 m bgs under current Site conditions.

It is assumed that surface soil overburden will remain in place and that subsoil will not be excavated and stockpiled at surface. A health and safety plan should be developed and implemented as part of the risk management for the Site if excavation or subsurface construction is planned in the future, including the use of personal protective equipment to protect workers by reducing or avoiding potential direct exposure to impacted soil and/or groundwater during subsurface disturbance.

2.2.2 Indoor Vapour Inhalation

The vapour inhalation pathway is protective of human receptors that may be exposed to volatile chemicals through the inhalation of impacted soil vapours. Substances of potential concern in the vapour phase may migrate from the subsurface into indoor air within the Site buildings or any of the surrounding buildings located within 30 m of the Site. Therefore, the vapour inhalation pathway is considered applicable to the Site.

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2.2.3 Protection of Potable Groundwater

The protection of potable groundwater exposure pathway is applicable to Sites where the groundwater is or has the potential to be withdrawn for domestic use. Section (16) of the Endpoint Selection Standard (SMoE, 2016) permits the elimination of the potable groundwater pathway for a site located within an incorporated city if there are not water wells within 500 m of the site and water is supplied to residents that is safe for human consumption.

The Site is located within the City of Saskatoon limits, where potable water is supplied by the City from the South Saskatchewan River via a piped delivery system. Water well searches indicate that there are no active water wells located within 500 m of the Site (Water Security Agency [WSA], 2016). It is reasonable to conclude that local shallow groundwater in the area of the Site is not being used for domestic purposes. The potable groundwater exposure pathway is considered eliminated at the Site.

2.2.4 Ecological Soil Contact

The ecological soil contact exposure pathway is protective of various biological receptors, including soil invertebrates, plants/crops, and wildlife/livestock, and nutrient cycling. In accordance with the Endpoint Selection Standard (SMoE, 2016), the ecological contact pathway may be eliminated for PHCs located >3 m bgs. Similarly, Environment Canada's Ecological Risk Assessment Guidance (EC, 2012) permits the exclusion of potential ecological exposure pathways if sufficient quantitative and/or qualitative considerations are provided that demonstrate no documented or anticipated link between a source a receptor.

The ecological contact pathway is considered applicable for soil located ≤3.0 m bgs and groundwater at the Site. The presence of 3.0 m of overburden soil at the Site is considered a sufficient physical control to limit ecological receptor exposure to SOPCs present at depth. As such, the ecological contact exposure pathway is considered eliminated for soil located >3.0 m bgs under current Site conditions. It is assumed that shallow soil overburden will remain in place and that soils at depth will not be excavated and stockpiled at surface.

2.2.5 Freshwater Aquatic Life

According to the Endpoint Selection Standard (SMoE, 2016), the freshwater aquatic life (FAL) pathway may be excluded for PHCs in cases where there is no surface water body located within 500 m of a site. Similarly, the EC Federal Contaminated Sites Action Plan (FCSAP) Federal Interim Groundwater Quality Guidelines (EC, 2015) permit the exclusion of the aquatic life pathway if water bodies are not present within 500 m of a site and the chemicals are not conservative solutes (e.g., chlorinated solvents, fluoride, chloride).

Surface water bodies are not currently located on-Site and none are expected to be constructed in the foreseeable future. The nearest surface water body is the South Saskatchewan River, which is located approximately 1,000 m south of the Site. In addition, none of the detectable SOPCs at the Site are considered conservative solutes. As such, the FAL pathway is considered eliminated under current Site conditions.

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2.2.6 Management Limits and Non-Potable Groundwater Standards

Management limits for PHC fractions F1 to F4 in soil and non-potable standards for benzene, toluene, ethylbenzene and xylenes (BTEX) in groundwater have been developed to be protective of other potential adverse effects (aside from those to human and ecological receptors discussed above) and to incorporate consideration of additional scientific, technical and socio-economic factors. Factors considered in the management limits include: free phase formation; exposure of workers in trenches to vapours; fire and explosive hazards; effects on buried infrastructure; aesthetic considerations; and technological factors. Guidance on the application of management limits and non-potable groundwater standards is not provided in the Endpoint Selection Standard (SMoE, 2016), so they are considered applicable to the Site.

2.3 Summary of Applicable Standards

The resultant comparative SEQS for soil are provided in the attached Tables 1 through 6. The resultant comparative groundwater SEQS are provided in the attached Tables 7 through 11.

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3 Field Methodology

3.1 Overview

From January 30, 2017 to February 7, 2017 and from June 7, 2017 to June 8, 2017, SNC-Lavalin personnel conducted subsurface investigations of the soil and groundwater conditions at the Site. A total of 19 boreholes were drilled, 14 of which were completed as groundwater monitoring wells. These groundwater monitoring wells were monitored and developed on February 3, 2017 and June 8, 2017, sampled on February 6, 2017 and June 8, 2017, and tested for hydraulic conductivities on February 6, 2017 and February 7, 2017.

A summary of the field activities is provided in the following sections.

3.2 Borehole Drilling

Prior to commencing ground disturbance activities, SNC-Lavalin contacted Sask 1st Call to request all public utility information for the Site and surrounding City right-of-ways. A representative from the City of Saskatoon Public Works department conducted a Site visit on January 30, 2017 to identify and communicate the locations of potable water, storm water and sanitary sewer lines in the vicinity of the Site to SNC-Lavalin. Shermco Industries Canada (Shermco) was hired by SNC-Lavalin to provide utility locating services for privately owned facilities at the Site on January 30, 2017 and June 7, 2017. G3TECH was contracted by SNC-Lavalin to perform ground penetrating radar (GPR) scans of proposed borehole (BH) drilling locations within the on-Site buildings on January 30, 2017 and January 31, 2017. All identified utility locations were reviewed by SNC-Lavalin personnel and contractors prior to commencing ground disturbance activities.

Badger Daylighting Ltd. (Badger) was contracted to daylight targeted boreholes for utility line clearance using a hydrovacuum truck. Boreholes 17-01, 17-03 to 17-07, 17-10S, 17-10D, 17-11 and 17-18 were cleared to depths ranging from 1.5 m bgs to 3.6 m bgs on January 31, 2017 February 1, 2017 and June 7, 2017. Approximately 7 m^3 of slurry was generated by the daylighting process and was transported by Badger to the Tervita Corporation cavern disposal facility located in Unity, Saskatchewan on February 1, 2017 and to City of Saskatoon heavy grit facility on June 8, 2017.

From January 31, 2017 to February 2, 2017, 18 boreholes (17-01 to 17-09, 17-10S, 17-10D and 17-11 to 17-17) were advanced at the Site by Intercore Environmental Services Ltd. (Intercore) of Maidstone, Saskatchewan, using a track-mounted GeoProbe® 7822 direct-push drill rig. Concrete coring equipment was used by Intercore prior to drilling where necessary. Soil cuttings generated by the drilling program were placed in a soil bag and stored in the former bus parking area north of the Shop B at 321 Avenue C North, Saskatoon, Saskatchewan for future disposal. On June 7, 2017, borehole 17-18 was advanced on the south bound parking lane on Avenue D north by Badger.

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Boreholes 17-02, 17-14 and 17-15 were advanced to depths of 3.0 m bgs. Borehole 17-18 was advanced to 3.2 m bgs. Boreholes 17-05, 17-07 and 17-10S were advanced to depths of 3.6 m bgs. Boreholes 17-01, 17-03, 17-04, 17-08, 17-11 and 17-17 were advanced to depths of 3.8 m bgs. Boreholes 17-12 and 17-13 were advanced to depths of 4.5 m bgs. Boreholes 17-06 and 17-09 were advanced to depths of 5.0 m bgs. Boreholes 17-16 and 17-10D were advanced to depths of 5.3 and 5.9 m bgs, respectively.

Photographs taken during the drilling program are included in Appendix I. Borehole logs, which include soil stratigraphy, observations of potential impacts to soil, and monitoring well installation details, are provided in Appendix II. Borehole and monitoring well locations are presented on Drawing 3.

3.3 Soil Sampling

Soil samples, where collected, were taken by collecting soil from the direct push dedicated soil core sampling tubes or by using an aluminum sidewall sampling device at targeted depths within the hydrovacuumed portions of pre-cleared boreholes. The soil was characterized in detail with respect to soil type, colour, texture, structure, consistency, moisture, and potential impacts. Representative soil samples were collected at approximate 0.75 m depth intervals, unless an increased or decreased sampling frequency was warranted based on visual observations and/or changes in stratigraphy. To minimize the possibility of cross-contamination, sampling equipment was decontaminated between samples. A composite sample of soil cuttings was collected after the completion of the drilling program.

A portion of soil from each sample was placed into laboratory-prepared soil sampling jars and methanol-preserved vials jars and placed in coolers with ice packs prior to submission to ALS Environmental in Saskatoon, Saskatchewan (ALS).

The remaining portion of collected soil was placed in sealed laboratory supplied bags with an approximate equal volume of air (headspace). Combustible organic vapour monitoring was captured with an Eagle® II RKI measuring hexane. Instrument calibration was completed by field staff, prior to use, with hexane gas concentrations of 15% lower explosive limit (% LEL).

3.4 Monitoring Well Installation

SNC-Lavalin supervised the installation of groundwater monitoring wells by Intercore and Mobile Augers in 14 of the newly advanced boreholes (17-03, 17-05 to 17-09, 17-10S, 17-10D, 17-11 to 17-13, 17-16, 17-17 and 17-18). Monitoring wells 17-10S and 17-10D are nested wells, which are installed right next to one another with screen intervals located at different depths. The nested wells are intended to provide vertical delineation of groundwater impacts in the vicinity of historically identified subsurface impacts at the Site and the vertical gradient of the groundwater at that location.

Each monitoring well consisted of a 51 mm diameter polyvinyl chloride (PVC) riser (which was assembled without glues or solvents), and machined 0.010 inch-slotted screen section. Monitoring well screen lengths are 1.52 m, with the exception of 17-10D, which is 1.00 m. Environmental 10/20 filter sand was placed in the borehole annulus around the well screen to approximately 0.3 m above the top of the well screen. Hydrated bentonite chips were placed immediately above the silica sand as the annular seal, to near surface.

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All of the wells casings were installed approximately 0.1 m bgs within a steel flush mount road box. Screen interval depths are presented in the monitoring report in Appendix III. Boreholes where a well was not installed were filled with bentonite.

3.5 Groundwater Monitoring, Well Development & Sampling

On February 3, 2017 and June 8, 2017, SNC-Lavalin personnel conducted groundwater monitoring activities and attempted to develop the newly installed wells. Water levels and the presence or absence of light non-aqueous phase liquids (LNAPL) in each monitoring well were determined using a Heron® Instruments model H.OIL water/oil interface probe. Prior to re-use, the interface probe was thoroughly cleaned using phosphate-free detergent in tap water to minimize the potential for cross-contamination of the wells.

Combustible organic vapour concentrations within the well riser headspaces were captured with an Eagle® II RKI measuring hexane.

Instrument calibration was completed by field staff, prior to use, with hexane gas concentrations of 15% LEL. The groundwater monitoring wells were developed by removing a minimum of three saturated well plus filter pack volumes of groundwater or until the well went dry using dedicated Waterra high density polyethylene (HDPE) tubing and foot valves. Development water was collected in a 55 gallon steel drum stored in the former bus parking area north of the Shop B at 321 Avenue C North, Saskatoon, Saskatchewan for future disposal.

Groundwater samples were collected by SNC-Lavalin personnel on February 6 and June 8, 2017 from the monitoring wells using dedicated disposable bailers after the purging of standing water. Groundwater samples were placed into laboratory-supplied groundwater sampling containers with preservatives, if required, and placed in coolers with ice packs prior to submission to ALS and Maxxam.

3.6 Groundwater Response Testing

Groundwater response tests were completed by SNC-Lavalin personnel for monitoring wells 17-09, 17-12 and 17-13 on February 6, 2017 and February 7, 2017. Prior to initiating the groundwater response tests, the water levels in the monitoring wells were measured to establish static water level. A change in hydraulic head was induced in the wells by removing water with dedicated PVC bailers. Changes in water level were recorded manually and by using a Solinst® data logger until approximately 90% recovery to initial conditions was achieved.

3.7 Laboratory Analyses

All collected soil samples were submitted under chain of custody (CoC) to ALS and Maxxam upon completion of the drilling program to be held pending analyses requests. Following a review of field screening soil headspace vapour concentrations (HVC), sample locations, and visual observations, SNC-Lavalin instructed ALS to analyze select samples for grain size, BTEX, PHC fractions F1 to F4, lead, metals, polycyclic aromatic hydrocarbons (PAHs), volatile organic compounds (VOCs), and/or glycols. A composite sample of drilling soil cuttings was analyzed for the Saskatchewan Class II Landfill parameter suite.

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All collected groundwater samples were submitted under CoC to ALS for the analyses of BTEX, PHC fractions F1 to F4, dissolved lead, dissolved metals, PAHs, VOCs, and/or glycols.

3.8 Quality Assurance / Quality Control

A quality assurance / quality control (QA/QC) program was implemented during sampling to minimize and quantify potential impacts introduced during sample collection, handling, shipping, and analysis. As part of the QA/QC program, sampling protocols included: minimizing sample handling, submitting samples within hold time limits, storing samples at appropriate temperatures, submitting field QA/QC samples, using dedicated non-contaminated sampling equipment, decontaminating non-dedicated sampling equipment between samples, using sample specific identification, using appropriate labelling procedures, and maintaining CoC records from sample collection to laboratory analysis.

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4 Results

4.1 Borehole Drilling & Soil Sampling

4.1.1 Stratigraphy

Based on the lithology presented in the boreholes at the Site, the surficial geology of the Site consisted of Surficial Stratified Deposits (SSD) of the Saskatoon Group. Stratigraphy observed during the subsurface investigation generally consisted of sand from surface to depths ranging from 1.5 m bgs to 3.0 m bgs, underlain by interbedded sands and silts and/or a silt and clay till to approximately 5.9 m bgs, the maximum depth of investigation.

All three of the soil samples collected during the investigation that were analyzed for grain size distribution contained >50% coarse-grained particles. The coarse-grained particle distribution ranged from 64.4% to 94.0%. The grain size analysis supports the assertion that the soil type which will predominately influence the distribution and transport of SOPCs in the subsurface at the Site coarse-grained. The grain size analytical results are presented in Table 1.

4.1.2 Subsurface Vapour Concentrations

The maximum recorded soil HVC measured during the investigation was 175 parts per million (ppm) (hexane), observed in sample 17-13-04 at 2.8 m bgs to 3.0 m bgs. The soil HVCs are presented in Table 2 and on the detailed borehole logs in Appendix II.

4.1.3 Soil Analytical Results

Laboratory analytical results for soil samples collected during the Site investigation did not exceed the applicable SEQS, with the exception of results obtained from boreholes:

- 17-06 at 2.2 m to 2.3 m bgs;
- 17-08 at 0.6 mbgs to 0.8 m bgs; and
- 17-09 at 2.0 m 2.2 m bgs and at 2.2 m to 2.4 m bgs.

The substances of concern identified in these samples include one or more of the following: benzene, and PHC fractions F1 to F3. In addition, the lead concentration in soil collected from the ground surface at borehole location 17-02 was 149 mg/kg. This result is below the applicable commercial land use SEQS, though it is not delineated to the east, where similar impacts, if present, would exceed the residential land use buffer zone SEQS. Analytical results for VOCs and glycols for all submitted samples were below the laboratory detection limits. The soil investigation analytical results are summarized in Tables 1 through 6 and select results are presented on Drawing 4. The laboratory certificates of analyses are included in Appendix IV.

The analytical results for the drilling soil cuttings sample (LANDFILL-170202) are not included in the appended tables. These results are presented in laboratory report L1887196-1 which is included in Appendix IV.

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4.2 Groundwater Monitoring, Sampling & Response Testing

4.2.1 Groundwater Monitoring Results

The maximum recorded monitoring well HVC measured during the investigation was 8,030 ppm (hexane), observed in well 17-13. The depths to groundwater measured in the monitored wells ranged from 2.15 m below top of casing (btoc) to 2.85 m btoc in wells 17-10S and 17-13, respectively. Monitoring wells 17-03, 17-08, 17-17, MWC and MWD were dry during the February 3, 2017 monitoring event. The monitoring well HVCs are presented in the monitoring report in Appendix III.

Groundwater bearing units located within the SSD of Saskatoon Group can be intermittent and have significant seasonal variations. The screen intervals of the wells installed during this investigation were selected based on the groundwater table measured in nearby previously installed monitoring wells and field observations. The presence of dry monitoring wells is likely due to the localized heterogeneity of the subsurface material.

A drawing displaying the potentiometric groundwater elevations and inferred groundwater flow direction cannot by prepared until a legal survey is completed for the Site and site infrastructure, including monitoring well elevations.

Monitoring wells 17-10S and 17-10D were installed as a nested pair to assess the vertical hydraulic gradient at the Site. Using the distance between the middle of each saturated screen, the calculated vertical gradient for the monitoring event on February 3, 2017 was 0.07 m/m downwards.

4.2.2 Groundwater Analytical Results

Concentrations of chemicals analyzed in groundwater for samples collected on February 6, 2017 and June 8, 2017 did not exceed the applicable SEQS, with the exception of PHC fraction F2 in the sample obtained from monitoring well 17-06. Analytical results for glycols were below the laboratory detection limits. The groundwater analytical results are detailed in Tables 7 through 11 and select results are presented on Drawing 5.

4.2.3 Groundwater Response Testing Results

The results of the groundwater response testing conducted at the Site were used to determine average in situ hydraulic conductivity of the screened geological material using the Bouwer and Rice[1] method and AQTESOLV[2] computer software. The hydraulic conductivity values are summarized in Table A, below:

[1] Bouwer, H. and R.C. Rice, 1976. *A slug test method for determining hydraulic conductivity of unconfined aquifers with completely or partially penetrating wells.* Water Resources Research, Vol. 12, no. 3 pp. 423-428.

[2] Glenn M. Dunffield. HydroSOLVE Inc. AQTESOLV

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Table A Groundwater Response Testing Results

Well ID	Type of Test	Screen Interval (m bgs)	Depth to Water (m btoc)	Hydraulic Conductivity (m/s)
17-09	Rising Head	2.0 - 3.5	2.505	1.52E-06
17-12	Rising Head	2.0 - 3.5	2.275	5.26E-07
17-13	Rising Head	2.2 - 3.7	2.913	1.32E-06

The response test results are presented in Appendix V.

The response test results for monitoring well 17-13 showed two slopes corresponding to two different hydraulic conductivity values. The hydraulic conductivity value which constituted 90% of the head recovery is reported, which was derived from the portion of the curve corresponding to the most representative material that responded to the test.

The measured hydraulic conductivity values (K values) ranged from 5.26E-07 m/s to 1.52E-06 m/s. The K values are within the range the Silty Sand[3] SSD material tested within these wells. The geometric mean of the hydraulic conductivities is 1.02E-06 m/s. The groundwater linear velocity can't be calculated until the legal survey of groundwater well elevations is completed.

Based on data included in the Canadian Digital Elevation Data (CDED), the topographic elevations of the Site and surrounding areas are relatively flat, gently sloping towards the South Saskatchewan River located southeast of the Site.

[3] Freeze and Cheery, Groundwater, 1979. Table 2.2

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5 Quality Assurance / Quality Control

The quality assurance / quality control (QA/QC) program is outlined below, and the laboratory analytical reports and data quality review checklists are presented in Appendix IV and Appendix VI, respectively.

QA/QC procedures were followed to determine if the analytical results were accurate and precise. CoC records were maintained to track sample handling between the field and the laboratory, and sample hold times were compared to regulatory guidelines.

A trip blank groundwater sample provided by the laboratory was transported to and from the Site. A field blank groundwater sample was exposed to the atmosphere at the Site. The equipment blank groundwater sample was transferred to the appropriate sample container after passing through a new PVC bailer. The trip, field and equipment blank groundwater samples were submitted for laboratory analyses and used to assess the field sampling procedures versus airborne contamination, sample handling and/or analytical procedures.

A total of three blind field duplicate soil samples and one blind field duplicate groundwater sample were submitted for laboratory analysis and used as a measure of quality control. Upon receipt of the analytical results, Relative Percent Difference (RPD) values between the samples and their blind duplicates were calculated using the following equation:

$$RPD\ (\%) = 200\% \times ABS\ (X - Y) / (X + Y)$$

Where, X = the concentration of the original sample
Y = the concentration of the blind field duplicate sample

The RPD is a calculated measure of the variability of analytical results. Where the RPD between a sample and its field duplicate exceeds the acceptance criteria, further investigation into the cause of the variability is required. Analytical error increases substantially near the reported detection limit (RDL). RPDs should only be calculated when the concentrations of both samples are greater than five times the RDL. The SNC-Lavalin blind duplicate RPD acceptance criteria for soil samples are indicated in Table B, below.

Table B SNC-Lavalin RPD Acceptance Values

Analyte	Soil (RPD)	Water (RPD)
Organics	60%	45%
Metals	45%	30%

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The laboratory QA/QC program included the analysis of laboratory method blanks, laboratory sample duplicates, surrogate recovery, and chemical spikes. The laboratory method blank analysis is used to detect interferences or impurities introduced by the laboratory equipment, reagents, or solvents. Surrogate recovery is analyzed by spiking samples with known quantities of surrogate chemicals that have similar chemical properties to the parameters being analyzed. The reported recovery provides an indication of the analytical method accuracy. Chemical spikes are conducted by adding known concentrations of the analyte of interest to a sample to evaluate the effects of the sample matrix on the analytical method. The analysis of selected samples in duplicate is used to evaluate the reproducibility of the analytical method.

Sampling dates and analytical dates were compared to determine if hold times exceeded SNC-Lavalin or ALS QA/QC limits.

Results of the QA/QC program are summarized below:

- All soil and groundwater samples were extracted for analysis within the appropriate laboratory hold times, with the exception of the moisture content analyses for samples 17-08-03 and 17-09-08, which exceeded the ALS recommended hold time of 14 days. These exceptions are not considered likely to materially affect the interpretation of results;
- The matrix spike recoveries for soil samples were within laboratory acceptance criteria;
- Analyte concentrations measured in trip, field and equipment blanks were within the acceptable limits;
- The calculated RPDs for soil and water blind field duplicate samples were within SNC-Lavalin acceptance criteria or variability could not be calculated because parameter concentrations were within 5x of the RDL;
- The laboratory duplicate RPD values were all within acceptable limits or variability could not be calculated because parameter concentrations were less than the RDL;
- All of the surrogate and chemical spike recoveries measured for soil samples were within acceptable limits; and
- Overall, the results are considered adequate to confirm that the data are considered reliable.

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6 Summary of the Phase II ESA

The significant field activities, observations and findings described above for the Phase II ESA conducted at the Site in January, February and June, 2017 can be summarized as follows:

- 19 boreholes were drilled at the Site, 14 of which were completed as groundwater monitoring wells;
- Stratigraphy observed during the subsurface investigation generally consisted of sand from surface to depths ranging from 1.5 m bgs to 3.0 m bgs, underlain by interbedded sands and silts and/or a silt and clay till to approximately 5.9 m bgs, the maximum depth of investigation;
- The grain size analysis supports the assertion that the soil type which will predominately influence the distribution of SOPCs in the subsurface at the Site is coarse-grained;
- 41 soil samples were analyzed for one or more of the following parameters: grains size distribution, BTEX, PHC fractions F1 to F4, lead, metals, PAHs, VOCs and glycols;
- Concentrations of benzene and PHC fractions F1 to F3 in soil exceeded the applicable SEQS in samples collected from boreholes 17-06, 17-08 and/or 17-09 at depths ranging from 0.6 m bgs to 2.5 m bgs.
- The depths to groundwater measured in the monitored wells ranged from 2.15 m btoc to 2.85 m btoc in wells 17-10S and 17-13, respectively;
- Monitoring wells 17-03 (located at 316 Avenue C North), 17-08 (located north of the maintenance building on 321 Avenue C North), 17-17 (located in the bus barn portion of the building at 301 – 24th Street West) and two historical monitoring wells (MWC and MWD) were dry during the time of monitoring;
- LNAPL was not detected in any of the monitored groundwater wells;
- 16 groundwater samples were analyzed for one or more of the following parameters: BTEX, PHC fractions F1 to F4, dissolved lead, dissolved metals, PAHs, VOCs and glycols;
- The concentration of PHC fraction F2 in groundwater exceeded the applicable SEQS in the sample collected from monitoring well 17-06;
- Three groundwater monitoring well response tests were conducted, with calculated hydraulic conductivity results ranging from 5.26E-07 m/s to 1.52E-06 m/s; and
- The results of the QA/QC program suggest that the data are reliable.

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7 Conclusions and Recommendations

Based on the observations and results of the Phase II ESA, the following conclusions can be drawn regarding the environmental conditions at the Site.

Substances of potential concern in soil were not identified in the boreholes drilled at the following locations:

- Nearest to the CP railway to the southeast of the former bus storage building at 301 24th Street West (BH 17-04) and 230 Avenue C North (BH 17-01);
- Near the eastern boundary of 316 Avenue C North, which is the borehole located nearest to the truck and trailer repair shop located at 309 Ave B North (BH 17-03);
- In the boreholes drilled near the former mechanical pits at 321 Avenue C North (BH 17-05 and BH 17-07). Horizontal delineation of previously identified soil impacts in this area may have been achieved;
- In the boreholes drilled on 24 Street West (BH 17-11) and in the southwest loading area (BH 17-10);
- In the boreholes drilled within the South Maintenance Shop at 321 Avenue C North (BH 17-12 and BH 17-13). Horizontal delineation of previously identified soil impacts in this area may have been achieved;
- In the boreholes drilled within the former bus storage building at 301 24 Street West (BH 17-14 to BH 17-17); and
- In BH17-18 drilled on the parking lane on Avenue D north.

Based on these results and current Site conditions and land use, further investigation of soil impacts at the above locations is not considered warranted at this time.

Soil benzene concentrations marginally exceed the applicable standards in the borehole drilled north of the historical shallow excavation at the 321 Avenue C North parking lot (BH 17-08). Vertical delineation of soil impacts in this area appears to have been achieved during the historical shallow excavation. Horizontal delineation of soil impacts in this area has not been achieved. The monitoring well (MW 17-08) installed at this location was dry during this investigation.

PHC fractions F1 to F3 in soil and PHC fraction F2 in groundwater have been identified as substances of concern in the boreholes and/or monitoring wells located near the western boundary of Shop B at 321 Avenue C North (BH/MW 17-06 and 17-09). Vertical delineation of soil impacts in this area appears to have been achieved during previous soil investigations. Horizontal delineation of soil and groundwater impacts in this area has been achieved at BH/MW17-18.

A groundwater monitoring program is recommended to assess the groundwater conditions which may be affected by seasonality. Based on the Site hydrogelogical conditions, semi-annual groundwater monitoring for a minimum of two years is recommended. A plume stability analysis can be carried out at the end of the two year period to analyze the groundwater PHC plume status and to determine whether continued monitoring is required.

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Potential risks associated with soil lead impacts within the vicinity of the former mechanical pit at 321 Avenue C North and the gravel parking lot at 232 Avenue C North may need to be addressed during Site redevelopment. Horizontal and vertical delineation of lead impacts in soil has been achieved, with the exception of the lead impacts identified at BH17-02. The surface lead concentration in soil at BH17-02 is undelineated to the east, where similar impacts, if present, would exceed the residential land use buffer zone SEQS.

A Corrective Action Plan (CAP) is recommended to address the identified soil and groundwater impacts at the Site. The CAP should apply environmental standards and/or select remediation endpoints based on the current and potential future uses of the Site. Recommended remediation techniques should also be included in the CAP to achieve the remedial endpoints.

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8 Closure

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Number C1365

Permission to Consult held by:

Discipline	Sk. Reg. No.	Signature
Environment	29846	

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Drawings

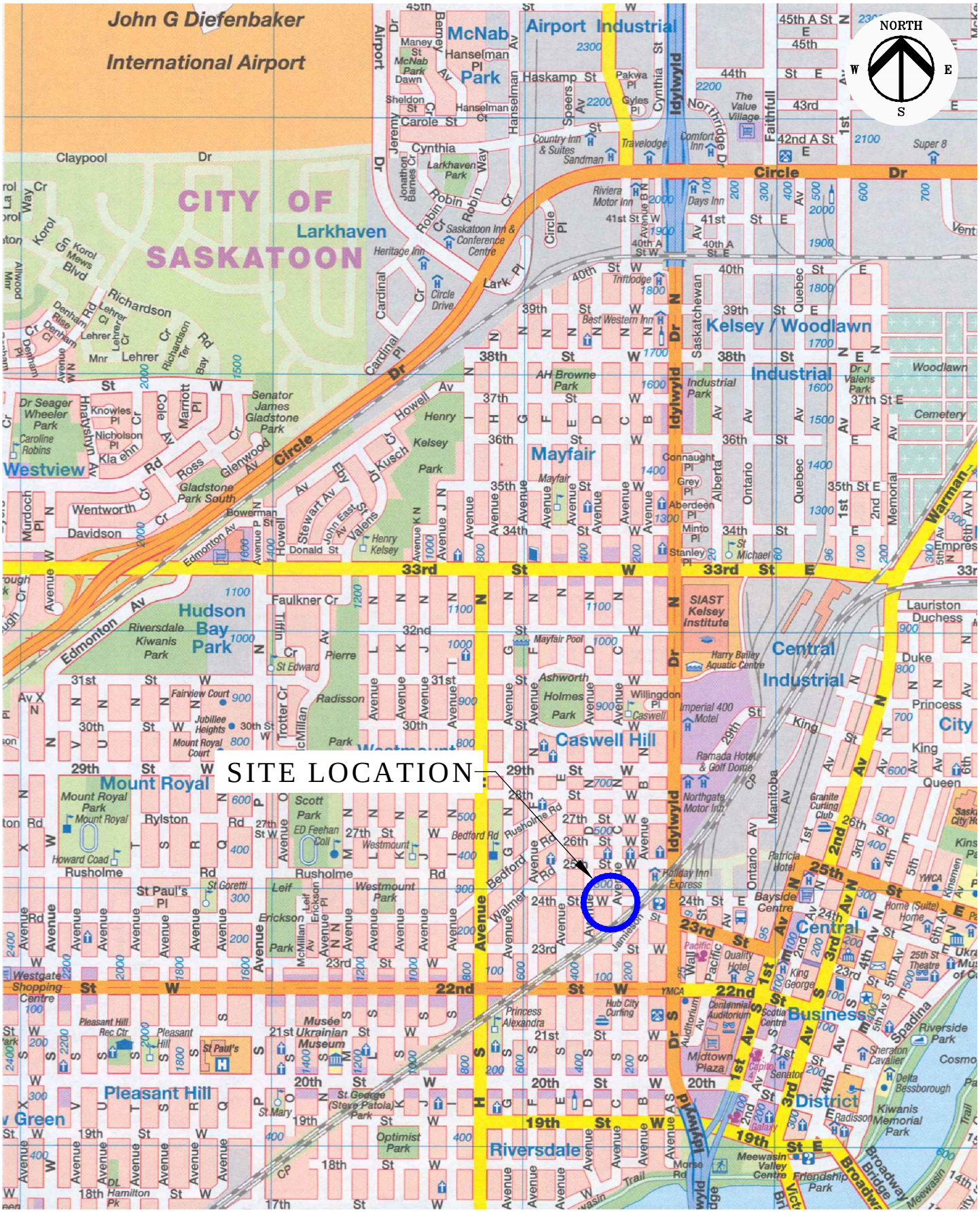
1 Site Location

2 Site and Surrounding Land Use

3 Site Plan

4 Soil Analytical Results

5 Groundwater Analytical Results



SNC·LAVALIN

DRAWING 1: SITE LOCATION

0 250 500 750 METRES

DATE:	DRAWN BY:	CHECKED:	CLIENT NAME:	PROJECT LOCATION:	SCALE:	SERIES NUMBER:
2017 02 10	CDM	TL	CITY OF SASKATOON	FORMER TRANSIT FACILITY, SASKATOON, SASKATCHEWAN	1:20,000	644079–001

LEGEND

- SITE PROPERTY LINE
- LOT LINE
- RAIL LINE

NOTES

1. ORIGINAL DRAWING IN COLOUR.
2. LOCATION OF FACILITIES AND UTILITIES SHOWN ARE APPROXIMATE ONLY AND SHOULD BE CONFIRMED PRIOR TO INVESTIGATIVE WORK. NOT ALL FACILITIES OR UTILITIES MAY BE SHOWN.
3. COORDINATE SYSTEM: NAD 1983 UTM ZONE 13N.

REFERENCE DRAWINGS

–	–	–
DWG. NO.	DATE	DESCRIPTION

REVISIONS

0	–	–	–	–
REV.	DATE	DESCRIPTION	BY	CHK

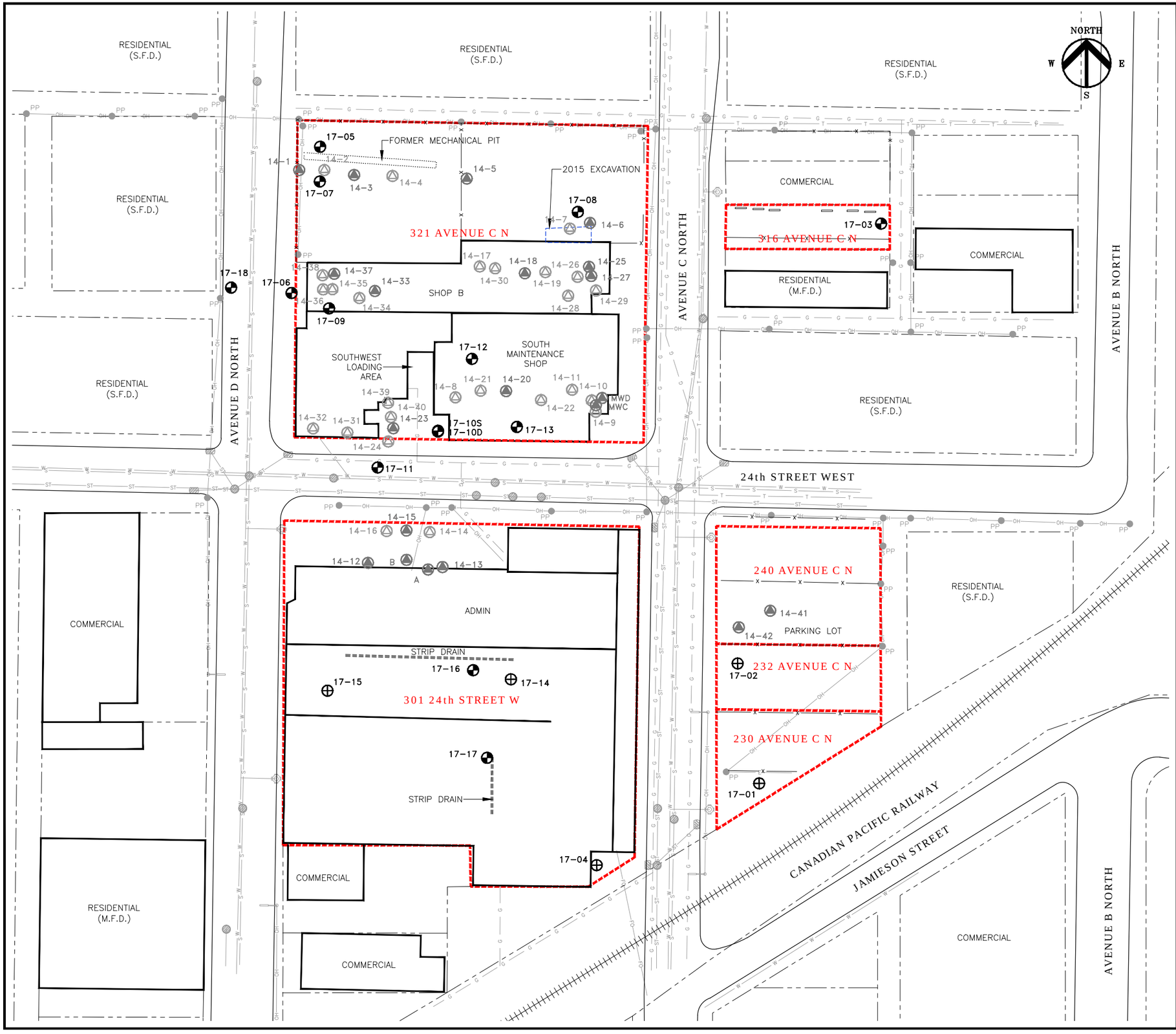
0 25 50 75
METRES

SNC·LAVALIN

CLIENT NAME: CITY OF SASKATOON	PROJECT LOCATION: FORMER TRANSIT FACILITY SASKATOON, SASKATCHEWAN

DRAWING 2: SITE AND SURROUNDING LAND USE

DWN BY: CDM	SCALE: 1:1,000	DATE: 2017 02 09	SERIES No: REV.: 0
CHK'D: TL	PLOT: 20170301.1307	CADFILE: 644079R00	644079-002



LEGEND

- MONITORING WELL (SNC–LAVALIN)
- BOREHOLE (SNC–LAVALIN)
- MONITORING WELL (BY OTHERS)
- TESTHOLE (BY OTHERS)
- SITE PROPERTY LINE
- LOT LINE
- FENCE LINE
- RAIL LINE
- UNDERGROUND ELECTRICAL LINE
- OVERHEAD ELECTRICAL LINE
- CITY FIBRE OPTIC LINE
- GAS LINE
- SANITARY SEWER LINE
- STORM LINE
- TELEPHONE LINE
- WATER LINE
- POWER POLE
- FIRE HYDRANT
- CATCH BASIN
- MANHOLE

NOTES

1. ORIGINAL DRAWING IN COLOUR.
2. LOCATION OF FACILITIES AND UTILITIES SHOWN ARE APPROXIMATE ONLY AND SHOULD BE CONFIRMED PRIOR TO INVESTIGATIVE WORK. NOT ALL FACILITIES OR UTILITIES MAY BE SHOWN.
3. COORDINATE SYSTEM: NAD 1983 UTM ZONE 13N.

REFERENCE DRAWINGS

–	–	–
DWG. NO.	DATE	DESCRIPTION

REVISIONS

0	–	–	–	–
REV.	DATE	DESCRIPTION	BY	CHK

0 10 20 30 40 50 METRES

SNC·LAVALIN

CLIENT NAME: CITY OF SASKATOON

PROJECT LOCATION: FORMER TRANSIT FACILITY SASKATOON, SASKATCHEWAN

DRAWING 3: SITE PLAN

DWN BY: CDM	SCALE: 1:1,000	DATE: 2017 02 09	SERIES No: 644079-003 REV.: 0
CHK'D: TL	PLOT: 20170620.0553	CADFILE: 644079R00	

14-3 — Date Sampled: 2014 05 15

Depth (mbgs)	B	T	E	X	F1	F2	F3	F4	Pb
2.25	<0.005	<0.05	<0.01	<0.1	<10	<30	99	118	5.2

17-05 — Date Sampled: 2017 01 31

Depth (mbgs)	B	T	E	X	F1	F2	F3	F4	Pb	PAHs
0.7 – 0.8	0.0317	0.229	0.077	0.48	<10	<25	<50	<50	6.80	–

14-2 — Date Sampled: 2014 05 15

Depth (mbgs)	B	T	E	X	F1	F2	F3	F4	Pb
0.75	0.0053	<0.05	<0.01	<0.1	<10	<30	**497**	137	**2,450**
2.25	<0.005	<0.05	<0.01	<0.1	<10	<30	67	<50	6.0

17-07 — Date Sampled: 2017 01 31

Depth (mbgs)	B	T	E	X	F1	F2	F3	F4	Pb	PAHs	VOCs	Glycols
2.2 – 2.3	<0.005	<0.05	<0.015	<0.1	<10	<25	<50	<50	8.04	<SEQS	<SEQS	<SEQS

14-1 — Date Sampled: 2014 05 15

Depth (mbgs)	B	T	E	X	F1	F2	F3	F4	Pb
2.25	<0.005	<0.05	<0.01	<0.1	<10	<30	<50	<50	<5

14-33 — Date Sampled: 2014 05 23

Depth (mbgs)	B	T	E	X	F1	F2	F3	F4	Pb
1.5	<0.005	<0.05	<0.01	<0.1	<10	<30	93	<50	<5

14-37 — Date Sampled: 2014 05 23

Depth (mbgs)	B	T	E	X	F1	F2	F3	F4	Pb
2.1	<0.005	<0.05	0.022	<0.1	58	**10,200**	**2,950**	<50	<5
3.75	<0.005	<0.05	<0.01	<0.1	<10	<30	<50	<50	<5

14-38 — Date Sampled: 2014 05 23

Depth (mbgs)	B	T	E	X	F1	F2	F3	F4	Pb
2.25	<0.005	<0.05	<0.01	<0.1	<10	<30	<50	<50	6.8

14-35 — Date Sampled: 2014 05 23

Depth (mbgs)	B	T	E	X	F1	F2	F3	F4	Pb
2.25	<0.005	<0.05	0.245	0.77	**148**	**6,000**	**21,500**	388	5.4
2.25 DUP	<0.005	<0.05	0.230	0.81	**183**	**6,110**	**13,300**	5,270	<5
4.5	<0.005	<0.05	<0.01	<0.1	<10	<30	105	<50	5.1

14-36 — Date Sampled: 2014 05 23

Depth (mbgs)	B	T	E	X	F1	F2	F3	F4	Pb
0.75	<0.005	<0.05	<0.01	<0.1	<10	<30	<50	<50	<5
2.25	<0.005	<0.05	0.110	0.61	**110**	**12,900**	**3,850**	<50	<5
4.5	<0.005	<0.05	<0.01	<0.1	<10	<30	140	<50	5.4

17-06 — Date Sampled: 2017 01 31

Depth (mbgs)	B	T	E	X	F1	F2	F3	F4	PAHs
2.2 – 2.3	<0.005	<0.05	<0.015	<0.1	<10	**369**	409	<50	4.27	<SEQS
3.7 – 3.8	<0.005	<0.05	<0.015	<0.1	<10	–	–	–	4.86	–
3.7 – 3.8 DUP	<0.005	<0.05	<0.015	<0.1	<10	–	–	–	4.83	–

17-18 — Date Sampled: 2017 06 07

Depth (mbgs)	B	T	E	X	F1	F2	F3	F4	Pb
0.8 – 0.9	–	–	–	–	<10	<50	<50	<50	–
2.3 – 2.4	–	–	–	–	<10	<50	<50	<50	–
2.3 – 2.4 DUP	–	–	–	–	<10	<50	<50	<50	–
3.0 – 3.1	–	–	–	–	<10	<50	<50	<50	–

14-34 — Date Sampled: 2014 05 23

Depth (mbgs)	B	T	E	X	F1	F2	F3	F4	Pb
0.75	<0.005	<0.05	<0.01	<0.1	<10	<30	139	64	42.8
2.25	<0.005	<0.05	<0.01	<0.1	<10	<30	**3,480**	582	<5

17-09 — Date Sampled: 2017 02 01

Depth (mbgs)	B	T	E	X	F1	F2	F3	F4	PAHs
2.0 – 2.2	<0.005	<0.05	0.024	0.14	**134**	**5,040**	**9,380**	3,620	7.64	<SEQS
2.2 – 2.4	<0.005	<0.05	<0.015	<0.1	18	**550**	**1,710**	905	5.93	<SEQS
3.5 – 3.8	<0.005	<0.05	<0.015	<0.1	<10	<25	68	<50	5.16	–
3.5 – 3.8 DUP	<0.005	<0.05	<0.015	<0.1	<10	–	–	–	–	–
4.8 – 5.0	<0.005	<0.05	<0.015	<0.1	<10	<25	55	<50	5.44	–

14-32 — Date Sampled: 2014 05 23

Depth (mbgs)	B	T	E	X	F1	F2	F3	F4	Pb
2.8	<0.005	<0.05	<0.01	<0.1	<10	<30	149	76	5.2
3.75	<0.005	<0.05	<0.01	<0.1	<10	<30	97	66	5.2
4.5	<0.005	<0.05	<0.01	<0.1	<10	<30	95	97	5.1

14-39 — Date Sampled: 2014 05 24

Depth (mbgs)	B	T	E	X	F1	F2	F3	F4	Pb
1.5	<0.005	<0.05	<0.01	<0.1	<10	<30	<50	<50	<5
3.0	<0.005	<0.05	<0.01	<0.1	<10	<30	274	125	5.3

14-31 — Date Sampled: 2014 05 23

Depth (mbgs)	B	T	E	X	F1	F2	F3	F4	Pb
2.25	<0.005	<0.05	<0.01	<0.1	<10	<30	56	<50	<5
3.0	<0.005	<0.05	<0.01	<0.1	<10	<30	86	64	5.3

14-40 — Date Sampled: 2014 05 24

Depth (mbgs)	B	T	E	X	F1	F2	F3	F4	Pb
3.0	<0.005	<0.05	<0.01	<0.1	147	1,750	543	<50	<5
4.5	<0.005	<0.05	<0.01	<0.1	<10	<30	77	<50	5.0

14-23 — Date Sampled: 2014 05 22

Depth (mbgs)	B	T	E	X	F1	F2	F3	F4	Pb
2.25	<0.005	<0.05	0.065	<0.1	**351**	**7,040**	1,360	<50	10.8
2.25 DUP	<0.005	<0.05	0.025	<0.1	210	**12,600**	1,200	<50	11.7
3.75	<0.005	<0.05	<0.01	<0.1	<10	<30	144	<50	5.3

14-24 — Date Sampled: 2014 05 22

Depth (mbgs)	B	T	E	X	F1	F2	F3	F4	Pb
3.0	<0.005	<0.05	0.022	<0.1	31	**565**	150	<50	<5
3.75	<0.005	<0.05	<0.01	<0.1	<10	52	91	56	5.1

17-11 — Date Sampled: 2017 02 01

Depth (mbgs)	B	T	E	X	F1	F2	F3	F4	Pb	PAHs
2.1 – 2.4	<0.005	<0.05	<0.015	<0.1	<10	<25	69	<50	4.69	<SEQS
3.5 – 3.8	<0.005	<0.05	<0.015	<0.1	<10	<25	94	<50	5.10	–
3.5 – 3.8 DUP	<0.005	<0.05	<0.015	<0.1	<10	<25	96	<50	5.16	–

17-10 — Date Sampled: 2017 02 01

Depth (mbgs)	B	T	E	X	F1	F2	F3	F4	Pb	PAHs
2.2 – 2.3	<0.005	<0.05	<0.015	<0.1	<10	<25	<50	<50	4.00	<SEQS
3.6 – 3.8	<0.005	<0.05	<0.015	<0.1	<10	<25	61	<50	4.94	<SEQS
5.7 – 5.8	<0.005	<0.05	<0.015	<0.1	<10	<25	50	<50	4.91	–

14-12 — Date Sampled: 2014 05 21

Depth (mbgs)	B	T	E	X	F1	F2	F3	F4	Pb
2.25	<0.005	<0.05	<0.01	<0.1	<10	<30	63	<50	<5
4.5	<0.005	<0.05	<0.01	<0.1	<10	<30	58	<50	5.2

14-16 — Date Sampled: 2014 05 21

Depth (mbgs)	B	T	E	X	F1	F2	F3	F4	Pb
1.5	<0.005	<0.05	<0.01	<0.1	<10	<30	<50	<50	<5
3.75	<0.005	<0.05	<0.01	<0.1	<10	<30	<50	<50	6.3

14-15 — Date Sampled: 2014 05 21

Depth (mbgs)	B	T	E	X	F1	F2	F3	F4	Pb
2.25	<0.005	<0.05	<0.01	<0.1	<10	<30	<50	<50	<5
5.5	<0.005	<0.05	<0.01	<0.1	<10	<30	<50	<50	<5
5.5 DUP	<0.005	<0.05	<0.01	<0.1	<10	<30	<50	<50	<5
6.0	<0.005	<0.05	<0.01	<0.1	<10	<30	<50	<50	<5

17-15 — Date Sampled: 2017 02 02

Depth (mbgs)	B	T	E	X	F1	F2	F3	F4	Pb	PAHs
2.8 – 3.0	<0.005	<0.05	<0.015	<0.1	<10	<25	101	56	4.70	<SEQS

14-4 — Date Sampled: 2014 05 15

Depth (mbgs)	B	T	E	X	F1	F2	F3	F4	Pb
2.25	<0.005	<0.05	<0.01	<0.1	<10	<30	169	<50	<5

14-5 — Date Sampled: 2014 05 15

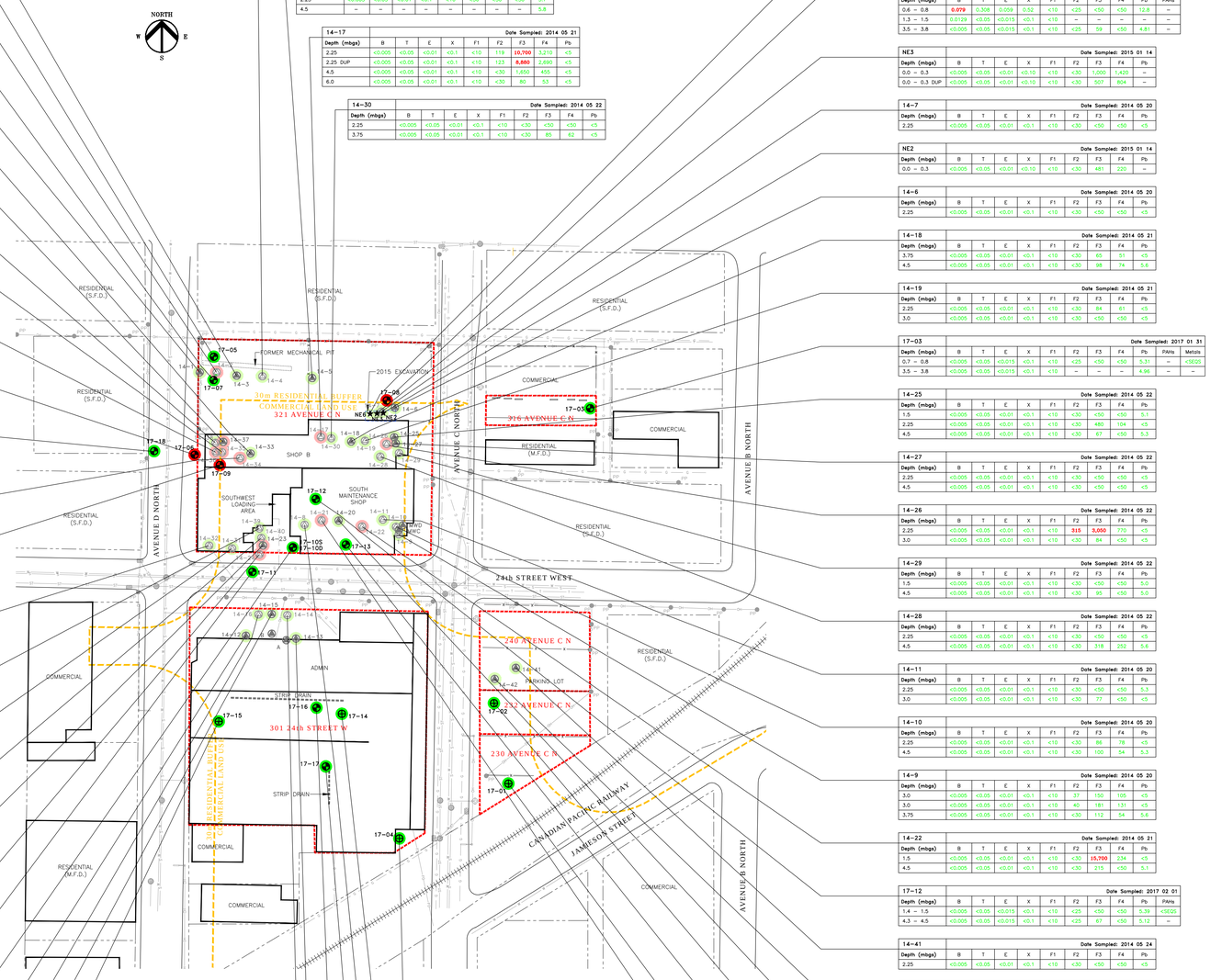
Depth (mbgs)	B	T	E	X	F1	F2	F3	F4	Pb
0.75	<0.005	<0.05	<0.01	<0.1	<10	<30	<50	65	5.7
0.75 DUP	<0.005	<0.05	<0.01	<0.1	<10	<30	<50	<50	<5.0
2.25	<0.005	<0.05	<0.01	<0.1	<10	<30	<50	<50	5.7
4.5	–	–	–	–	–	–	–	–	5.8

14-17 — Date Sampled: 2014 05 21

Depth (mbgs)	B	T	E	X	F1	F2	F3	F4	Pb
2.25	<0.005	<0.05	<0.01	<0.1	<10	119	**10,700**	3,210	<5
2.25 DUP	<0.005	<0.05	<0.01	<0.1	<10	123	**8,880**	2,890	<5
4.5	<0.005	<0.05	<0.01	<0.1	<10	<30	1,650	455	<5
6.0	<0.005	<0.05	<0.01	<0.1	<10	<30	80	53	<5

14-30 — Date Sampled: 2014 05 22

Depth (mbgs)	B	T	E	X	F1	F2	F3	F4	Pb
2.25	<0.005	<0.05	<0.01	<0.1	<10	<30	<50	<50	<5
3.75	<0.005	<0.05	<0.01	<0.1	<10	<30	85	62	<5



NE6 — Date Sampled: 2015 01 14

Depth (mbgs)	B	T	E	X	F1	F2	F3	F4	Pb
0.0 – 0.3	<0.005	<0.05	<0.01	<0.10	<10	<30	442	612	–

17-08 — Date Sampled: 2017 02 01

Depth (mbgs)	B	T	E	X	F1	F2	F3	F4	Pb	PAHs
0.6 – 0.8	**0.079**	0.308	0.059	0.52	<10	<25	<50	<50	12.8	–
1.3 – 1.5	0.0129	<0.05	<0.015	<0.1	<10	–	–	–	–	–
3.5 – 3.8	<0.005	<0.05	<0.015	<0.1	<10	<25	59	<50	4.81	–

NE3 — Date Sampled: 2015 01 14

Depth (mbgs)	B	T	E	X	F1	F2	F3	F4	Pb
0.0 – 0.3	<0.005	<0.05	<0.01	<0.10	<10	<30	1,000	1,420	–
0.0 – 0.3 DUP	<0.005	<0.05	<0.01	<0.10	<10	<30	507	804	–

14-7 — Date Sampled: 2014 05 20

Depth (mbgs)	B	T	E	X	F1	F2	F3	F4	Pb
2.25	<0.005	<0.05	<0.01	<0.1	<10	<30	<50	<50	<5

NE2 — Date Sampled: 2015 01 14

Depth (mbgs)	B	T	E	X	F1	F2	F3	F4	Pb
0.0 – 0.3	<0.005	<0.05	<0.01	<0.10	<10	<30	481	220	–

14-6 — Date Sampled: 2014 05 20

Depth (mbgs)	B	T	E	X	F1	F2	F3	F4	Pb
2.25	<0.005	<0.05	<0.01	<0.1	<10	<30	<50	<50	<5

14-18 — Date Sampled: 2014 05 21

Depth (mbgs)	B	T	E	X	F1	F2	F3	F4	Pb
3.75	<0.005	<0.05	<0.01	<0.1	<10	<30	65	51	<5
4.5	<0.005	<0.05	<0.01	<0.1	<10	<30	98	74	5.6

14-19 — Date Sampled: 2014 05 21

Depth (mbgs)	B	T	E	X	F1	F2	F3	F4	Pb
2.25	<0.005	<0.05	<0.01	<0.1	<10	<30	84	61	<5
3.0	<0.005	<0.05	<0.01	<0.1	<10	<30	<50	<50	<5

17-03 — Date Sampled: 2017 01 31

Depth (mbgs)	B	T	E	X	F1	F2	F3	F4	Pb	PAHs	Metals
0.7 – 0.8	<0.005	<0.05	<0.015	<0.1	<10	<25	<50	<50	5.31	–	<SEQS
3.5 – 3.8	<0.005	<0.05	<0.015	<0.1	<10	–	–	–	4.96	–	–

14-25 — Date Sampled: 2014 05 22

Depth (mbgs)	B	T	E	X	F1	F2	F3	F4	Pb
1.5	<0.005	<0.05	<0.01	<0.1	<10	<30	<50	<50	5.1
2.25	<0.005	<0.05	<0.01	<0.1	<10	<30	480	104	<5
4.5	<0.005	<0.05	<0.01	<0.1	<10	<30	67	<50	5.3

14-27 — Date Sampled: 2014 05 22

Depth (mbgs)	B	T	E	X	F1	F2	F3	F4	Pb
2.25	<0.005	<0.05	<0.01	<0.1	<10	<30	<50	<50	<5
4.5	<0.005	<0.05	<0.01	<0.1	<10	<30	<50	<50	<5

14-26 — Date Sampled: 2014 05 22

Depth (mbgs)	B	T	E	X	F1	F2	F3	F4	Pb
2.25	<0.005	<0.05	<0.01	<0.1	<10	**315**	**3,050**	770	<5
3.0	<0.005	<0.05	<0.01	<0.1	<10	<30	84	<50	<5

14-29 — Date Sampled: 2014 05 22

Depth (mbgs)	B	T	E	X	F1	F2	F3	F4	Pb
1.5	<0.005	<0.05	<0.01	<0.1	<10	<30	<50	<50	5.0
4.5	<0.005	<0.05	<0.01	<0.1	<10	<30	95	<50	5.0

14-28 — Date Sampled: 2014 05 22

Depth (mbgs)	B	T	E	X	F1	F2	F3	F4	Pb
2.25	<0.005	<0.05	<0.01	<0.1	<10	<30	<50	<50	<5
4.5	<0.005	<0.05	<0.01	<0.1	<10	<30	318	252	5.6

14-11 — Date Sampled: 2014 05 20

Depth (mbgs)	B	T	E	X	F1	F2	F3	F4	Pb
2.25	<0.005	<0.05	<0.01	<0.1	<10	<30	<50	<50	5.3
3.0	<0.005	<0.05	<0.01	<0.1	<10	<30	77	<50	<5

14-10 — Date Sampled: 2014 05 20

Depth (mbgs)	B	T	E	X	F1	F2	F3	F4	Pb
2.25	<0.005	<0.05	<0.01	<0.1	<10	<30	86	78	<5
4.5	<0.005	<0.05	<0.01	<0.1	<10	<30	100	54	5.3

14-9 — Date Sampled: 2014 05 20

Depth (mbgs)	B	T	E	X	F1	F2	F3	F4	Pb
3.0	<0.005	<0.05	<0.01	<0.1	<10	37	105	<50	<5
3.0	<0.005	<0.05	<0.01	<0.1	<10	40	181	131	<5
3.75	<0.005	<0.05	<0.01	<0.1	<10	<30	112	54	5.6

14-22 — Date Sampled: 2014 05 21

Depth (mbgs)	B	T	E	X	F1	F2	F3	F4	Pb
1.5	<0.005	<0.05	<0.01	<0.1	<10	<30	**15,700**	234	<5
4.5	<0.005	<0.05	<0.01	<0.1	<10	<30	215	<50	5.1

17-12 — Date Sampled: 2017 02 01

Depth (mbgs)	B	T	E	X	F1	F2	F3	F4	Pb	PAHs
1.4 – 1.5	<0.005	<0.05	<0.015	<0.1	<10	<25	<50	<50	5.39	<SEQS
4.3 – 4.5	<0.005	<0.05	<0.015	<0.1	<10	<25	67	<50	5.12	–

14-41 — Date Sampled: 2014 05 24

Depth (mbgs)	B	T	E	X	F1	F2	F3	F4	Pb
2.25	<0.005	<0.05	<0.01	<0.1	<10	<30	<50	<50	<5

14-42 — Date Sampled: 2014 05 24

Depth (mbgs)	B	T	E	X	F1	F2	F3	F4	Pb
2.25	<0.005	<0.05	<0.01	<0.1	<10	<30	<50	<50	6.1

14-20 — Date Sampled: 2014 05 21

Depth (mbgs)	B	T	E	X	F1	F2	F3	F4	Pb
3.0	<0.005	<0.05	<0.01	<0.1	<10	<30	<50	<50	<5
4.5	<0.005	<0.05	<0.01	<0.1	<10	<30	134	<50	<5

17-02 — Date Sampled: 2017 01 31

Depth (mbgs)	B	T	E	X	F1	F2	F3	F4	Pb	PAHs	Metals
0.0 – 0.2	<0.005	<0.05	0.017	0.34	<10	<25	126	109	149	–	<SEQS
2.8 – 3.0	<0.005	<0.05	<0.015	<0.1	<10	<25	<50	<50	–	–	–

17-13 — Date Sampled: 2017 02 02

Depth (mbgs)	B	T	E	X	F1	F2	F3	F4	Pb	PAHs
1.3 – 1.5	<0.005	<0.05	<0.015	<0.1	<10	<25	<50	<50	7.08	<SEQS
2.8 – 3.0	<0.005	<0.05	<0.015	<0.1	<10	<25	<50	<50	2.65	–
4.3 – 4.5	<0.005	<0.05	<0.015	<0.1	<10	<25	92	<50	5.44	–

17-01 — Date Sampled: 2017 01 31

Depth (mbgs)	B	T	E	X	F1	F2	F3	F4	Pb	PAHs	Metals
1.4 – 1.5	<0.005	<0.05	<0.015	<0.1	<10	<25	<50	<50	5.55	<SEQS	<SEQS
2.8 – 3.0	<0.005	<0.05	<0.015	<0.1	<10	<25	<50	<50	4.10	–	–

14-21 — Date Sampled: 2014 05 21

Depth (mbgs)	B	T	E	X	F1	F2	F3	F4	Pb
1.5	<0.005	<0.05	<0.01	<0.1	<10	89	**17,700**	268	12.8
4.5	<0.005	<0.05	<0.01	<0.1	<10	<30	124	<50	5.2

17-04 — Date Sampled: 2017 01 31

Depth (mbgs)	B	T	E	X	F1	F2	F3	F4	Pb	PAHs
3.4 – 3.7	<0.005	<0.05	<0.015	<0.1	<10	–	–	–	5.26	<SEQS

17-14 — Date Sampled: 2017 02 02

Depth (mbgs)	B	T	E	X	F1	F2	F3	F4	Pb	PAHs
2.1 – 2.3	<0.005	<0.05	<0.015	<0.1	<10	<25	<50	<50	5.93	<SEQS

14-14 — Date Sampled: 2014 05 21

Depth (mbgs)	B	T	E	X	F1	F2	F3	F4	Pb
2.25	<0.005	<0.05	<0.01	<0.1	<10	<30	<50	<50	<5
5.5	<0.005	<0.05	<0.01	<0.1	<10	<30	<50	<50	<5

14-13 — Date Sampled: 2014 05 21

Depth (mbgs)	B	T	E	X	F1	F2	F3	F4	Pb
2.25	<0.005	<0.05	<0.01	<0.1	<10	<30	63	<50	<5
4.5	<0.005	<0.05	<0.01	<0.1	<10	<30	81	<50	5.1

14-8 — Date Sampled: 2014 05 20

Depth (mbgs)	B	T	E	X	F1	F2	F3	F4	Pb
2.25	<0.005	<0.05	<0.01	<0.1	<10	<30	94	57	<5
4.5	<0.005	<0.05	<0.01	<0.1	<10	<30	94	57	<5

17-16 — Date Sampled: 2017 02 02

Depth (mbgs)	B	T	E	X	F1	F2	F3	F4	Pb	PAHs
3.0 – 3.2	<0.005	<0.05	<0.015	<0.1	<10	<25	<50	<50	3.83	<SEQS
5.1 – 5.3	<0.005	<0.05	<0.015	<0.1	<10	<25	74	<50	5.56	–

17-17 — Date Sampled: 2017 02 02

Depth (mbgs)	B	T	E	X	F1	F2	F3	F4	Pb	PAHs
2.0 – 2.2	<0.005	<0.05	<0.015	<0.1	<10	<25	<50	<50	8.15	<SEQS
3.8 – 3.8	<0.005	<0.05	<0.015	<0.1	<10	<25	88	<50	5.31	–

LEGEND

- MONITORING WELL (SNC-LAVALIN)
- BOREHOLE (SNC-LAVALIN)
- MONITORING WELL (BY OTHERS)
- TESTHOLE (BY OTHERS)
- EXCAVATION SAMPLE LOCATION
- SITE PROPERTY LINE
- LOT LINE
- FENCE LINE
- RAIL LINE
- UNDERGROUND ELECTRICAL LINE
- OVERHEAD ELECTRICAL LINE
- CITY FIBRE OPTIC LINE
- GAS LINE
- SANITARY SEWER LINE
- STORM LINE
- TELEPHONE LINE
- WATER LINE
- POWER POLE
- FIRE HYDRANT
- CATCH BASIN
- MANHOLE
- 30m RESIDENTIAL BUFFER
- LOCATION WHERE ALL SOIL SAMPLES MEET APPLICABLE GUIDELINE FOR ALL PARAMETERS ANALYZED, SHOWN IN GREEN
- LOCATION WHERE AT LEAST ONE SOIL SAMPLE EXCEEDS APPLICABLE GUIDELINE FOR AT LEAST ONE PARAMETER ANALYZED, SHOWN IN RED
- HISTORICAL LOCATION WHERE ALL SOIL SAMPLES MEET APPLICABLE GUIDELINE FOR ALL PARAMETERS ANALYZED, SHOWN IN LIGHT GREEN
- HISTORICAL LOCATION WHERE AT LEAST ONE SOIL SAMPLE EXCEEDS APPLICABLE GUIDELINE FOR AT LEAST ONE PARAMETER ANALYZED, SHOWN IN LIGHT RED

NOTES

1. ORIGINAL DRAWING IN COLOUR.
2. LOCATION OF FACILITIES AND UTILITIES SHOWN ARE APPROXIMATE ONLY AND SHOULD BE CONFIRMED PRIOR TO INVESTIGATIVE WORK. NOT ALL FACILITIES OR UTILITIES MAY BE SHOWN.
3. COORDINATE SYSTEM: NAD 1983 UTM ZONE 13N.
4. GUIDELINES BASED ON APPLICABLE CRITERIA AS DEFINED WITHIN THE BODY OF SNC-LAVALIN'S REPORT.
5. ALL RESULTS REPORTED IN MILLIGRAMS PER KILOGRAM (mg/kg).

SOIL GUIDELINES (mg/kg)[a]	B	T	E	X	F1	F2	F3	F4	Pb
Commercial Land Use – Surface Soil ≤1.5 mbgs	0.9	250	300	140	320	260	1,700	3,300	260
Commercial Land Use – Subsoil >1.5–≤3.0 mbgs	1.2	500	600	210	320	520	3,400	6,600	600
Commercial Land Use – Subsoil >3.0 mbgs	1.2	1,600	760	210	1,000	3,500	10,000	n/a	
30m Residential Buffer – Surface Soil ≤1.5 mbgs	0.073	75	44	12	30	150	300	2,800	140
30m Residential Buffer– Subsoil >1.5–≤3.0 mbgs	0.1	130	60	16	30	150	600	5,600	300
30m Residential Buffer– Subsoil >3.0 mbgs	0.1	130	60	16	30	150	2,500	10,000	n/a

a SNoE (2017) Tier 2 Saskatchewan Environmental Quality Standards (SEQS) for commercial land use with a 30m residential buffer and coarse-grained soil

mbgs	METRES BELOW GROUND SURFACE	–	NOT ANALYZED
<	LESS THAN	B	BENZENE
T	TOLUENE	E	ETHYLBENZENE
X	XYLENES	F1	PETROLEUM HYDROCARBON FRACTION 1 (C6–C10 minus BTEX)
F2	PETROLEUM HYDROCARBON FRACTION 2 (>C10–C16)	F3	PETROLEUM HYDROCARBON FRACTION 3 (>C16–C34)
F4	PETROLEUM HYDROCARBON FRACTION 4 (>C34)	PAHs	POLYCYCLIC AROMATIC HYDROCARBONS
Pb	LEAD	DUP	FIELD DUPLICATE SAMPLE

REFERENCE DRAWINGS

No.	DATE	DESCRIPTION
–	–	–
–	–	–

REVISIONS

REV.	DATE	DESCRIPTION	BY	CHK
–	–	–	–	–
–	–	–	–	–
–	–	–	–	–
–	–	–	–	–
0	–	–	–	–

2 10 20 40 60 80 100 METRES

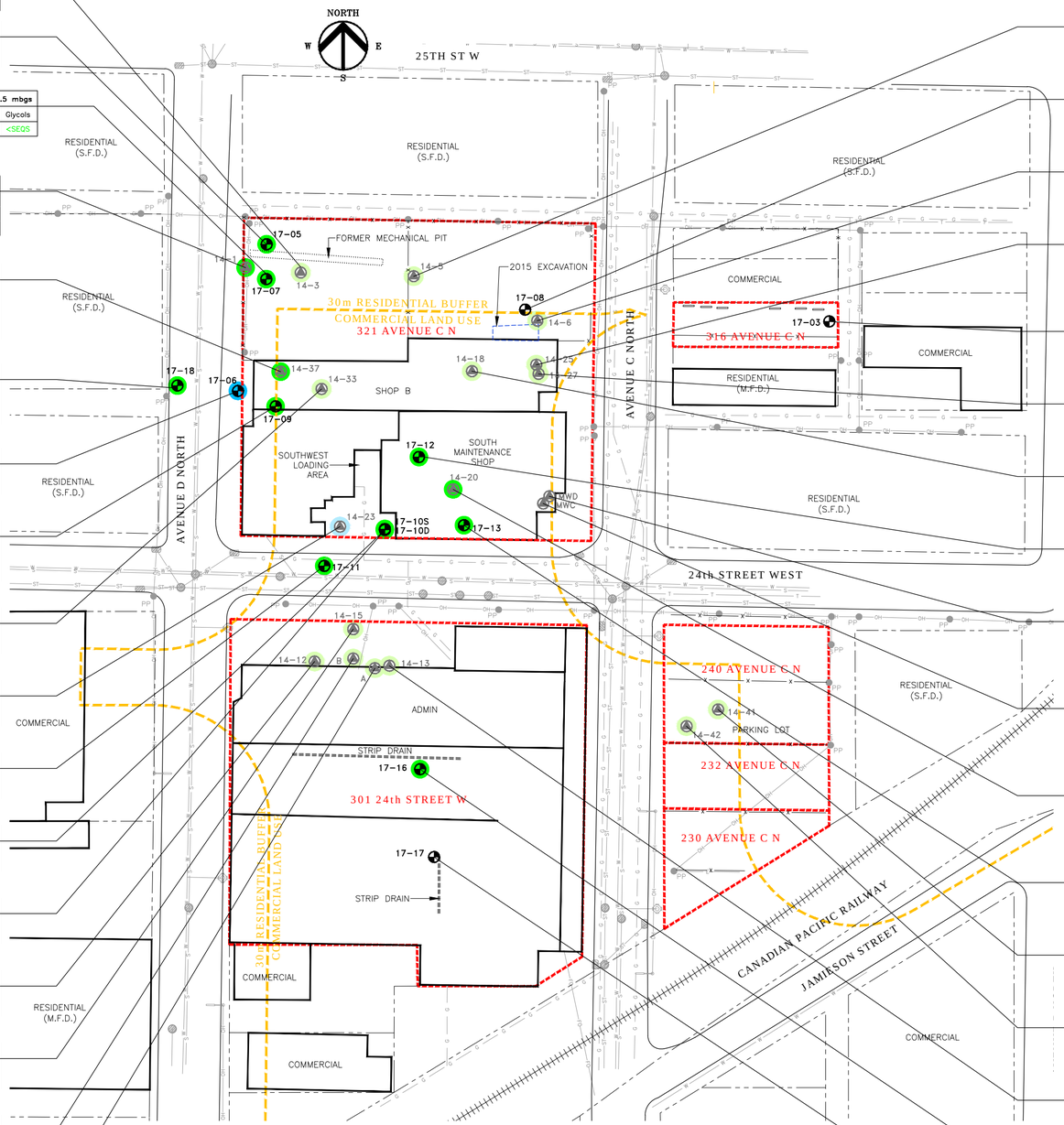
SNC·LAVALIN

CLIENT NAME:
CITY OF SASKATOON

PROJECT LOCATION:
FORMER TRANSIT FACILITY
SASKATOON, SASKATCHEWAN

DRAWING 4: SOIL ANALYTICAL RESULTS

DWN BY: CDM	SCALE: 1:1,000	DATE: 2017 03 17	SERIES No:	REV.: 0
CHK'D: TL	PLOT: 20170620.0553	CADFILE: 644079R00	644079-004	



14-3	Screen Interval: 2.7 – 4.2 mbgs									
Date (yyyymmdd)	B	T	E	X	F1	F2	F3	F4	Pb	PAHs
2014 06 26	<0.0005	<0.005	<0.0005	<0.002	<0.2	<0.2	–	–	0.000067	–

17-05	Screen Interval: 1.9 – 3.4 mbgs										
Date (yyyymmdd)	B	T	E	X	F1	F2	F3	F4	Pb	PAHs	VOCs
2017 02 06	<0.0005	<0.0005	<0.0005	<0.00071	<0.1	<0.2	<0.3	<0.3	<0.00005	<SEQS	<SEQS

17-07	Screen Interval: 2.0 – 3.5 mbgs											
Date (yyyymmdd)	B	T	E	X	F1	F2	F3	F4	Pb	PAHs	VOCs	Glycols
2017 02 06	<0.0005	<0.0005	<0.0005	<0.00071	<0.1	<0.2	<0.3	<0.3	<0.00005	<SEQS	<SEQS	<SEQS

14-1	Screen Interval: 2.7 – 4.2 mbgs									
Date (yyyymmdd)	B	T	E	X	F1	F2	F3	F4	Pb	PAHs
2014 06 26	<0.0005	<0.005	<0.0005	<0.002	<0.2	<0.2	–	–	<0.00005	–
2017 02 06	<0.0005	<0.0005	<0.0005	<0.00071	<0.1	<0.2	<0.3	<0.3	<0.0001	<SEQS

14-37	Screen Interval: 1.5 – 3.0 mbgs									
Date (yyyymmdd)	B	T	E	X	F1	F2	F3	F4	Pb	PAHs
2014 06 26	<0.0005	<0.005	<0.0005	<0.002	<0.2	0.60	–	–	–	–
2014 06 26 DUP	<0.0005	<0.005	<0.0005	<0.002	<0.2	0.64	–	–	–	–
2017 02 06	<0.0005	<0.0005	<0.0005	<0.00071	<0.1	0.54	0.34	<0.3	–	–

17-18	Screen Interval: 1.7 – 3.2 mbgs									
Date (yyyymmdd)	B	T	E	X	F1	F2	F3	F4	Pb	PAHs
2017 06 08	–	–	–	–	–	<0.10	<0.10	<0.20	–	–
2017 06 08 DUP	–	–	–	–	–	<0.10	<0.10	<0.20	–	–

17-06	Screen Interval: 2.0 – 3.5 mbgs									
Date (yyyymmdd)	B	T	E	X	F1	F2	F3	F4	Pb	PAHs
2017 02 06	0.00057	0.00052	0.00406	0.0222	0.37	**6.21**	2.31	<0.3	0.0016	<SEQS

17-09	Screen Interval: 2.0 – 3.5 mbgs									
Date (yyyymmdd)	B	T	E	X	F1	F2	F3	F4	Pb	PAHs
2017 02 06	<0.0005	<0.0005	<0.0005	<0.00071	<0.1	0.26	<0.3	<0.3	0.000064	<SEQS
2017 02 06 DUP	<0.0005	<0.0005	<0.0005	<0.00071	<0.1	0.46	<0.3	<0.3	0.000071	<SEQS

14-33	Screen Interval: 1.5 – 3.0 mbgs									
Date (yyyymmdd)	B	T	E	X	F1	F2	F3	F4	Pb	PAHs
2014 06 26	<0.0005	<0.005	<0.0005	<0.002	<0.2	<0.2	–	–	–	–

14-23	Screen Interval: 2.0 – 3.5 mbgs									
Date (yyyymmdd)	B	T	E	X	F1	F2	F3	F4	Pb	PAHs
2014 06 26	<0.0005	<0.005	<0.0005	<0.002	3.52	**136**	–	–	0.000155	–

17-11	Screen Interval: 2.0 – 3.5 mbgs									
Date (yyyymmdd)	B	T	E	X	F1	F2	F3	F4	Pb	PAHs
2017 02 06	<0.0005	<0.0005	0.00547	0.00179	0.17	0.47	<0.3	<0.3	<0.00005	<SEQS

17-10S	Screen Interval: 2.0 – 3.5 mbgs									
Date (yyyymmdd)	B	T	E	X	F1	F2	F3	F4	Pb	PAHs
2017 02 06	<0.0005	<0.0005	<0.0005	<0.00071	<0.1	<0.2	<0.3	<0.3	<0.00005	<SEQS

17-10D	Screen Interval: 4.8 – 5.8 mbgs									
Date (yyyymmdd)	B	T	E	X	F1	F2	F3	F4	Pb	PAHs
2017 02 06	<0.0005	<0.0005	<0.0005	<0.00071	<0.1	<0.2	<0.3	<0.3	<0.00005	<SEQS

14-12	Screen Interval: 2.7 – 4.2 mbgs									
Date (yyyymmdd)	B	T	E	X	F1	F2	F3	F4	Pb	PAHs
2014 06 26	<0.0005	<0.005	<0.0005	<0.002	<0.2	<0.2	–	–	–	–

14-15	Screen Interval: 3.6 – 5.1 mbgs									
Date (yyyymmdd)	B	T	E	X	F1	F2	F3	F4	Pb	PAHs
2014 06 26	<0.0005	<0.005	<0.0005	<0.002	<0.2	<0.2	–	–	–	–

MWB	Screen Interval: Unknown									
Date (yyyymmdd)	B	T	E	X	F1	F2	F3	F4	Pb	PAHs
2014 06 26	<0.0005	<0.005	<0.0005	<0.002	<0.2	<0.2	–	–	–	–

MWA	Screen Interval: Unknown									
Date (yyyymmdd)	B	T	E	X	F1	F2	F3	F4	Pb	PAHs
2014 06 26	<0.0005	<0.005	<0.0005	<0.002	<0.2	<0.2	–	–	–	–

14-5	Screen Interval: 2.2 – 3.6 mbgs									
Date (yyyymmdd)	B	T	E	X	F1	F2	F3	F4	Pb	PAHs
2014 06 26	<0.0005	<0.005	<0.0005	<0.002	<0.2	0.23	–	–	–	–

17-08	Screen Interval: 2.0 – 3.5 mbgs									
Date (yyyymmdd)	B	T	E	X	F1	F2	F3	F4	Pb	PAHs
2017 02 06	UNABLE TO SAMPLE – WELL DRY									

14-6	Screen Interval: 3.3 – 4.2 mbgs									
Date (yyyymmdd)	B	T	E	X	F1	F2	F3	F4	Pb	PAHs
2017 02 06	UNABLE TO SAMPLE – COULD NOT LOCATE									

14-25	Screen Interval: 2.7 – 4.2 mbgs									
Date (yyyymmdd)	B	T	E	X	F1	F2	F3	F4	Pb	PAHs
2014 06 26	<0.0005	<0.005	<0.0005	<0.002	<0.2	0.32	–	–	–	–
2014 06 26 DUP	<0.0005	<0.005	<0.0005	<0.002	<0.2	0.21	–	–	–	–

17-03	Screen Interval: 2.3 – 3.8 mbgs									
Date (yyyymmdd)	B	T	E	X	F1	F2	F3	F4	Pb	PAHs
2017 02 06	UNABLE TO SAMPLE – WELL DRY									

14-27	Screen Interval: 1.5 – 3.0 mbgs									
Date (yyyymmdd)	B	T	E	X	F1	F2	F3	F4	Pb	PAHs
2014 06 26	<0.0005	<0.005	<0.0005	<0.002	<0.2	<0.2	–	–	–	–

14-18	Screen Interval: 3.0 – 4.5 mbgs									
Date (yyyymmdd)	B	T	E	X	F1	F2	F3	F4	Pb	PAHs
2014 06 26	<0.0005	<0.005	<0.0005	<0.002	<0.2	<0.2	–	–	–	–

17-12	Screen Interval: 2.0 – 3.5 mbgs									
Date (yyyymmdd)	B	T	E	X	F1	F2	F3	F4	Pb	PAHs
2017 02 06	<0.0005	<0.0005	<0.0005	<0.00071	<0.1	<0.2	<0.3	<0.3	<0.00005	<SEQS

MWD	Screen Interval: Unknown									
Date (yyyymmdd)	B	T	E	X	F1	F2	F3	F4	Pb	PAHs
2014 06 26	UNABLE TO SAMPLE – WELL DRY									
2017 02 06	UNABLE TO SAMPLE – WELL DRY									

MWC	Screen Interval: Unknown									
Date (yyyymmdd)	B	T	E	X	F1	F2	F3	F4	Pb	PAHs
2014 06 26	UNABLE TO SAMPLE – WELL DRY									
2017 02 06	UNABLE TO SAMPLE – WELL DRY									

14-20	Screen Interval: 2.0 – 3.5 mbgs									
Date (yyyymmdd)	B	T	E	X	F1	F2	F3	F4	Pb	PAHs
2014 06 26	<0.0005	<0.005	<0.0005	<0.002	<0.2	0.26	–	–	–	–
2017 02 06	<0.0005	<0.0005	<0.0005	<0.00071	<0.1	<0.2	<0.3	<0.3	–	<SEQS

17-13	Screen Interval: 2.2 – 3.7 mbgs									
Date (yyyymmdd)	B	T	E	X	F1	F2	F3	F4	Pb	PAHs
2017 02 06	<0.0005	<0.0005	<0.0005	<0.00071	<0.1	<0.2	<0.3	<0.3	<0.00005	<SEQS

14-41	Screen Interval: 3.0 – 4.5 mbgs									
Date (yyyymmdd)	B	T	E	X	F1	F2	F3	F4	Pb	PAHs
2014 06 26	<0.0005	<0.005	<0.0005	<0.002	<0.2	<0.2	–	–	–	–

14-42	Screen Interval: 2.1 – 3.6 mbgs									
Date (yyyymmdd)	B	T	E	X	F1	F2	F3	F4	Pb	PAHs
2014 06 26	<0.0005	<0.005	<0.0005	<0.002	<0.2	<0.2	–	–	–	–

14-13	Screen Interval: 2.7 – 4.2 mbgs									
Date (yyyymmdd)	B	T	E	X	F1	F2	F3	F4	Pb	PAHs
2014 06 26	<0.0005	<0.005	<0.0005	<0.002	<0.2	<0.2	–	–	–	–

17-16	Screen Interval: 2.0 – 3.5 mbgs									
Date (yyyymmdd)	B	T	E	X	F1	F2	F3	F4	Pb	PAHs
2017 02 06	<0.0005	<0.0005	<0.0005	<0.00071	<0.1	0.39	<0.3	<0.3	<0.0001	<SEQS

17-17	Screen Interval: 2.0 – 3.5 mbgs									
Date (yyyymmdd)	B	T	E	X	F1	F2	F3	F4	Pb	PAHs
2017 02 06	UNABLE TO SAMPLE – WELL DRY									

GROUNDWATER GUIDELINES (mg/L) [a]	B	T	E	X	F1	F2	F3	F4	Pb
Commercial Land Use	1.8	200	76	9.0	9.1	3.1	n/a	n/a	n/a
30m Residential Buffer	0.14	59	16	3.9	0.81	1.5	n/a	n/a	n/a

a SMOE (2017) Tier 2 Saskatchewan Environmental Quality Standards (SEQS) for commercial land use with a 30m residential buffer and coarse-grained soil.

mbgs	METRES BELOW GROUND SURFACE		
<	LESS THAN	–	NOT ANALYZED
B	BENZENE	T	TOLUENE
E	ETHYLBENZENE	X	XYLENES
F1	PETROLEUM HYDROCARBON FRACTION 1 (C6–C10 minus BTEX)		
F2	PETROLEUM HYDROCARBON FRACTION 2 (>C10–C16)		
Pb	DISSOLVED LEAD		
PAHs	POLYCYCLIC AROMATIC HYDROCARBONS		
VOCs	VOLATILE ORGANIC COMPOUNDS		
DUP	FIELD DUPLICATE SAMPLE		

LEGEND

0 10 20 30 40 50 METRES

- MONITORING WELL (SNC–LAVALIN)
- MONITORING WELL (BY OTHERS)
- SITE PROPERTY LINE
- LOT LINE
- FENCE LINE
- RAIL LINE
- UNDERGROUND ELECTRICAL LINE
- OVERHEAD ELECTRICAL LINE
- CITY FIBRE OPTIC LINE
- GAS LINE
- SANITARY SEWER LINE
- STORM LINE
- TELEPHONE LINE
- WATER LINE
- POWER POLE
- FIRE HYDRANT
- CATCH BASIN
- MANHOLE
- 30m RESIDENTIAL BUFFER

- LOCATION WHERE MOST RECENT GROUNDWATER SAMPLING EVENT MEETS APPLICABLE GUIDELINE FOR ALL PARAMETERS ANALYZED, SHOWN IN GREEN
- LOCATION WHERE MOST RECENT GROUNDWATER SAMPLING EVENT EXCEEDS APPLICABLE GUIDELINE FOR AT LEAST ONE PARAMETER ANALYZED, SHOWN IN BLUE
- HISTORICAL LOCATION WHERE MOST RECENT GROUNDWATER SAMPLING EVENT MEETS APPLICABLE GUIDELINE FOR ALL PARAMETERS ANALYZED, SHOWN IN LIGHT GREEN
- HISTORICAL LOCATION WHERE MOST RECENT GROUNDWATER SAMPLING EVENT EXCEEDS APPLICABLE GUIDELINE FOR AT LEAST ONE PARAMETER ANALYZED, SHOWN IN LIGHT BLUE

NOTES

1. ORIGINAL DRAWING IN COLOUR.
2. LOCATION OF FACILITIES AND UTILITIES SHOWN ARE APPROXIMATE ONLY AND SHOULD BE CONFIRMED PRIOR TO INVESTIGATIVE WORK. NOT ALL FACILITIES OR UTILITIES MAY BE SHOWN.
3. COORDINATE SYSTEM: NAD 1983 UTM ZONE 13N.
4. GUIDELINES BASED ON APPLICABLE CRITERIA AS DEFINED WITHIN THE BODY OF SNC–LAVALIN'S REPORT.
5. ALL RESULTS REPORTED IN MILLIGRAMS PER LITRE (mg/L).

REFERENCE DRAWINGS

–	–	–
DWG. NO.	DATE	DESCRIPTION

REVISIONS

REV.	DATE	DESCRIPTION	BY	CHK
0	–	–	–	–

SNC·LAVALIN

CLIENT NAME: CITY OF SASKATOON

PROJECT LOCATION: FORMER TRANSIT FACILITY SASKATOON, SASKATCHEWAN

DRAWING 5: GROUNDWATER ANALYTICAL RESULTS

DWN BY: CDM	SCALE: 1:1,000	DATE: 2017 02 28	SERIES No: REV.: 0
CHK'D: TL	PLOT: 20170620.0600	CADFILE: 644079R00	644079-005

Tables

1 Soil Analytical Results – Grain Size

2 Soil Analytical Results – Petroleum Hydrocarbons and Lead

3 Soil Analytical Results – Polycyclic Aromatic Hydrocarbons

4 Soil Analytical Results – Total Metals

5 Soil Analytical Results – Volatile Organic Compounds

6 Soil Analytical Results – Glycols

7 Groundwater Analytical Results – Petroleum Hydrocarbons and Dissolved Lead

8 Groundwater Analytical Results – Dissolved Metals

9 Groundwater Analytical Results – Polycyclic Aromatic Hydrocarbons

10 Groundwater Analytical Results – Volatile Organic Compounds

11 Groundwater Analytical Results – Glycols

TABLE 1: Soil Analytical Results - Grain Size

Sample Location	Sample ID	Sample Date (yyyy mm dd)	Depth Interval (m)	Grain Size
				Sieve Analysis - 75 %
Reported Detection Limit				1.0
17-01	17-01-02	2017 01 31	1.4 - 1.5	64.4
	17-01-04	2017 01 31	2.8 - 3.0	94.0
17-02	17-02-01	2017 01 31	0.0 - 0.2	71.4

Associated ALS file(s): L1887184.
All terms defined within the body of SNC-Lavalin's report.

TABLE 2: Soil Analytical Results - Petroleum Hydrocarbons and Lead

Sample Location	Sample ID	Sample Date (yyyy mm dd)	Depth Interval (m)	Field Screen (ppm)	Monocyclic Aromatic Hydrocarbons				Petroleum Hydrocarbon Fractions				Total Metals
					Benzene mg/kg	Toluene mg/kg	Ethyl-benzene mg/kg	Xylenes mg/kg	F1-BTEX (C6-C10) mg/kg	F2 (>C10-C16) mg/kg	F3 (>C16-C34) mg/kg	F4 (>C34-C50) mg/kg	Lead mg/kg
Reported Detection Limit					0.0050	0.050	0.015	0.10	10	25	50	50	0.50
17-01	17-01-02	2017 01 31	1.4 - 1.5	0	< 0.0050	< 0.050	< 0.015	< 0.10	< 10	< 25	< 50	< 50	5.55
	17-01-04	2017 01 31	2.8 - 3.0	20	< 0.0050	< 0.050	< 0.015	< 0.10	< 10	< 25	< 50	< 50	4.10
17-02	17-02-01	2017 01 31	0.0 - 0.2	0	< 0.0050	< 0.050	0.017	0.34	< 10	< 25	126	109	149
	17-02-05	2017 01 31	2.8 - 3.0	15	< 0.0050	< 0.050	< 0.015	< 0.10	< 10	< 25	< 50	< 50	-
17-03[a]	17-03-01	2017 01 31	0.7 - 0.8	0	< 0.0050	< 0.050	< 0.015	< 0.10	< 10	< 25	< 50	< 50	5.31
	17-03-05	2017 01 31	3.5 - 3.8	0	< 0.0050	< 0.050	< 0.015	< 0.10	< 10	-	-	-	4.96
17-04	17-04-05	2017 01 31	3.4 - 3.7	0	< 0.0050	< 0.050	< 0.015	< 0.10	< 10	-	-	-	5.26
17-05[a]	17-05-01	2017 01 31	0.7 - 0.8	0	0.0317	0.229	0.077	0.48	< 10	< 25	< 50	< 50	6.80
17-06[a]	17-06-03	2017 01 31	2.2 - 2.3	10	< 0.0050	< 0.050	< 0.015	< 0.10	< 10	349	409	< 50	4.27
	17-06-04	2017 01 31	3.7 - 3.8	25	< 0.0050	< 0.050	< 0.015	< 0.10	< 10	-	-	-	4.86
	17-06-05	Duplicate of 17-06-04			< 0.0050	< 0.050	< 0.015	< 0.10	< 10	-	-	-	4.83
	QA/QC RPD%				*	*	*	*	*	-	-	-	1
17-07[a]	17-07-03	2017 01 31	2.2 - 2.3	0	< 0.0050	< 0.050	< 0.015	< 0.10	< 10	< 25	< 50	< 50	8.04
17-08[a]	17-08-02	2017 02 01	0.6 - 0.8	75	0.0790	0.308	0.059	0.52	< 10	< 25	< 50	< 50	12.8
	17-08-03	2017 02 01	1.3 - 1.5	5	0.0129	< 0.050	< 0.015	< 0.10	< 10	-	-	-	-
	17-08-06	2017 02 01	3.5 - 3.8	0	< 0.0050	< 0.050	< 0.015	< 0.10	< 10	< 25	59	< 50	4.81
17-09[a]	17-09-04	2017 02 01	2.0 - 2.2	20	< 0.0050	< 0.050	0.024	0.14	134	5,040	9,360	3,620	7.64
	17-09-05	2017 02 01	2.2 - 2.4	20	< 0.0050	< 0.050	< 0.015	< 0.10	18	550	1,710	905	5.93
	17-09-07	2017 02 01	3.5 - 3.8	25	< 0.0050	< 0.050	< 0.015	< 0.10	< 10	< 25	68	< 50	5.16
	17-09-08	Duplicate of 17-09-07			< 0.0050	< 0.050	< 0.015	< 0.10	< 10	-	-	-	-
	QA/QC RPD%				*	*	*	*	*	-	-	-	-
	17-09-10	2017 02 01	4.8 - 5.0	35	< 0.0050	< 0.050	< 0.015	< 0.10	< 10	< 25	55	< 50	5.44
SMoE (2016) Standards													
SEQS Tier 2 Commercial Land Use, Coarse-Grained Surface Soil (< 1.5 mbgs)[b]					0.9	250	300	140	320	260	1,700	3,300	260
SEQS Tier 2 Commercial Land Use, Coarse-Grained Subsoil (> 1.5 - ≤ 3.0 mbgs)[c]					1.2	500	600	210	320	520	3,400	6,600	600
SEQS Tier 2 Commercial Land Use, Coarse-Grained Subsoil (> 3.0 mbgs)[d]					1.2	1,600	760	210	320	1,000	3,500	10,000	n/a
SEQS Tier 2 30m Residential Buffer Zone, Coarse-Grained Surface Soil (< 1.5 mbgs)[b]					0.073	75	44	12	30	150	300	2,800	140
SEQS Tier 2 30m Residential Buffer Zone, Coarse-Grained Subsoil (> 1.5 - ≤ 3.0 mbgs)[c]					0.1	130	60	16	30	150	600	5,600	300
SEQS Tier 2 30m Residential Buffer Zone, Coarse-Grained Subsoil (> 3.0 mbgs)[d]					0.1	130	60	16	30	150	2,500	10,000	n/a

Associated ALS file(s): L1887184.
Associated Maxxam file(s): B745843.
All terms defined within the body of SNC-Lavalin's report.
< Denotes concentration less than indicated detection limit or RPD less than indicated value.
- Denotes analysis not conducted.
RPD Denotes relative percent difference.
* RPDs are not calculated where one or more concentrations are less than five times RDL.
RDL Denotes reported detection limit.

BOLD	Concentration greater than the SEQS Tier 2 Commercial Land Use, Coarse-Grained Surface Soil Standards.
SHADOW	Concentration greater than the SEQS Tier 2 Commercial Land Use, Coarse-Grained Subsoil Standards.
SHADED	Concentration greater than the SEQS Tier 2 30m Residential Buffer Zone, Coarse-Grained Surface Soil Standards.
INVERSE	Concentration greater than the SEQS Tier 2 30m Residential Buffer Zone, Coarse-Grained Subsoil Standards.

[a] Sample location is situated within a 30m buffer zone for Residential Land Use.
[b] Pathways Included: Dermal Contact, Ecological Contact, Management Limit, Soil Ingestion, Vapour Inhalation (basement), Vapour Inhalation (slab-on-grade), whichever is most stringent.
[c] Pathways Included: Ecological Contact, Management Limit, Vapour Inhalation (basement), Vapour Inhalation (slab-on-grade), whichever is most stringent.
[d] Pathways Included: Management Limit, Vapour Inhalation (basement), Vapour Inhalation (slab-on-grade), whichever is most stringent.

TABLE 2 (Cont'd): Soil Analytical Results - Petroleum Hydrocarbons and Lead

Sample Location	Sample ID	Sample Date (yyyy mm dd)	Depth Interval (m)	Field Screen (ppm)	Monocyclic Aromatic Hydrocarbons				Petroleum Hydrocarbon Fractions				Total Metals
					Benzene mg/kg	Toluene mg/kg	Ethyl-benzene mg/kg	Xylenes mg/kg	F1-BTEX (C6-C10) mg/kg	F2 (>C10-C16) mg/kg	F3 (>C16-C34) mg/kg	F4 (>C34-C50) mg/kg	Lead mg/kg
Reported Detection Limit					0.0050	0.050	0.015	0.10	10	25	50	50	0.50
17-10D	17-10-03	2017 02 01	2.2 - 2.3	55	< 0.0050	< 0.050	< 0.015	< 0.10	< 10	< 25	< 50	< 50	4.00
	17-10-05	2017 02 01	3.6 - 3.8	50	< 0.0050	< 0.050	< 0.015	< 0.10	< 10	< 25	61	< 50	4.94
	17-10-08	2017 02 01	5.7 - 5.8	65	< 0.0050	< 0.050	< 0.015	< 0.10	< 10	< 25	50	< 50	4.91
17-11	17-11-03	2017 02 01	2.1 - 2.4	45	< 0.0050	< 0.050	< 0.015	< 0.10	< 10	< 25	69	< 50	4.69
	17-11-05	2017 02 01	3.5 - 3.8	55	< 0.0050	< 0.050	< 0.015	< 0.10	< 10	< 25	94	< 50	5.10
	17-11-06	Duplicate of 17-11-05			< 0.0050	< 0.050	< 0.015	< 0.10	< 10	< 25	96	< 50	5.16
	QA/QC RPD%				*	*	*	*	*	*	*	*	1
17-12	17-12-02	2017 02 01	1.4 - 1.5	15	< 0.0050	< 0.050	< 0.015	< 0.10	< 10	< 25	< 50	< 50	5.39
	17-12-06	2017 02 01	4.3 - 4.5	15	< 0.0050	< 0.050	< 0.015	< 0.10	< 10	< 25	67	< 50	5.12
17-13	17-13-02	2017 02 02	1.3 - 1.5	15	< 0.0050	< 0.050	< 0.015	< 0.10	< 10	< 25	< 50	< 50	7.08
	17-13-04	2017 02 02	2.8 - 3.0	175	< 0.0050	< 0.050	< 0.015	< 0.10	< 10	< 25	< 50	< 50	2.65
	17-13-06	2017 02 02	4.3 - 4.5	15	< 0.0050	< 0.050	< 0.015	< 0.10	< 10	< 25	92	< 50	5.44
17-14	17-14-03	2017 02 02	2.1 - 2.3	0	< 0.0050	< 0.050	< 0.015	< 0.10	< 10	< 25	< 50	< 50	5.93
17-15	17-15-04	2017 02 02	2.8 - 3.0	5	< 0.0050	< 0.050	< 0.015	< 0.10	< 10	< 25	101	56	4.70
17-16	17-16-04	2017 02 02	3.0 - 3.2	75	< 0.0050	< 0.050	< 0.015	< 0.10	< 10	< 25	< 50	< 50	3.83
	17-16-07	2017 02 02	5.1 - 5.3	20	< 0.0050	< 0.050	< 0.015	< 0.10	< 10	< 25	74	< 50	5.56
17-17	17-17-03	2017 02 02	2.0 - 2.2	25	< 0.0050	< 0.050	< 0.015	< 0.10	< 10	< 25	< 50	< 50	8.15
	17-17-06	2017 02 02	3.6 - 3.8	20	< 0.0050	< 0.050	< 0.015	< 0.10	< 10	< 25	88	< 50	5.31
17-18[a]	17-18-01	2017 06 07	0.8 - 0.9	35	-	-	-	-	-	< 10	< 50	< 50	-
	17-18-02	2017 06 07	2.3 - 2.4	0	-	-	-	-	-	< 10	< 50	< 50	-
	17-18-03	Duplicate of 17-18-02			-	-	-	-	-	< 10	< 50	< 50	-
	QA/QC RPD%				-	-	-	-	-	*	*	*	-
	17-18-04	2017 06 07	3.0 - 3.1	0	-	-	-	-	-	< 10	< 50	< 50	-
SMoE (2016) Standards													
SEQS Tier 2 Commercial Land Use, Coarse-Grained Surface Soil (< 1.5 mbgs)[b]					0.9	250	300	140	320	260	1,700	3,300	260
SEQS Tier 2 Commercial Land Use, Coarse-Grained Subsoil (> 1.5 - ≤ 3.0 mbgs)[c]					1.2	500	600	210	320	520	3,400	6,600	600
SEQS Tier 2 Commercial Land Use, Coarse-Grained Subsoil (> 3.0 mbgs)[d]					1.2	1,600	760	210	320	1,000	3,500	10,000	n/a
SEQS Tier 2 30m Residential Buffer Zone, Coarse-Grained Surface Soil (< 1.5 mbgs)[b]					0.073	75	44	12	30	150	300	2,800	140
SEQS Tier 2 30m Residential Buffer Zone, Coarse-Grained Subsoil (> 1.5 - ≤ 3.0 mbgs)[c]					0.1	130	60	16	30	150	600	5,600	300
SEQS Tier 2 30m Residential Buffer Zone, Coarse-Grained Subsoil (> 3.0 mbgs)[d]					0.1	130	60	16	30	150	2,500	10,000	n/a

Associated ALS file(s): L1887184.
Associated Maxxam file(s): B745843.
All terms defined within the body of SNC-Lavalin's report.
< Denotes concentration less than indicated detection limit or RPD less than indicated value.
- Denotes analysis not conducted.
RPD Denotes relative percent difference.
* RPDs are not calculated where one or more concentrations are less than five times RDL.
RDL Denotes reported detection limit.

BOLD	Concentration greater than the SEQS Tier 2 Commercial Land Use, Coarse-Grained Surface Soil Standards.
SHADOW	Concentration greater than the SEQS Tier 2 Commercial Land Use, Coarse-Grained Subsoil Standards.
SHADED	Concentration greater than the SEQS Tier 2 30m Residential Buffer Zone, Coarse-Grained Surface Soil Standards.
INVERSE	Concentration greater than the SEQS Tier 2 30m Residential Buffer Zone, Coarse-Grained Subsoil Standards.

[a] Sample location is situated within a 30m buffer zone for Residential Land Use.
[b] Pathways Included: Dermal Contact, Ecological Contact, Management Limit, Soil Ingestion, Vapour Inhalation (basement), Vapour Inhalation (slab-on-grade), whichever is most stringent.
[c] Pathways Included: Ecological Contact, Management Limit, Vapour Inhalation (basement), Vapour Inhalation (slab-on-grade), whichever is most stringent.
[d] Pathways Included: Management Limit, Vapour Inhalation (basement), Vapour Inhalation (slab-on-grade), whichever is most stringent.

TABLE 3: Soil Analytical Results - Polycyclic Aromatic Hydrocarbons

Sample Location			17-01	17-04	17-06[a]	17-07[a]	17-09[a]		17-10D		SMoE (2016) Standards					
Sample ID			17-01-02	17-04-05	17-06-03	17-07-03	17-09-04	17-09-05	17-10-03	17-10-05	SEQS Tier 2 Commercial Land Use Coarse-Grained Surface (< 1.5 mbgs)[b]	SEQS Tier 2 Commercial Land Use Coarse-Grained Subsoil (> 1.5 - ≤ 3.0 mbgs)[c]	SEQS Tier 2 Commercial Land Use Coarse-Grained Subsoil (> 3.0 mbgs)[d]	SEQS Tier 2 30m Residential Buffer Zone Coarse-Grained Surface (< 1.5 mbgs)[b]	SEQS Tier 2 30m Residential Buffer Zone Coarse-Grained Subsoil (> 1.5 - ≤ 3.0 mbgs)[c]	SEQS Tier 2 30m Residential Buffer Zone Coarse-Grained Subsoil (> 3.0 mbgs)[d]
Sample Date (yyyy mm dd)			2017 01 31	2017 01 31	2017 01 31	2017 01 31	2017 02 01	2017 02 01	2017 02 01	2017 02 01						
Depth Interval (m)			1.4 - 1.5	3.4 - 3.7	2.2 - 2.3	2.2 - 2.3	2.0 - 2.2	2.2 - 2.4	2.2 - 2.3	3.6 - 3.8						
Parameter	**Units**	**RDL**	**Analytical Results**													
Polycyclic Aromatic Hydrocarbons																
B(a)P Equivalency	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	8	n/a	n/a	5.3	n/a	n/a
Acenaphthene	mg/kg	0.0050	< 0.0050	< 0.0050	0.0223	< 0.0050	0.221	0.166	< 0.0050	< 0.0050	8,000	43,000	43,000	21.5	3,900	3,900
Acenaphthylene	mg/kg	0.0050	< 0.0050	< 0.0050	< 0.031	< 0.0050	< 0.0050	0.0343	< 0.0050	< 0.0050	n/a	n/a	n/a	n/a	n/a	n/a
Anthracene	mg/kg	0.0040	< 0.0040	< 0.0040	< 0.022	< 0.0040	< 0.020	< 0.054	< 0.0040	< 0.0040	32	32	n/a	2.5	2.5	670,000
Benzo(a)anthracene	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	n/a	n/a	n/a	6.2	n/a	n/a
Benzo(b+j)fluoranthene	mg/kg	0.010	< 0.010	< 0.010	0.011	< 0.010	< 0.020	< 0.010	< 0.010	0.011	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(a)pyrene	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	72	72	n/a	0.6	20	n/a
Chrysene	mg/kg	0.010	< 0.010	< 0.010	0.068	< 0.010	0.157	0.033	< 0.010	< 0.010	n/a	n/a	n/a	6.2	n/a	n/a
Dibenz(a,h)anthracene	mg/kg	0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0060	< 0.0050	< 0.0050	< 0.0050	n/a	n/a	n/a	n/a	n/a	n/a
Fluoranthene	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010	0.026	< 0.010	< 0.010	< 0.010	180	180	n/a	15.4	50	480,000
Fluorene	mg/kg	0.010	< 0.010	< 0.010	0.081	< 0.010	1.34	0.417	< 0.010	< 0.010	4,100	91,000	91,000	15.4	8,600	8,600
Indeno(1,2,3-cd)pyrene	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.020	< 0.010	< 0.010	< 0.010	n/a	n/a	n/a	n/a	n/a	n/a
2-Methylnaphthalene	mg/kg	0.010	< 0.010	< 0.010	0.137	0.010	1.36	2.29	< 0.010	< 0.010	n/a	n/a	n/a	n/a	n/a	n/a
Naphthalene	mg/kg	0.010	< 0.010	< 0.010	< 0.030	< 0.010	0.281	0.370	< 0.010	< 0.010	25	25	25	2.2	2.2	2.2
Phenanthrene	mg/kg	0.010	< 0.010	< 0.010	0.074	< 0.010	1.21	0.312	< 0.010	< 0.010	n/a	n/a	n/a	43	n/a	n/a
Pyrene	mg/kg	0.010	< 0.010	< 0.010	0.044	< 0.010	0.153	0.031	< 0.010	< 0.010	3,200	n/a	n/a	7.7	730,000	730,000
Quinoline	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.020	< 0.010	< 0.010	< 0.010	n/a	n/a	n/a	n/a	n/a	n/a
Index of Additive Cancer Risk	mg/kg	0.15	< 0.15	< 0.15	0.17	< 0.15	0.21	< 0.15	< 0.15	< 0.15	n/a	n/a	n/a	n/a	n/a	n/a

Associated ALS file(s): L1887184.
All terms defined within the body of SNC-Lavalin's report.
< Denotes concentration less than indicated detection limit.
n/a Denotes no applicable standard/guideline.
RDL Denotes reported detection limit.

BOLD	Concentration greater than the SEQS Tier 2 Commercial Land Use, Coarse-Grained Surface Soil Standards.
SHADOW	Concentration greater than the SEQS Tier 2 Commercial Land Use, Coarse-Grained Subsoil Standards.
SHADED	Concentration greater than the SEQS Tier 2 30m Residential Buffer Zone, Coarse-Grained Surface Soil Standards.
INVERSE	Concentration greater than the SEQS Tier 2 30m Residential Buffer Zone, Coarse-Grained Subsoil Standards.

[a] Sample location is situated within a 30m buffer zone for Residential Land Use.
[b] Pathways Included: Dermal Contact, Ecological Contact, Management Limit, Soil Ingestion, Vapour Inhalation (basement), Vapour Inhalation (slab-on-grade), whichever is most stringent.
[c] Pathways Included: Ecological Contact, Management Limit, Vapour Inhalation (basement), Vapour Inhalation (slab-on-grade), whichever is most stringent.
[d] Pathways Included: Management Limit, Vapour Inhalation (basement), Vapour Inhalation (slab-on-grade), whichever is most stringent.

TABLE 3 (Cont'd): Soil Analytical Results - Polycyclic Aromatic Hydrocarbons

Sample Location			17-11	17-12	17-13	17-14	17-15	17-16	17-17	SMoE (2016) Standards					
Sample ID			17-11-03	17-12-02	17-13-02	17-14-03	17-15-04	17-16-04	17-17-03	SEQS Tier 2 Commercial Land Use Coarse-Grained Surface	SEQS Tier 2 Commercial Land Use Coarse-Grained Subsoil	SEQS Tier 2 Commercial Land Use Coarse-Grained Subsoil	SEQS Tier 2 30m Residential Buffer Zone Coarse-Grained Surface	SEQS Tier 2 30m Residential Buffer Zone Coarse-Grained Subsoil	SEQS Tier 2 30m Residential Buffer Zone Coarse-Grained Subsoil
Sample Date (yyyy mm dd)			2017 02 01	2017 02 01	2017 02 02	2017 02 02	2017 02 02	2017 02 02	2017 02 02						
Depth Interval (m)			2.1 - 2.4	1.4 - 1.5	1.3 - 1.5	2.1 - 2.3	2.8 - 3.0	3.0 - 3.2	2.0 - 2.2						
Parameter	**Units**	**RDL**	**Analytical Results**							(< 1.5 mbgs)[b]	(> 1.5 - ≤ 3.0 mbgs)[c]	(> 3.0 mbgs)[d]	(< 1.5 mbgs)[b]	(> 1.5 - ≤ 3.0 mbgs)[c]	(> 3.0 mbgs)[d]
Polycyclic Aromatic Hydrocarbons															
B(a)P Equivalency	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	8	n/a	n/a	5.3	n/a	n/a
Acenaphthene	mg/kg	0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	8,000	43,000	43,000	21.5	3,900	3,900
Acenaphthylene	mg/kg	0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	n/a	n/a	n/a	n/a	n/a	n/a
Anthracene	mg/kg	0.0040	< 0.0040	< 0.0040	< 0.0040	< 0.0040	< 0.0040	< 0.0040	< 0.0040	32	32	n/a	2.5	2.5	670,000
Benzo(a)anthracene	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	n/a	n/a	n/a	6.2	n/a	n/a
Benzo(b+j)fluoranthene	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010	0.010	< 0.010	< 0.010	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(a)pyrene	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	72	72	n/a	0.6	20	n/a
Chrysene	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	n/a	n/a	n/a	6.2	n/a	n/a
Dibenz(a,h)anthracene	mg/kg	0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	n/a	n/a	n/a	n/a	n/a	n/a
Fluoranthene	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	180	180	n/a	15.4	50	480,000
Fluorene	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	4,100	91,000	91,000	15.4	8,600	8,600
Indeno(1,2,3-cd)pyrene	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	n/a	n/a	n/a	n/a	n/a	n/a
2-Methylnaphthalene	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	n/a	n/a	n/a	n/a	n/a	n/a
Naphthalene	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	25	25	25	2.2	2.2	2.2
Phenanthrene	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	n/a	n/a	n/a	43	n/a	n/a
Pyrene	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	3,200	n/a	n/a	7.7	730,000	730,000
Quinoline	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	n/a	n/a	n/a	n/a	n/a	n/a
Index of Additive Cancer Risk	mg/kg	0.15	< 0.15	< 0.15	< 0.15	< 0.15	< 0.15	< 0.15	< 0.15	n/a	n/a	n/a	n/a	n/a	n/a

Associated ALS file(s): L1887184.
All terms defined within the body of SNC-Lavalin's report.
< Denotes concentration less than indicated detection limit.
n/a Denotes no applicable standard/guideline.
RDL Denotes reported detection limit.

BOLD	Concentration greater than the SEQS Tier 2 Commercial Land Use, Coarse-Grained Surface Soil Standards.
SHADOW	Concentration greater than the SEQS Tier 2 Commercial Land Use, Coarse-Grained Subsoil Standards.
SHADED	Concentration greater than the SEQS Tier 2 30m Residential Buffer Zone, Coarse-Grained Surface Soil Standards.
INVERSE	Concentration greater than the SEQS Tier 2 30m Residential Buffer Zone, Coarse-Grained Subsoil Standards.

[a] Sample location is situated within a 30m buffer zone for Residential Land Use.
[b] Pathways Included: Dermal Contact, Ecological Contact, Management Limit, Soil Ingestion, Vapour Inhalation (basement), Vapour Inhalation (slab-on-grade), whichever is most stringent.
[c] Pathways Included: Ecological Contact, Management Limit, Vapour Inhalation (basement), Vapour Inhalation (slab-on-grade), whichever is most stringent.
[d] Pathways Included: Management Limit, Vapour Inhalation (basement), Vapour Inhalation (slab-on-grade), whichever is most stringent.

TABLE 4: Soil Analytical Results - Total Metals

Sample Location			17-01	17-02	17-03[a]	SMoE (2016) Standards					
Sample ID			17-01-02	17-02-01	17-03-01	SEQS Tier 2 Commercial Land Use Coarse-Grained Surface (< 1.5 mbgs)[b]	SEQS Tier 2 Commercial Land Use Coarse-Grained Subsoil (> 1.5 - ≤ 3.0 mbgs)[c]	SEQS Tier 2 Commercial Land Use Coarse-Grained Subsoil (> 3.0 mbgs)[d]	SEQS Tier 2 30m Residential Buffer Zone Coarse-Grained Surface (< 1.5 mbgs)[b]	SEQS Tier 2 30m Residential Buffer Zone Coarse-Grained Subsoil (> 1.5 - ≤ 3.0 mbgs)[c]	SEQS Tier 2 30m Residential Buffer Zone Coarse-Grained Subsoil (> 3.0 mbgs)[d]
Sample Date (yyyy mm dd)			2017 01 31	2017 01 31	2017 01 31						
Depth Interval (m)			1.4 - 1.5	0.0 - 0.2	0.7 - 0.8						
Parameter	**Units**	**RDL**	**Analytical Results**								
Total Metals											
Aluminum	mg/kg	50	4,950	4,960	4,600	n/a	n/a	n/a	n/a	n/a	n/a
Antimony	mg/kg	0.10	0.27	2.21	0.23	40	40	n/a	20	20	n/a
Arsenic	mg/kg	0.10	4.07	7.41	5.11	12	26	n/a	12	17	n/a
Barium	mg/kg	0.50	129	153	74.9	2,000	2,000	n/a	500	500	n/a
Beryllium	mg/kg	0.10	0.27	0.29	0.27	8	8	n/a	5	5	n/a
Bismuth	mg/kg	0.20	< 0.20	< 0.20	< 0.20	n/a	n/a	n/a	n/a	n/a	n/a
Boron	mg/kg	5.0	15.0	10.3	6.8	n/a	n/a	n/a	n/a	n/a	n/a
Cadmium	mg/kg	0.020	0.189	0.559	0.128	22	22	n/a	10	10	n/a
Calcium	mg/kg	50	21,200	42,000	9,120	n/a	n/a	n/a	n/a	n/a	n/a
Chromium	mg/kg	0.50	7.88	16.2	7.83	87	87	n/a	64	64	n/a
Cobalt	mg/kg	0.10	4.31	5.34	4.53	300	300	n/a	20	20	n/a
Copper	mg/kg	0.50	5.85	75.9	5.13	91	91	n/a	63	63	n/a
Iron	mg/kg	50	9,220	17,500	9,130	n/a	n/a	n/a	n/a	n/a	n/a
Lead	mg/kg	0.50	5.55	149	5.31	260	600	n/a	140	300	n/a
Lithium	mg/kg	2.0	6.8	6.4	4.5	n/a	n/a	n/a	n/a	n/a	n/a
Magnesium	mg/kg	20	5,680	14,900	2,730	n/a	n/a	n/a	n/a	n/a	n/a
Manganese	mg/kg	1.0	303	459	212	n/a	n/a	n/a	n/a	n/a	n/a
Molybdenum	mg/kg	0.10	0.40	1.46	0.34	40	n/a	n/a	4	4	n/a
Nickel	mg/kg	0.50	9.37	18.6	10.1	89	89	n/a	45	45	n/a
Phosphorous	mg/kg	50	522	451	327	n/a	n/a	n/a	n/a	n/a	n/a
Potassium	mg/kg	100	1,270	1,040	1,070	n/a	n/a	n/a	n/a	n/a	n/a
Selenium	mg/kg	0.20	0.27	0.22	< 0.20	2.9	2.9	n/a	1	1	n/a
Silver	mg/kg	0.10	< 0.10	0.14	< 0.10	40	40	n/a	20	20	n/a
Sodium	mg/kg	50	327	580	154	n/a	n/a	n/a	n/a	n/a	n/a
Strontium	mg/kg	0.50	76.7	59.0	20.2	n/a	n/a	n/a	n/a	n/a	n/a
Thallium	mg/kg	0.050	0.083	0.116	0.085	1	3.6	n/a	1.4	1.4	n/a
Tin	mg/kg	1.0	< 1.0	23.2	1.5	300	300	n/a	300	300	n/a
Titanium	mg/kg	1.0	66.4	161	74.5	n/a	n/a	n/a	n/a	n/a	n/a
Uranium	mg/kg	0.050	0.646	0.691	0.457	33	2,000	n/a	23	500	n/a
Vanadium	mg/kg	0.20	14.8	19.1	15.7	130	130	n/a	130	130	n/a
Zinc	mg/kg	2.0	41.5	123	28.3	360	360	n/a	200	200	n/a
Zirconium	mg/kg	1.0	1.6	1.9	1.6	n/a	n/a	n/a	n/a	n/a	n/a

Associated ALS file(s): L1887184.
All terms defined within the body of SNC-Lavalin's report.
< Denotes concentration less than indicated detection limit.
n/a Denotes no applicable standard/guideline.
RDL Denotes reported detection limit.

BOLD	Concentration greater than the SEQS Tier 2 Commercial Land Use, Coarse-Grained Surface Soil Standards.
SHADOW	Concentration greater than the SEQS Tier 2 Commercial Land Use, Coarse-Grained Subsoil Standards.
SHADED	Concentration greater than the SEQS Tier 2 30m Residential Buffer Zone, Coarse-Grained Surface Soil Standards.
INVERSE	Concentration greater than the SEQS Tier 2 30m Residential Buffer Zone, Coarse-Grained Subsoil Standards.

[a] Sample location is situated within a 30m buffer zone for Residential Land Use.
[b] Pathways Included: Dermal Contact, Ecological Contact, Management Limit, Soil Ingestion, Vapour Inhalation (basement), Vapour Inhalation (slab-on-grade), whichever is most stringent.
[c] Pathways Included: Ecological Contact, Management Limit, Vapour Inhalation (basement), Vapour Inhalation (slab-on-grade), whichever is most stringent.
[d] Pathways Included: Management Limit, Vapour Inhalation (basement), Vapour Inhalation (slab-on-grade), whichever is most stringent.

TABLE 5: Soil Analytical Results - Volatile Organic Compounds

Parameter	Units	RDL	Sample Location: 17-07[a] Sample ID: 17-07-03 Sample Date (yyyy mm dd): 2017 01 31 Depth Interval (m): 2.2 - 2.3 Analytical Results	SMoE (2016) Standards SEQS Tier 2 30m Residential Buffer Zone Coarse-Grained Surface (< 1.5 mbgs)[b]	SEQS Tier 2 30m Residential Buffer Zone Coarse-Grained Subsoil (> 1.5 - ≤ 3.0 mbgs)[c]	SEQS Tier 2 30m Residential Buffer Zone Coarse-Grained Subsoil (> 3.0 mbgs)[d]
Volatile Organic Compounds						
Bromochloromethane	mg/kg	0.010	< 0.010	n/a	n/a	n/a
Bromodichloromethane	mg/kg	0.010	< 0.010	n/a	n/a	n/a
Bromoform	mg/kg	0.010	< 0.010	n/a	n/a	n/a
Bromomethane	mg/kg	0.10	< 0.10	n/a	n/a	n/a
sec-Butylbenzene	mg/kg	0.010	< 0.010	n/a	n/a	n/a
tert-Butylbenzene	mg/kg	0.010	< 0.010	n/a	n/a	n/a
Carbon tetrachloride	mg/kg	0.010	< 0.010[e]	0.00078	0.00078	0.00078
Chlorobenzene	mg/kg	0.010	< 0.010	0.024	0.024	0.024
Chloroethane	mg/kg	0.10	< 0.10	n/a	n/a	n/a
Chloroform	mg/kg	0.010	< 0.010[e]	0.015	0.015	0.015
Chloromethane	mg/kg	0.10	< 0.10	n/a	n/a	n/a
2-Chlorotoluene	mg/kg	0.010	< 0.010	n/a	n/a	n/a
4-Chlorotoluene	mg/kg	0.010	< 0.010	n/a	n/a	n/a
Isopropylbenzene	mg/kg	0.010	< 0.010	n/a	n/a	n/a
1,2-Dibromo-3-chloropropane	mg/kg	0.010	< 0.010	n/a	n/a	n/a
Dibromochloromethane	mg/kg	0.010	< 0.010	0.28	0.28	0.28
1,2-Dibromoethane	mg/kg	0.010	< 0.010	n/a	n/a	n/a
1,2-Dichlorobenzene	mg/kg	0.010	< 0.010	14	14	14
1,3-Dichlorobenzene	mg/kg	0.010	< 0.010	n/a	n/a	n/a
1,4-Dichlorobenzene	mg/kg	0.010	< 0.010	0.91	0.91	0.91
Dichlorodifluoromethane	mg/kg	0.010	< 0.010	n/a	n/a	n/a
1,1-Dichloroethane	mg/kg	0.010	< 0.010	n/a	n/a	n/a
1,2-Dichloroethane	mg/kg	0.010	< 0.010[e]	0.0038	0.0038	0.0038
1,1-Dichloroethylene	mg/kg	0.010	< 0.010	0.03	0.03	0.03
cis-1,2-Dichloroethylene	mg/kg	0.010	< 0.010	n/a	n/a	n/a
trans-1,2-Dichloroethylene	mg/kg	0.010	< 0.010	n/a	n/a	n/a
Dichloromethane	mg/kg	0.010	< 0.010	1	1	1
1,2-Dichloropropane	mg/kg	0.010	< 0.010	n/a	n/a	n/a
1,1-Dichloropropylene	mg/kg	0.010	< 0.010	n/a	n/a	n/a
1,3-Dichloropropane	mg/kg	0.010	< 0.010	n/a	n/a	n/a
2,2-Dichloropropane	mg/kg	0.010	< 0.010	n/a	n/a	n/a
cis-1,3-Dichloropropene	mg/kg	0.010	< 0.010	n/a	n/a	n/a
trans-1,3-Dichloropropene	mg/kg	0.010	< 0.010	n/a	n/a	n/a
Hexachlorobutadiene	mg/kg	0.010	< 0.010	n/a	n/a	n/a
Isopropylbenzene	mg/kg	0.010	< 0.010	n/a	n/a	n/a
Isopropyltoluene	mg/kg	0.010	< 0.010	n/a	n/a	n/a
Styrene	mg/kg	0.050	< 0.050	10	10	10
Methylene bromide	mg/kg	0.010	< 0.010	n/a	n/a	n/a
n-Butylbenzene	mg/kg	0.010	< 0.010	n/a	n/a	n/a
n-Propylbenzene	mg/kg	0.010	< 0.010	n/a	n/a	n/a
1,1,1,2-Tetrachloroethane	mg/kg	0.010	< 0.010	n/a	n/a	n/a
1,1,2,2-Tetrachloroethane	mg/kg	0.050	< 0.050	n/a	n/a	n/a
Tetrachloroethylene	mg/kg	0.010	< 0.010	0.2	0.2	0.2
1,2,3-Trichlorobenzene	mg/kg	0.010	< 0.010	0.3	0.3	0.3
1,2,4-Trichlorobenzene	mg/kg	0.010	< 0.010	0.26	0.26	0.26
1,1,1-Trichloroethane	mg/kg	0.010	< 0.010	n/a	n/a	n/a
1,1,2-Trichloroethane	mg/kg	0.010	< 0.010	n/a	n/a	n/a
Trichloroethylene	mg/kg	0.010	< 0.010	0.058	0.058	0.058
Trichlorofluoromethane	mg/kg	0.010	< 0.010	n/a	n/a	n/a
1,2,4-Trimethylbenzene	mg/kg	0.010	< 0.010	n/a	n/a	n/a
1,3,5-Trimethylbenzene	mg/kg	0.010	< 0.010	n/a	n/a	n/a
Vinyl chloride	mg/kg	0.20	< 0.20[e]	0.00049	0.00049	0.00049
Bromobenzene	mg/kg	0.010	< 0.010	n/a	n/a	n/a

Associated ALS file(s): L1887184.
All terms defined within the body of SNC-Lavalin's report.
< Denotes concentration less than indicated detection limit.
n/a Denotes no applicable standard/guideline.
RDL Denotes reported detection limit.

SHADED	Concentration greater than the SEQS Tier 2 30m Residential Buffer Zone, Coarse-Grained Surface Soil Standards.
INVERSE	Concentration greater than the SEQS Tier 2 30m Residential Buffer Zone, Coarse-Grained Subsoil Standards.

[a] Sample location is situated within a 30m buffer zone for Residential Land Use.
[b] Pathways Included: Dermal Contact, Ecological Contact, Management Limit, Soil Ingestion, Vapour Inhalation (basement), Vapour Inhalation (slab-on-grade), whichever is most stringent.
[c] Pathways Included: Ecological Contact, Management Limit, Vapour Inhalation (basement), Vapour Inhalation (slab-on-grade), whichever is most stringent.
[d] Pathways Included: Management Limit, Vapour Inhalation (basement), Vapour Inhalation (slab-on-grade), whichever is most stringent.
[e] Laboratory detection limit exceeds regulatory standard/guideline.

TABLE 6: Soil Analytical Results - Glycols

Sample Location			17-07[a]	SMoE (2016) Standards		
Sample ID			17-07-03	SEQS Tier 2 30m Residential Buffer Zone Coarse-Grained Surface (< 1.5 mbgs)[b]	SEQS Tier 2 30m Residential Buffer Zone Coarse-Grained Subsoil (> 1.5 - ≤ 3.0 mbgs)[c]	SEQS Tier 2 30m Residential Buffer Zone Coarse-Grained Subsoil (> 3.0 mbgs)[d]
Sample Date (yyyy mm dd)			2017 01 31			
Depth Interval (m)			2.2 - 2.3			
Parameter	**Units**	**RDL**	**Analytical Results**			
Glycols						
Propylene Glycol	mg/kg	10	< 10	n/a	n/a	n/a
Ethylene Glycol	mg/kg	10	< 10	1,100	1,100	86,000
Diethylene Glycol	mg/kg	5.0	< 5.0	1,000	1,000	n/a
Triethylene Glycol	mg/kg	10	< 10	5,000	5,000	n/a

Associated ALS file(s): L1887184.
All terms defined within the body of SNC-Lavalin's report.
< Denotes concentration less than indicated detection limit.
n/a Denotes no applicable standard/guideline.
RDL Denotes reported detection limit.

SHADED	Concentration greater than the SEQS Tier 2 30m Residential Buffer Zone, Coarse-Grained Surface Soil Standards.
INVERSE	Concentration greater than the SEQS Tier 2 30m Residential Buffer Zone, Coarse-Grained Subsoil Standards.

[a] Sample location is situated within a 30m buffer zone for Residential Land Use.
[b] Pathways Included: Dermal Contact, Ecological Contact, Management Limit, Soil Ingestion, Vapour Inhalation (basement), Vapour Inhalation (slab-on-grade), whichever is most stringent.
[c] Pathways Included: Ecological Contact, Management Limit, Vapour Inhalation (basement), Vapour Inhalation (slab-on-grade), whichever is most stringent.
[d] Pathways Included: Management Limit, Vapour Inhalation (basement), Vapour Inhalation (slab-on-grade), whichever is most stringent.

TABLE 7: Groundwater Analytical Results - Petroleum Hydrocarbons and Lead

Sample Location	Sample ID	Sample Date (yyyy mm dd)	Monocyclic Aromatic Hydrocarbons				Petroleum Hydrocarbon Fractions				Dissolved Metals
			Benzene mg/L	Toluene mg/L	Ethyl-benzene mg/L	Xylenes mg/L	F1-BTEX (C6-C10) mg/L	F2 (>C10-C16) mg/L	F3 (>C16-C34) mg/L	F4 (>C34-C50) mg/L	Lead mg/L
Reported Detection Limit			0.00050	0.00050	0.00050	0.00071	0.10	0.20	0.30	0.30	0.000050
MW14-1[a]	14-1-170206	2017 02 06	< 0.00050	< 0.00050	< 0.00050	< 0.00071	< 0.10	< 0.20	< 0.30	< 0.30	< 0.00010
MW14-20	14-20-170206	2017 02 06	< 0.00050	< 0.00050	< 0.00050	< 0.00071	< 0.10	< 0.20	< 0.30	< 0.30	-
MW14-37	14-37-170206	2017 02 06	< 0.00050	< 0.00050	< 0.00050	< 0.00071	< 0.10	0.54	0.34	< 0.30	-
MW17-05[a]	17-05-170206	2017 02 06	< 0.00050	< 0.00050	< 0.00050	< 0.00071	< 0.10	< 0.20	< 0.30	< 0.30	< 0.00010
MW17-06[a]	17-06-170206	2017 02 06	0.00057	0.00052	0.00406	0.0222	0.37	***6.21***	2.31	< 0.30	0.00160
MW17-07[a]	17-07-170206	2017 02 06	< 0.00050	< 0.00050	< 0.00050	< 0.00071	< 0.10	< 0.20	< 0.30	< 0.30	< 0.000050
MW17-09[a]	17-09-170206	2017 02 06	< 0.00050	< 0.00050	< 0.00050	< 0.00071	< 0.10	0.26	< 0.30	< 0.30	0.000064
	MW17-00A-170206	Duplicate of 17-09-170206	< 0.00050	< 0.00050	< 0.00050	< 0.00071	< 0.10	0.46	< 0.30	< 0.30	0.000071
	QA/QC RPD%		*	*	*	*	*	*	*	*	*
MW17-10D	17-10D-170206	2017 02 06	< 0.00050	< 0.00050	< 0.00050	< 0.00071	< 0.10	< 0.20	< 0.30	< 0.30	< 0.000050
MW17-10S	17-10S-170206	2017 02 06	< 0.00050	< 0.00050	< 0.00050	< 0.00071	< 0.10	< 0.20	< 0.30	< 0.30	< 0.000050
MW17-11	17-11-170206	2017 02 06	< 0.00050	< 0.00050	0.00547	0.00179	0.17	0.47	< 0.30	< 0.30	< 0.000050
MW17-12	17-12-170206	2017 02 06	< 0.00050	< 0.00050	< 0.00050	< 0.00071	< 0.10	< 0.20	< 0.30	< 0.30	< 0.000050
MW17-13	17-13-170206	2017 02 06	< 0.00050	< 0.00050	< 0.00050	< 0.00071	< 0.10	< 0.20	< 0.30	< 0.30	< 0.000050
MW17-16	17-16-170206	2017 02 06	< 0.00050	< 0.00050	< 0.00050	< 0.00071	< 0.10	0.39	< 0.30	< 0.30	< 0.00010
MW17-18[a]	MW17-18	2017 06 08	-	-	-	-	-	< 0.10	< 0.10	< 0.20	-
	MW17-00A	Duplicate of MW17-18	-	-	-	-	-	< 0.10	< 0.10	< 0.20	-
	QA/QC RPD%		-	-	-	-	-	*	*	*	-
TRIP BLANK	MW17-00B-170206	2017 02 06	< 0.00050	< 0.00050	< 0.00050	< 0.00071	< 0.10	< 0.20	< 0.30	< 0.30	< 0.000050
	MW17-00C	2017 06 08	-	-	-	-	-	< 0.10	< 0.10	< 0.20	-
EQUIP BLANK	MW17-00D-170206	2017 02 06	< 0.00050	< 0.00050	< 0.00050	< 0.00071	< 0.10	< 0.20	< 0.30	< 0.30	< 0.000050
FIELD BLANK	MW17-00C-170206	2017 02 06	< 0.00050	< 0.00050	< 0.00050	< 0.00071	< 0.10	< 0.20	< 0.30	< 0.30	< 0.000050
	MW17-00B	2017 06 08	-	-	-	-	-	< 0.10	< 0.10	< 0.20	-
SMoE (2016) Standards											
SEQS Tier 2 Commercial Land Use, Coarse-Grained Soil[b]			1.8	200	76	9	9.1	3.1	n/a	n/a	n/a
SEQS Tier 2 30m Residential Buffer Zone, Coarse-Grained Soil[b]			0.14	59	16	3.9	0.81	1.5	n/a	n/a	n/a

Associated ALS file(s): L1887783, L1887819.
Associated Maxxam file(s): B746019.
All terms defined within the body of SNC-Lavalin's report.
< Denotes concentration less than indicated detection limit or RPD less than indicated value.
- Denotes analysis not conducted.
n/a Denotes no applicable standard/guideline.
RPD Denotes relative percent difference.
* RPDs are not calculated where one or more concentrations are less than five times RDL.
RDL Denotes reported detection limit.

BOLD Concentration greater than the SEQS Tier 2 Commercial Land Use, Coarse-Grained Soil Standards.
SHADOW Concentration greater than the SEQS Tier 2 30m Residential Buffer Zone, Coarse-Grained Soil Standards.

[a] Sample location is situated within a 30m buffer zone for Residential Land Use.
[b] Pathways Included: Ecological Contact, Vapour Inhalation, Non-Potable, whichever is most stringent.

TABLE 8: Groundwater Analytical Results - Dissolved Metals

Sample Location			MW14-1[a]	MW17-05[a]	MW17-07[a]	TRIP BLANK	EQUIP BLANK	FIELD BLANK	SMoE (2016) Standards
Sample ID			14-1-170206	17-05-170206	17-07-170206	MW17-00B-170206	MW17-00D-170206	MW17-00C-170206	SEQS Tier 2 30m Residential Buffer Zone, Coarse-Grained Soil[b,c]
Sample Date (yyyy mm dd)			2017 02 06	2017 02 06	2017 02 06	2017 02 06	2017 02 06	2017 02 06	
Parameter	**Units**	**RDL**	**Analytical Results**						
Dissolved Metals									
Aluminum	mg/L	0.0020	< 0.0040	< 0.0040	< 0.0020	< 0.0020	< 0.0020	< 0.0020	n/a
Antimony	mg/L	0.00010	< 0.00020	0.00042	0.00026	< 0.00010	< 0.00010	< 0.00010	n/a
Arsenic	mg/L	0.00010	0.00020	0.00083	0.00058	< 0.00010	< 0.00010	< 0.00010	n/a
Barium	mg/L	0.000050	0.0738	0.0888	0.0761	< 0.000050	< 0.000050	< 0.000050	n/a
Beryllium	mg/L	0.00010	< 0.00020	< 0.00020	< 0.00010	< 0.00010	< 0.00010	< 0.00010	n/a
Bismuth	mg/L	0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000050	< 0.000050	n/a
Boron	mg/L	0.010	0.625	0.957	0.720	< 0.010	< 0.010	< 0.010	n/a
Cadmium	mg/L	0.0000050	0.000174	0.000096	0.0000343	< 0.0000050	< 0.0000050	< 0.0000050	n/a
Calcium	mg/L	0.050	139	188	129	< 0.050	< 0.050	< 0.050	n/a
Chromium	mg/L	0.00010	0.00021	< 0.00020	< 0.00010	< 0.00010	< 0.00010	< 0.00010	n/a
Cobalt	mg/L	0.00010	0.00029	0.00052	0.00025	< 0.00010	< 0.00010	< 0.00010	n/a
Copper	mg/L	0.00020	0.00151	0.00181	0.00085	< 0.00020	< 0.00020	< 0.00020	n/a
Iron	mg/L	0.010	< 0.020	< 0.020	< 0.010	< 0.010	< 0.010	< 0.010	n/a
Lithium	mg/L	0.0010	0.113	0.0901	0.0640	< 0.0010	< 0.0010	< 0.0010	n/a
Magnesium	mg/L	0.0050	101	90.4	49.2	< 0.0050	< 0.0050	< 0.0050	n/a
Manganese	mg/L	0.00010	0.00167	0.287	0.0493	< 0.00010	< 0.00010	< 0.00010	n/a
Molybdenum	mg/L	0.000050	0.00260	0.00282	0.00217	< 0.000050	< 0.000050	< 0.000050	n/a
Nickel	mg/L	0.00050	0.0094	0.0125	0.00241	< 0.00050	< 0.00050	< 0.00050	n/a
Phosphorous	mg/L	0.050	< 0.10	< 0.10	< 0.050	< 0.050	< 0.050	< 0.050	n/a
Potassium	mg/L	0.050	4.43	8.32	6.38	< 0.050	< 0.050	< 0.050	n/a
Selenium	mg/L	0.000050	0.00661	0.00680	0.0157	< 0.000050	< 0.000050	< 0.000050	n/a
Silicon	mg/L	0.050	8.36	7.88	7.29	< 0.050	< 0.050	< 0.050	n/a
Silver	mg/L	0.000010	< 0.000020	< 0.000020	< 0.000010	< 0.000010	< 0.000010	< 0.000010	n/a
Sodium	mg/L	0.050	92.1	84.7	61.0	< 0.050	< 0.050	< 0.050	n/a
Strontium	mg/L	0.00020	0.713	0.810	0.835	< 0.00020	< 0.00020	< 0.00020	n/a
Sulphur	mg/L	0.50	79.0	193	91.8	< 0.50	< 0.50	< 0.50	n/a
Tellurium	mg/L	0.00020	< 0.00040	< 0.00040	< 0.00020	< 0.00020	< 0.00020	< 0.00020	n/a
Thallium	mg/L	0.000010	0.000033	0.000052	0.000019	< 0.000010	< 0.000010	< 0.000010	n/a
Thorium	mg/L	0.00010	< 0.00020	< 0.00020	< 0.00010	< 0.00010	< 0.00010	< 0.00010	n/a
Tin	mg/L	0.00010	< 0.00020	0.00044	0.00025	< 0.00010	< 0.00010	< 0.00010	n/a
Titanium	mg/L	0.00030	< 0.00060	< 0.00060	< 0.00030	< 0.00030	< 0.00030	< 0.00030	n/a
Tungsten	mg/L	0.00010	< 0.00020	< 0.00020	< 0.00010	< 0.00010	< 0.00010	< 0.00010	n/a
Uranium	mg/L	0.000010	0.0123	0.0167	0.00768	< 0.000010	< 0.000010	< 0.000010	n/a
Vanadium	mg/L	0.00050	< 0.0010	< 0.0010	< 0.00050	< 0.00050	< 0.00050	< 0.00050	n/a
Zinc	mg/L	0.0010	< 0.0020	0.0045	0.0016	< 0.0010	< 0.0010	< 0.0010	n/a
Zirconium	mg/L	0.00030	< 0.00060	< 0.00060	< 0.00030	< 0.00030	< 0.00030	< 0.00030	n/a

Associated ALS file(s): L1887783, L1887819.
All terms defined within the body of SNC-Lavalin's report.
< Denotes concentration less than indicated detection limit.
n/a Denotes no applicable standard/guideline.
RDL Denotes reported detection limit.

SHADOW Concentration greater than the SEQS Tier 2 30m Residential Buffer Zone, Coarse-Grained Soil Standards.

[a] Sample location is situated within a 30m buffer zone for Residential Land Use.
[b] Pathways Included: Ecological Contact, Vapour Inhalation, whichever is most stringent.
[c] Results do not exceed SEQS Tier 2 Commercial Land Use, Coarse-Grained Soil Standards.

TABLE 9: Groundwater Analytical Results - Polycyclic Aromatic Hydrocarbons

Sample Location			MW14-1[a]	MW14-20	MW17-05[a]	MW17-06[a]	MW17-07[a]	MW17-09[a]			SMoE (2016) Standards	
Sample ID			14-1-170206	14-20-170206	17-05-170206	17-06-170206	17-07-170206	17-09-170206	MW17-00A-Duplicate of 17-09-170206	QA/QC RPD %	SEQS Tier 2 Commercial Land Use, Coarse-Grained Soil[b]	SEQS Tier 2 30m Residential Buffer Zone, Coarse-Grained Soil[b]
Sample Date (yyyy mm dd)			2017 02 06	2017 02 06	2017 02 06	2017 02 06	2017 02 06	2017 02 06				
Parameter	**Units**	**RDL**	**Analytical Results**									
Polycyclic Aromatic Hydrocarbons												
B(a)P Equivalency	mg/L	0.000010	< 0.000010	< 0.000010	< 0.000010	< 0.000010	0.000111	< 0.000010	0.000045	*	n/a	n/a
Acenaphthene	mg/L	0.000020	< 0.000020	< 0.000020	< 0.000020	0.00120	< 0.000020	0.000115	0.000153	28	n/a	n/a
Acridine	mg/L	0.000020	< 0.000020	< 0.000020	< 0.000020	< 0.00038	< 0.000020	< 0.000040	< 0.000070	*	n/a	n/a
Anthracene	mg/L	0.000010	< 0.000010	< 0.000010	< 0.000010	< 0.00027	0.000022	< 0.000030	< 0.000040	*	0.32	0.025
Benzo(a)anthracene	mg/L	0.000010	< 0.000010	< 0.000010	< 0.000010	< 0.000010	0.000079	< 0.000010	0.000034	*	n/a	n/a
Benzo(b+j)fluoranthene	mg/L	0.000010	< 0.000010	< 0.000010	< 0.000010	< 0.000020	0.000099	< 0.000010	0.000038	*	n/a	n/a
Benzo(k)fluoranthene	mg/L	0.000010	< 0.000010	< 0.000010	< 0.000010	< 0.000010	0.000037	< 0.000010	0.000018	*	n/a	n/a
Benzo(g,h,i)perylene	mg/L	0.000020	< 0.000020	< 0.000020	< 0.000020	< 0.000020	0.000054	< 0.000020	0.000022	*	n/a	n/a
Benzo(a)pyrene	mg/L	0.0000050	< 0.0000050	< 0.0000050	< 0.0000050	< 0.0000050	0.0000691	< 0.0000050	0.0000279	*	0.0066	0.0018
Chrysene	mg/L	0.000020	< 0.000020	< 0.000020	< 0.000020	0.000062	0.000081	< 0.000020	0.000041	*	n/a	n/a
Dibenz(a,h)anthracene	mg/L	0.0000050	< 0.0000050	< 0.0000050	< 0.0000050	< 0.0000050	0.0000138	< 0.0000050	0.0000052	*	n/a	n/a
Fluoranthene	mg/L	0.000020	< 0.000020	< 0.000020	< 0.000020	0.000036	0.000181	< 0.000020	0.000086	*	0.86	0.24
Fluorene	mg/L	0.000020	< 0.000020	< 0.000020	< 0.000020	0.00279	< 0.000020	0.000252	0.000354	34	n/a	n/a
Indeno(1,2,3-cd)pyrene	mg/L	0.000010	< 0.000010	< 0.000010	< 0.000010	< 0.000010	0.000049	< 0.000010	0.000020	*	n/a	n/a
Naphthalene	mg/L	0.000050	< 0.000050	< 0.000050	0.000066	0.00943	< 0.000050	0.00169	0.00162	4	7	0.6
Phenanthrene	mg/L	0.000050	< 0.000050	< 0.000050	< 0.000050	0.00164	0.000120	0.000107	0.000193	*	n/a	n/a
Pyrene	mg/L	0.000010	< 0.000010	< 0.000010	< 0.000010	0.000119	0.000158	< 0.000010	0.000089	*	n/a	n/a
Quinoline	mg/L	0.000020	< 0.000020	< 0.000020	< 0.000020	< 0.00071	< 0.000020	< 0.000080	< 0.00014	*	n/a	n/a

Associated ALS file(s): L1887783, L1887819.
All terms defined within the body of SNC-Lavalin's report.
< Denotes concentration less than indicated detection limit or RPD less than indicated value.
n/a Denotes no applicable standard/guideline.
RPD Denotes relative percent difference.
* RPDs are not calculated where one or more concentrations are less than five times RDL.
RDL Denotes reported detection limit.

BOLD Concentration greater than the SEQS Tier 2 Commercial Land Use, Coarse-Grained Soil Standards.
SHADOW Concentration greater than the SEQS Tier 2 30m Residential Buffer Zone, Coarse-Grained Soil Standards.

[a] Sample location is situated within a 30m buffer zone for Residential Land Use.
[b] Pathways Included: Ecological Contact, Vapour Inhalation, whichever is most stringent.

TABLE 9 (Cont'd): Groundwater Analytical Results - Polycyclic Aromatic Hydrocarbons

Sample Location			MW17-10D	MW17-10S	MW17-11	MW17-12	MW17-13	MW17-16	TRIP BLANK	EQUIP BLANK	FIELD BLANK	SMoE (2016) Standards	
Sample ID			17-10D-170206	17-10S-170206	17-11-170206	17-12-170206	17-13-170206	17-16-170206	MW17-00B-170206	MW17-00D-170206	MW17-00C-170206	SEQS Tier 2 Commercial Land Use, Coarse-Grained Soil[b]	SEQS Tier 2 30m Residential Buffer Zone, Coarse-Grained Soil[b]
Sample Date (yyyy mm dd)			2017 02 06	2017 02 06	2017 02 06	2017 02 06	2017 02 06	2017 02 06	2017 02 06	2017 02 06	2017 02 06		
Parameter	**Units**	**RDL**	**Analytical Results**										
Polycyclic Aromatic Hydrocarbons													
B(a)P Equivalency	mg/L	0.000010	< 0.000010	< 0.000010	< 0.000010	< 0.000010	< 0.000010	< 0.000010	< 0.000010	< 0.000010	< 0.000010	n/a	n/a
Acenaphthene	mg/L	0.000020	< 0.000020	< 0.000020	0.000279	< 0.000020	< 0.000020	< 0.000020	< 0.000020	< 0.000020	< 0.000020	n/a	n/a
Acridine	mg/L	0.000020	< 0.000020	< 0.000020	< 0.000020	< 0.000020	< 0.000020	< 0.000020	< 0.000020	< 0.000020	< 0.000020	n/a	n/a
Anthracene	mg/L	0.000010	< 0.000010	< 0.000010	< 0.000010	< 0.000010	< 0.000010	< 0.000010	< 0.000010	< 0.000010	< 0.000010	0.32	0.025
Benzo(a)anthracene	mg/L	0.000010	< 0.000010	< 0.000010	< 0.000010	< 0.000010	< 0.000010	< 0.000010	< 0.000010	< 0.000010	< 0.000010	n/a	n/a
Benzo(b+j)fluoranthene	mg/L	0.000010	< 0.000010	< 0.000010	< 0.000010	< 0.000010	< 0.000010	< 0.000010	< 0.000010	< 0.000010	< 0.000010	n/a	n/a
Benzo(k)fluoranthene	mg/L	0.000010	< 0.000010	< 0.000010	< 0.000010	< 0.000010	< 0.000010	< 0.000010	< 0.000010	< 0.000010	< 0.000010	n/a	n/a
Benzo(g,h,i)perylene	mg/L	0.000020	< 0.000020	< 0.000020	< 0.000020	< 0.000020	< 0.000020	< 0.000020	< 0.000020	< 0.000020	< 0.000020	n/a	n/a
Benzo(a)pyrene	mg/L	0.0000050	< 0.0000050	< 0.0000050	< 0.0000050	< 0.0000050	< 0.0000050	< 0.0000050	< 0.0000050	< 0.0000050	< 0.0000050	0.0066	0.0018
Chrysene	mg/L	0.000020	< 0.000020	< 0.000020	< 0.000020	< 0.000020	< 0.000020	< 0.000020	< 0.000020	< 0.000020	< 0.000020	n/a	n/a
Dibenz(a,h)anthracene	mg/L	0.0000050	< 0.0000050	< 0.0000050	< 0.0000050	< 0.0000050	< 0.0000050	< 0.0000050	< 0.0000050	< 0.0000050	< 0.0000050	n/a	n/a
Fluoranthene	mg/L	0.000020	< 0.000020	< 0.000020	< 0.000020	< 0.000020	< 0.000020	< 0.000020	< 0.000020	< 0.000020	< 0.000020	0.86	0.24
Fluorene	mg/L	0.000020	< 0.000020	< 0.000020	0.000335	< 0.000020	< 0.000020	0.000031	< 0.000020	< 0.000020	< 0.000020	n/a	n/a
Indeno(1,2,3-cd)pyrene	mg/L	0.000010	< 0.000010	< 0.000010	< 0.000010	< 0.000010	< 0.000010	< 0.000010	< 0.000010	< 0.000010	< 0.000010	n/a	n/a
Naphthalene	mg/L	0.000050	< 0.000050	< 0.000050	0.00422	< 0.000050	< 0.000050	< 0.000060	< 0.000050	< 0.000050	< 0.000050	7	0.6
Phenanthrene	mg/L	0.000050	< 0.000050	< 0.000050	< 0.000050	< 0.000050	< 0.000050	< 0.000050	< 0.000050	< 0.000050	< 0.000050	n/a	n/a
Pyrene	mg/L	0.000010	< 0.000010	< 0.000010	< 0.000010	< 0.000010	< 0.000010	< 0.000010	< 0.000010	< 0.000010	< 0.000010	n/a	n/a
Quinoline	mg/L	0.000020	< 0.000020	< 0.000020	< 0.00017	< 0.000020	< 0.000020	< 0.000020	< 0.000020	< 0.000020	< 0.000020	n/a	n/a

Associated ALS file(s): L1887783, L1887819.
All terms defined within the body of SNC-Lavalin's report.
< Denotes concentration less than indicated detection limit or RPD less than indicated value.
n/a Denotes no applicable standard/guideline.
RPD Denotes relative percent difference.
* RPDs are not calculated where one or more concentrations are less than five times RDL.
RDL Denotes reported detection limit.

BOLD Concentration greater than the SEQS Tier 2 Commercial Land Use, Coarse-Grained Soil Standards.
SHADOW Concentration greater than the SEQS Tier 2 30m Residential Buffer Zone, Coarse-Grained Soil Standards.

[a] Sample location is situated within a 30m buffer zone for Residential Land Use.
[b] Pathways Included: Ecological Contact, Vapour Inhalation, whichever is most stringent.

TABLE 10: Groundwater Analytical Results - Volatile Organic Compounds

Sample Location			MW17-05[a]	MW17-07[a]	SMoE (2016) Standards
Sample ID			17-05-170206	17-07-170206	SEQS Tier 2 30m
Sample Date (yyyy mm dd)			2017 02 06	2017 02 06	Residential Buffer Zone,
Parameter	**Units**	**RDL**	**Analytical Results**		Coarse-Grained Soil[b,d]
Volatile Organic Compounds					
Bromodichloromethane	mg/L	0.0010	< 0.0010	< 0.0010	n/a
Bromoform	mg/L	0.0010	< 0.0010	< 0.0010	0.38
Bromomethane	mg/L	0.010	< 0.010[c]	< 0.010[c]	0.0056
n-Butylbenzene	mg/L	0.0010	< 0.0010	< 0.0010	n/a
sec-Butylbenzene	mg/L	0.0010	< 0.0010	< 0.0010	n/a
tert-Butylbenzene	mg/L	0.0010	< 0.0010	< 0.0010	n/a
Carbon tetrachloride	mg/L	0.0010	< 0.0010[c]	< 0.0010[c]	0.00056
Chlorobenzene	mg/L	0.0010	< 0.0010	< 0.0010	0.014
Chloroethane	mg/L	0.010	< 0.010	< 0.010	n/a
Chloroform	mg/L	0.0010	< 0.0010	< 0.0010	0.003
Chloromethane	mg/L	0.010	< 0.010	< 0.010	n/a
1,2-Dibromo-3-chloropropane	mg/L	0.0010	< 0.0010	< 0.0010	n/a
Dibromochloromethane	mg/L	0.0010	< 0.0010	< 0.0010	1.1
Bromochloromethane	mg/L	0.0010	< 0.0010	< 0.0010	n/a
1,2-Dibromoethane	mg/L	0.0010	< 0.0010	< 0.0010	n/a
1,2-Dichlorobenzene	mg/L	0.0010	< 0.0010	< 0.0010	5.4
1,3-Dichlorobenzene	mg/L	0.0010	< 0.0010	< 0.0010	n/a
1,4-Dichlorobenzene	mg/L	0.0010	< 0.0010	< 0.0010	0.22
Dichlorodifluoromethane	mg/L	0.0010	< 0.0010	< 0.0010	n/a
1,1-Dichloroethane	mg/L	0.0010	< 0.0010	< 0.0010	0.32
1,2-Dichloroethane	mg/L	0.0010	< 0.0010	< 0.0010	0.01
1,1-Dichloroethylene	mg/L	0.0010	< 0.0010	< 0.0010	0.039
cis-1,2-Dichloroethylene	mg/L	0.0010	< 0.0010	< 0.0010	0.0016
trans-1,2-Dichloroethylene	mg/L	0.0010	< 0.0010	< 0.0010	n/a
Dichloromethane	mg/L	0.0010	< 0.0010	< 0.0010	3.4
1,2-Dichloropropane	mg/L	0.0010	< 0.0010	< 0.0010	0.016
2,2-Dichloropropane	mg/L	0.0010	< 0.0010	< 0.0010	n/a
1,1-Dichloropropylene	mg/L	0.0010	< 0.0010	< 0.0010	n/a
1,3-Dichloropropane	mg/L	0.0010	< 0.0010	< 0.0010	n/a
cis-1,3-Dichloropropene	mg/L	0.0010	< 0.0010	< 0.0010	n/a
trans-1,3-Dichloropropene	mg/L	0.0010	< 0.0010	< 0.0010	n/a
Isopropylbenzene	mg/L	0.0010	< 0.0010	< 0.0010	n/a
Isopropyltoluene	mg/L	0.0010	0.0148	< 0.0010	n/a
Styrene	mg/L	0.0010	< 0.0010	< 0.0010	4.3
Methylene bromide	mg/L	0.0010	< 0.0010	< 0.0010	n/a
n-Propylbenzene	mg/L	0.0010	< 0.0010	< 0.0010	n/a
1,1,1,2-Tetrachloroethane	mg/L	0.0010	< 0.0010	< 0.0010	0.0034
1,1,2,2-Tetrachloroethane	mg/L	0.0050	< 0.0050	< 0.0050	n/a
Tetrachloroethylene	mg/L	0.0010	< 0.0010	< 0.0010	0.11
1,1,1-Trichloroethane	mg/L	0.0010	< 0.0010	< 0.0010	0.64
1,1,2-Trichloroethane	mg/L	0.0010	< 0.0010	< 0.0010	0.0047
Trichloroethylene	mg/L	0.0010	< 0.0010	< 0.0010	0.02
1,2,3-Trichlorobenzene	mg/L	0.0010	< 0.0010	< 0.0010	0.032
1,2,4-Trichlorobenzene	mg/L	0.0010	< 0.0010	< 0.0010	0.028
Trichlorofluoromethane	mg/L	0.0010	< 0.0010	< 0.0010	n/a
1,2,3-Trichloropropane	mg/L	0.0020	< 0.0020	< 0.0020	n/a
1,2,4-Trimethylbenzene	mg/L	0.0010	< 0.0010	< 0.0010	n/a
1,3,5-Trimethylbenzene	mg/L	0.0010	< 0.0010	< 0.0010	n/a
Vinyl chloride	mg/L	0.00050	< 0.00050	< 0.00050	0.011
Bromobenzene	mg/L	0.0010	< 0.0010	< 0.0010	n/a

Associated ALS file(s): L1887819.
All terms defined within the body of SNC-Lavalin's report.
< Denotes concentration less than indicated detection limit.
n/a Denotes no applicable standard/guideline.
RDL Denotes reported detection limit.

SHADOW Concentration greater than the SEQS Tier 2 30m Residential Buffer Zone, Coarse-Grained Soil Standards.

[a] Sample location is situated within a 30m buffer zone for Residential Land Use.
[b] Pathways Included: Ecological Contact, Vapour Inhalation, whichever is most stringent.
[c] Laboratory detection limit exceeds regulatory standard/guideline.
[d] Results do not exceed SEQS Tier 2 Commercial Land Use, Coarse-Grained Soil Standards.

TABLE 11: Groundwater Analytical Results - Glycols

Sample Location			MW17-07[a]	SMoE (2016) Standards
Sample ID			17-07-170206	SEQS Tier 2 30m Residential Buffer Zone, Coarse-Grained Soil[b]
Sample Date (yyyy mm dd)			2017 02 06	
Parameter	**Units**	**RDL**	**Analytical Results**	
Glycols				
Propylene Glycol	mg/L	10	< 10	n/a
Ethylene Glycol	mg/L	10	< 10	16,000
Diethylene Glycol	mg/L	5.0	< 5.0	n/a
Triethylene Glycol	mg/L	10	< 10	n/a

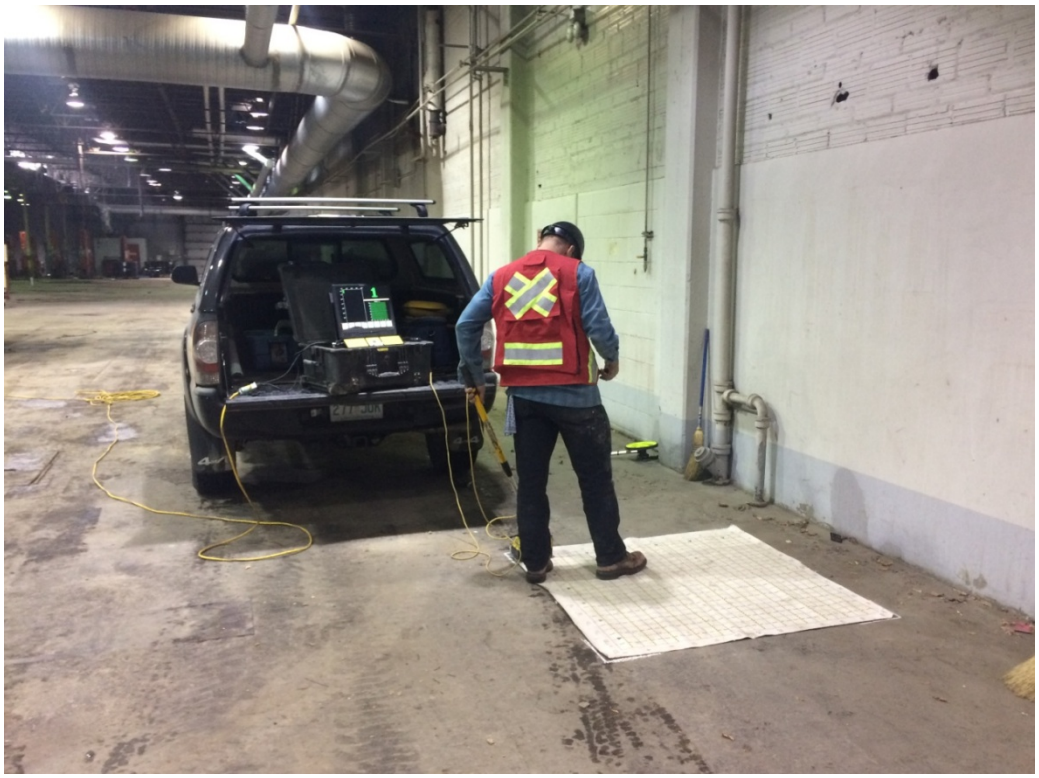
Associated ALS file(s): L1887819.
All terms defined within the body of SNC-Lavalin's report.
< Denotes concentration less than indicated detection limit.
n/a Denotes no applicable standard/guideline.
RDL Denotes reported detection limit.

SHADOW Concentration greater than the SEQS Tier 2 30m Residential Buffer Zone, Coarse-Grained Soil Standards.

[a] Sample location is situated within a 30m buffer zone for Residential Land Use.
[b] Pathways Included: Ecological Contact, Vapour Inhalation, whichever is most stringent.

Appendix I

Site Photographs



Photograph 1: Looking southeast at ground penetrating radar scan of proposed borehole location 17-09. January 30, 2017

Photograph 2: Looking north at concrete coring of proposed borehole location 17-17. February 2, 2017.

Photograph 3: Looking northwest at hydrovacuum daylighting of location 17-10S. February 1, 2017.

Photograph 4: Looking northwest at drilling of location 17-12. February 1, 2017.

Photograph 5: Looking north at drilling of location 17-06. January 31, 2017.

Photograph 6: Looking southwest at installation of monitoring well 17-03. January 31, 2017.

Photograph 7: Soil core collected from borehole 17-09 at 1.5 m to 3.0 m below ground surface. February 1, 2017.

Photograph 8: Soil core collected from borehole 17-14 at 1.5 m to 3.0 m below ground surface. February 2, 2017.

Appendix II

Borehole Logs

FINAL

SNC·LAVALIN

Client
City of Saskatoon

Location
230 Ave C N, Saskatoon, SK

Borehole No. : BH17-01

PAGE 1 OF 1

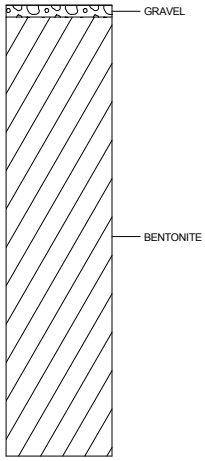
Drilling Contractor	Badger/Intercore	Date Monitored	n/a	Project Number:	644079
Drilling Method	Hydrovac/Direct Push	Ground Surface Elev. (m)	n/a	Borehole Logged By:	AS/TL
Borehole Dia. (m)	0.15	Top of Casing Elev. (m)	n/a	Date Drilled:	2017 01 31
Pipe/Slotted Pipe Dia. (m)	none/none	Northing: n/a	Easting: n/a	Log Typed By:	SS

Drilling Legend
- Sample Interval
- Vac. Extraction
- Direct Push

Water/ Levels
- Water Level 1
- Water Level 2

Depth in Metres	Soil Description	Stratigraphy Plot	Sample Interval Core Run	Sample Number	Blow Count	% Recovery	Soil Vapour (ppm)
0	SAND, fine-grained, some silt and gravel, trace clay, brown to dark brown, loose.			01-01		0	
				01-02		0	
1	SILT, trace sand and clay , dark brown, loose.					50	
	SAND, fine-grained, light brown, dense, damp.			01-03		10	
2							
	SAND, medium-grained, light brown, dense, damp.			**01-04**		20	
3	Between 3.1 m - 3.3m - reddish orange.					80	
	SILT, some fine-grained sand, trace clay, trace small gravel, grey, very stiff, damp.			01-05		0	
4	Bottom of hole at 3.8 m.						
5							
6							
7							
8							
9							
10							

Reading within indicated scale
Reading outside indicated scale
Soil Vapour (ppm)
10^1 10^2 10^3 10^4



NOTES
Bold sample denotes sample analyzed.

FINAL

SNC·LAVALIN

Client
City of Saskatoon

Location
232 Ave C N, Saskatoon, SK

Borehole No. : BH17-02

PAGE 1 OF 1

Drilling Contractor	Intercore Environmental Services Ltd.	Date Monitored	n/a	Project Number:	644079
Drilling Method	Direct Push	Ground Surface Elev. (m)	n/a	Borehole Logged By:	AS/TL
Borehole Dia. (m)	0.10	Top of Casing Elev. (m)	n/a	Date Drilled:	2017 01 31
Pipe/Slotted Pipe Dia. (m)	none/none	Northing: n/a	Easting: n/a	Log Typed By:	SS

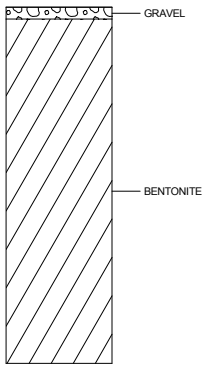
Drilling Legend
- Sample Interval
- Direct Push

Water/ Levels
- Water Level 1
- Water Level 2

Depth in Metres	Soil Description	Stratigraphy Plot	Sample Interval Core Run	Sample Number	Blow Count	% Recovery	Soil Vapour (ppm)
0	SAND AND GRAVEL (FILL), brown, dense, frozen.			**02-01**	50	0	
	SAND, fine-grained, some silt, trace coarse-grained sand, trace small gravel, brown, stiff, dry, trace oxidation.			02-02		25	
1				02-03	50	15	
2				02-04		30	
3	SILT, sandy, fine to coarse-grained, trace clay and small gravel, light brown to brown, very stiff, trace oxidation. Bottom of hole at 3.0 m.			**02-05**		15	
4							
5							
6							
7							
8							
9							
10							

Reading within indicated scale
Reading outside indicated scale

Soil Vapour (ppm): 10^1 10^2 10^3 10^4



NOTES
Bold sample denotes sample analyzed.

FINAL

SNC·LAVALIN

Client
City of Saskatoon

Borehole No. : BH17-03

Location
316 Ave C N, Saskatoon, SK

PAGE 1 OF 1

Drilling Contractor	Badger/Intercore	Date Monitored	2017 02 03	Project Number:	644079
Drilling Method	Hydrovac/Direct Push	Ground Surface Elev. (m)	n/a	Borehole Logged By:	AS/TL
Borehole Dia. (m)	0.15	Top of Casing Elev. (m)	n/a	Date Drilled:	2017 01 31
Pipe/Slotted Pipe Dia. (m)	0.05/0.05	Northing: n/a	Easting: n/a	Log Typed By:	SS

Drilling Legend
- Sample Interval
- Vac. Extraction
- Direct Push

Water/ Levels
- Water Level 1
- Water Level 2

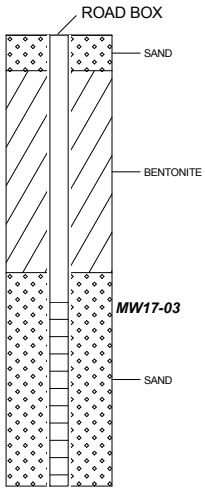
Reading within indicated scale
Reading outside indicated scale

Solid PVC
Slotted PVC

Well Name 1: MW17-03

Depth in Metres	Soil Description	Stratigraphy Plot	Sample Interval Core Run	Sample Number	Blow Count	% Recovery	Soil Vapour (ppm)
0	SAND, fine-grained, well sorted, some silt, trace clay, brown, loose, dry.			**03-01**			0
1				03-02		40	0
2	SAND, fine to coarse-grained, some silt and clay, trace small gravel, light brown, stiff, damp, trace oxidation.			03-03			0
3				03-04		80	0
	SILT, some fine to coarse-grained sand, some clay, trace small gravel, grey, stiff, damp, trace oxidation.			**03-05**			0
4	Bottom of hole at 3.8 m.						
5							
6							
7							
8							
9							
10							

Soil Vapour (ppm): 10^1 10^2 10^3 10^4



NOTES
Bold sample denotes sample analyzed.
Well dry when monitored.

FINAL

SNC·LAVALIN

Client
City of Saskatoon

Borehole No. : BH17-05

Location
321 Ave C N, Saskatoon, SK

PAGE 1 OF 1

Drilling Contractor	Badger/Intercore	Date Monitored	2017 02 03	Project Number:	644079
Drilling Method	Hydrovac	Ground Surface Elev. (m)	n/a	Borehole Logged By:	AS/TL
Borehole Dia. (m)	0.10	Top of Casing Elev. (m)	n/a	Date Drilled:	2017 01 31
Pipe/Slotted Pipe Dia. (m)	0.05/0.05	Northing: n/a	Easting: n/a	Log Typed By:	SS

Drilling Legend
- Sample Interval
- Vac. Extraction

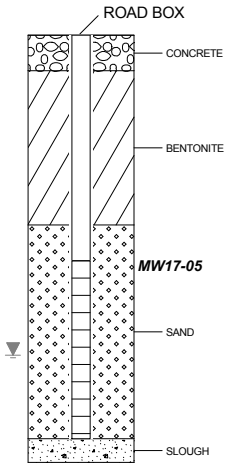
Water/ Levels
- Water Level 1
- Water Level 2

Reading within indicated scale
Reading outside indicated scale

Solid PVC
Slotted PVC

Well Name 1: MW17-05

Depth in Metres	Soil Description	Stratigraphy Plot	Sample Interval Core Run	Sample Number	Blow Count	% Recovery	Soil Vapour (ppm) 10^1 10^2 10^3 10^4
0	SAND, fine-grained, some silt and clay, trace gravel, brown with dark brown, loose, moist.			**05-01**			0
1				05-02			0
2	From 2.25 m - light brown.			05-03			0
3							
4	Bottom of hole at 3.6 m.						
5							
6							
7							
8							
9							
10							



NOTES
Bold sample denotes sample analyzed.

FINAL

SNC·LAVALIN

Client
City of Saskatoon

Borehole No. : BH17-06

Location
321 Ave C N, Saskatoon, SK

PAGE 1 OF 1

Drilling Contractor	Badger/Intercore	Date Monitored	2017 02 03	Project Number:	644079
Drilling Method	Hydrovac/Direct Push	Ground Surface Elev. (m)	n/a	Borehole Logged By:	AS/TL
Borehole Dia. (m)	0.10	Top of Casing Elev. (m)	n/a	Date Drilled:	2017 01 31
Pipe/Slotted Pipe Dia. (m)	0.05/0.05	Northing: n/a	Easting: n/a	Log Typed By:	SS

Drilling Legend
- Sample Interval
- Vac. Extraction
- Direct Push

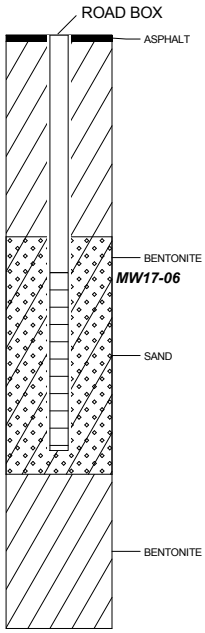
Water/ Levels
- Water Level 1
- Water Level 2

Reading within indicated scale
Reading outside indicated scale

Solid PVC
Slotted PVC

Well Name 1: MW17-06

Depth in Metres	Soil Description	Stratigraphy Plot	Sample Interval Core Run	Sample Number	Blow Count	% Recovery	Soil Vapour (ppm)
0	ASPHALT						
	SAND, fine-grained, some silt, some clay, dark brown, well sorted, loose, moist.			06-01			15
1							
	From 1.5 m - grey staining.			06-02			10
2				**06-03**			10
3	SILT AND CLAY (TILL), trace gravel, trace sand, brown/grey, stiff, medium plasticity.			**06-04**			
				06-05			25
4				06-06			15
5	Bottom of hole at 5.0 m.						
6							
7							
8							
9							
10							



NOTES
Bold sample denotes sample analyzed.
06-05 is a blind field duplicate of 06-04.

FINAL

SNC·LAVALIN

Client
City of Saskatoon

Borehole No. : BH17-07

Location
321 Ave C N, Saskatoon, SK

PAGE 1 OF 1

Drilling Contractor	Badger/Intercore	Date Monitored	2017 02 03	Project Number:	644079
Drilling Method	Hydrovac	Ground Surface Elev. (m)	n/a	Borehole Logged By:	AS/TL
Borehole Dia. (m)	0.10	Top of Casing Elev. (m)	n/a	Date Drilled:	2017 01 31
Pipe/Slotted Pipe Dia. (m)	0.05/0.05	Northing: n/a	Easting: n/a	Log Typed By:	SS

Drilling Legend
- Sample Interval
- Vac. Extraction

Water/ Levels
- Water Level 1
- Water Level 2

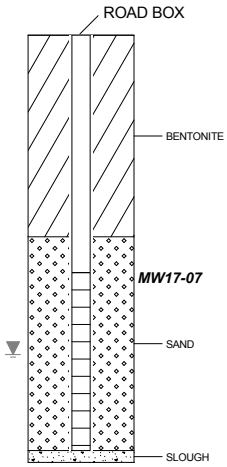
Reading within indicated scale
Reading outside indicated scale

Solid PVC
Slotted PVC

Well Name 1: MW17-07

Depth in Metres	Soil Description	Stratigraphy Plot	Sample Interval Core Run	Sample Number	Blow Count	% Recovery	Soil Vapour (ppm)
0	CLAY, some silt, some sand, dark brown and grey, soft, plastic, moist.						
	From 0.2 m - 0.4 m - broken concrete						
1	CLAY, some silt, some sand, dark brown and grey, soft, plastic, moist.			**07-01**			0
	From 1.5 m - lighter brown.			**07-02**			0
2				**07-03**			0
3							
	Bottom of hole at 3.6 m.						
4							
5							
6							
7							
8							
9							
10							

10^1 10^2 10^3 10^4



NOTES
Bold sample denotes sample analyzed.

FINAL

SNC·LAVALIN

Client
City of Saskatoon

Borehole No. : BH17-08

Location
321 Ave C N, Saskatoon, SK

PAGE 1 OF 1

Drilling Contractor	Intercore Environmental Services Ltd.	Date Monitored	2017 02 03	Project Number:	644079
Drilling Method	Direct Push	Ground Surface Elev. (m)	n/a	Borehole Logged By:	AS/TL
Borehole Dia. (m)	0.10	Top of Casing Elev. (m)	n/a	Date Drilled:	2017 02 01
Pipe/Slotted Pipe Dia. (m)	0.05/0.05	Northing: n/a	Easting: n/a	Log Typed By:	SS

Drilling Legend
- Sample Interval
- Direct Push

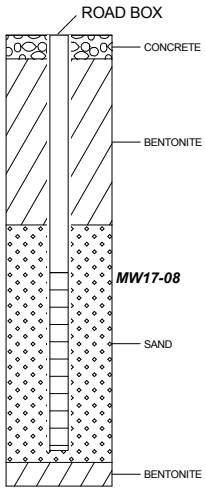
Water/ Levels
- Water Level 1
- Water Level 2

Reading within indicated scale
Reading outside indicated scale

Solid PVC
Slotted PVC

Well Name 1: MW17-08

Depth in Metres	Soil Description	Stratigraphy Plot	Sample Interval Core Run	Sample Number	Blow Count	% Recovery	Soil Vapour (ppm)
0	ASPHALT			08-01		70	35
	SAND, fine-grained, trace coarse-grained sand, trace small gravel, brown, loose, dry.						75
	CONCRETE			**08-02**			
1	SAND AND GRAVEL (FILL), light brown, dense, damp.						
	SAND, fine-grained, some silt, dark brown, dense, damp. Below 0.8 m - brown.			**08-03**			5
	SILT, sandy, fine-grained, trace clay, grey, stiff.			08-04			5
2	SAND, fine to medium-grained, orange-brown, loose, damp.						0
	SILT, some clay, some fine to coarse-grained sand, trace small gravel, light grey, firm, moist, trace oxidation.			08-05			
3	Below 3.3 m - dark greyish brown, stiff.			**08-06**			0
	Bottom of hole at 3.8 m.						
4							
5							
6							
7							
8							
9							
10							



NOTES
Bold sample denotes sample analyzed.
Well dry when monitored.

FINAL

SNC·LAVALIN

Client
City of Saskatoon

Location
321 Ave C N, Saskatoon, SK

Borehole No. : BH17-09

PAGE 1 OF 1

Drilling Contractor	Intercore Environmental Services Ltd.	Date Monitored	2017 02 03	Project Number:	644079
Drilling Method	Direct Push	Ground Surface Elev. (m)	n/a	Borehole Logged By:	AS/TL
Borehole Dia. (m)	0.10	Top of Casing Elev. (m)	n/a	Date Drilled:	2017 02 01
Pipe/Slotted Pipe Dia. (m)	0.05/0.05	Northing: n/a	Easting: n/a	Log Typed By:	SS

Drilling Legend
- Sample Interval
- Direct Push

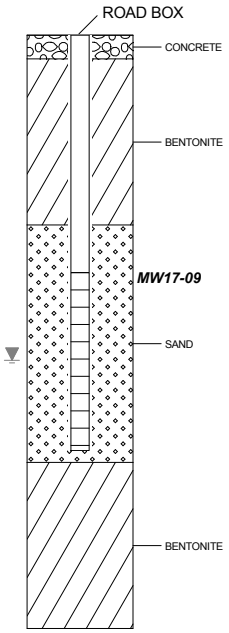
Water/ Levels
- Water Level 1
- Water Level 2

Reading within indicated scale
Reading outside indicated scale

Solid PVC
Slotted PVC

Well Name 1: MW17-09

Depth in Metres	Soil Description	Stratigraphy Plot	Sample Interval Core Run	Sample Number	Blow Count	% Recovery	Soil Vapour (ppm)
0	CONCRETE						
	SAND, fine grained, trace silt, brown, compact, damp. From 0.3 - 0.5 m - dark brown.			09-01			25
	From 0.6 - 0.8 m - grey.			09-02			20
1				09-03			20
2	From 2.0 - 2.25 m - grey.			**09-04**			20
	SILT, sandy, fine to coarse-grained, some clay, grey, firm, low plasticity, trace oxidation. Below 2.5 m - dark grey, stiff			**09-05**			20
3				09-06			30
				09-07			25
				09-08			
4	From 4.1 - 4.2 m - fine-grained sand, grey, loose, moist.			09-09			20
				09-10			35
5	Bottom of hole at 5.0 m.						
6							
7							
8							
9							
10							



NOTES
Bold sample denotes sample analyzed.
09-08 is a blind field duplicate of 09-07.

FINAL

SNC·LAVALIN

Client
City of Saskatoon

Location
321 Ave C N, Saskatoon, SK

Borehole No. : BH17-10D

PAGE 1 OF 1

Drilling Contractor	Badger/Intercore	Date Monitored	2017 02 03	Project Number:	644079
Drilling Method	Hydrovac/Direct Push	Ground Surface Elev. (m)	n/a	Borehole Logged By:	AS/TL
Borehole Dia. (m)	0.15	Top of Casing Elev. (m)	n/a	Date Drilled:	2017 02 01
Pipe/Slotted Pipe Dia. (m)	0.05/0.05	Northing: n/a	Easting: n/a	Log Typed By:	SS

Drilling Legend: Sample Interval; Vac. Extraction; Direct Push

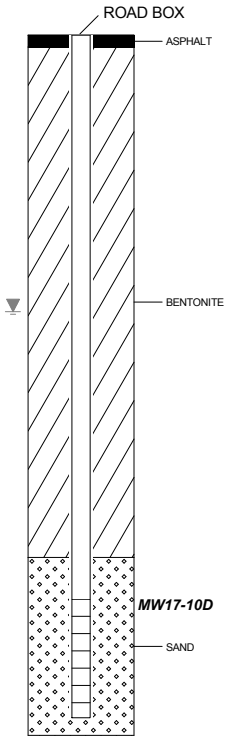
Water/ Levels: Water Level 1; Water Level 2

Reading within indicated scale; Reading outside indicated scale

Solid PVC; Slotted PVC

Well Name 1: MW17-10D

Depth in Metres	Soil Description	Stratigraphy Plot	Sample Interval Core Run	Sample Number	Blow Count	% Recovery	Soil Vapour (ppm)
0	ASPHALT						
	SAND, fine grained, some clay and silt, well sorted, brown, soft/loose, moist.			10-01			55
1							
	From 1.5 m - coarser sand, decreased clay/silt, loose.			10-02			30
2	SILT AND CLAY (TILL), some sand, trace gravel, brown/grey, stiff, low plasticity, relatively dry.			**10-03**			55
				10-04			55
3	At 3.5 m - sand seams.						
				10-05			50
4				10-06			55
				10-07			55
5							
	At 5.7 m - slight sand seam.			**10-08**			65
6	Bottom of hole at 5.9 m.						
7							
8							
9							
10							



NOTES
Bold sample denotes sample analyzed.

FINAL

SNC·LAVALIN

Client
City of Saskatoon

Location
321 Ave C N, Saskatoon, SK

Borehole No. : BH17-10S

PAGE 1 OF 1

Drilling Contractor	Badger/Intercore	Date Monitored	2017 02 03	Project Number:	644079
Drilling Method	Hydrovac/Direct Push	Ground Surface Elev. (m)	n/a	Borehole Logged By:	AS/TL
Borehole Dia. (m)	0.15	Top of Casing Elev. (m)	n/a	Date Drilled:	2017 02 01
Pipe/Slotted Pipe Dia. (m)	0.05/0.05	Northing: n/a	Easting: n/a	Log Typed By:	SS

Drilling Legend
- Sample Interval
- Vac. Extraction
- Direct Push

Water/ Levels
- Water Level 1
- Water Level 2

Soil Description

Depth in Metres | Stratigraphy Plot | Sample Interval Core Run | Sample Number | Blow Count | % Recovery

Soil Vapour (ppm)
- ○ Reading within indicated scale
- ● Reading outside indicated scale

10^1 10^2 10^3 10^4

Solid PVC
Slotted PVC

Well Name 1: MW17-10S

0 ASPHALT

SAND, fine grained, some clay and silt, well sorted, brown, soft/loose, moist.

1

From 1.5 m - coarser sand, decreased clay/silt, loose.

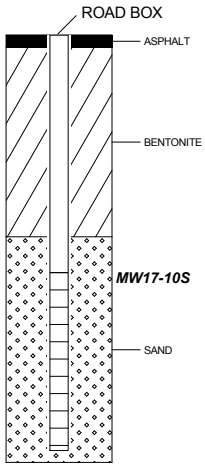
2 SILT AND CLAY (TILL), some sand, trace gravel, brown/grey, stiff, low plasticity, relatively dry.

3

At 3.5 m - sand seams.

Bottom of hole at 3.6 m.

4 5 6 7 8 9 10



NOTES
Bold sample denotes sample analyzed.

FINAL

SNC·LAVALIN

Client
City of Saskatoon

Borehole No. : BH17-11

Location
321 Ave C N, Saskatoon, SK

PAGE 1 OF 1

Drilling Contractor	Badger/Intercore	Date Monitored	2017 02 03	Project Number:	644079
Drilling Method	Hydrovac/Direct Push	Ground Surface Elev. (m)	n/a	Borehole Logged By:	AS/TL
Borehole Dia. (m)	0.10	Top of Casing Elev. (m)	n/a	Date Drilled:	2017 02 01
Pipe/Slotted Pipe Dia. (m)	0.05/0.05	Northing: n/a	Easting: n/a	Log Typed By:	SS

Drilling Legend
- Sample Interval
- Vac. Extraction
- Direct Push

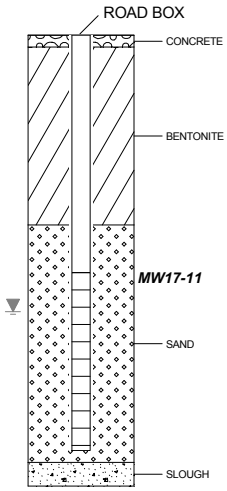
Water/ Levels
- Water Level 1
- Water Level 2

Reading within indicated scale
Reading outside indicated scale

Solid PVC
Slotted PVC

Well Name 1: MW17-11

Depth in Metres	Soil Description	Stratigraphy Plot	Sample Interval Core Run	Sample Number	Blow Count	% Recovery	Soil Vapour (ppm)
0	SAND, fine-grained, well sorted, some silt, trace clay, brown, loose, moist.			11-01			55
1				11-02		100	45
	From 1.5 m - decrease in silt and clay						
2	SILT, some fine to coarse-grained sand, some clay, trace small gravel, brown, stiff, low plasticity, damp. Below 1.9 m - dark grey-brown From 2.1 - 2.3 m - sandy			**11-03**			45
3	SAND, fine to coarse-grained, trace silt and clay, grey, loose, moist.			11-04		100	40
	SILT, some fine to coarse-grained sand, some clay, trace small gravel, dark grey, stiff, low plasticity, damp.			**11-05** **11-06**			55
4	Bottom of hole at 3.8 m.						
5							
6							
7							
8							
9							
10							



NOTES
Bold sample denotes sample analyzed.
11-06 is a blind field duplicate of 11-05.

FINAL

SNC·LAVALIN

Client
City of Saskatoon

Location
321 Ave C N, Saskatoon, SK

Borehole No. : BH17-12

PAGE 1 OF 1

Drilling Contractor	Intercore Environmental Services Ltd.	Date Monitored	2017 02 03	Project Number:	644079
Drilling Method	Direct Push	Ground Surface Elev. (m)	n/a	Borehole Logged By:	AS/TL
Borehole Dia. (m)	0.10	Top of Casing Elev. (m)	n/a	Date Drilled:	2017 02 01
Pipe/Slotted Pipe Dia. (m)	0.05/0.05	Northing: n/a	Easting: n/a	Log Typed By:	SS

Drilling Legend
- Sample Interval
- Direct Push

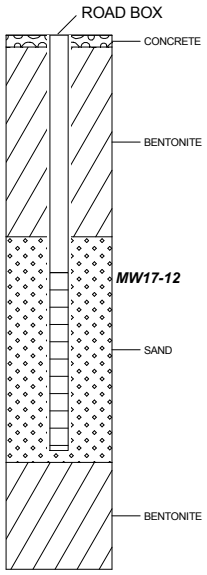
Water/ Levels
- Water Level 1
- Water Level 2

Reading within indicated scale
Reading outside indicated scale

Solid PVC
Slotted PVC

Well Name 1: MW17-12

Depth in Metres	Soil Description	Stratigraphy Plot	Sample Interval Core Run	Sample Number	Blow Count	% Recovery	Soil Vapour (ppm)
0	CONCRETE					60	10
	SAND, fine-grained, trace silt, brown, loose, damp.			12-01			
	SILT, sandy, fine-grained, grey, firm, low plasticity, damp.						
1	SAND, fine-grained, trace silt, brown, loose, damp.			**12-02**		30	15
	SILT, some fine to coarse-grained sand, some clay, trace small gravel, dark brownish grey, stiff, damp.						30
2				12-03			15
	From 2.7 - 3.0 m - fine to medium sand pockets.			12-04		100	
3							5
				12-05			
4				**12-06**			15
	Bottom of hole at 4.5 m.						
5							
6							
7							
8							
9							
10							



NOTES
Bold sample denotes sample analyzed.

FINAL

SNC·LAVALIN

Client
City of Saskatoon

Borehole No. : BH17-13

Location
321 Ave C N, Saskatoon, SK

PAGE 1 OF 1

Drilling Contractor	Intercore Environmental Services Ltd.	Date Monitored	2017 02 03	Project Number:	644079
Drilling Method	Direct Push	Ground Surface Elev. (m)	n/a	Borehole Logged By:	AS/TL
Borehole Dia. (m)	0.10	Top of Casing Elev. (m)	n/a	Date Drilled:	2017 02 02
Pipe/Slotted Pipe Dia. (m)	0.05/0.05	Northing: n/a	Easting: n/a	Log Typed By:	SS

Drilling Legend
Sample Interval
Direct Push

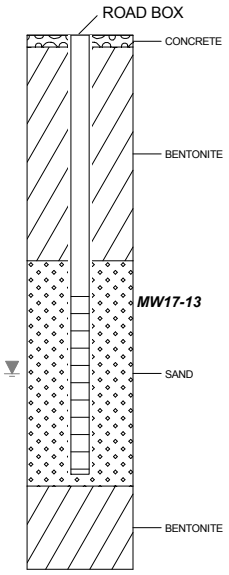
Water/ Levels
Water Level 1
Water Level 2

Reading within indicated scale
Reading outside indicated scale

Solid PVC
Slotted PVC

Well Name 1: MW17-13

Depth in Metres	Soil Description	Stratigraphy Plot	Sample Interval Core Run	Sample Number	Blow Count	% Recovery	Soil Vapour (ppm)
0	CONCRETE					40	25
	SAND AND GRAVEL (FILL)						
	SAND, fine-grained, well sorted, trace silt, brown, compact, damp.			13-01			
1				**13-02**		100	15
	At 1.9 m - small gravel						
2	SILT, some fine to coarse-grained sand and clay, trace small gravel, brown, stiff, low plasticity, damp.			13-03			5
				13-04			175
3	SAND, fine to medium-grained, trace silt, brownish grey, loose, moist.					100	
	SILT, some fine-grained sand, some clay, trace small gravel, brown, stiff, low plasticity, damp.			13-05			15
4				**13-06**			15
	Bottom of hole at 4.5 m.						
5							
6							
7							
8							
9							
10							



NOTES
Bold sample denotes sample analyzed.

FINAL

SNC·LAVALIN

Client
City of Saskatoon

Borehole No. : BH17-04

Location
301 24th St W, Saskatoon, SK

PAGE 1 OF 1

Drilling Contractor	Badger/Intercore	Date Monitored	n/a	Project Number:	644079
Drilling Method	Hydrovac/Direct Push	Ground Surface Elev. (m)	n/a	Borehole Logged By:	AS/TL
Borehole Dia. (m)	0.15	Top of Casing Elev. (m)	n/a	Date Drilled:	2017 01 31
Pipe/Slotted Pipe Dia. (m)	none/none	Northing: n/a	Easting: n/a	Log Typed By:	SS

Drilling Legend
- Sample Interval
- Vac. Extraction
- Direct Push

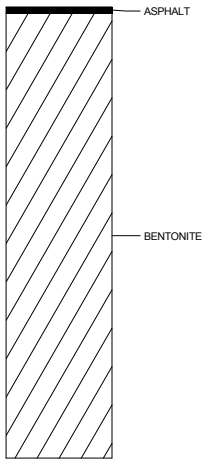
Water/ Levels
- Water Level 1
- Water Level 2

Depth in Metres	Soil Description	Stratigraphy Plot	Sample Interval Core Run	Sample Number	Blow Count	% Recovery	Soil Vapour (ppm)
0	ASPHALT						
	SAND, fine-grained, well sorted, trace clay, trace silt, trace gravel, dark brown, moist, loose.			04-01		0	
1				04-02		40 0	
	SAND, fine-grained, well sorted, light brown, dense, damp. Below 2.0 m - fine to medium-grained.			04-03		0	
2							
	SILT, some fine-grained sand, some clay, black, firm, non-plastic, friable, damp.			04-04		0	
3	SAND, fine to coarse-grained, poorly sorted, greyish brown, loose, damp. At 3.2 m - cobbles. Below 3.2 m - reddish orange.			**04-05**		80 0	
	SILT, some fine to coarse-grained, some clay, trace small gravel, grey, stiff, damp, trace oxidation.						
4	Bottom of hole at 3.8 m.						
5							
6							
7							
8							
9							
10							

Water/ Levels
- Water Level 1
- Water Level 2

Reading within indicated scale
Reading outside indicated scale

Soil Vapour (ppm)
10^1 10^2 10^3 10^4



NOTES
Bold sample denotes sample analyzed.

FINAL

SNC·LAVALIN

Client
City of Saskatoon

Borehole No. : BH17-14

Location
301 24th St W, Saskatoon, SK

PAGE 1 OF 1

Drilling Contractor	Intercore Environmental Services Ltd.	Date Monitored	n/a	Project Number:	644079
Drilling Method	Direct Push	Ground Surface Elev. (m)	n/a	Borehole Logged By:	AS/TL
Borehole Dia. (m)	0.10	Top of Casing Elev. (m)	n/a	Date Drilled:	2017 02 02
Pipe/Slotted Pipe Dia. (m)	none/none	Northing: n/a	Easting: n/a	Log Typed By:	SS

Drilling Legend
- Sample Interval
- Direct Push

Water/ Levels
- Water Level 1
- Water Level 2

Depth in Metres	Soil Description	Stratigraphy Plot	Sample Interval Core Run	Sample Number	Blow Count	% Recovery	Soil Vapour (ppm)
0	CONCRETE						
	SAND AND GRAVEL (FILL)						
	SILT, some fine to coarse sand, trace clay, brown, firm, low plasticity, damp.			14-01		60	5
1	SAND, fine-grained, some silt, dark brown, compact, damp.			14-02			0
	SAND, fine-grained, well sorted, light brown, loose, dry.					80	
	SILT, sandy, fine to coarse-grained, trace clay, greyish brown, firm, low plasticity, damp, trace oxidation.						0
2	At 2.1 m - light brown sand seam.			**14-03**			
	SILT, some fine to coarse-grained sand, trace clay, trace small gravel, dark grey, stiff, low plasticity, damp.			14-04			45
				14-05			
3	SAND, fine to medium-grained, brown, loose, moist to wet.						
	Bottom of hole at 3.0 m.						
4							
5							
6							
7							
8							
9							
10							

BENTONITE

NOTES
Bold sample denotes sample analyzed.
14-04 is a blind field duplicate of 14-03.

FINAL

SNC·LAVALIN

Client
City of Saskatoon

Borehole No. : BH17-15

Location
301 24th St W, Saskatoon, SK

PAGE 1 OF 1

Drilling Contractor	Intercore Environmental Services Ltd.	Date Monitored	n/a	Project Number:	644079
Drilling Method	Direct Push	Ground Surface Elev. (m)	n/a	Borehole Logged By:	AS/TL
Borehole Dia. (m)	0.10	Top of Casing Elev. (m)	n/a	Date Drilled:	2017 02 02
Pipe/Slotted Pipe Dia. (m)	none/none	Northing: n/a	Easting: n/a	Log Typed By:	SS

Drilling Legend
- Sample Interval
- Direct Push

Water/ Levels
- Water Level 1
- Water Level 2

Depth in Metres	Soil Description	Stratigraphy Plot	Sample Interval Core Run	Sample Number	Blow Count	% Recovery	Soil Vapour (ppm)
0	CONCRETE						
	SAND AND GRAVEL (FILL)						
	SILT, sandy, fine to coarse-grained, brown, firm, low plasticity, damp.			15-01			0
1	SAND, fine-grained, well sorted, brown, loose, damp.			15-02			0
	SILT, sandy, fine to coarse-grained, greyish brown, firm, moist, trace oxidation.			15-03			0
2	At 2.1 m - cobbles.						
	SAND, fine to medium-grained, brown, loose, moist.						
	SILT, some fine to coarse-grained sand, some clay, trace small gravel, dark grey, stiff, low plasticity, damp.			**15-04**			5
3	Bottom of hole at 3.0 m.						
4							
5							
6							
7							
8							
9							
10							

BENTONITE

NOTES
Bold sample denotes sample analyzed.

FINAL

SNC·LAVALIN

Client
City of Saskatoon

Borehole No. : BH17-16

Location
301 24th St W, Saskatoon, SK

PAGE 1 OF 1

Drilling Contractor	Intercore Environmental Services Ltd.	Date Monitored	2017 02 03	Project Number:	644079
Drilling Method	Direct Push	Ground Surface Elev. (m)	n/a	Borehole Logged By:	AS/TL
Borehole Dia. (m)	0.10	Top of Casing Elev. (m)	n/a	Date Drilled:	2017 02 02
Pipe/Slotted Pipe Dia. (m)	0.05/0.05	Northing: n/a	Easting: n/a	Log Typed By:	SS

Drilling Legend
Sample Interval
Direct Push

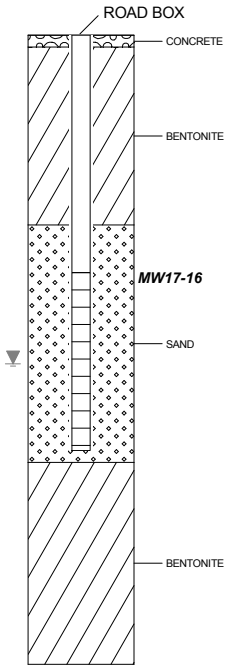
Water/ Levels
Water Level 1
Water Level 2

Reading within indicated scale
Reading outside indicated scale

Solid PVC
Slotted PVC

Well Name 1: MW17-16

Depth in Metres	Soil Description	Stratigraphy Plot	Sample Interval Core Run	Sample Number	Blow Count	% Recovery	Soil Vapour (ppm)
0	CONCRETE					30	25
	SAND AND GRAVEL (FILL)						
	SILT, sandy, fine to medium-grained, brown, firm, damp.			16-01			
1				16-02		70	25
							20
2				16-03			
	At 2.6 m - reddish brown sand seam						
3	SAND, fine to medium-grained, trace clay and silt, grey, loose, moist.			**16-04**		110	75
	SILT, some fine to coarse-grained sand, some clay, trace small gravel.			16-05			30
4						110	
				16-06			15
						110	
5				**16-07**			20
	Bottom of hole at 5.3 m.						
6							
7							
8							
9							
10							



NOTES
Bold sample denotes sample analyzed.

FINAL

SNC·LAVALIN

Client
City of Saskatoon

Borehole No. : BH17-17

Location
301 24th St W, Saskatoon, SK

PAGE 1 OF 1

Drilling Contractor	Intercore Environmental Services Ltd.	Date Monitored	2017 02 03	Project Number:	644079
Drilling Method	Direct Push	Ground Surface Elev. (m)	n/a	Borehole Logged By:	AS/TL
Borehole Dia. (m)	0.10	Top of Casing Elev. (m)	n/a	Date Drilled:	2017 02 02
Pipe/Slotted Pipe Dia. (m)	0.05/0.05	Northing: n/a	Easting: n/a	Log Typed By:	SS

Drilling Legend
Sample Interval
Direct Push

Water/ Levels
Water Level 1
Water Level 2

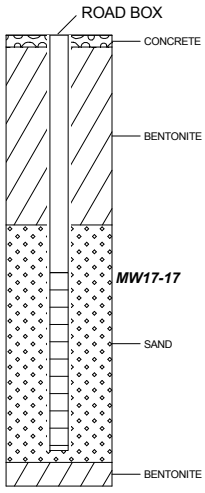
Reading within indicated scale
Reading outside indicated scale

Soil Vapour (ppm)

Solid PVC
Slotted PVC

Well Name 1: MW17-17

Depth in Metres	Soil Description	Stratigraphy Plot	Sample Interval Core Run	Sample Number	Blow Count	% Recovery	Soil Vapour (ppm)
0	CONCRETE						
	SAND AND GRAVEL (FILL)						
	SILT, sandy, fine to medium-grained, dark brown to black, firm, damp.			17-01		60	20
1	SAND, fine-grained, trace silt, dark brown, loose, damp.			17-02		70	30
	Below 1.7 m - trace medium to coarse sand, brown.						
2	From 1.9 - 2.0 m - silt till, brown			**17-03**			25
	From 2.2 - 2.3 m - silt till, brown						
	SILT, some fine to coarse-grained sand, trace clay, trace small gravel, dark grey, stiff, low plasticity, damp.			17-04		110	15
3				17-05			20
				17-06			
4	Bottom of hole at 3.8 m.						
5							
6							
7							
8							
9							
10							



NOTES
Bold sample denotes sample analyzed.
17-06 is a blind field duplicate of 17-05.
Well dry when monitored.

FINAL

SNC·LAVALIN

Client
City of Saskatoon

Location
Ave D N, Saskatoon, SK

Borehole No. : BH17-18

PAGE 1 OF 1

Drilling Contractor	Badger Daylighting Ltd.	Date Monitored	2017 06 08	Project Number:	644079
Drilling Method	Hydrovac	Ground Surface Elev. (m)	n/a	Borehole Logged By:	AS
Borehole Dia. (m)	0.15	Top of Casing Elev. (m)	n/a	Date Drilled:	2017 06 07
Pipe/Slotted Pipe Dia. (m)	0.05/0.05	Northing: n/a	Easting: n/a	Log Typed By:	EKB

Drilling Legend
- Sample Interval
- Vac. Extraction

Water/ Levels
- Water Level 1
- Water Level 2

Soil Description

Stratigraphy Plot | Sample Interval Core Run | Sample Number | Blow Count | % Recovery

Soil Vapour (ppm)
- ○ Reading within indicated scale
- ● Reading outside indicated scale

10^1 10^2 10^3 10^4

Well Name 1: MW17-18
- Solid PVC
- Slotted PVC

Depth in Metres	Soil Description	Sample Number	Soil Vapour (ppm)
0	SILT, some clay, some fine-grained sand, greyish brown, loose, moist to damp.	**18-01**	35
2	From 2.3 m - increased clay, trace gravel (cobbles), trace fine-grained sand.	**18-02** **18-03**	0
3	From 2.8 m - increased stiff clay, coarser sand and gravel, dense, wet.	**18-04**	0
	Bottom of hole at 3.2 m.		

ROAD BOX
CONCRETE
SAND
BENTONITE
MW17-18
SAND

NOTES
Bold sample denotes sample analyzed.
18-03 is a blind field duplicate of 18-02.

Appendix III

Monitoring Reports

SNC·LAVALIN

MONITORING REPORT

Project No.: 644079
Date: 2017-02-03
Observer: AS/TL
Weather: -17°C
Time: 09:00:00
Approved by: QJL

City of Saskatoon
Saskatoon, SK

Monitoring Well No.	Reference Elevation[1] (m)	Ground Surface Elevation (m)	Depth of Borehole (mbgs)	Screen Interval (mbgs)	Measured Depth to NAPL[2] (mbtoc)	Depth to NAPL[2] (mbgs)	Apparent NAPL Thickness[3] (mm)	Measured Depth to Water (mbtoc)	Depth to Water (mbgs)	Potentio-Metric Elevation (m)	Measured Depth to Well Bottom (mbtoc)	Depth to Well Bottom (mbgs)	Vapour Concentration (ppm)	pH (pH)	EC (dS/m)	Temp. (ºC)	Comments
MW14-1	NS	NS	4.5	2.8 - 4.3	-	-	0	2.68	NS	NA	3.99	NS	20	7.8	1.841	2.6	
MW14-06	NS	NS	4.5	3.3 - 4.2	-	-	-	-	-	-	-	-	-	-	-	-	CNL
MW14-20	NS	NS	4.5	2.0 - 3.5	-	-	0	2.30	NS	NA	3.19	NS	0	7.8	2.45	17.7	
MW14-37	NS	NS	4.5	1.5 - 3.0	-	-	0	2.29	NS	NA	2.79	NS	0	7.6	0.926	13.2	
MW17-03	NS	NS	3.8	2.3 - 3.8	-	-	-	-	-	-	3.73	-	360	-	-	-	Dry
MW17-05	NS	NS	3.6	1.9 - 3.4	-	-	0	2.70	NS	NA	3.60	NS	0	8.5	1.93	0.5	
MW17-06	NS	NS	5.0	2.0 - 3.5	-	-	0	2.44	NS	NA	3.47	NS	50	8	2.39	4.2	
MW17-07	NS	NS	3.6	2.0 - 3.5	-	-	0	2.69	NS	NA	3.25	NS	0	8.2	1.08	2.1	
MW17-08	NS	NS	3.8	2.0 - 3.5	-	-	-	-	-	-	3.51	-	90	-	-	-	Dry
MW17-09	NS	NS	5.0	2.0 - 3.5	-	-	0	2.74	NS	NA	3.64	NS	270	7.8	2.09	12.9	
MW17-10D	NS	NS	5.9	4.8 - 5.8	-	-	0	2.33	NS	NA	5.66	NS	5830	8.6	1.77	4.1	
MW17-10S	NS	NS	3.6	2.0 - 3.5	-	-	0	2.15	NS	NA	3.55	NS	2200	9.5	1.749	3.4	
MW17-11	NS	NS	3.8	2.0 - 3.5	-	-	0	2.33	NS	NA	3.48	NS	960	8.4	2.16	0.8	
MW17-12	NS	NS	4.5	2.0 - 3.5	-	-	0	2.18	NS	NA	3.60	NS	1050	7.9	1.332	17.6	
MW17-13	NS	NS	4.5	2.2 - 3.7	-	-	0	2.85	NS	NA	3.67	NS	8030	8.0	1.64	14.9	
MW17-16	NS	NS	5.3	2.0 - 3.5	-	-	0	2.77	NS	NA	3.49	NS	3850	7.3	2.76	13.3	
MW17-17	NS	NS	3.8	2.0 - 3.5	-	-	-	-	-	-	3.46	-	380	-	-	-	Dry
MWC	NS	NS	NA	NA	-	-	-	-	NS	NA	1.90	NS	-	-	-	-	Dry
MWD	NS	NS	NA	NA	-	-	-	-	NS	NA	-	NS	-	-	-	-	Dry

[1] Reference Elevation is a mark on the rim of the monitoring well standpipe surveyed with respect to Local Datum.
[2] Non-Aqueous Phase Liquid.
[3] NAPL specific gravity assumed to be 0.80.
- Not Monitored
NA - Not Available or Unknown
NS - Not Surveyed
CNA - Could Not Access
CNL - Could Not Locate
mbtoc - Meters Below Top of Casing
mbgs - Meters Below Ground Surface

MONITORING REPORT

SNC·LAVALIN

Project No.: 644079
Date: 2017-06-08
Observer: AS
Weather: 30°C
Time: 8:20:00
Approved by: JL

City of Saskatoon
Ave D N
Saskatoon, SK

Monitoring Well No.	Reference Elevation[1] (m)	Ground Surface Elevation (m)	Depth of Borehole (mbgs)	Screen Interval (mbgs)	Measured Depth to NAPL[2] (mbtoc)	Depth to NAPL[2] (mbgs)	Apparent NAPL Thickness[3] (mm)	Measured Depth to Water (mbtoc)	Depth to Water (mbgs)	Potentio-Metric Elevation (m)	Measured Depth to Well Bottom (mbtoc)	Depth to Well Bottom (mbgs)	Vapour Concentration (ppm)	pH (pH)	EC (dS/m)	Temp. (ºC)	Comments
MW17-18	NS	NS	3.2	1.7 - 3.2	-	-	0	2.35	NS	-	3.07	NS	0	7.8	2.22	9.9	

[1] Reference Elevation is a mark on the rim of the monitoring well standpipe surveyed with respect to Local Datum.
[2] Non-Aqueous Phase Liquid.
[3] NAPL specific gravity assumed to be 0.80.
- Not Monitored
NS - Not Surveyed
mbgs - Meters Below Ground Surface

Appendix IV

Laboratory Certificates of Analysis

SNC-Lavalin Inc.
ATTN: June Lu
216 1st Ave South
SASKATOON SK S7K 1K3

Date Received: 06-FEB-17
Report Date: 08-MAR-17 14:58 (MT)
Version: FINAL REV. 4

Client Phone: 306-934-7527

Certificate of Analysis

Lab Work Order #: L1887184

Project P.O. #: NOT SUBMITTED
Job Reference: 644079
C of C Numbers: 14-422164, 14-422165, 14-422166, 14-422167, 14-422168, 14-422169, 14-422170, 14-422171
Legal Site Desc:

Comments: 1-MAR-2017 BTX,F1 added to -21, -35 and -46
8-MAR-2017 BTX,F1-F4 and metals added to -72

Brian Morgan, B.Sc. Hons.
Client Services Manager

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1887184-2 17-01-02							
Sampled By: TL/AS on 31-JAN-17 @ 12:00							
Matrix: SOIL							
BTEX, F1-F4 and SK Reg. PHC's.							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	10-FEB-17	13-FEB-17	R3650584
Toluene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
Ethylbenzene	<0.015		0.015	mg/kg	10-FEB-17	13-FEB-17	R3650584
o-Xylene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
m+p-Xylene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
Styrene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
F1(C6-C10)	<10		10	mg/kg	10-FEB-17	13-FEB-17	R3650584
F1-BTEX	<10		10	mg/kg	10-FEB-17	13-FEB-17	R3650584
Xylenes	<0.10		0.10	mg/kg	10-FEB-17	13-FEB-17	R3650584
Surrogate: 1,4-Difluorobenzene	89.1		70-130	%	10-FEB-17	13-FEB-17	R3650584
Surrogate: 4-Bromofluorobenzene	87.9		70-130	%	10-FEB-17	13-FEB-17	R3650584
Surrogate: 3,4-Dichlorotoluene	102.3		70-130	%	10-FEB-17	13-FEB-17	R3650584
CCME F2-4 Hydrocarbons							
F2: (C10-C16)	<25		25	mg/kg	10-FEB-17	12-FEB-17	R3650491
F3: (C16-C34)	<50		50	mg/kg	10-FEB-17	12-FEB-17	R3650491
F4: (C34-C50)	<50		50	mg/kg	10-FEB-17	12-FEB-17	R3650491
Chrom. to baseline at nC50	YES			ppm	10-FEB-17	12-FEB-17	R3650491
Prep/Analysis Dates					10-FEB-17	12-FEB-17	R3650491
Surrogate: 2-Bromobenzotrifluoride	86.0		70-130	%	10-FEB-17	12-FEB-17	R3650491
CCME Total Hydrocarbons							
F1-BTEX	<10		10	mg/kg		14-FEB-17	
F2-Naphth	<25		25	mg/kg		14-FEB-17	
F3-PAH	<50		50	mg/kg		14-FEB-17	
Total Hydrocarbons (C6-C50)	<76		76	mg/kg		14-FEB-17	
Extractable Hydrocarbons. Tumbler/GC-FID							
TEH (C11-C22)	<50		50	mg/kg	10-FEB-17	12-FEB-17	R3650578
TEH (C23-C60)	<100		100	mg/kg	10-FEB-17	12-FEB-17	R3650578
Chrom. to baseline at nC50	YES		0	ppm	10-FEB-17	12-FEB-17	R3650578
Surrogate: 2-Bromobenzotrifluoride	86.0		70-130	%	10-FEB-17	12-FEB-17	R3650578
Miscellaneous Parameters							
Moisture	20.0		0.25	%		10-FEB-17	R3650399
% Particles > 75um (Coarse/Fine)							
MUST PSA % > 75um	64.4		1.0	%	14-FEB-17	14-FEB-17	R3651503
General Texture Class	Coarse				14-FEB-17	14-FEB-17	R3651503
Metals in Soil by CRC ICPMS							
Aluminum (Al)	4950		50	mg/kg	09-FEB-17	10-FEB-17	R3650219
Antimony (Sb)	0.27		0.10	mg/kg	09-FEB-17	10-FEB-17	R3650219
Arsenic (As)	4.07		0.10	mg/kg	09-FEB-17	10-FEB-17	R3650219
Barium (Ba)	129		0.50	mg/kg	09-FEB-17	10-FEB-17	R3650219
Beryllium (Be)	0.27		0.10	mg/kg	09-FEB-17	10-FEB-17	R3650219
Boron (B)	15.0		5.0	mg/kg	09-FEB-17	10-FEB-17	R3650219
Bismuth (Bi)	<0.20		0.20	mg/kg	09-FEB-17	10-FEB-17	R3650219
Cadmium (Cd)	0.189		0.020	mg/kg	09-FEB-17	10-FEB-17	R3650219
Calcium (Ca)	21200		50	mg/kg	09-FEB-17	10-FEB-17	R3650219
Chromium (Cr)	7.88		0.50	mg/kg	09-FEB-17	10-FEB-17	R3650219
Cobalt (Co)	4.31		0.10	mg/kg	09-FEB-17	10-FEB-17	R3650219
Copper (Cu)	5.85		0.50	mg/kg	09-FEB-17	10-FEB-17	R3650219
Iron (Fe)	9220		50	mg/kg	09-FEB-17	10-FEB-17	R3650219
Lead (Pb)	5.55		0.50	mg/kg	09-FEB-17	10-FEB-17	R3650219
Lithium (Li)	6.8		2.0	mg/kg	09-FEB-17	10-FEB-17	R3650219
Magnesium (Mg)	5680		20	mg/kg	09-FEB-17	10-FEB-17	R3650219

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1887184-2 17-01-02							
Sampled By: TL/AS on 31-JAN-17 @ 12:00							
Matrix: SOIL							
Metals in Soil by CRC ICPMS							
Manganese (Mn)	303		1.0	mg/kg	09-FEB-17	10-FEB-17	R3650219
Molybdenum (Mo)	0.40		0.10	mg/kg	09-FEB-17	10-FEB-17	R3650219
Nickel (Ni)	9.37		0.50	mg/kg	09-FEB-17	10-FEB-17	R3650219
Phosphorus (P)	522		50	mg/kg	09-FEB-17	10-FEB-17	R3650219
Potassium (K)	1270		100	mg/kg	09-FEB-17	10-FEB-17	R3650219
Selenium (Se)	0.27		0.20	mg/kg	09-FEB-17	10-FEB-17	R3650219
Silver (Ag)	<0.10		0.10	mg/kg	09-FEB-17	10-FEB-17	R3650219
Sodium (Na)	327		50	mg/kg	09-FEB-17	10-FEB-17	R3650219
Strontium (Sr)	76.7		0.50	mg/kg	09-FEB-17	10-FEB-17	R3650219
Thallium (Tl)	0.083		0.050	mg/kg	09-FEB-17	10-FEB-17	R3650219
Tin (Sn)	<1.0		1.0	mg/kg	09-FEB-17	10-FEB-17	R3650219
Titanium (Ti)	66.4		1.0	mg/kg	09-FEB-17	10-FEB-17	R3650219
Uranium (U)	0.646		0.050	mg/kg	09-FEB-17	10-FEB-17	R3650219
Vanadium (V)	14.8		0.20	mg/kg	09-FEB-17	10-FEB-17	R3650219
Zinc (Zn)	41.5		2.0	mg/kg	09-FEB-17	10-FEB-17	R3650219
Zirconium (Zr)	1.6		1.0	mg/kg	09-FEB-17	10-FEB-17	R3650219
CCME PAHs							
Naphthalene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Acenapthene	<0.0050		0.0050	mg/kg	10-FEB-17	12-FEB-17	R3651104
Quinoline	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Acenapthylene	<0.0050		0.0050	mg/kg	10-FEB-17	12-FEB-17	R3651104
Phenanthrene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Anthracene	<0.0040		0.0040	mg/kg	10-FEB-17	12-FEB-17	R3651104
Pyrene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Benzo(g,h,i)perylene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Benzo(a)anthracene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Chrysene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Benzo(b&j)fluoranthene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Benzo(k)fluoranthene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Benzo(a)pyrene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Fluoroanthene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Fluorene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Indeno(1,2,3-cd)pyrene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Dibenzo(a,h)anthracene	<0.0050		0.0050	mg/kg	10-FEB-17	12-FEB-17	R3651104
2-methylnaphthalene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
B(A)P Total Potency Equivalent	<0.020		0.020	mg/kg	10-FEB-17	12-FEB-17	R3651104
IACR (CCME)	<0.15		0.15	mg/kg	10-FEB-17	12-FEB-17	R3651104
Surrogate: d10-Acenaphthene	89.8		60-130	%	10-FEB-17	12-FEB-17	R3651104
Surrogate: d10-Phenanthrene	94.7		60-130	%	10-FEB-17	12-FEB-17	R3651104
Surrogate: d12-Chrysene	86.1		60-130	%	10-FEB-17	12-FEB-17	R3651104
L1887184-4 17-01-04							
Sampled By: TL/AS on 31-JAN-17 @ 12:00							
Matrix: SOIL							
BTEX, F1-F4 and SK Reg. PHC's.							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	10-FEB-17	13-FEB-17	R3650584
Toluene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
Ethylbenzene	<0.015		0.015	mg/kg	10-FEB-17	13-FEB-17	R3650584
o-Xylene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
m+p-Xylene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
Styrene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1887184-4 17-01-04							
Sampled By: TL/AS on 31-JAN-17 @ 12:00							
Matrix: SOIL							
BTEX and F1							
F1(C6-C10)	<10		10	mg/kg	10-FEB-17	13-FEB-17	R3650584
F1-BTEX	<10		10	mg/kg	10-FEB-17	13-FEB-17	R3650584
Xylenes	<0.10		0.10	mg/kg	10-FEB-17	13-FEB-17	R3650584
Surrogate: 1,4-Difluorobenzene	102.6		70-130	%	10-FEB-17	13-FEB-17	R3650584
Surrogate: 4-Bromofluorobenzene	103.5		70-130	%	10-FEB-17	13-FEB-17	R3650584
Surrogate: 3,4-Dichlorotoluene	103.4		70-130	%	10-FEB-17	13-FEB-17	R3650584
CCME F2-4 Hydrocarbons							
F2: (C10-C16)	<25		25	mg/kg	10-FEB-17	12-FEB-17	R3650491
F3: (C16-C34)	<50		50	mg/kg	10-FEB-17	12-FEB-17	R3650491
F4: (C34-C50)	<50		50	mg/kg	10-FEB-17	12-FEB-17	R3650491
Chrom. to baseline at nC50	YES			ppm	10-FEB-17	12-FEB-17	R3650491
Prep/Analysis Dates					10-FEB-17	12-FEB-17	R3650491
Surrogate: 2-Bromobenzotrifluoride	89.4		70-130	%	10-FEB-17	12-FEB-17	R3650491
CCME Total Hydrocarbons							
F1-BTEX	<10		10	mg/kg		13-FEB-17	
Total Hydrocarbons (C6-C50)	<76		76	mg/kg		13-FEB-17	
Extractable Hydrocarbons. Tumbler/GC-FID							
TEH (C11-C22)	<50		50	mg/kg	10-FEB-17	12-FEB-17	R3650578
TEH (C23-C60)	<100		100	mg/kg	10-FEB-17	12-FEB-17	R3650578
Chrom. to baseline at nC50	YES		0	ppm	10-FEB-17	12-FEB-17	R3650578
Surrogate: 2-Bromobenzotrifluoride	89.4		70-130	%	10-FEB-17	12-FEB-17	R3650578
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	4.10		0.50	mg/kg	09-FEB-17	10-FEB-17	R3650219
Miscellaneous Parameters							
Moisture	5.14		0.25	%		10-FEB-17	R3650399
% Particles > 75um (Coarse/Fine)							
MUST PSA % > 75um	94.0		1.0	%	14-FEB-17	14-FEB-17	R3651503
General Texture Class	Coarse				14-FEB-17	14-FEB-17	R3651503
L1887184-6 17-02-01							
Sampled By: TL/AS on 31-JAN-17 @ 12:00							
Matrix: SOIL							
BTEX, F1-F4 and SK Reg. PHC's.							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	10-FEB-17	13-FEB-17	R3650584
Toluene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
Ethylbenzene	0.017		0.015	mg/kg	10-FEB-17	13-FEB-17	R3650584
o-Xylene	0.203		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
m+p-Xylene	0.141		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
Styrene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
F1(C6-C10)	<10		10	mg/kg	10-FEB-17	13-FEB-17	R3650584
F1-BTEX	<10		10	mg/kg	10-FEB-17	13-FEB-17	R3650584
Xylenes	0.34		0.10	mg/kg	10-FEB-17	13-FEB-17	R3650584
Surrogate: 1,4-Difluorobenzene	97.4		70-130	%	10-FEB-17	13-FEB-17	R3650584
Surrogate: 4-Bromofluorobenzene	96.3		70-130	%	10-FEB-17	13-FEB-17	R3650584
Surrogate: 3,4-Dichlorotoluene	91.9		70-130	%	10-FEB-17	13-FEB-17	R3650584
CCME F2-4 Hydrocarbons							
F2: (C10-C16)	<25		25	mg/kg	10-FEB-17	12-FEB-17	R3650491
F3: (C16-C34)	126		50	mg/kg	10-FEB-17	12-FEB-17	R3650491
F4: (C34-C50)	109		50	mg/kg	10-FEB-17	12-FEB-17	R3650491
Chrom. to baseline at nC50	YES			ppm	10-FEB-17	12-FEB-17	R3650491

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1887184-6 17-02-01							
Sampled By: TL/AS on 31-JAN-17 @ 12:00							
Matrix: SOIL							
CCME F2-4 Hydrocarbons							
Prep/Analysis Dates					10-FEB-17	12-FEB-17	R3650491
Surrogate: 2-Bromobenzotrifluoride	84.5		70-130	%	10-FEB-17	12-FEB-17	R3650491
CCME Total Hydrocarbons							
F1-BTEX	<10		10	mg/kg		13-FEB-17	
Total Hydrocarbons (C6-C50)	235		76	mg/kg		13-FEB-17	
Extractable Hydrocarbons. Tumbler/GC-FID							
TEH (C11-C22)	<50		50	mg/kg	10-FEB-17	12-FEB-17	R3650578
TEH (C23-C60)	280		100	mg/kg	10-FEB-17	12-FEB-17	R3650578
Chrom. to baseline at nC50	YES		0	ppm	10-FEB-17	12-FEB-17	R3650578
Surrogate: 2-Bromobenzotrifluoride	84.5		70-130	%	10-FEB-17	12-FEB-17	R3650578
Miscellaneous Parameters							
Moisture	7.35		0.25	%		10-FEB-17	R3650399
% Particles > 75um (Coarse/Fine)							
MUST PSA % > 75um	71.4		1.0	%	14-FEB-17	14-FEB-17	R3651503
General Texture Class	Coarse				14-FEB-17	14-FEB-17	R3651503
Metals in Soil by CRC ICPMS							
Aluminum (Al)	4960		50	mg/kg	09-FEB-17	10-FEB-17	R3650219
Antimony (Sb)	2.21		0.10	mg/kg	09-FEB-17	10-FEB-17	R3650219
Arsenic (As)	7.41		0.10	mg/kg	09-FEB-17	10-FEB-17	R3650219
Barium (Ba)	153		0.50	mg/kg	09-FEB-17	10-FEB-17	R3650219
Beryllium (Be)	0.29		0.10	mg/kg	09-FEB-17	10-FEB-17	R3650219
Boron (B)	10.3		5.0	mg/kg	09-FEB-17	10-FEB-17	R3650219
Bismuth (Bi)	<0.20		0.20	mg/kg	09-FEB-17	10-FEB-17	R3650219
Cadmium (Cd)	0.559		0.020	mg/kg	09-FEB-17	10-FEB-17	R3650219
Calcium (Ca)	42000		50	mg/kg	09-FEB-17	10-FEB-17	R3650219
Chromium (Cr)	16.2		0.50	mg/kg	09-FEB-17	10-FEB-17	R3650219
Cobalt (Co)	5.34		0.10	mg/kg	09-FEB-17	10-FEB-17	R3650219
Copper (Cu)	75.9		0.50	mg/kg	09-FEB-17	10-FEB-17	R3650219
Iron (Fe)	17500		50	mg/kg	09-FEB-17	10-FEB-17	R3650219
Lead (Pb)	149		0.50	mg/kg	09-FEB-17	10-FEB-17	R3650219
Lithium (Li)	6.4		2.0	mg/kg	09-FEB-17	10-FEB-17	R3650219
Magnesium (Mg)	14900		20	mg/kg	09-FEB-17	10-FEB-17	R3650219
Manganese (Mn)	459		1.0	mg/kg	09-FEB-17	10-FEB-17	R3650219
Molybdenum (Mo)	1.46		0.10	mg/kg	09-FEB-17	10-FEB-17	R3650219
Nickel (Ni)	18.6		0.50	mg/kg	09-FEB-17	10-FEB-17	R3650219
Phosphorus (P)	451		50	mg/kg	09-FEB-17	10-FEB-17	R3650219
Potassium (K)	1040		100	mg/kg	09-FEB-17	10-FEB-17	R3650219
Selenium (Se)	0.22		0.20	mg/kg	09-FEB-17	10-FEB-17	R3650219
Silver (Ag)	0.14		0.10	mg/kg	09-FEB-17	10-FEB-17	R3650219
Sodium (Na)	580		50	mg/kg	09-FEB-17	10-FEB-17	R3650219
Strontium (Sr)	59.0		0.50	mg/kg	09-FEB-17	10-FEB-17	R3650219
Thallium (Tl)	0.116		0.050	mg/kg	09-FEB-17	10-FEB-17	R3650219
Tin (Sn)	23.2		1.0	mg/kg	09-FEB-17	10-FEB-17	R3650219
Titanium (Ti)	161		1.0	mg/kg	09-FEB-17	10-FEB-17	R3650219
Uranium (U)	0.691		0.050	mg/kg	09-FEB-17	10-FEB-17	R3650219
Vanadium (V)	19.1		0.20	mg/kg	09-FEB-17	10-FEB-17	R3650219
Zinc (Zn)	123		2.0	mg/kg	09-FEB-17	10-FEB-17	R3650219
Zirconium (Zr)	1.9		1.0	mg/kg	09-FEB-17	10-FEB-17	R3650219
L1887184-10 17-02-05							
Sampled By: TL/AS on 31-JAN-17 @ 12:00							
Matrix: SOIL							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1887184-10 17-02-05							
Sampled By: TL/AS on 31-JAN-17 @ 12:00							
Matrix: SOIL							
BTEX, F1-F4 and SK Reg. PHC's.							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	10-FEB-17	13-FEB-17	R3650584
Toluene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
Ethylbenzene	<0.015		0.015	mg/kg	10-FEB-17	13-FEB-17	R3650584
o-Xylene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
m+p-Xylene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
Styrene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
F1(C6-C10)	<10		10	mg/kg	10-FEB-17	13-FEB-17	R3650584
F1-BTEX	<10		10	mg/kg	10-FEB-17	13-FEB-17	R3650584
Xylenes	<0.10		0.10	mg/kg	10-FEB-17	13-FEB-17	R3650584
Surrogate: 1,4-Difluorobenzene	95.6		70-130	%	10-FEB-17	13-FEB-17	R3650584
Surrogate: 4-Bromofluorobenzene	93.6		70-130	%	10-FEB-17	13-FEB-17	R3650584
Surrogate: 3,4-Dichlorotoluene	97.7		70-130	%	10-FEB-17	13-FEB-17	R3650584
CCME F2-4 Hydrocarbons							
F2: (C10-C16)	<25		25	mg/kg	10-FEB-17	12-FEB-17	R3650491
F3: (C16-C34)	<50		50	mg/kg	10-FEB-17	12-FEB-17	R3650491
F4: (C34-C50)	<50		50	mg/kg	10-FEB-17	12-FEB-17	R3650491
Chrom. to baseline at nC50	YES			ppm	10-FEB-17	12-FEB-17	R3650491
Prep/Analysis Dates					10-FEB-17	12-FEB-17	R3650491
Surrogate: 2-Bromobenzotrifluoride	74.9		70-130	%	10-FEB-17	12-FEB-17	R3650491
CCME Total Hydrocarbons							
F1-BTEX	<10		10	mg/kg		13-FEB-17	
Total Hydrocarbons (C6-C50)	<76		76	mg/kg		13-FEB-17	
Extractable Hydrocarbons. Tumbler/GC-FID							
TEH (C11-C22)	<50		50	mg/kg	10-FEB-17	12-FEB-17	R3650578
TEH (C23-C60)	<100		100	mg/kg	10-FEB-17	12-FEB-17	R3650578
Chrom. to baseline at nC50	YES		0	ppm	10-FEB-17	12-FEB-17	R3650578
Surrogate: 2-Bromobenzotrifluoride	74.9		70-130	%	10-FEB-17	12-FEB-17	R3650578
Miscellaneous Parameters							
Moisture	9.12		0.25	%		10-FEB-17	R3650399
L1887184-11 17-03-01							
Sampled By: TL/AS on 31-JAN-17 @ 12:00							
Matrix: SOIL							
BTEX, F1-F4 and SK Reg. PHC's.							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	10-FEB-17	13-FEB-17	R3650584
Toluene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
Ethylbenzene	<0.015		0.015	mg/kg	10-FEB-17	13-FEB-17	R3650584
o-Xylene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
m+p-Xylene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
Styrene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
F1(C6-C10)	<10		10	mg/kg	10-FEB-17	13-FEB-17	R3650584
F1-BTEX	<10		10	mg/kg	10-FEB-17	13-FEB-17	R3650584
Xylenes	<0.10		0.10	mg/kg	10-FEB-17	13-FEB-17	R3650584
Surrogate: 1,4-Difluorobenzene	87.9		70-130	%	10-FEB-17	13-FEB-17	R3650584
Surrogate: 4-Bromofluorobenzene	86.4		70-130	%	10-FEB-17	13-FEB-17	R3650584
Surrogate: 3,4-Dichlorotoluene	89.3		70-130	%	10-FEB-17	13-FEB-17	R3650584
CCME F2-4 Hydrocarbons							
F2: (C10-C16)	<25		25	mg/kg	10-FEB-17	12-FEB-17	R3650491
F3: (C16-C34)	<50		50	mg/kg	10-FEB-17	12-FEB-17	R3650491
F4: (C34-C50)	<50		50	mg/kg	10-FEB-17	12-FEB-17	R3650491

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1887184-11 17-03-01							
Sampled By: TL/AS on 31-JAN-17 @ 12:00							
Matrix: SOIL							
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	10-FEB-17	12-FEB-17	R3650491
Prep/Analysis Dates					10-FEB-17	12-FEB-17	R3650491
Surrogate: 2-Bromobenzotrifluoride	84.5		70-130	%	10-FEB-17	12-FEB-17	R3650491
CCME Total Hydrocarbons							
F1-BTEX	<10		10	mg/kg		13-FEB-17	
Total Hydrocarbons (C6-C50)	<76		76	mg/kg		13-FEB-17	
Extractable Hydrocarbons. Tumbler/GC-FID							
TEH (C11-C22)	<50		50	mg/kg	10-FEB-17	12-FEB-17	R3650578
TEH (C23-C60)	<100		100	mg/kg	10-FEB-17	12-FEB-17	R3650578
Chrom. to baseline at nC50	YES		0	ppm	10-FEB-17	12-FEB-17	R3650578
Surrogate: 2-Bromobenzotrifluoride	84.5		70-130	%	10-FEB-17	12-FEB-17	R3650578
Miscellaneous Parameters							
Moisture	12.1		0.25	%		10-FEB-17	R3650399
Metals in Soil by CRC ICPMS							
Aluminum (Al)	4600		50	mg/kg	09-FEB-17	10-FEB-17	R3650219
Antimony (Sb)	0.23		0.10	mg/kg	09-FEB-17	10-FEB-17	R3650219
Arsenic (As)	5.11		0.10	mg/kg	09-FEB-17	10-FEB-17	R3650219
Barium (Ba)	74.9		0.50	mg/kg	09-FEB-17	10-FEB-17	R3650219
Beryllium (Be)	0.27		0.10	mg/kg	09-FEB-17	10-FEB-17	R3650219
Boron (B)	6.8		5.0	mg/kg	09-FEB-17	10-FEB-17	R3650219
Bismuth (Bi)	<0.20		0.20	mg/kg	09-FEB-17	10-FEB-17	R3650219
Cadmium (Cd)	0.128		0.020	mg/kg	09-FEB-17	10-FEB-17	R3650219
Calcium (Ca)	9120		50	mg/kg	09-FEB-17	10-FEB-17	R3650219
Chromium (Cr)	7.83		0.50	mg/kg	09-FEB-17	10-FEB-17	R3650219
Cobalt (Co)	4.53		0.10	mg/kg	09-FEB-17	10-FEB-17	R3650219
Copper (Cu)	5.13		0.50	mg/kg	09-FEB-17	10-FEB-17	R3650219
Iron (Fe)	9130		50	mg/kg	09-FEB-17	10-FEB-17	R3650219
Lead (Pb)	5.31		0.50	mg/kg	09-FEB-17	10-FEB-17	R3650219
Lithium (Li)	4.5		2.0	mg/kg	09-FEB-17	10-FEB-17	R3650219
Magnesium (Mg)	2730		20	mg/kg	09-FEB-17	10-FEB-17	R3650219
Manganese (Mn)	212		1.0	mg/kg	09-FEB-17	10-FEB-17	R3650219
Molybdenum (Mo)	0.34		0.10	mg/kg	09-FEB-17	10-FEB-17	R3650219
Nickel (Ni)	10.1		0.50	mg/kg	09-FEB-17	10-FEB-17	R3650219
Phosphorus (P)	327		50	mg/kg	09-FEB-17	10-FEB-17	R3650219
Potassium (K)	1070		100	mg/kg	09-FEB-17	10-FEB-17	R3650219
Selenium (Se)	<0.20		0.20	mg/kg	09-FEB-17	10-FEB-17	R3650219
Silver (Ag)	<0.10		0.10	mg/kg	09-FEB-17	10-FEB-17	R3650219
Sodium (Na)	154		50	mg/kg	09-FEB-17	10-FEB-17	R3650219
Strontium (Sr)	20.2		0.50	mg/kg	09-FEB-17	10-FEB-17	R3650219
Thallium (Tl)	0.085		0.050	mg/kg	09-FEB-17	10-FEB-17	R3650219
Tin (Sn)	1.5		1.0	mg/kg	09-FEB-17	10-FEB-17	R3650219
Titanium (Ti)	74.5		1.0	mg/kg	09-FEB-17	10-FEB-17	R3650219
Uranium (U)	0.457		0.050	mg/kg	09-FEB-17	10-FEB-17	R3650219
Vanadium (V)	15.7		0.20	mg/kg	09-FEB-17	10-FEB-17	R3650219
Zinc (Zn)	28.3		2.0	mg/kg	09-FEB-17	10-FEB-17	R3650219
Zirconium (Zr)	1.6		1.0	mg/kg	09-FEB-17	10-FEB-17	R3650219
L1887184-15 17-03-05							
Sampled By: TL/AS on 31-JAN-17 @ 12:00							
Matrix: SOIL							
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1887184-15 17-03-05							
Sampled By: TL/AS on 31-JAN-17 @ 12:00							
Matrix: SOIL							
Metals in Soil by CRC ICPMS							
Lead (Pb)	4.96		0.50	mg/kg	09-FEB-17	10-FEB-17	R3650219
Miscellaneous Parameters							
Moisture	8.20		0.25	%		14-FEB-17	R3651192
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	13-FEB-17	14-FEB-17	R3651257
Toluene	<0.050		0.050	mg/kg	13-FEB-17	14-FEB-17	R3651257
Ethylbenzene	<0.015		0.015	mg/kg	13-FEB-17	14-FEB-17	R3651257
o-Xylene	<0.050		0.050	mg/kg	13-FEB-17	14-FEB-17	R3651257
m+p-Xylene	<0.050		0.050	mg/kg	13-FEB-17	14-FEB-17	R3651257
Styrene	<0.050		0.050	mg/kg	13-FEB-17	14-FEB-17	R3651257
F1(C6-C10)	<10		10	mg/kg	13-FEB-17	14-FEB-17	R3651257
F1-BTEX	<10		10	mg/kg	13-FEB-17	14-FEB-17	R3651257
Xylenes	<0.10		0.10	mg/kg	13-FEB-17	14-FEB-17	R3651257
Surrogate: 1,4-Difluorobenzene	79.1		70-130	%	13-FEB-17	14-FEB-17	R3651257
Surrogate: 4-Bromofluorobenzene	74.3		70-130	%	13-FEB-17	14-FEB-17	R3651257
Surrogate: 3,4-Dichlorotoluene	91.2		70-130	%	13-FEB-17	14-FEB-17	R3651257
L1887184-20 17-04-05							
Sampled By: TL/AS on 31-JAN-17 @ 12:00							
Matrix: SOIL							
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	5.26		0.50	mg/kg	09-FEB-17	10-FEB-17	R3650219
Miscellaneous Parameters							
Moisture	7.70		0.25	%		14-FEB-17	R3651192
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	13-FEB-17	14-FEB-17	R3651257
Toluene	<0.050		0.050	mg/kg	13-FEB-17	14-FEB-17	R3651257
Ethylbenzene	<0.015		0.015	mg/kg	13-FEB-17	14-FEB-17	R3651257
o-Xylene	<0.050		0.050	mg/kg	13-FEB-17	14-FEB-17	R3651257
m+p-Xylene	<0.050		0.050	mg/kg	13-FEB-17	14-FEB-17	R3651257
Styrene	<0.050		0.050	mg/kg	13-FEB-17	14-FEB-17	R3651257
F1(C6-C10)	<10		10	mg/kg	13-FEB-17	14-FEB-17	R3651257
F1-BTEX	<10		10	mg/kg	13-FEB-17	14-FEB-17	R3651257
Xylenes	<0.10		0.10	mg/kg	13-FEB-17	14-FEB-17	R3651257
Surrogate: 1,4-Difluorobenzene	84.3		70-130	%	13-FEB-17	14-FEB-17	R3651257
Surrogate: 4-Bromofluorobenzene	81.3		70-130	%	13-FEB-17	14-FEB-17	R3651257
Surrogate: 3,4-Dichlorotoluene	92.5		70-130	%	13-FEB-17	14-FEB-17	R3651257
CCME PAHs							
Naphthalene	<0.010		0.010	mg/kg	13-FEB-17	14-FEB-17	R3651568
Acenapthene	<0.0050		0.0050	mg/kg	13-FEB-17	14-FEB-17	R3651568
Quinoline	<0.010		0.010	mg/kg	13-FEB-17	14-FEB-17	R3651568
Acenapthylene	<0.0050		0.0050	mg/kg	13-FEB-17	14-FEB-17	R3651568
Phenanthrene	<0.010		0.010	mg/kg	13-FEB-17	14-FEB-17	R3651568
Anthracene	<0.0040		0.0040	mg/kg	13-FEB-17	14-FEB-17	R3651568
Pyrene	<0.010		0.010	mg/kg	13-FEB-17	14-FEB-17	R3651568
Benzo(g,h,i)perylene	<0.010		0.010	mg/kg	13-FEB-17	14-FEB-17	R3651568
Benzo(a)anthracene	<0.010		0.010	mg/kg	13-FEB-17	14-FEB-17	R3651568
Chrysene	<0.010		0.010	mg/kg	13-FEB-17	14-FEB-17	R3651568
Benzo(b&j)fluoranthene	<0.010		0.010	mg/kg	13-FEB-17	14-FEB-17	R3651568
Benzo(k)fluoranthene	<0.010		0.010	mg/kg	13-FEB-17	14-FEB-17	R3651568
Benzo(a)pyrene	<0.010		0.010	mg/kg	13-FEB-17	14-FEB-17	R3651568

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1887184-20 17-04-05							
Sampled By: TL/AS on 31-JAN-17 @ 12:00							
Matrix: SOIL							
CCME PAHs							
Fluoroanthene	<0.010		0.010	mg/kg	13-FEB-17	14-FEB-17	R3651568
Fluorene	<0.010		0.010	mg/kg	13-FEB-17	14-FEB-17	R3651568
Indeno(1,2,3-cd)pyrene	<0.010		0.010	mg/kg	13-FEB-17	14-FEB-17	R3651568
Dibenzo(a,h)anthracene	<0.0050		0.0050	mg/kg	13-FEB-17	14-FEB-17	R3651568
2-methylnaphthalene	<0.010		0.010	mg/kg	13-FEB-17	14-FEB-17	R3651568
B(A)P Total Potency Equivalent	<0.020		0.020	mg/kg	13-FEB-17	14-FEB-17	R3651568
IACR (CCME)	<0.15		0.15	mg/kg	13-FEB-17	14-FEB-17	R3651568
Surrogate: d10-Acenaphthene	94.5		60-130	%	13-FEB-17	14-FEB-17	R3651568
Surrogate: d10-Phenanthrene	98.0		60-130	%	13-FEB-17	14-FEB-17	R3651568
Surrogate: d12-Chrysene	101.6		60-130	%	13-FEB-17	14-FEB-17	R3651568
L1887184-21 17-05-01							
Sampled By: TL/AS on 31-JAN-17 @ 12:00							
Matrix: SOIL							
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	6.80		0.50	mg/kg	09-FEB-17	10-FEB-17	R3650219
Miscellaneous Parameters							
Moisture	25.3		0.25	%		10-FEB-17	R3650399
BTEX and F1							
Benzene	0.0317		0.0050	mg/kg	01-MAR-17	01-MAR-17	R3664774
Toluene	0.229		0.050	mg/kg	01-MAR-17	01-MAR-17	R3664774
Ethylbenzene	0.077		0.015	mg/kg	01-MAR-17	01-MAR-17	R3664774
o-Xylene	0.214		0.050	mg/kg	01-MAR-17	01-MAR-17	R3664774
m+p-Xylene	0.261		0.050	mg/kg	01-MAR-17	01-MAR-17	R3664774
Styrene	<0.050		0.050	mg/kg	01-MAR-17	01-MAR-17	R3664774
F1(C6-C10)	<10		10	mg/kg	01-MAR-17	01-MAR-17	R3664774
F1-BTEX	<10		10	mg/kg	01-MAR-17	01-MAR-17	R3664774
Xylenes	0.48		0.10	mg/kg	01-MAR-17	01-MAR-17	R3664774
Surrogate: 1,4-Difluorobenzene	102.3		70-130	%	01-MAR-17	01-MAR-17	R3664774
Surrogate: 4-Bromofluorobenzene	114.3		70-130	%	01-MAR-17	01-MAR-17	R3664774
Surrogate: 3,4-Dichlorotoluene	105.1		70-130	%	01-MAR-17	01-MAR-17	R3664774
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	10-FEB-17	12-FEB-17	R3650491
Prep/Analysis Dates					10-FEB-17	12-FEB-17	R3650491
Surrogate: 2-Bromobenzotrifluoride	83.0		70-130	%	10-FEB-17	12-FEB-17	R3650491
CCME Total Hydrocarbons							
F2 (C10-C16)	<25		25	mg/kg		12-FEB-17	
F3 (C16-C34)	<50		50	mg/kg		12-FEB-17	
F4 (C34-C50)	<50		50	mg/kg		12-FEB-17	
L1887184-26 17-06-03							
Sampled By: TL/AS on 31-JAN-17 @ 12:00							
Matrix: SOIL							
BTEX, F1-F4 and SK Reg. PHC's.							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	10-FEB-17	13-FEB-17	R3650584
Toluene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
Ethylbenzene	<0.015		0.015	mg/kg	10-FEB-17	13-FEB-17	R3650584
o-Xylene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
m+p-Xylene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
Styrene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
F1(C6-C10)	<10		10	mg/kg	10-FEB-17	13-FEB-17	R3650584

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1887184-26 17-06-03							
Sampled By: TL/AS on 31-JAN-17 @ 12:00							
Matrix: SOIL							
BTEX and F1							
F1-BTEX	<10		10	mg/kg	10-FEB-17	13-FEB-17	R3650584
Xylenes	<0.10		0.10	mg/kg	10-FEB-17	13-FEB-17	R3650584
Surrogate: 1,4-Difluorobenzene	90.5		70-130	%	10-FEB-17	13-FEB-17	R3650584
Surrogate: 4-Bromofluorobenzene	90.3		70-130	%	10-FEB-17	13-FEB-17	R3650584
Surrogate: 3,4-Dichlorotoluene	90.2		70-130	%	10-FEB-17	13-FEB-17	R3650584
CCME F2-4 Hydrocarbons							
F2: (C10-C16)	349		25	mg/kg	10-FEB-17	12-FEB-17	R3650491
F3: (C16-C34)	409		50	mg/kg	10-FEB-17	12-FEB-17	R3650491
F4: (C34-C50)	<50		50	mg/kg	10-FEB-17	12-FEB-17	R3650491
Chrom. to baseline at nC50	YES			ppm	10-FEB-17	12-FEB-17	R3650491
Prep/Analysis Dates					10-FEB-17	12-FEB-17	R3650491
Surrogate: 2-Bromobenzotrifluoride	80.9		70-130	%	10-FEB-17	12-FEB-17	R3650491
CCME Total Hydrocarbons							
F1-BTEX	<10		10	mg/kg		14-FEB-17	
F2-Naphth	349		25	mg/kg		14-FEB-17	
F3-PAH	409		50	mg/kg		14-FEB-17	
Total Hydrocarbons (C6-C50)	758		76	mg/kg		14-FEB-17	
Extractable Hydrocarbons. Tumbler/GC-FID							
TEH (C11-C22)	516		50	mg/kg	10-FEB-17	12-FEB-17	R3650578
TEH (C23-C60)	290		100	mg/kg	10-FEB-17	12-FEB-17	R3650578
Chrom. to baseline at nC50	YES		0	ppm	10-FEB-17	12-FEB-17	R3650578
Surrogate: 2-Bromobenzotrifluoride	80.9		70-130	%	10-FEB-17	12-FEB-17	R3650578
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	4.27		0.50	mg/kg	09-FEB-17	10-FEB-17	R3650219
Miscellaneous Parameters							
Moisture	16.0		0.25	%		10-FEB-17	R3650399
CCME PAHs							
Naphthalene	<0.030	DLCI	0.030	mg/kg	10-FEB-17	12-FEB-17	R3651104
Acenapthene	0.0223		0.0050	mg/kg	10-FEB-17	12-FEB-17	R3651104
Quinoline	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Acenapthylene	<0.031	DLCI	0.031	mg/kg	10-FEB-17	12-FEB-17	R3651104
Phenanthrene	0.074		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Anthracene	<0.022	DLCI	0.022	mg/kg	10-FEB-17	12-FEB-17	R3651104
Pyrene	0.044		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Benzo(g,h,i)perylene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Benzo(a)anthracene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Chrysene	0.068		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Benzo(b&j)fluoranthene	0.011		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Benzo(k)fluoranthene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Benzo(a)pyrene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Fluoroanthene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Fluorene	0.081		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Indeno(1,2,3-cd)pyrene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Dibenzo(a,h)anthracene	<0.0050		0.0050	mg/kg	10-FEB-17	12-FEB-17	R3651104
2-methylnaphthalene	0.137		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
B(A)P Total Potency Equivalent	<0.020		0.020	mg/kg	10-FEB-17	12-FEB-17	R3651104
IACR (CCME)	0.17		0.15	mg/kg	10-FEB-17	12-FEB-17	R3651104
Surrogate: d10-Acenaphthene	86.2		60-130	%	10-FEB-17	12-FEB-17	R3651104
Surrogate: d10-Phenanthrene	95.6		60-130	%	10-FEB-17	12-FEB-17	R3651104
Surrogate: d12-Chrysene	97.1		60-130	%	10-FEB-17	12-FEB-17	R3651104

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1887184-27 17-06-04							
Sampled By: TL/AS on 31-JAN-17 @ 12:00							
Matrix: SOIL							
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	4.86		0.50	mg/kg	09-FEB-17	10-FEB-17	R3650219
Miscellaneous Parameters							
Moisture	9.92		0.25	%		14-FEB-17	R3651192
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	13-FEB-17	14-FEB-17	R3651257
Toluene	<0.050		0.050	mg/kg	13-FEB-17	14-FEB-17	R3651257
Ethylbenzene	<0.015		0.015	mg/kg	13-FEB-17	14-FEB-17	R3651257
o-Xylene	<0.050		0.050	mg/kg	13-FEB-17	14-FEB-17	R3651257
m+p-Xylene	<0.050		0.050	mg/kg	13-FEB-17	14-FEB-17	R3651257
Styrene	<0.050		0.050	mg/kg	13-FEB-17	14-FEB-17	R3651257
F1(C6-C10)	<10		10	mg/kg	13-FEB-17	14-FEB-17	R3651257
F1-BTEX	<10		10	mg/kg	13-FEB-17	14-FEB-17	R3651257
Xylenes	<0.10		0.10	mg/kg	13-FEB-17	14-FEB-17	R3651257
Surrogate: 1,4-Difluorobenzene	83.7		70-130	%	13-FEB-17	14-FEB-17	R3651257
Surrogate: 4-Bromofluorobenzene	87.1		70-130	%	13-FEB-17	14-FEB-17	R3651257
Surrogate: 3,4-Dichlorotoluene	82.1		70-130	%	13-FEB-17	14-FEB-17	R3651257
L1887184-28 17-06-05							
Sampled By: TL/AS on 31-JAN-17 @ 12:00							
Matrix: SOIL							
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	4.83		0.50	mg/kg	09-FEB-17	10-FEB-17	R3650219
Miscellaneous Parameters							
Moisture	8.94		0.25	%		14-FEB-17	R3651192
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	13-FEB-17	14-FEB-17	R3651257
Toluene	<0.050		0.050	mg/kg	13-FEB-17	14-FEB-17	R3651257
Ethylbenzene	<0.015		0.015	mg/kg	13-FEB-17	14-FEB-17	R3651257
o-Xylene	<0.050		0.050	mg/kg	13-FEB-17	14-FEB-17	R3651257
m+p-Xylene	<0.050		0.050	mg/kg	13-FEB-17	14-FEB-17	R3651257
Styrene	<0.050		0.050	mg/kg	13-FEB-17	14-FEB-17	R3651257
F1(C6-C10)	<10		10	mg/kg	13-FEB-17	14-FEB-17	R3651257
F1-BTEX	<10		10	mg/kg	13-FEB-17	14-FEB-17	R3651257
Xylenes	<0.10		0.10	mg/kg	13-FEB-17	14-FEB-17	R3651257
Surrogate: 1,4-Difluorobenzene	83.6		70-130	%	13-FEB-17	14-FEB-17	R3651257
Surrogate: 4-Bromofluorobenzene	82.6		70-130	%	13-FEB-17	14-FEB-17	R3651257
Surrogate: 3,4-Dichlorotoluene	81.4		70-130	%	13-FEB-17	14-FEB-17	R3651257
L1887184-32 17-07-03							
Sampled By: TL/AS on 31-JAN-17 @ 12:00							
Matrix: SOIL							
BTEX, F1-F4 and SK Reg. PHC's.							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	10-FEB-17	13-FEB-17	R3650584
Toluene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
Ethylbenzene	<0.015		0.015	mg/kg	10-FEB-17	13-FEB-17	R3650584
o-Xylene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
m+p-Xylene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
Styrene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
F1(C6-C10)	<10		10	mg/kg	10-FEB-17	13-FEB-17	R3650584
F1-BTEX	<10		10	mg/kg	10-FEB-17	13-FEB-17	R3650584

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1887184-32 17-07-03							
Sampled By: TL/AS on 31-JAN-17 @ 12:00							
Matrix: SOIL							
BTEX and F1							
Xylenes	<0.10		0.10	mg/kg	10-FEB-17	13-FEB-17	R3650584
Surrogate: 1,4-Difluorobenzene	120.8		70-130	%	10-FEB-17	13-FEB-17	R3650584
Surrogate: 4-Bromofluorobenzene	127.2		70-130	%	10-FEB-17	13-FEB-17	R3650584
Surrogate: 3,4-Dichlorotoluene	115.2		70-130	%	10-FEB-17	13-FEB-17	R3650584
CCME F2-4 Hydrocarbons							
F2: (C10-C16)	<25		25	mg/kg	10-FEB-17	12-FEB-17	R3650491
F3: (C16-C34)	<50		50	mg/kg	10-FEB-17	12-FEB-17	R3650491
F4: (C34-C50)	<50		50	mg/kg	10-FEB-17	12-FEB-17	R3650491
Chrom. to baseline at nC50	YES			ppm	10-FEB-17	12-FEB-17	R3650491
Prep/Analysis Dates					10-FEB-17	12-FEB-17	R3650491
Surrogate: 2-Bromobenzotrifluoride	78.7		70-130	%	10-FEB-17	12-FEB-17	R3650491
CCME Total Hydrocarbons							
F1-BTEX	<10		10	mg/kg		14-FEB-17	
F2-Naphth	<25		25	mg/kg		14-FEB-17	
F3-PAH	<50		50	mg/kg		14-FEB-17	
Total Hydrocarbons (C6-C50)	<76		76	mg/kg		14-FEB-17	
Extractable Hydrocarbons. Tumbler/GC-FID							
TEH (C11-C22)	<50		50	mg/kg	10-FEB-17	12-FEB-17	R3650578
TEH (C23-C60)	<100		100	mg/kg	10-FEB-17	12-FEB-17	R3650578
Chrom. to baseline at nC50	YES		0	ppm	10-FEB-17	12-FEB-17	R3650578
Surrogate: 2-Bromobenzotrifluoride	78.7		70-130	%	10-FEB-17	12-FEB-17	R3650578
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	8.04		0.50	mg/kg	09-FEB-17	10-FEB-17	R3650219
Miscellaneous Parameters							
Moisture	15.5		0.25	%		10-FEB-17	R3650399
EPA 8260 Volatile Organics							
Dichlorodifluoromethane	<0.010		0.010	mg/kg		09-FEB-17	R3650793
Chloromethane	<0.10		0.10	mg/kg		09-FEB-17	R3650793
Vinyl chloride	<0.20		0.20	mg/kg		09-FEB-17	R3650793
Bromomethane	<0.10		0.10	mg/kg		09-FEB-17	R3650793
Chloroethane	<0.10		0.10	mg/kg		09-FEB-17	R3650793
Trichlorofluoromethane	<0.010		0.010	mg/kg		09-FEB-17	R3650793
1,1-Dichloroethene	<0.010		0.010	mg/kg		09-FEB-17	R3650793
Methylene chloride	<0.010		0.010	mg/kg		09-FEB-17	R3650793
trans-1,2-Dichloroethene	<0.010		0.010	mg/kg		09-FEB-17	R3650793
1,1-Dichloroethane	<0.010		0.010	mg/kg		09-FEB-17	R3650793
2,2-Dichloropropane	<0.010		0.010	mg/kg		09-FEB-17	R3650793
cis-1,2-Dichloroethene	<0.010		0.010	mg/kg		09-FEB-17	R3650793
Chloroform	<0.010		0.010	mg/kg		09-FEB-17	R3650793
Bromochloromethane	<0.010		0.010	mg/kg		09-FEB-17	R3650793
1,2-Dichloroethane	<0.010		0.010	mg/kg		09-FEB-17	R3650793
1,1,1-Trichloroethane	<0.010		0.010	mg/kg		09-FEB-17	R3650793
1,1-Dichloropropene	<0.010		0.010	mg/kg		09-FEB-17	R3650793
Carbon tetrachloride	<0.010		0.010	mg/kg		09-FEB-17	R3650793
Trichloroethene	<0.010		0.010	mg/kg		09-FEB-17	R3650793
1,2-Dichloropropane	<0.010		0.010	mg/kg		09-FEB-17	R3650793
Bromodichloromethane	<0.010		0.010	mg/kg		09-FEB-17	R3650793
Dibromomethane	<0.010		0.010	mg/kg		09-FEB-17	R3650793
cis-1,3-Dichloropropene	<0.010		0.010	mg/kg		09-FEB-17	R3650793
trans-1,3-Dichloropropene	<0.010		0.010	mg/kg		09-FEB-17	R3650793
1,1,2-Trichloroethane	<0.010		0.010	mg/kg		09-FEB-17	R3650793

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1887184-32 17-07-03							
Sampled By: TL/AS on 31-JAN-17 @ 12:00							
Matrix: SOIL							
EPA 8260 Volatile Organics							
1,3-Dichloropropane	<0.010		0.010	mg/kg		09-FEB-17	R3650793
Tetrachloroethene	<0.010		0.010	mg/kg		09-FEB-17	R3650793
Dibromochloromethane	<0.010		0.010	mg/kg		09-FEB-17	R3650793
1,2-Dibromoethane	<0.010		0.010	mg/kg		09-FEB-17	R3650793
Chlorobenzene	<0.010		0.010	mg/kg		09-FEB-17	R3650793
1,1,1,2-Tetrachloroethane	<0.010		0.010	mg/kg		09-FEB-17	R3650793
Bromoform	<0.010		0.010	mg/kg		09-FEB-17	R3650793
Isopropylbenzene	<0.010		0.010	mg/kg		09-FEB-17	R3650793
1,1,2,2-Tetrachloroethane	<0.050		0.050	mg/kg		09-FEB-17	R3650793
1,2,3-Trichloropropane	<0.020		0.020	mg/kg		09-FEB-17	R3650793
n-Propylbenzene	<0.010		0.010	mg/kg		09-FEB-17	R3650793
Bromobenzene	<0.010		0.010	mg/kg		09-FEB-17	R3650793
1,3,5-Trimethylbenzene	<0.010		0.010	mg/kg		09-FEB-17	R3650793
2-Chlorotoluene	<0.010		0.010	mg/kg		09-FEB-17	R3650793
4-Chlorotoluene	<0.010		0.010	mg/kg		09-FEB-17	R3650793
tert-Butylbenzene	<0.010		0.010	mg/kg		09-FEB-17	R3650793
1,2,4-Trimethylbenzene	<0.010		0.010	mg/kg		09-FEB-17	R3650793
sec-Butylbenzene	<0.010		0.010	mg/kg		09-FEB-17	R3650793
p-Isopropyltoluene	<0.010		0.010	mg/kg		09-FEB-17	R3650793
1,3-Dichlorobenzene	<0.010		0.010	mg/kg		09-FEB-17	R3650793
1,4-Dichlorobenzene	<0.010		0.010	mg/kg		09-FEB-17	R3650793
n-Butylbenzene	<0.010		0.010	mg/kg		09-FEB-17	R3650793
1,2-Dichlorobenzene	<0.010		0.010	mg/kg		09-FEB-17	R3650793
1,2-Dibromo-3-chloropropane	<0.010		0.010	mg/kg		09-FEB-17	R3650793
1,2,4-Trichlorobenzene	<0.010		0.010	mg/kg		09-FEB-17	R3650793
Hexachlorobutadiene	<0.010		0.010	mg/kg		09-FEB-17	R3650793
1,2,3-Trichlorobenzene	<0.010		0.010	mg/kg		09-FEB-17	R3650793
Surrogate: 1,4-Difluorobenzene (SS)	86.0		50-150	%		09-FEB-17	R3650793
Surrogate: 4-Bromofluorobenzene (SS)	87.0		70-130	%		09-FEB-17	R3650793
Surrogate: 3,4-Dichlorotoluene (SS)	99.0		50-150	%		09-FEB-17	R3650793
CCME PAHs							
Naphthalene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Acenapthene	<0.0050		0.0050	mg/kg	10-FEB-17	12-FEB-17	R3651104
Quinoline	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Acenapthylene	<0.0050		0.0050	mg/kg	10-FEB-17	12-FEB-17	R3651104
Phenanthrene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Anthracene	<0.0040		0.0040	mg/kg	10-FEB-17	12-FEB-17	R3651104
Pyrene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Benzo(g,h,i)perylene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Benzo(a)anthracene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Chrysene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Benzo(b&j)fluoranthene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Benzo(k)fluoranthene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Benzo(a)pyrene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Fluoroanthene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Fluorene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Indeno(1,2,3-cd)pyrene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Dibenzo(a,h)anthracene	<0.0050		0.0050	mg/kg	10-FEB-17	12-FEB-17	R3651104
2-methylnaphthalene	0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
B(A)P Total Potency Equivalent	<0.020		0.020	mg/kg	10-FEB-17	12-FEB-17	R3651104
IACR (CCME)	<0.15		0.15	mg/kg	10-FEB-17	12-FEB-17	R3651104

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1887184-32 17-07-03							
Sampled By: TL/AS on 31-JAN-17 @ 12:00							
Matrix: SOIL							
CCME PAHs							
Surrogate: d10-Acenaphthene	80.9		60-130	%	10-FEB-17	12-FEB-17	R3651104
Surrogate: d10-Phenanthrene	83.1		60-130	%	10-FEB-17	12-FEB-17	R3651104
Surrogate: d12-Chrysene	80.7		60-130	%	10-FEB-17	12-FEB-17	R3651104
Glycol Screen							
Diethylene Glycol	<5.0		5.0	mg/kg	10-FEB-17	11-FEB-17	R3650503
Ethylene Glycol	<10		10	mg/kg	10-FEB-17	11-FEB-17	R3650503
Propylene Glycol	<10		10	mg/kg	10-FEB-17	11-FEB-17	R3650503
Triethylene Glycol	<10		10	mg/kg	10-FEB-17	11-FEB-17	R3650503
L1887184-34 17-08-02							
Sampled By: TL/AS on 01-FEB-17 @ 12:00							
Matrix: SOIL							
BTEX, F1-F4 and SK Reg. PHC's.							
BTEX and F1							
Benzene	0.0790		0.0050	mg/kg	10-FEB-17	13-FEB-17	R3650584
Toluene	0.308		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
Ethylbenzene	0.059		0.015	mg/kg	10-FEB-17	13-FEB-17	R3650584
o-Xylene	0.209		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
m+p-Xylene	0.308		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
Styrene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
F1(C6-C10)	<10		10	mg/kg	10-FEB-17	13-FEB-17	R3650584
F1-BTEX	<10		10	mg/kg	10-FEB-17	13-FEB-17	R3650584
Xylenes	0.52		0.10	mg/kg	10-FEB-17	13-FEB-17	R3650584
Surrogate: 1,4-Difluorobenzene	87.4		70-130	%	10-FEB-17	13-FEB-17	R3650584
Surrogate: 4-Bromofluorobenzene	88.8		70-130	%	10-FEB-17	13-FEB-17	R3650584
Surrogate: 3,4-Dichlorotoluene	88.6		70-130	%	10-FEB-17	13-FEB-17	R3650584
CCME F2-4 Hydrocarbons							
F2: (C10-C16)	<25		25	mg/kg	10-FEB-17	12-FEB-17	R3650491
F3: (C16-C34)	<50		50	mg/kg	10-FEB-17	12-FEB-17	R3650491
F4: (C34-C50)	<50		50	mg/kg	10-FEB-17	12-FEB-17	R3650491
Chrom. to baseline at nC50	YES			ppm	10-FEB-17	12-FEB-17	R3650491
Prep/Analysis Dates					10-FEB-17	12-FEB-17	R3650491
Surrogate: 2-Bromobenzotrifluoride	74.1		70-130	%	10-FEB-17	12-FEB-17	R3650491
CCME Total Hydrocarbons							
F1-BTEX	<10		10	mg/kg		13-FEB-17	
Total Hydrocarbons (C6-C50)	<76		76	mg/kg		13-FEB-17	
Extractable Hydrocarbons. Tumbler/GC-FID							
TEH (C11-C22)	<50		50	mg/kg	10-FEB-17	12-FEB-17	R3650578
TEH (C23-C60)	<100		100	mg/kg	10-FEB-17	12-FEB-17	R3650578
Chrom. to baseline at nC50	YES		0	ppm	10-FEB-17	12-FEB-17	R3650578
Surrogate: 2-Bromobenzotrifluoride	74.1		70-130	%	10-FEB-17	12-FEB-17	R3650578
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	12.8		0.50	mg/kg	09-FEB-17	10-FEB-17	R3650219
Miscellaneous Parameters							
Moisture	30.2		0.25	%		10-FEB-17	R3650399
L1887184-35 17-08-03							
Sampled By: TL/AS on 01-FEB-17 @ 12:00							
Matrix: SOIL							
Miscellaneous Parameters							
Moisture	12.2		0.25	%		01-MAR-17	R3664726
BTEX and F1							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1887184-35 17-08-03							
Sampled By: TL/AS on 01-FEB-17 @ 12:00							
Matrix: SOIL							
BTEX and F1							
Benzene	0.0129		0.0050	mg/kg	01-MAR-17	01-MAR-17	R3664774
Toluene	<0.050		0.050	mg/kg	01-MAR-17	01-MAR-17	R3664774
Ethylbenzene	<0.015		0.015	mg/kg	01-MAR-17	01-MAR-17	R3664774
o-Xylene	<0.050		0.050	mg/kg	01-MAR-17	01-MAR-17	R3664774
m+p-Xylene	<0.050		0.050	mg/kg	01-MAR-17	01-MAR-17	R3664774
Styrene	<0.050		0.050	mg/kg	01-MAR-17	01-MAR-17	R3664774
F1(C6-C10)	<10		10	mg/kg	01-MAR-17	01-MAR-17	R3664774
F1-BTEX	<10		10	mg/kg	01-MAR-17	01-MAR-17	R3664774
Xylenes	<0.10		0.10	mg/kg	01-MAR-17	01-MAR-17	R3664774
Surrogate: 1,4-Difluorobenzene	101.5		70-130	%	01-MAR-17	01-MAR-17	R3664774
Surrogate: 4-Bromofluorobenzene	110.3		70-130	%	01-MAR-17	01-MAR-17	R3664774
Surrogate: 3,4-Dichlorotoluene	105.1		70-130	%	01-MAR-17	01-MAR-17	R3664774
L1887184-38 17-08-06							
Sampled By: TL/AS on 01-FEB-17 @ 12:00							
Matrix: SOIL							
BTEX, F1-F4 and SK Reg. PHC's.							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	13-FEB-17	14-FEB-17	R3651257
Toluene	<0.050		0.050	mg/kg	13-FEB-17	14-FEB-17	R3651257
Ethylbenzene	<0.015		0.015	mg/kg	13-FEB-17	14-FEB-17	R3651257
o-Xylene	<0.050		0.050	mg/kg	13-FEB-17	14-FEB-17	R3651257
m+p-Xylene	<0.050		0.050	mg/kg	13-FEB-17	14-FEB-17	R3651257
Styrene	<0.050		0.050	mg/kg	13-FEB-17	14-FEB-17	R3651257
F1(C6-C10)	<10		10	mg/kg	13-FEB-17	14-FEB-17	R3651257
F1-BTEX	<10		10	mg/kg	13-FEB-17	14-FEB-17	R3651257
Xylenes	<0.10		0.10	mg/kg	13-FEB-17	14-FEB-17	R3651257
Surrogate: 1,4-Difluorobenzene	87.1		70-130	%	13-FEB-17	14-FEB-17	R3651257
Surrogate: 4-Bromofluorobenzene	84.9		70-130	%	13-FEB-17	14-FEB-17	R3651257
Surrogate: 3,4-Dichlorotoluene	85.7		70-130	%	13-FEB-17	14-FEB-17	R3651257
CCME F2-4 Hydrocarbons							
F2: (C10-C16)	<25		25	mg/kg	10-FEB-17	13-FEB-17	R3650982
F3: (C16-C34)	59		50	mg/kg	10-FEB-17	13-FEB-17	R3650982
F4: (C34-C50)	<50		50	mg/kg	10-FEB-17	13-FEB-17	R3650982
Chrom. to baseline at nC50	YES			ppm	10-FEB-17	13-FEB-17	R3650982
Prep/Analysis Dates					10-FEB-17	13-FEB-17	R3650982
Surrogate: 2-Bromobenzotrifluoride	81.2		70-130	%	10-FEB-17	13-FEB-17	R3650982
CCME Total Hydrocarbons							
F1-BTEX	<10		10	mg/kg		14-FEB-17	
Total Hydrocarbons (C6-C50)	<76		76	mg/kg		14-FEB-17	
Extractable Hydrocarbons. Tumbler/GC-FID							
TEH (C11-C22)	<50		50	mg/kg	10-FEB-17	13-FEB-17	R3650984
TEH (C23-C60)	<100		100	mg/kg	10-FEB-17	13-FEB-17	R3650984
Chrom. to baseline at nC50	YES		0	ppm	10-FEB-17	13-FEB-17	R3650984
Surrogate: 2-Bromobenzotrifluoride	81.2		70-130	%	10-FEB-17	13-FEB-17	R3650984
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	4.81		0.50	mg/kg	09-FEB-17	10-FEB-17	R3650219
Miscellaneous Parameters							
Moisture	7.62		0.25	%		10-FEB-17	R3650497

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1887184-42 17-09-04							
Sampled By: TL/AS on 01-FEB-17 @ 12:00							
Matrix: SOIL							
BTEX, F1-F4 and SK Reg. PHC's.							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	10-FEB-17	13-FEB-17	R3650584
Toluene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
Ethylbenzene	0.024		0.015	mg/kg	10-FEB-17	13-FEB-17	R3650584
o-Xylene	0.085		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
m+p-Xylene	0.053		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
Styrene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
F1(C6-C10)	134		10	mg/kg	10-FEB-17	13-FEB-17	R3650584
F1-BTEX	134		10	mg/kg	10-FEB-17	13-FEB-17	R3650584
Xylenes	0.14		0.10	mg/kg	10-FEB-17	13-FEB-17	R3650584
Surrogate: 1,4-Difluorobenzene	86.6		70-130	%	10-FEB-17	13-FEB-17	R3650584
Surrogate: 4-Bromofluorobenzene	82.2		70-130	%	10-FEB-17	13-FEB-17	R3650584
Surrogate: 3,4-Dichlorotoluene	N/A	SMI	-	%	10-FEB-17	13-FEB-17	R3650584
CCME F2-4 Hydrocarbons							
F2: (C10-C16)	5040		25	mg/kg	10-FEB-17	13-FEB-17	R3650982
F3: (C16-C34)	9360		50	mg/kg	10-FEB-17	13-FEB-17	R3650982
F4: (C34-C50)	3620		50	mg/kg	10-FEB-17	13-FEB-17	R3650982
Chrom. to baseline at nC50	YES			ppm	10-FEB-17	13-FEB-17	R3650982
Prep/Analysis Dates					10-FEB-17	13-FEB-17	R3650982
Surrogate: 2-Bromobenzotrifluoride	80.0		70-130	%	10-FEB-17	13-FEB-17	R3650982
CCME Total Hydrocarbons							
F1-BTEX	134		10	mg/kg		14-FEB-17	
F2-Naphth	5040		25	mg/kg		14-FEB-17	
F3-PAH	9360		50	mg/kg		14-FEB-17	
Total Hydrocarbons (C6-C50)	18200		76	mg/kg		14-FEB-17	
Extractable Hydrocarbons. Tumbler/GC-FID							
TEH (C11-C22)	7530		50	mg/kg	10-FEB-17	13-FEB-17	R3650984
TEH (C23-C60)	10800		100	mg/kg	10-FEB-17	13-FEB-17	R3650984
Chrom. to baseline at nC50	YES		0	ppm	10-FEB-17	13-FEB-17	R3650984
Surrogate: 2-Bromobenzotrifluoride	80.0		70-130	%	10-FEB-17	13-FEB-17	R3650984
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	7.64		0.50	mg/kg	09-FEB-17	10-FEB-17	R3650219
Miscellaneous Parameters							
Moisture	9.85		0.25	%		10-FEB-17	R3650497
CCME PAHs							
Naphthalene	0.281		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Acenapthene	0.221		0.0050	mg/kg	10-FEB-17	12-FEB-17	R3651104
Quinoline	<0.020	DLCI	0.020	mg/kg	10-FEB-17	12-FEB-17	R3651104
Acenapthylene	<0.0050		0.0050	mg/kg	10-FEB-17	12-FEB-17	R3651104
Phenanthrene	1.21		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Anthracene	<0.020	DLCI	0.020	mg/kg	10-FEB-17	12-FEB-17	R3651104
Pyrene	0.153		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Benzo(g,h,i)perylene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Benzo(a)anthracene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Chrysene	0.157		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Benzo(b&j)fluoranthene	<0.020	DLCI	0.020	mg/kg	10-FEB-17	12-FEB-17	R3651104
Benzo(k)fluoranthene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Benzo(a)pyrene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Fluoroanthene	0.026		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Fluorene	1.34		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Indeno(1,2,3-cd)pyrene	<0.020	DLCI	0.020	mg/kg	10-FEB-17	12-FEB-17	R3651104

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1887184-42 17-09-04							
Sampled By: TL/AS on 01-FEB-17 @ 12:00							
Matrix: SOIL							
CCME PAHs							
Dibenzo(a,h)anthracene	<0.0060	DLCI	0.0060	mg/kg	10-FEB-17	12-FEB-17	R3651104
2-methylnaphthalene	1.36		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
B(A)P Total Potency Equivalent	<0.020		0.020	mg/kg	10-FEB-17	12-FEB-17	R3651104
IACR (CCME)	0.21		0.15	mg/kg	10-FEB-17	12-FEB-17	R3651104
Surrogate: d10-Acenaphthene	N/A	SMI	-	%	10-FEB-17	12-FEB-17	R3651104
Surrogate: d10-Phenanthrene	89.3		60-130	%	10-FEB-17	12-FEB-17	R3651104
Surrogate: d12-Chrysene	N/A	SMI	-	%	10-FEB-17	12-FEB-17	R3651104
L1887184-43 17-09-05							
Sampled By: TL/AS on 01-FEB-17 @ 12:00							
Matrix: SOIL							
BTEX, F1-F4 and SK Reg. PHC's.							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	10-FEB-17	13-FEB-17	R3650584
Toluene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
Ethylbenzene	<0.015		0.015	mg/kg	10-FEB-17	13-FEB-17	R3650584
o-Xylene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
m+p-Xylene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
Styrene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
F1(C6-C10)	18		10	mg/kg	10-FEB-17	13-FEB-17	R3650584
F1-BTEX	18		10	mg/kg	10-FEB-17	13-FEB-17	R3650584
Xylenes	<0.10		0.10	mg/kg	10-FEB-17	13-FEB-17	R3650584
Surrogate: 1,4-Difluorobenzene	86.4		70-130	%	10-FEB-17	13-FEB-17	R3650584
Surrogate: 4-Bromofluorobenzene	86.6		70-130	%	10-FEB-17	13-FEB-17	R3650584
Surrogate: 3,4-Dichlorotoluene	84.5		70-130	%	10-FEB-17	13-FEB-17	R3650584
CCME F2-4 Hydrocarbons							
F2: (C10-C16)	550		25	mg/kg	10-FEB-17	13-FEB-17	R3650982
F3: (C16-C34)	1710		50	mg/kg	10-FEB-17	13-FEB-17	R3650982
F4: (C34-C50)	905		50	mg/kg	10-FEB-17	13-FEB-17	R3650982
Chrom. to baseline at nC50	YES			ppm	10-FEB-17	13-FEB-17	R3650982
Prep/Analysis Dates					10-FEB-17	13-FEB-17	R3650982
Surrogate: 2-Bromobenzotrifluoride	81.0		70-130	%	10-FEB-17	13-FEB-17	R3650982
CCME Total Hydrocarbons							
F1-BTEX	18		10	mg/kg		14-FEB-17	
F2-Naphth	550		25	mg/kg		14-FEB-17	
F3-PAH	1710		50	mg/kg		14-FEB-17	
Total Hydrocarbons (C6-C50)	3180		76	mg/kg		14-FEB-17	
Extractable Hydrocarbons. Tumbler/GC-FID							
TEH (C11-C22)	809		50	mg/kg	10-FEB-17	13-FEB-17	R3650984
TEH (C23-C60)	2390		100	mg/kg	10-FEB-17	13-FEB-17	R3650984
Chrom. to baseline at nC50	YES		0	ppm	10-FEB-17	13-FEB-17	R3650984
Surrogate: 2-Bromobenzotrifluoride	81.0		70-130	%	10-FEB-17	13-FEB-17	R3650984
Individual Metal in Soil							
Metals in Soil by CRC ICPMS							
Lead (Pb)	5.93		0.50	mg/kg	13-FEB-17	13-FEB-17	R3651028
Miscellaneous Parameters							
Moisture	10.5		0.25	%		10-FEB-17	R3650497
CCME PAHs							
Naphthalene	0.370		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Acenapthene	0.166		0.0050	mg/kg	10-FEB-17	12-FEB-17	R3651104
Quinoline	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Acenapthylene	0.0343		0.0050	mg/kg	10-FEB-17	12-FEB-17	R3651104

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1887184-43 17-09-05							
Sampled By: TL/AS on 01-FEB-17 @ 12:00							
Matrix: SOIL							
CCME PAHs							
Phenanthrene	0.312		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Anthracene	<0.054	DLCI	0.054	mg/kg	10-FEB-17	12-FEB-17	R3651104
Pyrene	0.031		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Benzo(g,h,i)perylene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Benzo(a)anthracene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Chrysene	0.033		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Benzo(b&j)fluoranthene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Benzo(k)fluoranthene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Benzo(a)pyrene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Fluoroanthene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Fluorene	0.417		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Indeno(1,2,3-cd)pyrene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Dibenzo(a,h)anthracene	<0.0050		0.0050	mg/kg	10-FEB-17	12-FEB-17	R3651104
2-methylnaphthalene	2.29		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
B(A)P Total Potency Equivalent	<0.020		0.020	mg/kg	10-FEB-17	12-FEB-17	R3651104
IACR (CCME)	<0.15		0.15	mg/kg	10-FEB-17	12-FEB-17	R3651104
Surrogate: d10-Acenaphthene	92.5		60-130	%	10-FEB-17	12-FEB-17	R3651104
Surrogate: d10-Phenanthrene	93.6		60-130	%	10-FEB-17	12-FEB-17	R3651104
Surrogate: d12-Chrysene	88.6		60-130	%	10-FEB-17	12-FEB-17	R3651104
L1887184-45 17-09-07							
Sampled By: TL/AS on 01-FEB-17 @ 12:00							
Matrix: SOIL							
BTEX, F1-F4 and SK Reg. PHC's.							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	10-FEB-17	13-FEB-17	R3650584
Toluene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
Ethylbenzene	<0.015		0.015	mg/kg	10-FEB-17	13-FEB-17	R3650584
o-Xylene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
m+p-Xylene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
Styrene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
F1(C6-C10)	<10		10	mg/kg	10-FEB-17	13-FEB-17	R3650584
F1-BTEX	<10		10	mg/kg	10-FEB-17	13-FEB-17	R3650584
Xylenes	<0.10		0.10	mg/kg	10-FEB-17	13-FEB-17	R3650584
Surrogate: 1,4-Difluorobenzene	86.4		70-130	%	10-FEB-17	13-FEB-17	R3650584
Surrogate: 4-Bromofluorobenzene	87.3		70-130	%	10-FEB-17	13-FEB-17	R3650584
Surrogate: 3,4-Dichlorotoluene	90.4		70-130	%	10-FEB-17	13-FEB-17	R3650584
CCME F2-4 Hydrocarbons							
F2: (C10-C16)	<25		25	mg/kg	10-FEB-17	13-FEB-17	R3650982
F3: (C16-C34)	68		50	mg/kg	10-FEB-17	13-FEB-17	R3650982
F4: (C34-C50)	<50		50	mg/kg	10-FEB-17	13-FEB-17	R3650982
Chrom. to baseline at nC50	YES			ppm	10-FEB-17	13-FEB-17	R3650982
Prep/Analysis Dates					10-FEB-17	13-FEB-17	R3650982
Surrogate: 2-Bromobenzotrifluoride	85.0		70-130	%	10-FEB-17	13-FEB-17	R3650982
CCME Total Hydrocarbons							
F1-BTEX	<10		10	mg/kg		13-FEB-17	
Total Hydrocarbons (C6-C50)	<76		76	mg/kg		13-FEB-17	
Extractable Hydrocarbons. Tumbler/GC-FID							
TEH (C11-C22)	<50		50	mg/kg	10-FEB-17	13-FEB-17	R3650984
TEH (C23-C60)	<100		100	mg/kg	10-FEB-17	13-FEB-17	R3650984
Chrom. to baseline at nC50	YES		0	ppm	10-FEB-17	13-FEB-17	R3650984
Surrogate: 2-Bromobenzotrifluoride	85.0		70-130	%	10-FEB-17	13-FEB-17	R3650984

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1887184-45 17-09-07							
Sampled By: TL/AS on 01-FEB-17 @ 12:00							
Matrix: SOIL							
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	5.16		0.50	mg/kg	09-FEB-17	10-FEB-17	R3650219
Miscellaneous Parameters							
Moisture	8.06		0.25	%		10-FEB-17	R3650497
L1887184-46 17-09-08							
Sampled By: TL/AS on 01-FEB-17 @ 12:00							
Matrix: SOIL							
Miscellaneous Parameters							
Moisture	7.76		0.25	%		01-MAR-17	R3664726
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	01-MAR-17	01-MAR-17	R3664774
Toluene	<0.050		0.050	mg/kg	01-MAR-17	01-MAR-17	R3664774
Ethylbenzene	<0.015		0.015	mg/kg	01-MAR-17	01-MAR-17	R3664774
o-Xylene	<0.050		0.050	mg/kg	01-MAR-17	01-MAR-17	R3664774
m+p-Xylene	<0.050		0.050	mg/kg	01-MAR-17	01-MAR-17	R3664774
Styrene	<0.050		0.050	mg/kg	01-MAR-17	01-MAR-17	R3664774
F1(C6-C10)	<10		10	mg/kg	01-MAR-17	01-MAR-17	R3664774
F1-BTEX	<10		10	mg/kg	01-MAR-17	01-MAR-17	R3664774
Xylenes	<0.10		0.10	mg/kg	01-MAR-17	01-MAR-17	R3664774
Surrogate: 1,4-Difluorobenzene	101.7		70-130	%	01-MAR-17	01-MAR-17	R3664774
Surrogate: 4-Bromofluorobenzene	109.3		70-130	%	01-MAR-17	01-MAR-17	R3664774
Surrogate: 3,4-Dichlorotoluene	98.8		70-130	%	01-MAR-17	01-MAR-17	R3664774
L1887184-48 17-09-10							
Sampled By: TL/AS on 01-FEB-17 @ 12:00							
Matrix: SOIL							
BTEX, F1-F4 and SK Reg. PHC's.							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	10-FEB-17	13-FEB-17	R3650584
Toluene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
Ethylbenzene	<0.015		0.015	mg/kg	10-FEB-17	13-FEB-17	R3650584
o-Xylene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
m+p-Xylene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
Styrene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
F1(C6-C10)	<10		10	mg/kg	10-FEB-17	13-FEB-17	R3650584
F1-BTEX	<10		10	mg/kg	10-FEB-17	13-FEB-17	R3650584
Xylenes	<0.10		0.10	mg/kg	10-FEB-17	13-FEB-17	R3650584
Surrogate: 1,4-Difluorobenzene	90.4		70-130	%	10-FEB-17	13-FEB-17	R3650584
Surrogate: 4-Bromofluorobenzene	87.5		70-130	%	10-FEB-17	13-FEB-17	R3650584
Surrogate: 3,4-Dichlorotoluene	92.2		70-130	%	10-FEB-17	13-FEB-17	R3650584
CCME F2-4 Hydrocarbons							
F2: (C10-C16)	<25		25	mg/kg	10-FEB-17	13-FEB-17	R3650982
F3: (C16-C34)	55		50	mg/kg	10-FEB-17	13-FEB-17	R3650982
F4: (C34-C50)	<50		50	mg/kg	10-FEB-17	13-FEB-17	R3650982
Chrom. to baseline at nC50	YES			ppm	10-FEB-17	13-FEB-17	R3650982
Prep/Analysis Dates					10-FEB-17	13-FEB-17	R3650982
Surrogate: 2-Bromobenzotrifluoride	79.9		70-130	%	10-FEB-17	13-FEB-17	R3650982
CCME Total Hydrocarbons							
F1-BTEX	<10		10	mg/kg		13-FEB-17	
Total Hydrocarbons (C6-C50)	<76		76	mg/kg		13-FEB-17	
Extractable Hydrocarbons. Tumbler/GC-FID							
TEH (C11-C22)	<50		50	mg/kg	10-FEB-17	13-FEB-17	R3650984

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1887184-48 17-09-10							
Sampled By: TL/AS on 01-FEB-17 @ 12:00							
Matrix: SOIL							
Extractable Hydrocarbons. Tumbler/GC-FID							
TEH (C23-C60)	<100		100	mg/kg	10-FEB-17	13-FEB-17	R3650984
Chrom. to baseline at nC50	YES		0	ppm	10-FEB-17	13-FEB-17	R3650984
Surrogate: 2-Bromobenzotrifluoride	79.9		70-130	%	10-FEB-17	13-FEB-17	R3650984
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	5.44		0.50	mg/kg	09-FEB-17	10-FEB-17	R3650219
Miscellaneous Parameters							
Moisture	8.24		0.25	%		10-FEB-17	R3650497
L1887184-51 17-10-03							
Sampled By: TL/AS on 01-FEB-17 @ 12:00							
Matrix: SOIL							
BTEX, F1-F4 and SK Reg. PHC's.							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	10-FEB-17	13-FEB-17	R3650584
Toluene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
Ethylbenzene	<0.015		0.015	mg/kg	10-FEB-17	13-FEB-17	R3650584
o-Xylene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
m+p-Xylene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
Styrene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
F1(C6-C10)	<10		10	mg/kg	10-FEB-17	13-FEB-17	R3650584
F1-BTEX	<10		10	mg/kg	10-FEB-17	13-FEB-17	R3650584
Xylenes	<0.10		0.10	mg/kg	10-FEB-17	13-FEB-17	R3650584
Surrogate: 1,4-Difluorobenzene	90.8		70-130	%	10-FEB-17	13-FEB-17	R3650584
Surrogate: 4-Bromofluorobenzene	90.2		70-130	%	10-FEB-17	13-FEB-17	R3650584
Surrogate: 3,4-Dichlorotoluene	89.7		70-130	%	10-FEB-17	13-FEB-17	R3650584
CCME F2-4 Hydrocarbons							
F2: (C10-C16)	<25		25	mg/kg	10-FEB-17	13-FEB-17	R3650982
F3: (C16-C34)	<50		50	mg/kg	10-FEB-17	13-FEB-17	R3650982
F4: (C34-C50)	<50		50	mg/kg	10-FEB-17	13-FEB-17	R3650982
Chrom. to baseline at nC50	YES			ppm	10-FEB-17	13-FEB-17	R3650982
Prep/Analysis Dates					10-FEB-17	13-FEB-17	R3650982
Surrogate: 2-Bromobenzotrifluoride	85.2		70-130	%	10-FEB-17	13-FEB-17	R3650982
CCME Total Hydrocarbons							
F1-BTEX	<10		10	mg/kg		14-FEB-17	
F2-Naphth	<25		25	mg/kg		14-FEB-17	
F3-PAH	<50		50	mg/kg		14-FEB-17	
Total Hydrocarbons (C6-C50)	<76		76	mg/kg		14-FEB-17	
Extractable Hydrocarbons. Tumbler/GC-FID							
TEH (C11-C22)	<50		50	mg/kg	10-FEB-17	13-FEB-17	R3650984
TEH (C23-C60)	<100		100	mg/kg	10-FEB-17	13-FEB-17	R3650984
Chrom. to baseline at nC50	YES		0	ppm	10-FEB-17	13-FEB-17	R3650984
Surrogate: 2-Bromobenzotrifluoride	85.2		70-130	%	10-FEB-17	13-FEB-17	R3650984
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	4.00		0.50	mg/kg	09-FEB-17	10-FEB-17	R3650219
Miscellaneous Parameters							
Moisture	9.16		0.25	%		10-FEB-17	R3650497
CCME PAHs							
Naphthalene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Acenapthene	<0.0050		0.0050	mg/kg	10-FEB-17	12-FEB-17	R3651104
Quinoline	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1887184-51 17-10-03							
Sampled By: TL/AS on 01-FEB-17 @ 12:00							
Matrix: SOIL							
CCME PAHs							
Acenapthylene	<0.0050		0.0050	mg/kg	10-FEB-17	12-FEB-17	R3651104
Phenanthrene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Anthracene	<0.0040		0.0040	mg/kg	10-FEB-17	12-FEB-17	R3651104
Pyrene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Benzo(g,h,i)perylene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Benzo(a)anthracene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Chrysene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Benzo(b&j)fluoranthene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Benzo(k)fluoranthene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Benzo(a)pyrene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Fluoroanthene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Fluorene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Indeno(1,2,3-cd)pyrene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Dibenzo(a,h)anthracene	<0.0050		0.0050	mg/kg	10-FEB-17	12-FEB-17	R3651104
2-methylnaphthalene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
B(A)P Total Potency Equivalent	<0.020		0.020	mg/kg	10-FEB-17	12-FEB-17	R3651104
IACR (CCME)	<0.15		0.15	mg/kg	10-FEB-17	12-FEB-17	R3651104
Surrogate: d10-Acenaphthene	92.0		60-130	%	10-FEB-17	12-FEB-17	R3651104
Surrogate: d10-Phenanthrene	99.2		60-130	%	10-FEB-17	12-FEB-17	R3651104
Surrogate: d12-Chrysene	100.2		60-130	%	10-FEB-17	12-FEB-17	R3651104
L1887184-53 17-10-05							
Sampled By: TL/AS on 01-FEB-17 @ 12:00							
Matrix: SOIL							
BTEX, F1-F4 and SK Reg. PHC's.							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	10-FEB-17	13-FEB-17	R3650584
Toluene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
Ethylbenzene	<0.015		0.015	mg/kg	10-FEB-17	13-FEB-17	R3650584
o-Xylene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
m+p-Xylene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
Styrene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
F1(C6-C10)	<10		10	mg/kg	10-FEB-17	13-FEB-17	R3650584
F1-BTEX	<10		10	mg/kg	10-FEB-17	13-FEB-17	R3650584
Xylenes	<0.10		0.10	mg/kg	10-FEB-17	13-FEB-17	R3650584
Surrogate: 1,4-Difluorobenzene	89.0		70-130	%	10-FEB-17	13-FEB-17	R3650584
Surrogate: 4-Bromofluorobenzene	88.7		70-130	%	10-FEB-17	13-FEB-17	R3650584
Surrogate: 3,4-Dichlorotoluene	80.3		70-130	%	10-FEB-17	13-FEB-17	R3650584
CCME F2-4 Hydrocarbons							
F2: (C10-C16)	<25		25	mg/kg	10-FEB-17	13-FEB-17	R3650982
F3: (C16-C34)	61		50	mg/kg	10-FEB-17	13-FEB-17	R3650982
F4: (C34-C50)	<50		50	mg/kg	10-FEB-17	13-FEB-17	R3650982
Chrom. to baseline at nC50	YES			ppm	10-FEB-17	13-FEB-17	R3650982
Prep/Analysis Dates					10-FEB-17	13-FEB-17	R3650982
Surrogate: 2-Bromobenzotrifluoride	81.6		70-130	%	10-FEB-17	13-FEB-17	R3650982
CCME Total Hydrocarbons							
F1-BTEX	<10		10	mg/kg		14-FEB-17	
F2-Naphth	<25		25	mg/kg		14-FEB-17	
F3-PAH	61		50	mg/kg		14-FEB-17	
Total Hydrocarbons (C6-C50)	<76		76	mg/kg		14-FEB-17	
Extractable Hydrocarbons. Tumbler/GC-FID							
TEH (C11-C22)	<50		50	mg/kg	10-FEB-17	13-FEB-17	R3650984

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1887184-53 17-10-05							
Sampled By: TL/AS on 01-FEB-17 @ 12:00							
Matrix: SOIL							
Extractable Hydrocarbons. Tumbler/GC-FID							
TEH (C23-C60)	<100		100	mg/kg	10-FEB-17	13-FEB-17	R3650984
Chrom. to baseline at nC50	YES		0	ppm	10-FEB-17	13-FEB-17	R3650984
Surrogate: 2-Bromobenzotrifluoride	81.6		70-130	%	10-FEB-17	13-FEB-17	R3650984
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	4.94		0.50	mg/kg	09-FEB-17	10-FEB-17	R3650219
Miscellaneous Parameters							
Moisture	7.33		0.25	%		10-FEB-17	R3650497
CCME PAHs							
Naphthalene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Acenapthene	<0.0050		0.0050	mg/kg	10-FEB-17	12-FEB-17	R3651104
Quinoline	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Acenapthylene	<0.0050		0.0050	mg/kg	10-FEB-17	12-FEB-17	R3651104
Phenanthrene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Anthracene	<0.0040		0.0040	mg/kg	10-FEB-17	12-FEB-17	R3651104
Pyrene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Benzo(g,h,i)perylene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Benzo(a)anthracene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Chrysene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Benzo(b&j)fluoranthene	0.011		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Benzo(k)fluoranthene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Benzo(a)pyrene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Fluoroanthene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Fluorene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Indeno(1,2,3-cd)pyrene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Dibenzo(a,h)anthracene	<0.0050		0.0050	mg/kg	10-FEB-17	12-FEB-17	R3651104
2-methylnaphthalene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
B(A)P Total Potency Equivalent	<0.020		0.020	mg/kg	10-FEB-17	12-FEB-17	R3651104
IACR (CCME)	<0.15		0.15	mg/kg	10-FEB-17	12-FEB-17	R3651104
Surrogate: d10-Acenaphthene	89.1		60-130	%	10-FEB-17	12-FEB-17	R3651104
Surrogate: d10-Phenanthrene	100.5		60-130	%	10-FEB-17	12-FEB-17	R3651104
Surrogate: d12-Chrysene	100.5		60-130	%	10-FEB-17	12-FEB-17	R3651104
L1887184-56 17-10-08							
Sampled By: TL/AS on 01-FEB-17 @ 12:00							
Matrix: SOIL							
BTEX, F1-F4 and SK Reg. PHC's.							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	10-FEB-17	13-FEB-17	R3650584
Toluene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
Ethylbenzene	<0.015		0.015	mg/kg	10-FEB-17	13-FEB-17	R3650584
o-Xylene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
m+p-Xylene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
Styrene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
F1(C6-C10)	<10		10	mg/kg	10-FEB-17	13-FEB-17	R3650584
F1-BTEX	<10		10	mg/kg	10-FEB-17	13-FEB-17	R3650584
Xylenes	<0.10		0.10	mg/kg	10-FEB-17	13-FEB-17	R3650584
Surrogate: 1,4-Difluorobenzene	86.7		70-130	%	10-FEB-17	13-FEB-17	R3650584
Surrogate: 4-Bromofluorobenzene	84.4		70-130	%	10-FEB-17	13-FEB-17	R3650584
Surrogate: 3,4-Dichlorotoluene	89.4		70-130	%	10-FEB-17	13-FEB-17	R3650584
CCME F2-4 Hydrocarbons							
F2: (C10-C16)	<25		25	mg/kg	10-FEB-17	13-FEB-17	R3650982

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1887184-56 17-10-08							
Sampled By: TL/AS on 01-FEB-17 @ 12:00							
Matrix: SOIL							
CCME F2-4 Hydrocarbons							
F3: (C16-C34)	50		50	mg/kg	10-FEB-17	13-FEB-17	R3650982
F4: (C34-C50)	<50		50	mg/kg	10-FEB-17	13-FEB-17	R3650982
Chrom. to baseline at nC50	YES			ppm	10-FEB-17	13-FEB-17	R3650982
Prep/Analysis Dates					10-FEB-17	13-FEB-17	R3650982
Surrogate: 2-Bromobenzotrifluoride	85.0		70-130	%	10-FEB-17	13-FEB-17	R3650982
CCME Total Hydrocarbons							
F1-BTEX	<10		10	mg/kg		13-FEB-17	
Total Hydrocarbons (C6-C50)	<76		76	mg/kg		13-FEB-17	
Extractable Hydrocarbons. Tumbler/GC-FID							
TEH (C11-C22)	<50		50	mg/kg	10-FEB-17	13-FEB-17	R3650984
TEH (C23-C60)	<100		100	mg/kg	10-FEB-17	13-FEB-17	R3650984
Chrom. to baseline at nC50	YES		0	ppm	10-FEB-17	13-FEB-17	R3650984
Surrogate: 2-Bromobenzotrifluoride	85.0		70-130	%	10-FEB-17	13-FEB-17	R3650984
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	4.91		0.50	mg/kg	09-FEB-17	10-FEB-17	R3650219
Miscellaneous Parameters							
Moisture	10.3		0.25	%		10-FEB-17	R3650497
L1887184-59 17-11-03							
Sampled By: TL/AS on 01-FEB-17 @ 12:00							
Matrix: SOIL							
BTEX, F1-F4 and SK Reg. PHC's.							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	10-FEB-17	13-FEB-17	R3650584
Toluene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
Ethylbenzene	<0.015		0.015	mg/kg	10-FEB-17	13-FEB-17	R3650584
o-Xylene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
m+p-Xylene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
Styrene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
F1(C6-C10)	<10		10	mg/kg	10-FEB-17	13-FEB-17	R3650584
F1-BTEX	<10		10	mg/kg	10-FEB-17	13-FEB-17	R3650584
Xylenes	<0.10		0.10	mg/kg	10-FEB-17	13-FEB-17	R3650584
Surrogate: 1,4-Difluorobenzene	89.6		70-130	%	10-FEB-17	13-FEB-17	R3650584
Surrogate: 4-Bromofluorobenzene	87.8		70-130	%	10-FEB-17	13-FEB-17	R3650584
Surrogate: 3,4-Dichlorotoluene	91.4		70-130	%	10-FEB-17	13-FEB-17	R3650584
CCME F2-4 Hydrocarbons							
F2: (C10-C16)	<25		25	mg/kg	10-FEB-17	13-FEB-17	R3650982
F3: (C16-C34)	69		50	mg/kg	10-FEB-17	13-FEB-17	R3650982
F4: (C34-C50)	<50		50	mg/kg	10-FEB-17	13-FEB-17	R3650982
Chrom. to baseline at nC50	YES			ppm	10-FEB-17	13-FEB-17	R3650982
Prep/Analysis Dates					10-FEB-17	13-FEB-17	R3650982
Surrogate: 2-Bromobenzotrifluoride	82.6		70-130	%	10-FEB-17	13-FEB-17	R3650982
CCME Total Hydrocarbons							
F1-BTEX	<10		10	mg/kg		14-FEB-17	
F2-Naphth	<25		25	mg/kg		14-FEB-17	
F3-PAH	69		50	mg/kg		14-FEB-17	
Total Hydrocarbons (C6-C50)	<76		76	mg/kg		14-FEB-17	
Extractable Hydrocarbons. Tumbler/GC-FID							
TEH (C11-C22)	<50		50	mg/kg	10-FEB-17	13-FEB-17	R3650984
TEH (C23-C60)	110		100	mg/kg	10-FEB-17	13-FEB-17	R3650984
Chrom. to baseline at nC50	YES		0	ppm	10-FEB-17	13-FEB-17	R3650984

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1887184-59 17-11-03							
Sampled By: TL/AS on 01-FEB-17 @ 12:00							
Matrix: SOIL							
Extractable Hydrocarbons. Tumbler/GC-FID							
Surrogate: 2-Bromobenzotrifluoride	82.6		70-130	%	10-FEB-17	13-FEB-17	R3650984
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	4.69		0.50	mg/kg	09-FEB-17	10-FEB-17	R3650219
Miscellaneous Parameters							
Moisture	6.60		0.25	%		10-FEB-17	R3650497
CCME PAHs							
Naphthalene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Acenapthene	<0.0050		0.0050	mg/kg	10-FEB-17	12-FEB-17	R3651104
Quinoline	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Acenapthylene	<0.0050		0.0050	mg/kg	10-FEB-17	12-FEB-17	R3651104
Phenanthrene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Anthracene	<0.0040		0.0040	mg/kg	10-FEB-17	12-FEB-17	R3651104
Pyrene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Benzo(g,h,i)perylene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Benzo(a)anthracene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Chrysene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Benzo(b&j)fluoranthene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Benzo(k)fluoranthene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Benzo(a)pyrene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Fluoroanthene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Fluorene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Indeno(1,2,3-cd)pyrene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Dibenzo(a,h)anthracene	<0.0050		0.0050	mg/kg	10-FEB-17	12-FEB-17	R3651104
2-methylnaphthalene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
B(A)P Total Potency Equivalent	<0.020		0.020	mg/kg	10-FEB-17	12-FEB-17	R3651104
IACR (CCME)	<0.15		0.15	mg/kg	10-FEB-17	12-FEB-17	R3651104
Surrogate: d10-Acenaphthene	85.7		60-130	%	10-FEB-17	12-FEB-17	R3651104
Surrogate: d10-Phenanthrene	96.2		60-130	%	10-FEB-17	12-FEB-17	R3651104
Surrogate: d12-Chrysene	97.2		60-130	%	10-FEB-17	12-FEB-17	R3651104
L1887184-61 17-11-05							
Sampled By: TL/AS on 01-FEB-17 @ 12:00							
Matrix: SOIL							
BTEX, F1-F4 and SK Reg. PHC's.							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	10-FEB-17	13-FEB-17	R3650584
Toluene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
Ethylbenzene	<0.015		0.015	mg/kg	10-FEB-17	13-FEB-17	R3650584
o-Xylene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
m+p-Xylene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
Styrene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
F1(C6-C10)	<10		10	mg/kg	10-FEB-17	13-FEB-17	R3650584
F1-BTEX	<10		10	mg/kg	10-FEB-17	13-FEB-17	R3650584
Xylenes	<0.10		0.10	mg/kg	10-FEB-17	13-FEB-17	R3650584
Surrogate: 1,4-Difluorobenzene	91.7		70-130	%	10-FEB-17	13-FEB-17	R3650584
Surrogate: 4-Bromofluorobenzene	88.5		70-130	%	10-FEB-17	13-FEB-17	R3650584
Surrogate: 3,4-Dichlorotoluene	92.3		70-130	%	10-FEB-17	13-FEB-17	R3650584
CCME F2-4 Hydrocarbons							
F2: (C10-C16)	<25		25	mg/kg	10-FEB-17	13-FEB-17	R3650982
F3: (C16-C34)	94		50	mg/kg	10-FEB-17	13-FEB-17	R3650982
F4: (C34-C50)	<50		50	mg/kg	10-FEB-17	13-FEB-17	R3650982

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1887184-61 17-11-05							
Sampled By: TL/AS on 01-FEB-17 @ 12:00							
Matrix: SOIL							
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	10-FEB-17	13-FEB-17	R3650982
Prep/Analysis Dates					10-FEB-17	13-FEB-17	R3650982
Surrogate: 2-Bromobenzotrifluoride	83.2		70-130	%	10-FEB-17	13-FEB-17	R3650982
CCME Total Hydrocarbons							
F1-BTEX	<10		10	mg/kg		13-FEB-17	
Total Hydrocarbons (C6-C50)	94		76	mg/kg		13-FEB-17	
Extractable Hydrocarbons. Tumbler/GC-FID							
TEH (C11-C22)	<50		50	mg/kg	10-FEB-17	13-FEB-17	R3650984
TEH (C23-C60)	140		100	mg/kg	10-FEB-17	13-FEB-17	R3650984
Chrom. to baseline at nC50	YES		0	ppm	10-FEB-17	13-FEB-17	R3650984
Surrogate: 2-Bromobenzotrifluoride	83.2		70-130	%	10-FEB-17	13-FEB-17	R3650984
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	5.10		0.50	mg/kg	10-FEB-17	10-FEB-17	R3650232
Miscellaneous Parameters							
Moisture	6.83		0.25	%		10-FEB-17	R3650497
L1887184-62 17-11-06							
Sampled By: TL/AS on 01-FEB-17 @ 12:00							
Matrix: SOIL							
BTEX, F1-F4 and SK Reg. PHC's.							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	10-FEB-17	13-FEB-17	R3650584
Toluene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
Ethylbenzene	<0.015		0.015	mg/kg	10-FEB-17	13-FEB-17	R3650584
o-Xylene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
m+p-Xylene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
Styrene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
F1(C6-C10)	<10		10	mg/kg	10-FEB-17	13-FEB-17	R3650584
F1-BTEX	<10		10	mg/kg	10-FEB-17	13-FEB-17	R3650584
Xylenes	<0.10		0.10	mg/kg	10-FEB-17	13-FEB-17	R3650584
Surrogate: 1,4-Difluorobenzene	87.0		70-130	%	10-FEB-17	13-FEB-17	R3650584
Surrogate: 4-Bromofluorobenzene	87.1		70-130	%	10-FEB-17	13-FEB-17	R3650584
Surrogate: 3,4-Dichlorotoluene	88.9		70-130	%	10-FEB-17	13-FEB-17	R3650584
CCME F2-4 Hydrocarbons							
F2: (C10-C16)	<25		25	mg/kg	10-FEB-17	13-FEB-17	R3650982
F3: (C16-C34)	96		50	mg/kg	10-FEB-17	13-FEB-17	R3650982
F4: (C34-C50)	<50		50	mg/kg	10-FEB-17	13-FEB-17	R3650982
Chrom. to baseline at nC50	YES			ppm	10-FEB-17	13-FEB-17	R3650982
Prep/Analysis Dates					10-FEB-17	13-FEB-17	R3650982
Surrogate: 2-Bromobenzotrifluoride	90.3		70-130	%	10-FEB-17	13-FEB-17	R3650982
CCME Total Hydrocarbons							
F1-BTEX	<10		10	mg/kg		13-FEB-17	
Total Hydrocarbons (C6-C50)	96		76	mg/kg		13-FEB-17	
Extractable Hydrocarbons. Tumbler/GC-FID							
TEH (C11-C22)	<50		50	mg/kg	10-FEB-17	13-FEB-17	R3650984
TEH (C23-C60)	140		100	mg/kg	10-FEB-17	13-FEB-17	R3650984
Chrom. to baseline at nC50	YES		0	ppm	10-FEB-17	13-FEB-17	R3650984
Surrogate: 2-Bromobenzotrifluoride	90.3		70-130	%	10-FEB-17	13-FEB-17	R3650984
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	5.16		0.50	mg/kg	10-FEB-17	10-FEB-17	R3650232

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1887184-62 17-11-06							
Sampled By: TL/AS on 01-FEB-17 @ 12:00							
Matrix: SOIL							
Miscellaneous Parameters							
Moisture	7.54		0.25	%		10-FEB-17	R3650497
L1887184-64 17-12-02							
Sampled By: TL/AS on 01-FEB-17 @ 12:00							
Matrix: SOIL							
BTEX, F1-F4 and SK Reg. PHC's.							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	10-FEB-17	13-FEB-17	R3650584
Toluene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
Ethylbenzene	<0.015		0.015	mg/kg	10-FEB-17	13-FEB-17	R3650584
o-Xylene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
m+p-Xylene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
Styrene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
F1(C6-C10)	<10		10	mg/kg	10-FEB-17	13-FEB-17	R3650584
F1-BTEX	<10		10	mg/kg	10-FEB-17	13-FEB-17	R3650584
Xylenes	<0.10		0.10	mg/kg	10-FEB-17	13-FEB-17	R3650584
Surrogate: 1,4-Difluorobenzene	91.6		70-130	%	10-FEB-17	13-FEB-17	R3650584
Surrogate: 4-Bromofluorobenzene	91.1		70-130	%	10-FEB-17	13-FEB-17	R3650584
Surrogate: 3,4-Dichlorotoluene	93.1		70-130	%	10-FEB-17	13-FEB-17	R3650584
CCME F2-4 Hydrocarbons							
F2: (C10-C16)	<25		25	mg/kg	10-FEB-17	13-FEB-17	R3650982
F3: (C16-C34)	<50		50	mg/kg	10-FEB-17	13-FEB-17	R3650982
F4: (C34-C50)	<50		50	mg/kg	10-FEB-17	13-FEB-17	R3650982
Chrom. to baseline at nC50	YES			ppm	10-FEB-17	13-FEB-17	R3650982
Prep/Analysis Dates					10-FEB-17	13-FEB-17	R3650982
Surrogate: 2-Bromobenzotrifluoride	80.0		70-130	%	10-FEB-17	13-FEB-17	R3650982
CCME Total Hydrocarbons							
F1-BTEX	<10		10	mg/kg		14-FEB-17	
F2-Naphth	<25		25	mg/kg		14-FEB-17	
F3-PAH	<50		50	mg/kg		14-FEB-17	
Total Hydrocarbons (C6-C50)	<76		76	mg/kg		14-FEB-17	
Extractable Hydrocarbons. Tumbler/GC-FID							
TEH (C11-C22)	<50		50	mg/kg	10-FEB-17	13-FEB-17	R3650984
TEH (C23-C60)	<100		100	mg/kg	10-FEB-17	13-FEB-17	R3650984
Chrom. to baseline at nC50	YES		0	ppm	10-FEB-17	13-FEB-17	R3650984
Surrogate: 2-Bromobenzotrifluoride	80.0		70-130	%	10-FEB-17	13-FEB-17	R3650984
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	5.39		0.50	mg/kg	10-FEB-17	10-FEB-17	R3650232
Miscellaneous Parameters							
Moisture	7.05		0.25	%		10-FEB-17	R3650497
CCME PAHs							
Naphthalene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Acenapthene	<0.0050		0.0050	mg/kg	10-FEB-17	12-FEB-17	R3651104
Quinoline	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Acenapthylene	<0.0050		0.0050	mg/kg	10-FEB-17	12-FEB-17	R3651104
Phenanthrene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Anthracene	<0.0040		0.0040	mg/kg	10-FEB-17	12-FEB-17	R3651104
Pyrene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Benzo(g,h,i)perylene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Benzo(a)anthracene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Chrysene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1887184-64 17-12-02							
Sampled By: TL/AS on 01-FEB-17 @ 12:00							
Matrix: SOIL							
CCME PAHs							
Benzo(b&j)fluoranthene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Benzo(k)fluoranthene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Benzo(a)pyrene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Fluoroanthene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Fluorene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Indeno(1,2,3-cd)pyrene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Dibenzo(a,h)anthracene	<0.0050		0.0050	mg/kg	10-FEB-17	12-FEB-17	R3651104
2-methylnaphthalene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
B(A)P Total Potency Equivalent	<0.020		0.020	mg/kg	10-FEB-17	12-FEB-17	R3651104
IACR (CCME)	<0.15		0.15	mg/kg	10-FEB-17	12-FEB-17	R3651104
Surrogate: d10-Acenaphthene	87.8		60-130	%	10-FEB-17	12-FEB-17	R3651104
Surrogate: d10-Phenanthrene	93.9		60-130	%	10-FEB-17	12-FEB-17	R3651104
Surrogate: d12-Chrysene	98.1		60-130	%	10-FEB-17	12-FEB-17	R3651104
L1887184-68 17-12-06							
Sampled By: TL/AS on 01-FEB-17 @ 12:00							
Matrix: SOIL							
BTEX, F1-F4 and SK Reg. PHC's.							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	10-FEB-17	13-FEB-17	R3650584
Toluene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
Ethylbenzene	<0.015		0.015	mg/kg	10-FEB-17	13-FEB-17	R3650584
o-Xylene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
m+p-Xylene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
Styrene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
F1(C6-C10)	<10		10	mg/kg	10-FEB-17	13-FEB-17	R3650584
F1-BTEX	<10		10	mg/kg	10-FEB-17	13-FEB-17	R3650584
Xylenes	<0.10		0.10	mg/kg	10-FEB-17	13-FEB-17	R3650584
Surrogate: 1,4-Difluorobenzene	83.6		70-130	%	10-FEB-17	13-FEB-17	R3650584
Surrogate: 4-Bromofluorobenzene	78.8		70-130	%	10-FEB-17	13-FEB-17	R3650584
Surrogate: 3,4-Dichlorotoluene	97.7		70-130	%	10-FEB-17	13-FEB-17	R3650584
CCME F2-4 Hydrocarbons							
F2: (C10-C16)	<25		25	mg/kg	10-FEB-17	13-FEB-17	R3650982
F3: (C16-C34)	67		50	mg/kg	10-FEB-17	13-FEB-17	R3650982
F4: (C34-C50)	<50		50	mg/kg	10-FEB-17	13-FEB-17	R3650982
Chrom. to baseline at nC50	YES			ppm	10-FEB-17	13-FEB-17	R3650982
Prep/Analysis Dates					10-FEB-17	13-FEB-17	R3650982
Surrogate: 2-Bromobenzotrifluoride	77.1		70-130	%	10-FEB-17	13-FEB-17	R3650982
CCME Total Hydrocarbons							
F1-BTEX	<10		10	mg/kg		13-FEB-17	
Total Hydrocarbons (C6-C50)	<76		76	mg/kg		13-FEB-17	
Extractable Hydrocarbons. Tumbler/GC-FID							
TEH (C11-C22)	<50		50	mg/kg	10-FEB-17	13-FEB-17	R3650984
TEH (C23-C60)	100		100	mg/kg	10-FEB-17	13-FEB-17	R3650984
Chrom. to baseline at nC50	YES		0	ppm	10-FEB-17	13-FEB-17	R3650984
Surrogate: 2-Bromobenzotrifluoride	77.1		70-130	%	10-FEB-17	13-FEB-17	R3650984
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	5.12		0.50	mg/kg	10-FEB-17	10-FEB-17	R3650232
Miscellaneous Parameters							
Moisture	7.04		0.25	%		10-FEB-17	R3650497

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1887184-70 17-13-02							
Sampled By: TL/AS on 02-FEB-17 @ 12:00							
Matrix: SOIL							
BTEX, F1-F4 and SK Reg. PHC's.							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	10-FEB-17	13-FEB-17	R3650584
Toluene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
Ethylbenzene	<0.015		0.015	mg/kg	10-FEB-17	13-FEB-17	R3650584
o-Xylene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
m+p-Xylene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
Styrene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
F1(C6-C10)	<10		10	mg/kg	10-FEB-17	13-FEB-17	R3650584
F1-BTEX	<10		10	mg/kg	10-FEB-17	13-FEB-17	R3650584
Xylenes	<0.10		0.10	mg/kg	10-FEB-17	13-FEB-17	R3650584
Surrogate: 1,4-Difluorobenzene	89.8		70-130	%	10-FEB-17	13-FEB-17	R3650584
Surrogate: 4-Bromofluorobenzene	87.3		70-130	%	10-FEB-17	13-FEB-17	R3650584
Surrogate: 3,4-Dichlorotoluene	93.4		70-130	%	10-FEB-17	13-FEB-17	R3650584
CCME F2-4 Hydrocarbons							
F2: (C10-C16)	<25		25	mg/kg	10-FEB-17	13-FEB-17	R3650982
F3: (C16-C34)	<50		50	mg/kg	10-FEB-17	13-FEB-17	R3650982
F4: (C34-C50)	<50		50	mg/kg	10-FEB-17	13-FEB-17	R3650982
Chrom. to baseline at nC50	YES			ppm	10-FEB-17	13-FEB-17	R3650982
Prep/Analysis Dates					10-FEB-17	13-FEB-17	R3650982
Surrogate: 2-Bromobenzotrifluoride	87.3		70-130	%	10-FEB-17	13-FEB-17	R3650982
CCME Total Hydrocarbons							
F1-BTEX	<10		10	mg/kg		14-FEB-17	
F2-Naphth	<25		25	mg/kg		14-FEB-17	
F3-PAH	<50		50	mg/kg		14-FEB-17	
Total Hydrocarbons (C6-C50)	<76		76	mg/kg		14-FEB-17	
Extractable Hydrocarbons. Tumbler/GC-FID							
TEH (C11-C22)	<50		50	mg/kg	10-FEB-17	13-FEB-17	R3650984
TEH (C23-C60)	<100		100	mg/kg	10-FEB-17	13-FEB-17	R3650984
Chrom. to baseline at nC50	YES		0	ppm	10-FEB-17	13-FEB-17	R3650984
Surrogate: 2-Bromobenzotrifluoride	87.3		70-130	%	10-FEB-17	13-FEB-17	R3650984
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	7.08		0.50	mg/kg	10-FEB-17	10-FEB-17	R3650232
Miscellaneous Parameters							
Moisture	1.55		0.25	%		10-FEB-17	R3650497
CCME PAHs							
Naphthalene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Acenapthene	<0.0050		0.0050	mg/kg	10-FEB-17	12-FEB-17	R3651104
Quinoline	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Acenapthylene	<0.0050		0.0050	mg/kg	10-FEB-17	12-FEB-17	R3651104
Phenanthrene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Anthracene	<0.0040		0.0040	mg/kg	10-FEB-17	12-FEB-17	R3651104
Pyrene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Benzo(g,h,i)perylene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Benzo(a)anthracene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Chrysene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Benzo(b&j)fluoranthene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Benzo(k)fluoranthene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Benzo(a)pyrene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Fluoroanthene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Fluorene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Indeno(1,2,3-cd)pyrene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1887184-70 17-13-02							
Sampled By: TL/AS on 02-FEB-17 @ 12:00							
Matrix: SOIL							
CCME PAHs							
Dibenzo(a,h)anthracene	<0.0050		0.0050	mg/kg	10-FEB-17	12-FEB-17	R3651104
2-methylnaphthalene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
B(A)P Total Potency Equivalent	<0.020		0.020	mg/kg	10-FEB-17	12-FEB-17	R3651104
IACR (CCME)	<0.15		0.15	mg/kg	10-FEB-17	12-FEB-17	R3651104
Surrogate: d10-Acenaphthene	87.2		60-130	%	10-FEB-17	12-FEB-17	R3651104
Surrogate: d10-Phenanthrene	98.4		60-130	%	10-FEB-17	12-FEB-17	R3651104
Surrogate: d12-Chrysene	101.8		60-130	%	10-FEB-17	12-FEB-17	R3651104
L1887184-72 17-13-04							
Sampled By: TL/AS on 02-FEB-17 @ 12:00							
Matrix: SOIL							
BTEX, F1-F4 and SK Reg. PHC's.							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	04-MAR-17	08-MAR-17	R3669805
Toluene	<0.050		0.050	mg/kg	04-MAR-17	08-MAR-17	R3669805
Ethylbenzene	<0.015		0.015	mg/kg	04-MAR-17	08-MAR-17	R3669805
o-Xylene	<0.050		0.050	mg/kg	04-MAR-17	08-MAR-17	R3669805
m+p-Xylene	<0.050		0.050	mg/kg	04-MAR-17	08-MAR-17	R3669805
Styrene	<0.050		0.050	mg/kg	04-MAR-17	08-MAR-17	R3669805
F1(C6-C10)	<10		10	mg/kg	04-MAR-17	08-MAR-17	R3669805
F1-BTEX	<10		10	mg/kg	04-MAR-17	08-MAR-17	R3669805
Xylenes	<0.10		0.10	mg/kg	04-MAR-17	08-MAR-17	R3669805
Surrogate: 1,4-Difluorobenzene	77.8		70-130	%	04-MAR-17	08-MAR-17	R3669805
Surrogate: 4-Bromofluorobenzene	81.0		70-130	%	04-MAR-17	08-MAR-17	R3669805
Surrogate: 3,4-Dichlorotoluene	79.1		70-130	%	04-MAR-17	08-MAR-17	R3669805
CCME F2-4 Hydrocarbons							
F2: (C10-C16)	<25		25	mg/kg	03-MAR-17	07-MAR-17	R3669135
F3: (C16-C34)	<50		50	mg/kg	03-MAR-17	07-MAR-17	R3669135
F4: (C34-C50)	<50		50	mg/kg	03-MAR-17	07-MAR-17	R3669135
Chrom. to baseline at nC50	YES			ppm	03-MAR-17	07-MAR-17	R3669135
Prep/Analysis Dates					03-MAR-17	07-MAR-17	R3669135
Surrogate: 2-Bromobenzotrifluoride	83.8		70-130	%	03-MAR-17	07-MAR-17	R3669135
CCME Total Hydrocarbons							
F1-BTEX	<10		10	mg/kg		08-MAR-17	
Total Hydrocarbons (C6-C50)	<76		76	mg/kg		08-MAR-17	
Extractable Hydrocarbons. Tumbler/GC-FID							
TEH (C11-C22)	<50		50	mg/kg	03-MAR-17	07-MAR-17	R3669154
TEH (C23-C60)	<100		100	mg/kg	03-MAR-17	07-MAR-17	R3669154
Chrom. to baseline at nC50	YES		0	ppm	03-MAR-17	07-MAR-17	R3669154
Surrogate: 2-Bromobenzotrifluoride	83.8		70-130	%	03-MAR-17	07-MAR-17	R3669154
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	2.65		0.50	mg/kg	03-MAR-17	03-MAR-17	R3667671
Miscellaneous Parameters							
Moisture	7.57		0.25	%		03-MAR-17	R3667891
L1887184-74 17-13-06							
Sampled By: TL/AS on 02-FEB-17 @ 12:00							
Matrix: SOIL							
BTEX, F1-F4 and SK Reg. PHC's.							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	10-FEB-17	13-FEB-17	R3650584
Toluene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1887184-74 17-13-06							
Sampled By: TL/AS on 02-FEB-17 @ 12:00							
Matrix: SOIL							
BTEX and F1							
Ethylbenzene	<0.015		0.015	mg/kg	10-FEB-17	13-FEB-17	R3650584
o-Xylene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
m+p-Xylene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
Styrene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
F1(C6-C10)	<10		10	mg/kg	10-FEB-17	13-FEB-17	R3650584
F1-BTEX	<10		10	mg/kg	10-FEB-17	13-FEB-17	R3650584
Xylenes	<0.10		0.10	mg/kg	10-FEB-17	13-FEB-17	R3650584
Surrogate: 1,4-Difluorobenzene	83.2		70-130	%	10-FEB-17	13-FEB-17	R3650584
Surrogate: 4-Bromofluorobenzene	83.3		70-130	%	10-FEB-17	13-FEB-17	R3650584
Surrogate: 3,4-Dichlorotoluene	88.2		70-130	%	10-FEB-17	13-FEB-17	R3650584
CCME F2-4 Hydrocarbons							
F2: (C10-C16)	<25		25	mg/kg	10-FEB-17	13-FEB-17	R3650982
F3: (C16-C34)	92		50	mg/kg	10-FEB-17	13-FEB-17	R3650982
F4: (C34-C50)	<50		50	mg/kg	10-FEB-17	13-FEB-17	R3650982
Chrom. to baseline at nC50	YES			ppm	10-FEB-17	13-FEB-17	R3650982
Prep/Analysis Dates					10-FEB-17	13-FEB-17	R3650982
Surrogate: 2-Bromobenzotrifluoride	80.5		70-130	%	10-FEB-17	13-FEB-17	R3650982
CCME Total Hydrocarbons							
F1-BTEX	<10		10	mg/kg		13-FEB-17	
Total Hydrocarbons (C6-C50)	92		76	mg/kg		13-FEB-17	
Extractable Hydrocarbons. Tumbler/GC-FID							
TEH (C11-C22)	<50		50	mg/kg	10-FEB-17	13-FEB-17	R3650984
TEH (C23-C60)	140		100	mg/kg	10-FEB-17	13-FEB-17	R3650984
Chrom. to baseline at nC50	YES		0	ppm	10-FEB-17	13-FEB-17	R3650984
Surrogate: 2-Bromobenzotrifluoride	80.5		70-130	%	10-FEB-17	13-FEB-17	R3650984
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	5.44		0.50	mg/kg	10-FEB-17	10-FEB-17	R3650232
Miscellaneous Parameters							
Moisture	7.14		0.25	%		10-FEB-17	R3650497
L1887184-77 17-14-03							
Sampled By: TL/AS on 02-FEB-17 @ 12:00							
Matrix: SOIL							
BTEX, F1-F4 and SK Reg. PHC's.							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	10-FEB-17	13-FEB-17	R3650584
Toluene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
Ethylbenzene	<0.015		0.015	mg/kg	10-FEB-17	13-FEB-17	R3650584
o-Xylene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
m+p-Xylene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
Styrene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
F1(C6-C10)	<10		10	mg/kg	10-FEB-17	13-FEB-17	R3650584
F1-BTEX	<10		10	mg/kg	10-FEB-17	13-FEB-17	R3650584
Xylenes	<0.10		0.10	mg/kg	10-FEB-17	13-FEB-17	R3650584
Surrogate: 1,4-Difluorobenzene	87.2		70-130	%	10-FEB-17	13-FEB-17	R3650584
Surrogate: 4-Bromofluorobenzene	86.2		70-130	%	10-FEB-17	13-FEB-17	R3650584
Surrogate: 3,4-Dichlorotoluene	88.4		70-130	%	10-FEB-17	13-FEB-17	R3650584
CCME F2-4 Hydrocarbons							
F2: (C10-C16)	<25		25	mg/kg	10-FEB-17	13-FEB-17	R3650982
F3: (C16-C34)	<50		50	mg/kg	10-FEB-17	13-FEB-17	R3650982
F4: (C34-C50)	<50		50	mg/kg	10-FEB-17	13-FEB-17	R3650982

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1887184-77 17-14-03							
Sampled By: TL/AS on 02-FEB-17 @ 12:00							
Matrix: SOIL							
CCME F2-4 Hydrocarbons							
Chrom. to baseline at nC50	YES			ppm	10-FEB-17	13-FEB-17	R3650982
Prep/Analysis Dates					10-FEB-17	13-FEB-17	R3650982
Surrogate: 2-Bromobenzotrifluoride	82.0		70-130	%	10-FEB-17	13-FEB-17	R3650982
CCME Total Hydrocarbons							
F1-BTEX	<10		10	mg/kg		14-FEB-17	
F2-Naphth	<25		25	mg/kg		14-FEB-17	
F3-PAH	<50		50	mg/kg		14-FEB-17	
Total Hydrocarbons (C6-C50)	<76		76	mg/kg		14-FEB-17	
Extractable Hydrocarbons. Tumbler/GC-FID							
TEH (C11-C22)	<50		50	mg/kg	10-FEB-17	13-FEB-17	R3650984
TEH (C23-C60)	<100		100	mg/kg	10-FEB-17	13-FEB-17	R3650984
Chrom. to baseline at nC50	YES		0	ppm	10-FEB-17	13-FEB-17	R3650984
Surrogate: 2-Bromobenzotrifluoride	82.0		70-130	%	10-FEB-17	13-FEB-17	R3650984
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	5.93		0.50	mg/kg	10-FEB-17	10-FEB-17	R3650232
Miscellaneous Parameters							
Moisture	8.96		0.25	%		10-FEB-17	R3650497
CCME PAHs							
Naphthalene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Acenapthene	<0.0050		0.0050	mg/kg	10-FEB-17	12-FEB-17	R3651104
Quinoline	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Acenapthylene	<0.0050		0.0050	mg/kg	10-FEB-17	12-FEB-17	R3651104
Phenanthrene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Anthracene	<0.0040		0.0040	mg/kg	10-FEB-17	12-FEB-17	R3651104
Pyrene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Benzo(g,h,i)perylene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Benzo(a)anthracene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Chrysene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Benzo(b&j)fluoranthene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Benzo(k)fluoranthene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Benzo(a)pyrene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Fluoroanthene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Fluorene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Indeno(1,2,3-cd)pyrene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Dibenzo(a,h)anthracene	<0.0050		0.0050	mg/kg	10-FEB-17	12-FEB-17	R3651104
2-methylnaphthalene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
B(A)P Total Potency Equivalent	<0.020		0.020	mg/kg	10-FEB-17	12-FEB-17	R3651104
IACR (CCME)	<0.15		0.15	mg/kg	10-FEB-17	12-FEB-17	R3651104
Surrogate: d10-Acenaphthene	85.9		60-130	%	10-FEB-17	12-FEB-17	R3651104
Surrogate: d10-Phenanthrene	94.6		60-130	%	10-FEB-17	12-FEB-17	R3651104
Surrogate: d12-Chrysene	94.3		60-130	%	10-FEB-17	12-FEB-17	R3651104
L1887184-83 17-15-04							
Sampled By: TL/AS on 02-FEB-17 @ 12:00							
Matrix: SOIL							
BTEX, F1-F4 and SK Reg. PHC's.							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	10-FEB-17	13-FEB-17	R3650584
Toluene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
Ethylbenzene	<0.015		0.015	mg/kg	10-FEB-17	13-FEB-17	R3650584
o-Xylene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1887184-83 17-15-04							
Sampled By: TL/AS on 02-FEB-17 @ 12:00							
Matrix: SOIL							
BTEX and F1							
m+p-Xylene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
Styrene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
F1(C6-C10)	<10		10	mg/kg	10-FEB-17	13-FEB-17	R3650584
F1-BTEX	<10		10	mg/kg	10-FEB-17	13-FEB-17	R3650584
Xylenes	<0.10		0.10	mg/kg	10-FEB-17	13-FEB-17	R3650584
Surrogate: 1,4-Difluorobenzene	88.2		70-130	%	10-FEB-17	13-FEB-17	R3650584
Surrogate: 4-Bromofluorobenzene	88.0		70-130	%	10-FEB-17	13-FEB-17	R3650584
Surrogate: 3,4-Dichlorotoluene	78.3		70-130	%	10-FEB-17	13-FEB-17	R3650584
CCME F2-4 Hydrocarbons							
F2: (C10-C16)	<25		25	mg/kg	10-FEB-17	13-FEB-17	R3650982
F3: (C16-C34)	101		50	mg/kg	10-FEB-17	13-FEB-17	R3650982
F4: (C34-C50)	56		50	mg/kg	10-FEB-17	13-FEB-17	R3650982
Chrom. to baseline at nC50	YES			ppm	10-FEB-17	13-FEB-17	R3650982
Prep/Analysis Dates					10-FEB-17	13-FEB-17	R3650982
Surrogate: 2-Bromobenzotrifluoride	84.2		70-130	%	10-FEB-17	13-FEB-17	R3650982
CCME Total Hydrocarbons							
F1-BTEX	<10		10	mg/kg		14-FEB-17	
F2-Naphth	<25		25	mg/kg		14-FEB-17	
F3-PAH	101		50	mg/kg		14-FEB-17	
Total Hydrocarbons (C6-C50)	157		76	mg/kg		14-FEB-17	
Extractable Hydrocarbons. Tumbler/GC-FID							
TEH (C11-C22)	<50		50	mg/kg	10-FEB-17	13-FEB-17	R3650984
TEH (C23-C60)	160		100	mg/kg	10-FEB-17	13-FEB-17	R3650984
Chrom. to baseline at nC50	YES		0	ppm	10-FEB-17	13-FEB-17	R3650984
Surrogate: 2-Bromobenzotrifluoride	84.2		70-130	%	10-FEB-17	13-FEB-17	R3650984
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	4.70		0.50	mg/kg	10-FEB-17	10-FEB-17	R3650232
Miscellaneous Parameters							
Moisture	7.71		0.25	%		10-FEB-17	R3650497
CCME PAHs							
Naphthalene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Acenapthene	<0.0050		0.0050	mg/kg	10-FEB-17	12-FEB-17	R3651104
Quinoline	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Acenapthylene	<0.0050		0.0050	mg/kg	10-FEB-17	12-FEB-17	R3651104
Phenanthrene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Anthracene	<0.0040		0.0040	mg/kg	10-FEB-17	12-FEB-17	R3651104
Pyrene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Benzo(g,h,i)perylene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Benzo(a)anthracene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Chrysene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Benzo(b&j)fluoranthene	0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Benzo(k)fluoranthene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Benzo(a)pyrene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Fluoroanthene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Fluorene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Indeno(1,2,3-cd)pyrene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Dibenzo(a,h)anthracene	<0.0050		0.0050	mg/kg	10-FEB-17	12-FEB-17	R3651104
2-methylnaphthalene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
B(A)P Total Potency Equivalent	<0.020		0.020	mg/kg	10-FEB-17	12-FEB-17	R3651104
IACR (CCME)	<0.15		0.15	mg/kg	10-FEB-17	12-FEB-17	R3651104
Surrogate: d10-Acenaphthene	84.4		60-130	%	10-FEB-17	12-FEB-17	R3651104

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1887184-83 17-15-04							
Sampled By: TL/AS on 02-FEB-17 @ 12:00							
Matrix: SOIL							
CCME PAHs							
Surrogate: d10-Phenanthrene	94.7		60-130	%	10-FEB-17	12-FEB-17	R3651104
Surrogate: d12-Chrysene	96.3		60-130	%	10-FEB-17	12-FEB-17	R3651104
L1887184-87 17-16-04							
Sampled By: TL/AS on 02-FEB-17 @ 12:00							
Matrix: SOIL							
BTEX, F1-F4 and SK Reg. PHC's.							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	10-FEB-17	13-FEB-17	R3650584
Toluene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
Ethylbenzene	<0.015		0.015	mg/kg	10-FEB-17	13-FEB-17	R3650584
o-Xylene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
m+p-Xylene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
Styrene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
F1(C6-C10)	<10		10	mg/kg	10-FEB-17	13-FEB-17	R3650584
F1-BTEX	<10		10	mg/kg	10-FEB-17	13-FEB-17	R3650584
Xylenes	<0.10		0.10	mg/kg	10-FEB-17	13-FEB-17	R3650584
Surrogate: 1,4-Difluorobenzene	84.1		70-130	%	10-FEB-17	13-FEB-17	R3650584
Surrogate: 4-Bromofluorobenzene	88.5		70-130	%	10-FEB-17	13-FEB-17	R3650584
Surrogate: 3,4-Dichlorotoluene	89.0		70-130	%	10-FEB-17	13-FEB-17	R3650584
CCME F2-4 Hydrocarbons							
F2: (C10-C16)	<25		25	mg/kg	10-FEB-17	13-FEB-17	R3650982
F3: (C16-C34)	<50		50	mg/kg	10-FEB-17	13-FEB-17	R3650982
F4: (C34-C50)	<50		50	mg/kg	10-FEB-17	13-FEB-17	R3650982
Chrom. to baseline at nC50	YES			ppm	10-FEB-17	13-FEB-17	R3650982
Prep/Analysis Dates					10-FEB-17	13-FEB-17	R3650982
Surrogate: 2-Bromobenzotrifluoride	82.0		70-130	%	10-FEB-17	13-FEB-17	R3650982
CCME Total Hydrocarbons							
F1-BTEX	<10		10	mg/kg		14-FEB-17	
F2-Naphth	<25		25	mg/kg		14-FEB-17	
F3-PAH	<50		50	mg/kg		14-FEB-17	
Total Hydrocarbons (C6-C50)	<76		76	mg/kg		14-FEB-17	
Extractable Hydrocarbons. Tumbler/GC-FID							
TEH (C11-C22)	<50		50	mg/kg	10-FEB-17	13-FEB-17	R3650984
TEH (C23-C60)	<100		100	mg/kg	10-FEB-17	13-FEB-17	R3650984
Chrom. to baseline at nC50	YES		0	ppm	10-FEB-17	13-FEB-17	R3650984
Surrogate: 2-Bromobenzotrifluoride	82.0		70-130	%	10-FEB-17	13-FEB-17	R3650984
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	3.83		0.50	mg/kg	10-FEB-17	10-FEB-17	R3650232
Miscellaneous Parameters							
Moisture	11.4		0.25	%		10-FEB-17	R3650497
CCME PAHs							
Naphthalene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Acenapthene	<0.0050		0.0050	mg/kg	10-FEB-17	12-FEB-17	R3651104
Quinoline	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Acenapthylene	<0.0050		0.0050	mg/kg	10-FEB-17	12-FEB-17	R3651104
Phenanthrene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Anthracene	<0.0040		0.0040	mg/kg	10-FEB-17	12-FEB-17	R3651104
Pyrene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Benzo(g,h,i)perylene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Benzo(a)anthracene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1887184-87 17-16-04							
Sampled By: TL/AS on 02-FEB-17 @ 12:00							
Matrix: SOIL							
CCME PAHs							
Chrysene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Benzo(b&j)fluoranthene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Benzo(k)fluoranthene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Benzo(a)pyrene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Fluoroanthene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Fluorene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Indeno(1,2,3-cd)pyrene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Dibenzo(a,h)anthracene	<0.0050		0.0050	mg/kg	10-FEB-17	12-FEB-17	R3651104
2-methylnaphthalene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
B(A)P Total Potency Equivalent	<0.020		0.020	mg/kg	10-FEB-17	12-FEB-17	R3651104
IACR (CCME)	<0.15		0.15	mg/kg	10-FEB-17	12-FEB-17	R3651104
Surrogate: d10-Acenaphthene	86.0		60-130	%	10-FEB-17	12-FEB-17	R3651104
Surrogate: d10-Phenanthrene	90.9		60-130	%	10-FEB-17	12-FEB-17	R3651104
Surrogate: d12-Chrysene	96.3		60-130	%	10-FEB-17	12-FEB-17	R3651104
L1887184-90 17-16-07							
Sampled By: TL/AS on 02-FEB-17 @ 12:00							
Matrix: SOIL							
BTEX, F1-F4 and SK Reg. PHC's.							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	10-FEB-17	13-FEB-17	R3650584
Toluene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
Ethylbenzene	<0.015		0.015	mg/kg	10-FEB-17	13-FEB-17	R3650584
o-Xylene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
m+p-Xylene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
Styrene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
F1(C6-C10)	<10		10	mg/kg	10-FEB-17	13-FEB-17	R3650584
F1-BTEX	<10		10	mg/kg	10-FEB-17	13-FEB-17	R3650584
Xylenes	<0.10		0.10	mg/kg	10-FEB-17	13-FEB-17	R3650584
Surrogate: 1,4-Difluorobenzene	84.6		70-130	%	10-FEB-17	13-FEB-17	R3650584
Surrogate: 4-Bromofluorobenzene	83.7		70-130	%	10-FEB-17	13-FEB-17	R3650584
Surrogate: 3,4-Dichlorotoluene	85.2		70-130	%	10-FEB-17	13-FEB-17	R3650584
CCME F2-4 Hydrocarbons							
F2: (C10-C16)	<25		25	mg/kg	10-FEB-17	13-FEB-17	R3650982
F3: (C16-C34)	74		50	mg/kg	10-FEB-17	13-FEB-17	R3650982
F4: (C34-C50)	<50		50	mg/kg	10-FEB-17	13-FEB-17	R3650982
Chrom. to baseline at nC50	YES			ppm	10-FEB-17	13-FEB-17	R3650982
Prep/Analysis Dates					10-FEB-17	13-FEB-17	R3650982
Surrogate: 2-Bromobenzotrifluoride	82.9		70-130	%	10-FEB-17	13-FEB-17	R3650982
CCME Total Hydrocarbons							
F1-BTEX	<10		10	mg/kg		13-FEB-17	
Total Hydrocarbons (C6-C50)	<76		76	mg/kg		13-FEB-17	
Extractable Hydrocarbons. Tumbler/GC-FID							
TEH (C11-C22)	<50		50	mg/kg	10-FEB-17	13-FEB-17	R3650984
TEH (C23-C60)	120		100	mg/kg	10-FEB-17	13-FEB-17	R3650984
Chrom. to baseline at nC50	YES		0	ppm	10-FEB-17	13-FEB-17	R3650984
Surrogate: 2-Bromobenzotrifluoride	82.9		70-130	%	10-FEB-17	13-FEB-17	R3650984
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	5.56		0.50	mg/kg	10-FEB-17	10-FEB-17	R3650232
Miscellaneous Parameters							
Moisture	7.63		0.25	%		10-FEB-17	R3650497

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1887184-90 17-16-07							
Sampled By: TL/AS on 02-FEB-17 @ 12:00							
Matrix: SOIL							
L1887184-93 17-17-03							
Sampled By: TL/AS on 02-FEB-17 @ 12:00							
Matrix: SOIL							
BTEX, F1-F4 and SK Reg. PHC's.							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	10-FEB-17	13-FEB-17	R3650584
Toluene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
Ethylbenzene	<0.015		0.015	mg/kg	10-FEB-17	13-FEB-17	R3650584
o-Xylene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
m+p-Xylene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
Styrene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
F1(C6-C10)	<10		10	mg/kg	10-FEB-17	13-FEB-17	R3650584
F1-BTEX	<10		10	mg/kg	10-FEB-17	13-FEB-17	R3650584
Xylenes	<0.10		0.10	mg/kg	10-FEB-17	13-FEB-17	R3650584
Surrogate: 1,4-Difluorobenzene	90.0		70-130	%	10-FEB-17	13-FEB-17	R3650584
Surrogate: 4-Bromofluorobenzene	88.4		70-130	%	10-FEB-17	13-FEB-17	R3650584
Surrogate: 3,4-Dichlorotoluene	88.6		70-130	%	10-FEB-17	13-FEB-17	R3650584
CCME F2-4 Hydrocarbons							
F2: (C10-C16)	<25		25	mg/kg	10-FEB-17	13-FEB-17	R3650982
F3: (C16-C34)	<50		50	mg/kg	10-FEB-17	13-FEB-17	R3650982
F4: (C34-C50)	<50		50	mg/kg	10-FEB-17	13-FEB-17	R3650982
Chrom. to baseline at nC50	YES			ppm	10-FEB-17	13-FEB-17	R3650982
Prep/Analysis Dates					10-FEB-17	13-FEB-17	R3650982
Surrogate: 2-Bromobenzotrifluoride	78.8		70-130	%	10-FEB-17	13-FEB-17	R3650982
CCME Total Hydrocarbons							
F1-BTEX	<10		10	mg/kg		14-FEB-17	
F2-Naphth	<25		25	mg/kg		14-FEB-17	
F3-PAH	<50		50	mg/kg		14-FEB-17	
Total Hydrocarbons (C6-C50)	<76		76	mg/kg		14-FEB-17	
Extractable Hydrocarbons. Tumbler/GC-FID							
TEH (C11-C22)	<50		50	mg/kg	10-FEB-17	13-FEB-17	R3650984
TEH (C23-C60)	<100		100	mg/kg	10-FEB-17	13-FEB-17	R3650984
Chrom. to baseline at nC50	YES		0	ppm	10-FEB-17	13-FEB-17	R3650984
Surrogate: 2-Bromobenzotrifluoride	78.8		70-130	%	10-FEB-17	13-FEB-17	R3650984
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	8.15		0.50	mg/kg	10-FEB-17	10-FEB-17	R3650232
Miscellaneous Parameters							
Moisture	4.26		0.25	%		10-FEB-17	R3650497
CCME PAHs							
Naphthalene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Acenapthene	<0.0050		0.0050	mg/kg	10-FEB-17	12-FEB-17	R3651104
Quinoline	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Acenapthylene	<0.0050		0.0050	mg/kg	10-FEB-17	12-FEB-17	R3651104
Phenanthrene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Anthracene	<0.0040		0.0040	mg/kg	10-FEB-17	12-FEB-17	R3651104
Pyrene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Benzo(g,h,i)perylene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Benzo(a)anthracene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Chrysene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Benzo(b&j)fluoranthene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Benzo(k)fluoranthene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1887184-93 17-17-03							
Sampled By: TL/AS on 02-FEB-17 @ 12:00							
Matrix: SOIL							
CCME PAHs							
Benzo(a)pyrene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Fluoroanthene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Fluorene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Indeno(1,2,3-cd)pyrene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
Dibenzo(a,h)anthracene	<0.0050		0.0050	mg/kg	10-FEB-17	12-FEB-17	R3651104
2-methylnaphthalene	<0.010		0.010	mg/kg	10-FEB-17	12-FEB-17	R3651104
B(A)P Total Potency Equivalent	<0.020		0.020	mg/kg	10-FEB-17	12-FEB-17	R3651104
IACR (CCME)	<0.15		0.15	mg/kg	10-FEB-17	12-FEB-17	R3651104
Surrogate: d10-Acenaphthene	80.5		60-130	%	10-FEB-17	12-FEB-17	R3651104
Surrogate: d10-Phenanthrene	88.4		60-130	%	10-FEB-17	12-FEB-17	R3651104
Surrogate: d12-Chrysene	91.1		60-130	%	10-FEB-17	12-FEB-17	R3651104
L1887184-96 17-17-06							
Sampled By: TL/AS on 02-FEB-17 @ 12:00							
Matrix: SOIL							
BTEX, F1-F4 and SK Reg. PHC's.							
BTEX and F1							
Benzene	<0.0050		0.0050	mg/kg	10-FEB-17	13-FEB-17	R3650584
Toluene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
Ethylbenzene	<0.015		0.015	mg/kg	10-FEB-17	13-FEB-17	R3650584
o-Xylene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
m+p-Xylene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
Styrene	<0.050		0.050	mg/kg	10-FEB-17	13-FEB-17	R3650584
F1(C6-C10)	<10		10	mg/kg	10-FEB-17	13-FEB-17	R3650584
F1-BTEX	<10		10	mg/kg	10-FEB-17	13-FEB-17	R3650584
Xylenes	<0.10		0.10	mg/kg	10-FEB-17	13-FEB-17	R3650584
Surrogate: 1,4-Difluorobenzene	88.0		70-130	%	10-FEB-17	13-FEB-17	R3650584
Surrogate: 4-Bromofluorobenzene	84.7		70-130	%	10-FEB-17	13-FEB-17	R3650584
Surrogate: 3,4-Dichlorotoluene	92.5		70-130	%	10-FEB-17	13-FEB-17	R3650584
CCME F2-4 Hydrocarbons							
F2: (C10-C16)	<25		25	mg/kg	10-FEB-17	13-FEB-17	R3650982
F3: (C16-C34)	88		50	mg/kg	10-FEB-17	13-FEB-17	R3650982
F4: (C34-C50)	<50		50	mg/kg	10-FEB-17	13-FEB-17	R3650982
Chrom. to baseline at nC50	YES			ppm	10-FEB-17	13-FEB-17	R3650982
Prep/Analysis Dates					10-FEB-17	13-FEB-17	R3650982
Surrogate: 2-Bromobenzotrifluoride	78.2		70-130	%	10-FEB-17	13-FEB-17	R3650982
CCME Total Hydrocarbons							
F1-BTEX	<10		10	mg/kg		13-FEB-17	
Total Hydrocarbons (C6-C50)	88		76	mg/kg		13-FEB-17	
Extractable Hydrocarbons. Tumbler/GC-FID							
TEH (C11-C22)	<50		50	mg/kg	10-FEB-17	13-FEB-17	R3650984
TEH (C23-C60)	130		100	mg/kg	10-FEB-17	13-FEB-17	R3650984
Chrom. to baseline at nC50	YES		0	ppm	10-FEB-17	13-FEB-17	R3650984
Surrogate: 2-Bromobenzotrifluoride	78.2		70-130	%	10-FEB-17	13-FEB-17	R3650984
Single Metal in Soil by CRC ICPMS							
Metals in Soil by CRC ICPMS							
Lead (Pb)	5.31		0.50	mg/kg	10-FEB-17	10-FEB-17	R3650232
Miscellaneous Parameters							
Moisture	7.59		0.25	%		10-FEB-17	R3650497

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

Sample Parameter Qualifier Key:

Qualifier	Description
DLCI	Detection Limit Raised: Chromatographic Interference due to co-elution.
MES	Data Quality Objective was marginally exceeded (by < 10% absolute) for < 10% of analytes in a Multi-Element Scan / Multi-Parameter Scan (considered acceptable as per OMOE & CCME).
SMI	Surrogate recovery could not be measured due to sample matrix interference.

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
BTXS,F1-MEOH-CL	Soil	BTEX and F1	EPA 8260C/5021A and CWS PHC Tier 1

This analysis involves the extraction of a subsample of the sediment/soil with methanol added in the field at the time of subsampling. The soil methanol extract is added to water and reagents, then heated in a sealed vial to equilibrium. The headspace from the vial is transferred into a gas chromatograph. BTX Target compound concentrations are measured using mass spectrometry detection. The instrumental portion of F1 analysis is carried out in accordance with the Canada Wide Standard for Petroleum Hydrocarbons in Soil - Tier 1 Method (2001).

F1-4-CALC-CL	Soil	CCME Total Hydrocarbons	CCME CWS-PHC, Pub #1310, Dec 2001

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

Hydrocarbon results are expressed on a dry weight basis.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.
In samples where BTEX and F1 were analyzed , F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:
1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:
1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

F1-F4-CALC-CL	Soil	CCME Total Hydrocarbons	CCME CWS-PHC, Pub #1310, Dec 2001

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

Hydrocarbon results are expressed on a dry weight basis.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.
In samples where BTEX and F1 were analyzed , F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:
1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:
1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

F2-4-TMB-H/A-FID-CL	Soil	CCME F2-4 Hydrocarbons	CCME CWS-PHC, Pub #1310, Dec 2001

This analysis is carried out in accordance with the "Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil - Tier 1 Method, Canadian Council of Ministers of the Environment, December 2001." For C10 to C50 hydrocarbons (F2, F3, F4) and gravimetric heavy hydrocarbons (F4G-sg), a subsample of the sediment/soil is extracted with 1:1 hexane:acetone using a rotary extractor. The extract undergoes a silica-gel clean-up to remove polar compounds. F2, F3 & F4 are analyzed by on-column GC/FID, and F4G-sg is analyzed gravimetrically.

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**

Notes:
1. F2 (C10-C16): Sum of all hydrocarbons that elute between nC10 and nC16.
2. F3 (C16-C34): Sum of all hydrocarbons that elute between nC16 and nC34.
3. F4 (C34-C50): Sum of all hydrocarbons that elute between nC34 and nC50.
4. F4G: Gravimetric Heavy Hydrocarbons
5. F4G-sg: Gravimetric Heavy Hydrocarbons (F4G) after silica gel treatment.
6. Where F4 (C34-C50) and F4G-sg results are reported for a sample, the larger of the reported values is used for comparison against the relevant CCME standard for F4.
7. The gravimetric heavy hydrocarbon results (F4G-sg), cannot be added to the C6 to C50 hydrocarbon results.
8. This method is validated for use.
9. Data from analysis of quality control samples is available upon request.
10. Reported results are expressed as milligrams per dry kilogram.

GLYCOL-CL	Soil	Glycol Screen	EPA 3550C, EPA 8015D

This analysis is carried out using procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846, Method 8015D and 3550C, published by the United States Environmental Protection Agency (EPA). The procedure involves extraction of a subsample of the sediment/soil with de-ionized water, followed by ultrasonic bath. The water extract is then analyzed by GC-FID direct aqueous injection.

MET-200.2-CCMS-CL	Soil	Metals in Soil by CRC ICPMS	EPA 200.2/6020A (mod)

Soil samples are digested with nitric and hydrochloric acids, followed by analysis by CRC ICPMS.

Method Limitation: This method is not a total digestion technique. It is a very strong acid digestion that is intended to dissolve those metals that may be environmentally available. This method does not dissolve all silicate materials and may result in a partial extraction. depending on the sample matrix, for some metals, including, but not limited to Al, Ba, Be, Cr, Sr, Ti, Tl, and V.

MET-200.2-CCMS-SK	Soil	Metals in Soil by CRC ICPMS	EPA 200.2/6020A (mod)

Soil samples are digested with nitric and hydrochloric acids, followed by analysis by CRC ICPMS.

Method Limitation: This method is not a total digestion technique. It is a very strong acid digestion that is intended to dissolve those metals that may be environmentally available. This method does not dissolve all silicate materials and may result in a partial extraction. depending on the sample matrix, for some metals, including, but not limited to Al, Ba, Be, Cr, Sr, Ti, Tl, and V.

MOISTURE-CL	Soil	% Moisture	CWS for PHC in Soil - Tier 1

This analysis is carried out gravimetrically by drying the sample at 105 C

PAH-CCME-CL	Soil	CCME PAHs	EPA 3570/8270-GC/MS

This analysis is carried out using procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846, Methods 3570 & 8270, published by the United States Environmental Protection Agency (EPA). The procedure uses a mechanical shaking technique to extract a subsample of the sediment/soil with a 1:1 mixture of DCM and acetone. The extract is then solvent exchanged to toluene. The final extract is analyzed by capillary column gas chromatography with mass spectrometric detection (GC/MS). Surrogate recoveries may not be reported in cases where interferences from the sample matrix prevent accurate quantitation.

PSA-MUST-SK	Soil	% Particles > 75um (Coarse/Fine)	ASTM D422-63-SIEVE

An air-dried sample is reduced to < 2 mm size and mixed with a dispersing agent (Calgon solution). The sample is washed through a 200 mesh (75 µm) sieve. The retained mass of sample is used to determine % sand fraction.

Reference: ASTM D422-63

TEH-SK-H/A-FID-CL	Soil	Extractable Hydrocarbons. Tumbler/GC-FID	EPA 3570/CCME CWS-PHC, Dec. 2001

This analysis is carried out in accordance with the "Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil - Tier 1 Method, Canadian Council of Ministers of the Environment, December 2001." A subsample of soil/sediment is extracted with 1:1 hexane:acetone using a rotary extractor. An aliquot of the extract is transferred to an autosampler vial for analysis. Quantitative determination of the TEH (C11-C22), and TEH (C23-C60) is conducted on a Gas Chromatograph equipped with an FID using external standard method.

VOC-8260-ED	Soil	EPA 8260 Volatile Organics	SW 846 8260-GC-MS

The soil methanol extract is added to water and reagents, then heated in a sealed vial to equilibrium. The headspace from the vial is transferred into a gas chromatograph. Target compound concentrations are measured using mass spectrometry detection.

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
SK	ALS ENVIRONMENTAL - SASKATOON, SASKATCHEWAN, CANADA

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
ED		ALS ENVIRONMENTAL - EDMONTON, ALBERTA, CANADA	
CL		ALS ENVIRONMENTAL - CALGARY, ALBERTA, CANADA	

Chain of Custody Numbers:

14-422164	14-422165	14-422166	14-422167	14-422168
14-422169	14-422170	14-422171		

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Quality Control Report

Client: SNC-Lavalin Inc.
216 1st Ave South
SASKATOON SK S7K 1K3
Contact: June Lu

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
BTXS,F1-MEOH-CL	**Soil**							
Batch R3650584								
WG2478038-4 DUP		**L1887184-2**						
Benzene		<0.0050	<0.0050	RPD-NA	mg/kg	N/A	30	13-FEB-17
Toluene		<0.050	<0.050	RPD-NA	mg/kg	N/A	30	13-FEB-17
Ethylbenzene		<0.015	<0.015	RPD-NA	mg/kg	N/A	30	13-FEB-17
o-Xylene		<0.050	<0.050	RPD-NA	mg/kg	N/A	30	13-FEB-17
m+p-Xylene		<0.050	<0.050	RPD-NA	mg/kg	N/A	30	13-FEB-17
Styrene		<0.050	<0.050	RPD-NA	mg/kg	N/A	30	13-FEB-17
F1(C6-C10)		<10	<10	RPD-NA	mg/kg	N/A	30	13-FEB-17
WG2478040-3 DUP		**L1887184-96**						
Benzene		<0.0050	<0.0050	RPD-NA	mg/kg	N/A	30	13-FEB-17
Toluene		<0.050	<0.050	RPD-NA	mg/kg	N/A	30	13-FEB-17
Ethylbenzene		<0.015	<0.015	RPD-NA	mg/kg	N/A	30	13-FEB-17
o-Xylene		<0.050	<0.050	RPD-NA	mg/kg	N/A	30	13-FEB-17
m+p-Xylene		<0.050	<0.050	RPD-NA	mg/kg	N/A	30	13-FEB-17
Styrene		<0.050	<0.050	RPD-NA	mg/kg	N/A	30	13-FEB-17
F1(C6-C10)		<10	<10	RPD-NA	mg/kg	N/A	30	13-FEB-17
WG2478038-2 LCS								
Benzene			95.4		%		70-130	13-FEB-17
Toluene			96.0		%		70-130	13-FEB-17
Ethylbenzene			86.8		%		70-130	13-FEB-17
o-Xylene			90.8		%		70-130	13-FEB-17
m+p-Xylene			86.2		%		70-130	13-FEB-17
Styrene			84.7		%		70-130	13-FEB-17
F1(C6-C10)			92.1		%		70-130	13-FEB-17
WG2478040-2 LCS								
Benzene			92.6		%		70-130	13-FEB-17
Toluene			90.4		%		70-130	13-FEB-17
Ethylbenzene			84.8		%		70-130	13-FEB-17
o-Xylene			87.3		%		70-130	13-FEB-17
m+p-Xylene			83.6		%		70-130	13-FEB-17
Styrene			83.9		%		70-130	13-FEB-17
F1(C6-C10)			85.1		%		70-130	13-FEB-17
WG2478038-1 MB								
Benzene			<0.0050		mg/kg		0.005	13-FEB-17
Toluene			<0.050		mg/kg		0.05	13-FEB-17
Ethylbenzene			<0.015		mg/kg		0.015	13-FEB-17

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
BTXS,F1-MEOH-CL	**Soil**							
Batch R3650584								
WG2478038-1 MB								
o-Xylene			<0.050		mg/kg		0.05	13-FEB-17
m+p-Xylene			<0.050		mg/kg		0.05	13-FEB-17
Styrene			<0.050		mg/kg		0.05	13-FEB-17
F1(C6-C10)			<10		mg/kg		10	13-FEB-17
Surrogate: 1,4-Difluorobenzene			97.4		%		70-130	13-FEB-17
Surrogate: 4-Bromofluorobenzene			94.2		%		70-130	13-FEB-17
Surrogate: 3,4-Dichlorotoluene			94.3		%		70-130	13-FEB-17
WG2478040-1 MB								
Benzene			<0.0050		mg/kg		0.005	13-FEB-17
Toluene			<0.050		mg/kg		0.05	13-FEB-17
Ethylbenzene			<0.015		mg/kg		0.015	13-FEB-17
o-Xylene			<0.050		mg/kg		0.05	13-FEB-17
m+p-Xylene			<0.050		mg/kg		0.05	13-FEB-17
Styrene			<0.050		mg/kg		0.05	13-FEB-17
F1(C6-C10)			<10		mg/kg		10	13-FEB-17
Surrogate: 1,4-Difluorobenzene			92.8		%		70-130	13-FEB-17
Surrogate: 4-Bromofluorobenzene			89.9		%		70-130	13-FEB-17
Surrogate: 3,4-Dichlorotoluene			98.5		%		70-130	13-FEB-17
Batch R3651257								
WG2478792-3 DUP		**L1887184-15**						
Benzene		<0.0050	<0.0050	RPD-NA	mg/kg	N/A	30	14-FEB-17
Toluene		<0.050	<0.050	RPD-NA	mg/kg	N/A	30	14-FEB-17
Ethylbenzene		<0.015	<0.015	RPD-NA	mg/kg	N/A	30	14-FEB-17
o-Xylene		<0.050	<0.050	RPD-NA	mg/kg	N/A	30	14-FEB-17
m+p-Xylene		<0.050	<0.050	RPD-NA	mg/kg	N/A	30	14-FEB-17
Styrene		<0.050	<0.050	RPD-NA	mg/kg	N/A	30	14-FEB-17
F1(C6-C10)		<10	<10	RPD-NA	mg/kg	N/A	30	14-FEB-17
WG2478792-2 LCS								
Benzene			72.6		%		70-130	14-FEB-17
Toluene			77.4		%		70-130	14-FEB-17
Ethylbenzene			79.5		%		70-130	14-FEB-17
o-Xylene			82.8		%		70-130	14-FEB-17
m+p-Xylene			82.9		%		70-130	14-FEB-17
Styrene			82.7		%		70-130	14-FEB-17
F1(C6-C10)			97.1		%		70-130	14-FEB-17

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
BTXS,F1-MEOH-CL	**Soil**							
Batch R3651257								
WG2478792-1 MB								
Benzene			<0.0050		mg/kg		0.005	14-FEB-17
Toluene			<0.050		mg/kg		0.05	14-FEB-17
Ethylbenzene			<0.015		mg/kg		0.015	14-FEB-17
o-Xylene			<0.050		mg/kg		0.05	14-FEB-17
m+p-Xylene			<0.050		mg/kg		0.05	14-FEB-17
Styrene			<0.050		mg/kg		0.05	14-FEB-17
F1(C6-C10)			<10		mg/kg		10	14-FEB-17
Surrogate: 1,4-Difluorobenzene			76.5		%		70-130	14-FEB-17
Surrogate: 4-Bromofluorobenzene			73.3		%		70-130	14-FEB-17
Surrogate: 3,4-Dichlorotoluene			90.2		%		70-130	14-FEB-17
Batch R3664774								
WG2485926-2 LCS								
Benzene			72.1		%		70-130	01-MAR-17
Toluene			86.4		%		70-130	01-MAR-17
Ethylbenzene			92.6		%		70-130	01-MAR-17
o-Xylene			97.6		%		70-130	01-MAR-17
m+p-Xylene			94.6		%		70-130	01-MAR-17
Styrene			101.5		%		70-130	01-MAR-17
F1(C6-C10)			94.7		%		70-130	01-MAR-17
WG2485926-1 MB								
Benzene			<0.0050		mg/kg		0.005	01-MAR-17
Toluene			<0.050		mg/kg		0.05	01-MAR-17
Ethylbenzene			<0.015		mg/kg		0.015	01-MAR-17
o-Xylene			<0.050		mg/kg		0.05	01-MAR-17
m+p-Xylene			<0.050		mg/kg		0.05	01-MAR-17
Styrene			<0.050		mg/kg		0.05	01-MAR-17
F1(C6-C10)			<10		mg/kg		10	01-MAR-17
Surrogate: 1,4-Difluorobenzene			106.5		%		70-130	01-MAR-17
Surrogate: 4-Bromofluorobenzene			115.3		%		70-130	01-MAR-17
Surrogate: 3,4-Dichlorotoluene			105.5		%		70-130	01-MAR-17
Batch R3669805								
WG2488426-2 LCS								
Benzene			88.8		%		70-130	08-MAR-17
Toluene			78.5		%		70-130	08-MAR-17
Ethylbenzene			80.5		%		70-130	08-MAR-17

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
BTXS,F1-MEOH-CL	**Soil**							
Batch R3669805								
WG2488426-2 LCS								
o-Xylene			84.3		%		70-130	08-MAR-17
m+p-Xylene			88.7		%		70-130	08-MAR-17
Styrene			84.5		%		70-130	08-MAR-17
F1(C6-C10)			91.3		%		70-130	08-MAR-17
WG2488426-1 MB								
Benzene			<0.0050		mg/kg		0.005	08-MAR-17
Toluene			<0.050		mg/kg		0.05	08-MAR-17
Ethylbenzene			<0.015		mg/kg		0.015	08-MAR-17
o-Xylene			<0.050		mg/kg		0.05	08-MAR-17
m+p-Xylene			<0.050		mg/kg		0.05	08-MAR-17
Styrene			<0.050		mg/kg		0.05	08-MAR-17
F1(C6-C10)			<10		mg/kg		10	08-MAR-17
Surrogate: 1,4-Difluorobenzene			91.7		%		70-130	08-MAR-17
Surrogate: 4-Bromofluorobenzene			85.7		%		70-130	08-MAR-17
Surrogate: 3,4-Dichlorotoluene			105.6		%		70-130	08-MAR-17
F2-4-TMB-H/A-FID-CL	**Soil**							
Batch R3650491								
WG2477551-3 IRM		**ALS PHC2 RM**						
F2: (C10-C16)			92.9		%		70-130	12-FEB-17
F3: (C16-C34)			87.3		%		70-130	12-FEB-17
F4: (C34-C50)			80.9		%		70-130	12-FEB-17
WG2477551-2 LCS								
F2: (C10-C16)			111.7		%		70-130	12-FEB-17
F3: (C16-C34)			92.0		%		70-130	12-FEB-17
F4: (C34-C50)			89.9		%		70-130	12-FEB-17
WG2477551-1 MB								
F2: (C10-C16)			<25		mg/kg		25	12-FEB-17
F3: (C16-C34)			<50		mg/kg		50	12-FEB-17
F4: (C34-C50)			<50		mg/kg		50	12-FEB-17
Surrogate: 2-Bromobenzotrifluoride			81.1		%		70-130	12-FEB-17
Batch R3650982								
WG2477576-4 DUP		**L1887184-38**						
F2: (C10-C16)		<25	<25	RPD-NA	mg/kg	N/A	40	13-FEB-17
F3: (C16-C34)		59	58		mg/kg	2.0	40	13-FEB-17
F4: (C34-C50)		<50	<50	RPD-NA	mg/kg	N/A	40	13-FEB-17

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F2-4-TMB-H/A-FID-CL	**Soil**							
Batch R3650982								
WG2477576-8 DUP		**L1887184-96**						
F2: (C10-C16)		<25	<25	RPD-NA	mg/kg	N/A	40	13-FEB-17
F3: (C16-C34)		88	90		mg/kg	2.4	40	13-FEB-17
F4: (C34-C50)		<50	<50	RPD-NA	mg/kg	N/A	40	13-FEB-17
WG2477576-3 IRM		**ALS PHC2 RM**						
F2: (C10-C16)			72.5		%		70-130	13-FEB-17
F3: (C16-C34)			82.5		%		70-130	13-FEB-17
F4: (C34-C50)			84.8		%		70-130	13-FEB-17
WG2477576-7 IRM		**ALS PHC2 RM**						
F2: (C10-C16)			73.7		%		70-130	13-FEB-17
F3: (C16-C34)			86.7		%		70-130	13-FEB-17
F4: (C34-C50)			84.4		%		70-130	13-FEB-17
WG2477576-2 LCS								
F2: (C10-C16)			105.6		%		70-130	13-FEB-17
F3: (C16-C34)			112.0		%		70-130	13-FEB-17
F4: (C34-C50)			116.2		%		70-130	13-FEB-17
WG2477576-6 LCS								
F2: (C10-C16)			92.0		%		70-130	13-FEB-17
F3: (C16-C34)			99.7		%		70-130	13-FEB-17
F4: (C34-C50)			101.8		%		70-130	13-FEB-17
WG2477576-1 MB								
F2: (C10-C16)			<25		mg/kg		25	13-FEB-17
F3: (C16-C34)			<50		mg/kg		50	13-FEB-17
F4: (C34-C50)			<50		mg/kg		50	13-FEB-17
Surrogate: 2-Bromobenzotrifluoride			86.6		%		70-130	13-FEB-17
WG2477576-5 MB								
F2: (C10-C16)			<25		mg/kg		25	13-FEB-17
F3: (C16-C34)			<50		mg/kg		50	13-FEB-17
F4: (C34-C50)			<50		mg/kg		50	13-FEB-17
Surrogate: 2-Bromobenzotrifluoride			87.2		%		70-130	13-FEB-17
Batch R3669135								
WG2488523-3 IRM		**ALS PHC2 RM**						
F2: (C10-C16)			87.1		%		70-130	07-MAR-17
F3: (C16-C34)			87.5		%		70-130	07-MAR-17
F4: (C34-C50)			77.5		%		70-130	07-MAR-17
WG2488523-2 LCS								
F2: (C10-C16)			105.8		%		70-130	07-MAR-17

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F2-4-TMB-H/A-FID-CL	**Soil**							
Batch R3669135								
WG2488523-2 LCS								
F3: (C16-C34)			102.3		%		70-130	07-MAR-17
F4: (C34-C50)			102.4		%		70-130	07-MAR-17
WG2488523-1 MB								
F2: (C10-C16)			<25		mg/kg		25	07-MAR-17
F3: (C16-C34)			<50		mg/kg		50	07-MAR-17
F4: (C34-C50)			<50		mg/kg		50	07-MAR-17
Surrogate: 2-Bromobenzotrifluoride			102.8		%		70-130	07-MAR-17
GLYCOL-CL	**Soil**							
Batch R3650503								
WG2478395-6 DUP		**L1887184-32**						
Diethylene Glycol		<5.0	<5.0	RPD-NA	mg/kg	N/A	30	11-FEB-17
Ethylene Glycol		<10	<10	RPD-NA	mg/kg	N/A	30	11-FEB-17
Propylene Glycol		<10	<10	RPD-NA	mg/kg	N/A	30	11-FEB-17
Triethylene Glycol		<10	<10	RPD-NA	mg/kg	N/A	30	11-FEB-17
WG2478395-4 LCS								
Diethylene Glycol			80.0		%		70-130	09-FEB-17
Ethylene Glycol			76.4		%		70-130	09-FEB-17
Propylene Glycol			85.4		%		70-130	09-FEB-17
Triethylene Glycol			83.9		%		70-130	09-FEB-17
WG2478395-9 LCS								
Diethylene Glycol			83.8		%		70-130	11-FEB-17
Ethylene Glycol			77.8		%		70-130	11-FEB-17
Propylene Glycol			85.0		%		70-130	11-FEB-17
Triethylene Glycol			85.3		%		70-130	11-FEB-17
WG2478395-2 MB								
Diethylene Glycol			<5.0		mg/kg		5	09-FEB-17
Ethylene Glycol			<10		mg/kg		10	09-FEB-17
Propylene Glycol			<10		mg/kg		10	09-FEB-17
Triethylene Glycol			<10		mg/kg		10	09-FEB-17
WG2478395-5 MB								
Diethylene Glycol			<5.0		mg/kg		5	11-FEB-17
Ethylene Glycol			<10		mg/kg		10	11-FEB-17
Propylene Glycol			<10		mg/kg		10	11-FEB-17
Triethylene Glycol			<10		mg/kg		10	11-FEB-17
MET-200.2-CCMS-CL	**Soil**							

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-CL	**Soil**							
Batch R3651028								
WG2478815-2 CRM		**TILL-1**						
Lead (Pb)			90.4		%		70-130	13-FEB-17
WG2478815-4 DUP		**L1887184-43**						
Lead (Pb)		5.93	5.87		mg/kg	1.1	40	13-FEB-17
WG2478815-1 MB								
Lead (Pb)			<0.50		mg/kg		0.5	13-FEB-17
MET-200.2-CCMS-SK	**Soil**							
Batch R3650219								
WG2476112-3 CRM		**TILL-1**						
Aluminum (Al)			96.0		%		70-130	10-FEB-17
Antimony (Sb)			99.8		%		70-130	10-FEB-17
Arsenic (As)			107.2		%		70-130	10-FEB-17
Barium (Ba)			102.8		%		70-130	10-FEB-17
Beryllium (Be)			96.1		%		70-130	10-FEB-17
Bismuth (Bi)			101.3		%		70-130	10-FEB-17
Cadmium (Cd)			93.5		%		70-130	10-FEB-17
Calcium (Ca)			103.4		%		70-130	10-FEB-17
Chromium (Cr)			105.5		%		70-130	10-FEB-17
Cobalt (Co)			103.8		%		70-130	10-FEB-17
Copper (Cu)			102.9		%		70-130	10-FEB-17
Iron (Fe)			100.1		%		70-130	10-FEB-17
Lead (Pb)			98.8		%		70-130	10-FEB-17
Lithium (Li)			102.3		%		70-130	10-FEB-17
Magnesium (Mg)			99.1		%		70-130	10-FEB-17
Manganese (Mn)			97.0		%		70-130	10-FEB-17
Molybdenum (Mo)			90.6		%		70-130	10-FEB-17
Nickel (Ni)			103.3		%		70-130	10-FEB-17
Phosphorus (P)			104.2		%		70-130	10-FEB-17
Potassium (K)			90.2		%		70-130	10-FEB-17
Selenium (Se)			103.6		%		70-130	10-FEB-17
Silver (Ag)			103.5		%		70-130	10-FEB-17
Sodium (Na)			102.1		%		70-130	10-FEB-17
Strontium (Sr)			109.8		%		70-130	10-FEB-17
Thallium (Tl)			93.3		%		70-130	10-FEB-17
Tin (Sn)			91.6		%		70-130	10-FEB-17
Titanium (Ti)			94.5		%		70-130	10-FEB-17

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-SK	**Soil**							
Batch R3650219								
WG2476112-3 CRM		**TILL-1**						
Uranium (U)			114.6		%		70-130	10-FEB-17
Vanadium (V)			107.4		%		70-130	10-FEB-17
Zinc (Zn)			101.0		%		70-130	10-FEB-17
WG2476112-4 LCS								
Aluminum (Al)			95.8		%		80-120	10-FEB-17
Antimony (Sb)			99.5		%		80-120	10-FEB-17
Arsenic (As)			97.7		%		80-120	10-FEB-17
Barium (Ba)			95.9		%		80-120	10-FEB-17
Beryllium (Be)			93.3		%		80-120	10-FEB-17
Boron (B)			94.3		%		80-120	10-FEB-17
Bismuth (Bi)			97.9		%		80-120	10-FEB-17
Cadmium (Cd)			99.2		%		80-120	10-FEB-17
Calcium (Ca)			93.8		%		80-120	10-FEB-17
Chromium (Cr)			96.9		%		80-120	10-FEB-17
Cobalt (Co)			98.7		%		80-120	10-FEB-17
Copper (Cu)			97.4		%		80-120	10-FEB-17
Iron (Fe)			102.3		%		80-120	10-FEB-17
Lead (Pb)			100.1		%		80-120	10-FEB-17
Lithium (Li)			96.1		%		80-120	10-FEB-17
Magnesium (Mg)			94.5		%		80-120	10-FEB-17
Manganese (Mn)			97.4		%		80-120	10-FEB-17
Molybdenum (Mo)			94.0		%		80-120	10-FEB-17
Nickel (Ni)			96.3		%		80-120	10-FEB-17
Phosphorus (P)			105.7		%		80-120	10-FEB-17
Potassium (K)			94.1		%		80-120	10-FEB-17
Selenium (Se)			101.7		%		80-120	10-FEB-17
Silver (Ag)			99.1		%		80-120	10-FEB-17
Sodium (Na)			98.0		%		80-120	10-FEB-17
Strontium (Sr)			95.0		%		80-120	10-FEB-17
Thallium (Tl)			96.7		%		80-120	10-FEB-17
Tin (Sn)			98.3		%		80-120	10-FEB-17
Titanium (Ti)			96.7		%		80-120	10-FEB-17
Uranium (U)			103.5		%		80-120	10-FEB-17
Vanadium (V)			99.6		%		80-120	10-FEB-17

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-SK	**Soil**							
Batch R3650219								
WG2476112-4 LCS								
Zinc (Zn)			93.0		%		80-120	10-FEB-17
Zirconium (Zr)			95.5		%		80-120	10-FEB-17
WG2476112-1 MB								
Aluminum (Al)			<50		mg/kg		50	10-FEB-17
Antimony (Sb)			<0.10		mg/kg		0.1	10-FEB-17
Arsenic (As)			<0.10		mg/kg		0.1	10-FEB-17
Barium (Ba)			<0.50		mg/kg		0.5	10-FEB-17
Beryllium (Be)			<0.10		mg/kg		0.1	10-FEB-17
Boron (B)			<5.0		mg/kg		5	10-FEB-17
Bismuth (Bi)			<0.20		mg/kg		0.2	10-FEB-17
Cadmium (Cd)			<0.020		mg/kg		0.02	10-FEB-17
Calcium (Ca)			<50		mg/kg		50	10-FEB-17
Chromium (Cr)			<0.50		mg/kg		0.5	10-FEB-17
Cobalt (Co)			<0.10		mg/kg		0.1	10-FEB-17
Copper (Cu)			<0.50		mg/kg		0.5	10-FEB-17
Iron (Fe)			<50		mg/kg		50	10-FEB-17
Lead (Pb)			<0.50		mg/kg		0.5	10-FEB-17
Lithium (Li)			<2.0		mg/kg		2	10-FEB-17
Magnesium (Mg)			<20		mg/kg		20	10-FEB-17
Manganese (Mn)			<1.0		mg/kg		1	10-FEB-17
Molybdenum (Mo)			<0.10		mg/kg		0.1	10-FEB-17
Nickel (Ni)			<0.50		mg/kg		0.5	10-FEB-17
Phosphorus (P)			<50		mg/kg		50	10-FEB-17
Potassium (K)			<100		mg/kg		100	10-FEB-17
Selenium (Se)			<0.20		mg/kg		0.2	10-FEB-17
Silver (Ag)			<0.10		mg/kg		0.1	10-FEB-17
Sodium (Na)			<50		mg/kg		50	10-FEB-17
Strontium (Sr)			<0.50		mg/kg		0.5	10-FEB-17
Thallium (Tl)			<0.050		mg/kg		0.05	10-FEB-17
Tin (Sn)			<1.0		mg/kg		1	10-FEB-17
Titanium (Ti)			<1.0		mg/kg		1	10-FEB-17
Uranium (U)			<0.050		mg/kg		0.05	10-FEB-17
Vanadium (V)			<0.20		mg/kg		0.2	10-FEB-17
Zinc (Zn)			<2.0		mg/kg		2	10-FEB-17

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-SK	**Soil**							
Batch R3650219								
WG2476112-1 MB								
Zirconium (Zr)			<1.0		mg/kg		1	10-FEB-17
Batch R3650232								
WG2476238-3 CRM		**TILL-1**						
Lead (Pb)			101.2		%		70-130	10-FEB-17
WG2476238-2 DUP		**L1887184-77**						
Lead (Pb)		5.93	5.52		mg/kg	7.2	40	10-FEB-17
WG2476238-4 LCS								
Lead (Pb)			101.1		%		80-120	10-FEB-17
WG2476238-1 MB								
Lead (Pb)			<0.50		mg/kg		0.5	10-FEB-17
Batch R3667671								
WG2488101-3 CRM		**TILL-1**						
Lead (Pb)			100.6		%		70-130	03-MAR-17
WG2488101-4 LCS								
Lead (Pb)			104.9		%		80-120	03-MAR-17
WG2488101-1 MB								
Lead (Pb)			<0.50		mg/kg		0.5	03-MAR-17
MOISTURE-CL	**Soil**							
Batch R3650399								
WG2477573-2 LCS								
Moisture			102.0		%		90-110	10-FEB-17
WG2477573-1 MB								
Moisture			<0.25		%		0.25	10-FEB-17
Batch R3650497								
WG2477582-3 DUP		**L1887184-38**						
Moisture		7.62	7.61		%	0.2	20	10-FEB-17
WG2477582-6 DUP		**L1887184-96**						
Moisture		7.59	7.26		%	4.4	20	10-FEB-17
WG2477582-10 LCS								
Moisture			102.1		%		90-110	10-FEB-17
WG2477582-2 LCS								
Moisture			103.6		%		90-110	10-FEB-17
WG2477582-1 MB								
Moisture			<0.25		%		0.25	10-FEB-17
WG2477582-9 MB								
Moisture			<0.25		%		0.25	10-FEB-17

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MOISTURE-CL	**Soil**							
Batch R3651192								
WG2478791-3 DUP		**L1887184-20**						
Moisture		7.70	7.60		%	1.2	20	14-FEB-17
WG2478791-2 LCS								
Moisture			105.0		%		90-110	14-FEB-17
WG2478791-1 MB								
Moisture			<0.25		%		0.25	14-FEB-17
Batch R3664726								
WG2486454-3 DUP		**L1887184-35**						
Moisture		12.2	11.6		%	4.8	20	01-MAR-17
WG2486454-2 LCS								
Moisture			105.9		%		90-110	01-MAR-17
WG2486454-1 MB								
Moisture			<0.25		%		0.25	01-MAR-17
Batch R3667891								
WG2488724-3 DUP		**L1887184-72**						
Moisture		7.57	8.00		%	5.5	20	03-MAR-17
WG2488724-2 LCS								
Moisture			102.5		%		90-110	03-MAR-17
WG2488724-1 MB								
Moisture			<0.25		%		0.25	03-MAR-17
PAH-CCME-CL	**Soil**							
Batch R3651104								
WG2479071-5 DUP		**L1887184-2**						
Naphthalene		<0.010	<0.010	RPD-NA	mg/kg	N/A	50	12-FEB-17
Acenapthene		<0.0050	<0.0050	RPD-NA	mg/kg	N/A	50	12-FEB-17
Quinoline		<0.010	<0.010	RPD-NA	mg/kg	N/A	50	12-FEB-17
Acenapthylene		<0.0050	<0.0050	RPD-NA	mg/kg	N/A	50	12-FEB-17
Phenanthrene		<0.010	<0.010	RPD-NA	mg/kg	N/A	50	12-FEB-17
Anthracene		<0.0040	<0.0040	RPD-NA	mg/kg	N/A	50	12-FEB-17
Pyrene		<0.010	<0.010	RPD-NA	mg/kg	N/A	50	12-FEB-17
Benzo(g,h,i)perylene		<0.010	<0.010	RPD-NA	mg/kg	N/A	50	12-FEB-17
Benzo(a)anthracene		<0.010	<0.010	RPD-NA	mg/kg	N/A	50	12-FEB-17
Chrysene		<0.010	<0.010	RPD-NA	mg/kg	N/A	50	12-FEB-17
Benzo(b&j)fluoranthene		<0.010	<0.010	RPD-NA	mg/kg	N/A	50	12-FEB-17
Benzo(k)fluoranthene		<0.010	<0.010	RPD-NA	mg/kg	N/A	50	12-FEB-17
Benzo(a)pyrene		<0.010	<0.010	RPD-NA	mg/kg	N/A	50	12-FEB-17
Fluoroanthene		<0.010	<0.010	RPD-NA	mg/kg	N/A	50	12-FEB-17

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-CCME-CL	**Soil**							
Batch R3651104								
WG2479071-5 DUP		**L1887184-2**						
Fluorene		<0.010	<0.010	RPD-NA	mg/kg	N/A	50	12-FEB-17
Indeno(1,2,3-cd)pyrene		<0.010	<0.010	RPD-NA	mg/kg	N/A	50	12-FEB-17
Dibenzo(a,h)anthracene		<0.0050	<0.0050	RPD-NA	mg/kg	N/A	50	12-FEB-17
2-methylnaphthalene		<0.010	<0.010	RPD-NA	mg/kg	N/A	50	12-FEB-17
WG2479071-1 LCS								
Naphthalene			92.7		%		50-130	10-FEB-17
Acenapthene			89.2		%		60-130	10-FEB-17
Quinoline			96.6		%		60-130	10-FEB-17
Acenapthylene			90.3		%		60-130	10-FEB-17
Phenanthrene			91.3		%		60-130	10-FEB-17
Anthracene			88.6		%		60-130	10-FEB-17
Pyrene			97.9		%		60-130	10-FEB-17
Benzo(g,h,i)perylene			112.1		%		60-130	10-FEB-17
Benzo(a)anthracene			87.3		%		60-130	10-FEB-17
Chrysene			90.5		%		60-130	10-FEB-17
Benzo(b&j)fluoranthene			80.9		%		60-130	10-FEB-17
Benzo(k)fluoranthene			78.6		%		60-130	10-FEB-17
Benzo(a)pyrene			73.7		%		60-130	10-FEB-17
Fluoroanthene			98.1		%		60-130	10-FEB-17
Fluorene			91.8		%		60-130	10-FEB-17
Indeno(1,2,3-cd)pyrene			88.8		%		60-130	10-FEB-17
Dibenzo(a,h)anthracene			103.9		%		60-130	10-FEB-17
2-methylnaphthalene			87.9		%		60-130	10-FEB-17
WG2479071-7 LCS								
Naphthalene			79.4		%		50-130	13-FEB-17
Acenapthene			82.9		%		60-130	13-FEB-17
Quinoline			89.7		%		60-130	13-FEB-17
Acenapthylene			87.1		%		60-130	13-FEB-17
Phenanthrene			93.6		%		60-130	13-FEB-17
Anthracene			95.8		%		60-130	13-FEB-17
Pyrene			93.1		%		60-130	13-FEB-17
Benzo(g,h,i)perylene			84.7		%		60-130	13-FEB-17
Benzo(a)anthracene			106.4		%		60-130	13-FEB-17
Chrysene			94.9		%		60-130	13-FEB-17
Benzo(b&j)fluoranthene			127.5		%		60-130	13-FEB-17

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-CCME-CL	**Soil**							
Batch R3651104								
WG2479071-7 LCS								
Benzo(k)fluoranthene			102.0		%		60-130	13-FEB-17
Benzo(a)pyrene			120.4		%		60-130	13-FEB-17
Fluoroanthene			91.6		%		60-130	13-FEB-17
Fluorene			92.5		%		60-130	13-FEB-17
Indeno(1,2,3-cd)pyrene			115.0		%		60-130	13-FEB-17
Dibenzo(a,h)anthracene			103.1		%		60-130	13-FEB-17
2-methylnaphthalene			78.0		%		60-130	13-FEB-17
WG2479071-2 MB								
Naphthalene			<0.010		mg/kg		0.01	10-FEB-17
Acenapthene			<0.0050		mg/kg		0.005	10-FEB-17
Quinoline			<0.010		mg/kg		0.01	10-FEB-17
Acenapthylene			<0.0050		mg/kg		0.005	10-FEB-17
Phenanthrene			<0.010		mg/kg		0.01	10-FEB-17
Anthracene			<0.0040		mg/kg		0.004	10-FEB-17
Pyrene			<0.010		mg/kg		0.01	10-FEB-17
Benzo(g,h,i)perylene			<0.010		mg/kg		0.01	10-FEB-17
Benzo(a)anthracene			<0.010		mg/kg		0.01	10-FEB-17
Chrysene			<0.010		mg/kg		0.01	10-FEB-17
Benzo(b&j)fluoranthene			<0.010		mg/kg		0.01	10-FEB-17
Benzo(k)fluoranthene			<0.010		mg/kg		0.01	10-FEB-17
Benzo(a)pyrene			<0.010		mg/kg		0.01	10-FEB-17
Fluoroanthene			<0.010		mg/kg		0.01	10-FEB-17
Fluorene			<0.010		mg/kg		0.01	10-FEB-17
Indeno(1,2,3-cd)pyrene			<0.010		mg/kg		0.01	10-FEB-17
Dibenzo(a,h)anthracene			<0.0050		mg/kg		0.005	10-FEB-17
2-methylnaphthalene			<0.010		mg/kg		0.01	10-FEB-17
Surrogate: d10-Acenaphthene			94.5		%		60-130	10-FEB-17
Surrogate: d10-Phenanthrene			89.6		%		60-130	10-FEB-17
Surrogate: d12-Chrysene			73.0		%		60-130	10-FEB-17
WG2479071-4 MB								
Naphthalene			<0.010		mg/kg		0.01	12-FEB-17
Acenapthene			<0.0050		mg/kg		0.005	12-FEB-17
Quinoline			<0.010		mg/kg		0.01	12-FEB-17
Acenapthylene			<0.0050		mg/kg		0.005	12-FEB-17
Phenanthrene			<0.010		mg/kg		0.01	12-FEB-17

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-CCME-CL	**Soil**							
Batch R3651104								
WG2479071-4 MB								
Anthracene			<0.0040		mg/kg		0.004	12-FEB-17
Pyrene			<0.010		mg/kg		0.01	12-FEB-17
Benzo(g,h,i)perylene			<0.010		mg/kg		0.01	12-FEB-17
Benzo(a)anthracene			<0.010		mg/kg		0.01	12-FEB-17
Chrysene			<0.010		mg/kg		0.01	12-FEB-17
Benzo(b&j)fluoranthene			<0.010		mg/kg		0.01	12-FEB-17
Benzo(k)fluoranthene			<0.010		mg/kg		0.01	12-FEB-17
Benzo(a)pyrene			<0.010		mg/kg		0.01	12-FEB-17
Fluoroanthene			<0.010		mg/kg		0.01	12-FEB-17
Fluorene			<0.010		mg/kg		0.01	12-FEB-17
Indeno(1,2,3-cd)pyrene			<0.010		mg/kg		0.01	12-FEB-17
Dibenzo(a,h)anthracene			<0.0050		mg/kg		0.005	12-FEB-17
2-methylnaphthalene			<0.010		mg/kg		0.01	12-FEB-17
Surrogate: d10-Acenaphthene			94.9		%		60-130	12-FEB-17
Surrogate: d10-Phenanthrene			95.1		%		60-130	12-FEB-17
Surrogate: d12-Chrysene			88.6		%		60-130	12-FEB-17
WG2479071-6 MS		**L1887184-26**						
Naphthalene			70.2		%		50-150	12-FEB-17
Acenapthene			73.4		%		50-150	12-FEB-17
Quinoline			75.8		%		50-150	12-FEB-17
Acenapthylene			79.2		%		50-150	12-FEB-17
Phenanthrene			82.5		%		50-150	12-FEB-17
Anthracene			102.7		%		50-150	12-FEB-17
Pyrene			90.3		%		50-150	12-FEB-17
Benzo(g,h,i)perylene			80.1		%		50-150	12-FEB-17
Benzo(a)anthracene			104.0		%		50-150	12-FEB-17
Chrysene			91.5		%		50-150	12-FEB-17
Benzo(b&j)fluoranthene			126.2		%		50-150	12-FEB-17
Benzo(k)fluoranthene			100.5		%		50-150	12-FEB-17
Benzo(a)pyrene			120.3		%		50-150	12-FEB-17
Fluoroanthene			89.5		%		50-150	12-FEB-17
Fluorene			78.4		%		50-150	12-FEB-17
Indeno(1,2,3-cd)pyrene			110.2		%		50-150	12-FEB-17
Dibenzo(a,h)anthracene			95.2		%		50-150	12-FEB-17

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-CCME-CL	**Soil**							
Batch R3651104								
WG2479071-6 MS		**L1887184-26**						
2-methylnaphthalene			56.5		%		50-150	12-FEB-17
Batch R3651568								
WG2479473-9 DUP		**L1887184-20**						
Naphthalene		<0.010	<0.010	RPD-NA	mg/kg	N/A	50	14-FEB-17
Acenapthene		<0.0050	<0.0050	RPD-NA	mg/kg	N/A	50	14-FEB-17
Quinoline		<0.010	<0.010	RPD-NA	mg/kg	N/A	50	14-FEB-17
Acenapthylene		<0.0050	<0.0050	RPD-NA	mg/kg	N/A	50	14-FEB-17
Phenanthrene		<0.010	<0.010	RPD-NA	mg/kg	N/A	50	14-FEB-17
Anthracene		<0.0040	<0.0040	RPD-NA	mg/kg	N/A	50	14-FEB-17
Pyrene		<0.010	<0.010	RPD-NA	mg/kg	N/A	50	14-FEB-17
Benzo(g,h,i)perylene		<0.010	<0.010	RPD-NA	mg/kg	N/A	50	14-FEB-17
Benzo(a)anthracene		<0.010	<0.010	RPD-NA	mg/kg	N/A	50	14-FEB-17
Chrysene		<0.010	<0.010	RPD-NA	mg/kg	N/A	50	14-FEB-17
Benzo(b&j)fluoranthene		<0.010	<0.010	RPD-NA	mg/kg	N/A	50	14-FEB-17
Benzo(k)fluoranthene		<0.010	<0.010	RPD-NA	mg/kg	N/A	50	14-FEB-17
Benzo(a)pyrene		<0.010	<0.010	RPD-NA	mg/kg	N/A	50	14-FEB-17
Fluoroanthene		<0.010	<0.010	RPD-NA	mg/kg	N/A	50	14-FEB-17
Fluorene		<0.010	<0.010	RPD-NA	mg/kg	N/A	50	14-FEB-17
Indeno(1,2,3-cd)pyrene		<0.010	<0.010	RPD-NA	mg/kg	N/A	50	14-FEB-17
Dibenzo(a,h)anthracene		<0.0050	<0.0050	RPD-NA	mg/kg	N/A	50	14-FEB-17
2-methylnaphthalene		<0.010	<0.010	RPD-NA	mg/kg	N/A	50	14-FEB-17
WG2479473-1 LCS								
Naphthalene			90.9		%		50-130	13-FEB-17
Acenapthene			87.4		%		60-130	13-FEB-17
Quinoline			91.5		%		60-130	13-FEB-17
Acenapthylene			90.1		%		60-130	13-FEB-17
Phenanthrene			90.1		%		60-130	13-FEB-17
Anthracene			87.7		%		60-130	13-FEB-17
Pyrene			90.4		%		60-130	13-FEB-17
Benzo(g,h,i)perylene			103.6		%		60-130	13-FEB-17
Benzo(a)anthracene			90.8		%		60-130	13-FEB-17
Chrysene			96.7		%		60-130	13-FEB-17
Benzo(b&j)fluoranthene			89.0		%		60-130	13-FEB-17
Benzo(k)fluoranthene			94.1		%		60-130	13-FEB-17

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-CCME-CL	**Soil**							
Batch R3651568								
WG2479473-1 LCS								
Benzo(a)pyrene			95.2		%		60-130	13-FEB-17
Fluoroanthene			91.2		%		60-130	13-FEB-17
Fluorene			90.6		%		60-130	13-FEB-17
Indeno(1,2,3-cd)pyrene			102.6		%		60-130	13-FEB-17
Dibenzo(a,h)anthracene			102.6		%		60-130	13-FEB-17
2-methylnaphthalene			84.4		%		60-130	13-FEB-17
WG2479473-14 LCS								
Naphthalene			94.5		%		50-130	14-FEB-17
Acenapthene			90.7		%		60-130	14-FEB-17
Quinoline			95.5		%		60-130	14-FEB-17
Acenapthylene			95.2		%		60-130	14-FEB-17
Phenanthrene			95.8		%		60-130	14-FEB-17
Anthracene			95.4		%		60-130	14-FEB-17
Pyrene			97.1		%		60-130	14-FEB-17
Benzo(g,h,i)perylene			109.0		%		60-130	14-FEB-17
Benzo(a)anthracene			101.6		%		60-130	14-FEB-17
Chrysene			105.5		%		60-130	14-FEB-17
Benzo(b&j)fluoranthene			109.5		%		60-130	14-FEB-17
Benzo(k)fluoranthene			113.0		%		60-130	14-FEB-17
Benzo(a)pyrene			112.2		%		60-130	14-FEB-17
Fluoroanthene			96.9		%		60-130	14-FEB-17
Fluorene			97.1		%		60-130	14-FEB-17
Indeno(1,2,3-cd)pyrene			113.3		%		60-130	14-FEB-17
Dibenzo(a,h)anthracene			107.4		%		60-130	14-FEB-17
2-methylnaphthalene			88.6		%		60-130	14-FEB-17
WG2479473-5 LCS								
Naphthalene			95.5		%		50-130	14-FEB-17
Acenapthene			92.1		%		60-130	14-FEB-17
Quinoline			98.8		%		60-130	14-FEB-17
Acenapthylene			94.7		%		60-130	14-FEB-17
Phenanthrene			95.3		%		60-130	14-FEB-17
Anthracene			94.0		%		60-130	14-FEB-17
Pyrene			97.0		%		60-130	14-FEB-17
Benzo(g,h,i)perylene			115.8		%		60-130	14-FEB-17
Benzo(a)anthracene			101.8		%		60-130	14-FEB-17

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-CCME-CL	**Soil**							
Batch R3651568								
WG2479473-5 LCS								
Chrysene			108.6		%		60-130	14-FEB-17
Benzo(b&j)fluoranthene			107.5		%		60-130	14-FEB-17
Benzo(k)fluoranthene			117.7		%		60-130	14-FEB-17
Benzo(a)pyrene			112.0		%		60-130	14-FEB-17
Fluoroanthene			97.3		%		60-130	14-FEB-17
Fluorene			96.1		%		60-130	14-FEB-17
Indeno(1,2,3-cd)pyrene			122.6		%		60-130	14-FEB-17
Dibenzo(a,h)anthracene			111.9		%		60-130	14-FEB-17
2-methylnaphthalene			89.9		%		60-130	14-FEB-17
WG2479473-11 MB								
Naphthalene			<0.010		mg/kg		0.01	14-FEB-17
Acenapthene			<0.0050		mg/kg		0.005	14-FEB-17
Quinoline			<0.010		mg/kg		0.01	14-FEB-17
Acenapthylene			<0.0050		mg/kg		0.005	14-FEB-17
Phenanthrene			<0.010		mg/kg		0.01	14-FEB-17
Anthracene			<0.0040		mg/kg		0.004	14-FEB-17
Pyrene			<0.010		mg/kg		0.01	14-FEB-17
Benzo(g,h,i)perylene			<0.010		mg/kg		0.01	14-FEB-17
Benzo(a)anthracene			<0.010		mg/kg		0.01	14-FEB-17
Chrysene			<0.010		mg/kg		0.01	14-FEB-17
Benzo(b&j)fluoranthene			<0.010		mg/kg		0.01	14-FEB-17
Benzo(k)fluoranthene			<0.010		mg/kg		0.01	14-FEB-17
Benzo(a)pyrene			<0.010		mg/kg		0.01	14-FEB-17
Fluoroanthene			<0.010		mg/kg		0.01	14-FEB-17
Fluorene			<0.010		mg/kg		0.01	14-FEB-17
Indeno(1,2,3-cd)pyrene			<0.010		mg/kg		0.01	14-FEB-17
Dibenzo(a,h)anthracene			<0.0050		mg/kg		0.005	14-FEB-17
2-methylnaphthalene			<0.010		mg/kg		0.01	14-FEB-17
Surrogate: d10-Acenaphthene			95.6		%		60-130	14-FEB-17
Surrogate: d10-Phenanthrene			97.4		%		60-130	14-FEB-17
Surrogate: d12-Chrysene			102.5		%		60-130	14-FEB-17
WG2479473-2 MB								
Naphthalene			<0.010		mg/kg		0.01	13-FEB-17
Acenapthene			<0.0050		mg/kg		0.005	13-FEB-17
Quinoline			<0.010		mg/kg		0.01	13-FEB-17

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-CCME-CL	**Soil**							
Batch R3651568								
WG2479473-2 MB								
Acenapthylene			<0.0050		mg/kg		0.005	13-FEB-17
Phenanthrene			<0.010		mg/kg		0.01	13-FEB-17
Anthracene			<0.0040		mg/kg		0.004	13-FEB-17
Pyrene			<0.010		mg/kg		0.01	13-FEB-17
Benzo(g,h,i)perylene			<0.010		mg/kg		0.01	13-FEB-17
Benzo(a)anthracene			<0.010		mg/kg		0.01	13-FEB-17
Chrysene			<0.010		mg/kg		0.01	13-FEB-17
Benzo(b&j)fluoranthene			<0.010		mg/kg		0.01	13-FEB-17
Benzo(k)fluoranthene			<0.010		mg/kg		0.01	13-FEB-17
Benzo(a)pyrene			<0.010		mg/kg		0.01	13-FEB-17
Fluoroanthene			<0.010		mg/kg		0.01	13-FEB-17
Fluorene			<0.010		mg/kg		0.01	13-FEB-17
Indeno(1,2,3-cd)pyrene			<0.010		mg/kg		0.01	13-FEB-17
Dibenzo(a,h)anthracene			<0.0050		mg/kg		0.005	13-FEB-17
2-methylnaphthalene			<0.010		mg/kg		0.01	13-FEB-17
Surrogate: d10-Acenaphthene			84.6		%		60-130	13-FEB-17
Surrogate: d10-Phenanthrene			86.8		%		60-130	13-FEB-17
Surrogate: d12-Chrysene			83.1		%		60-130	13-FEB-17
WG2479473-6 MB								
Naphthalene			<0.010		mg/kg		0.01	14-FEB-17
Acenapthene			<0.0050		mg/kg		0.005	14-FEB-17
Quinoline			<0.010		mg/kg		0.01	14-FEB-17
Acenapthylene			<0.0050		mg/kg		0.005	14-FEB-17
Phenanthrene			<0.010		mg/kg		0.01	14-FEB-17
Anthracene			<0.0040		mg/kg		0.004	14-FEB-17
Pyrene			<0.010		mg/kg		0.01	14-FEB-17
Benzo(g,h,i)perylene			<0.010		mg/kg		0.01	14-FEB-17
Benzo(a)anthracene			<0.010		mg/kg		0.01	14-FEB-17
Chrysene			<0.010		mg/kg		0.01	14-FEB-17
Benzo(b&j)fluoranthene			<0.010		mg/kg		0.01	14-FEB-17
Benzo(k)fluoranthene			<0.010		mg/kg		0.01	14-FEB-17
Benzo(a)pyrene			<0.010		mg/kg		0.01	14-FEB-17
Fluoroanthene			<0.010		mg/kg		0.01	14-FEB-17
Fluorene			<0.010		mg/kg		0.01	14-FEB-17

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-CCME-CL	**Soil**							
Batch R3651568								
WG2479473-6 MB								
Indeno(1,2,3-cd)pyrene			<0.010		mg/kg		0.01	14-FEB-17
Dibenzo(a,h)anthracene			<0.0050		mg/kg		0.005	14-FEB-17
2-methylnaphthalene			<0.010		mg/kg		0.01	14-FEB-17
Surrogate: d10-Acenaphthene			94.7		%		60-130	14-FEB-17
Surrogate: d10-Phenanthrene			93.9		%		60-130	14-FEB-17
Surrogate: d12-Chrysene			100.2		%		60-130	14-FEB-17
WG2479473-10 MS		**L1887184-20**						
Naphthalene			74.0		%		50-150	14-FEB-17
Acenapthene			73.8		%		50-150	14-FEB-17
Quinoline			76.9		%		50-150	14-FEB-17
Acenapthylene			75.9		%		50-150	14-FEB-17
Phenanthrene			80.6		%		50-150	14-FEB-17
Anthracene			82.2		%		50-150	14-FEB-17
Pyrene			86.5		%		50-150	14-FEB-17
Benzo(g,h,i)perylene			86.7		%		50-150	14-FEB-17
Benzo(a)anthracene			91.1		%		50-150	14-FEB-17
Chrysene			88.6		%		50-150	14-FEB-17
Benzo(b&j)fluoranthene			103.2		%		50-150	14-FEB-17
Benzo(k)fluoranthene			99.2		%		50-150	14-FEB-17
Benzo(a)pyrene			104.9		%		50-150	14-FEB-17
Fluoroanthene			85.2		%		50-150	14-FEB-17
Fluorene			78.3		%		50-150	14-FEB-17
Indeno(1,2,3-cd)pyrene			102.5		%		50-150	14-FEB-17
Dibenzo(a,h)anthracene			91.7		%		50-150	14-FEB-17
2-methylnaphthalene			70.8		%		50-150	14-FEB-17
PSA-MUST-SK	**Soil**							
Batch R3651503								
WG2479487-1 DUP		**L1887184-4**						
MUST PSA % > 75um		94.0	93.6	J	%	0.4	5	14-FEB-17
WG2479487-2 IRM		**10-105_SOIL**						
MUST PSA % > 75um			27.0		%		21-31	14-FEB-17
TEH-SK-H/A-FID-CL	**Soil**							

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
TEH-SK-H/A-FID-CL	**Soil**							
Batch R3650578								
WG2477551-3 IRM		**ALS PHC2 RM**						
TEH (C11-C22)			98.4		%		70-130	12-FEB-17
TEH (C23-C60)			81.7		%		70-130	12-FEB-17
WG2477551-1 MB								
TEH (C11-C22)			<50		mg/kg		50	12-FEB-17
TEH (C23-C60)			<100		mg/kg		100	12-FEB-17
Surrogate: 2-Bromobenzotrifluoride			81.1		%		70-130	12-FEB-17
Batch R3650984								
WG2477576-4 DUP		**L1887184-38**						
TEH (C11-C22)		<50	<50	RPD-NA	mg/kg	N/A	40	13-FEB-17
TEH (C23-C60)		<100	<100	RPD-NA	mg/kg	N/A	40	13-FEB-17
WG2477576-8 DUP		**L1887184-96**						
TEH (C11-C22)		<50	<50	RPD-NA	mg/kg	N/A	40	13-FEB-17
TEH (C23-C60)		130	130		mg/kg	2.2	40	13-FEB-17
WG2477576-3 IRM		**ALS PHC2 RM**						
TEH (C11-C22)			89.1		%		70-130	13-FEB-17
TEH (C23-C60)			76.1		%		70-130	13-FEB-17
WG2477576-7 IRM		**ALS PHC2 RM**						
TEH (C11-C22)			93.7		%		70-130	13-FEB-17
TEH (C23-C60)			76.2		%		70-130	13-FEB-17
WG2477576-1 MB								
TEH (C11-C22)			<50		mg/kg		50	13-FEB-17
TEH (C23-C60)			<100		mg/kg		100	13-FEB-17
Surrogate: 2-Bromobenzotrifluoride			86.6		%		70-130	13-FEB-17
WG2477576-5 MB								
TEH (C11-C22)			<50		mg/kg		50	13-FEB-17
TEH (C23-C60)			<100		mg/kg		100	13-FEB-17
Surrogate: 2-Bromobenzotrifluoride			87.2		%		70-130	13-FEB-17
Batch R3669154								
WG2488726-3 DUP		**L1887184-72**						
TEH (C11-C22)		<50	<50	RPD-NA	mg/kg	N/A	40	07-MAR-17
TEH (C23-C60)		<100	<100	RPD-NA	mg/kg	N/A	40	07-MAR-17
WG2488726-4 IRM		**ALS PHC2 RM**						
TEH (C11-C22)			93.9		%		70-130	07-MAR-17
TEH (C23-C60)			84.5		%		70-130	07-MAR-17
WG2488726-1 MB								
TEH (C11-C22)			<50		mg/kg		50	07-MAR-17

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
TEH-SK-H/A-FID-CL	**Soil**							
Batch R3669154								
WG2488726-1 MB								
TEH (C23-C60)			<100		mg/kg		100	07-MAR-17
Surrogate: 2-Bromobenzotrifluoride			92.4		%		70-130	07-MAR-17
VOC-8260-ED	**Soil**							
Batch R3650793								
WG2477478-3 DUP		**L1887184-32**						
Dichlorodifluoromethane		<0.010	<0.010	RPD-NA	mg/kg	N/A	40	09-FEB-17
Chloromethane		<0.10	<0.10	RPD-NA	mg/kg	N/A	40	09-FEB-17
Vinyl chloride		<0.20	<0.20	RPD-NA	mg/kg	N/A	40	09-FEB-17
Bromomethane		<0.10	<0.10	RPD-NA	mg/kg	N/A	40	09-FEB-17
Chloroethane		<0.10	<0.10	RPD-NA	mg/kg	N/A	40	09-FEB-17
Trichlorofluoromethane		<0.010	<0.010	RPD-NA	mg/kg	N/A	40	09-FEB-17
1,1-Dichloroethene		<0.010	<0.010	RPD-NA	mg/kg	N/A	40	09-FEB-17
Methylene chloride		<0.010	<0.010	RPD-NA	mg/kg	N/A	40	09-FEB-17
trans-1,2-Dichloroethene		<0.010	<0.010	RPD-NA	mg/kg	N/A	40	09-FEB-17
1,1-Dichloroethane		<0.010	<0.010	RPD-NA	mg/kg	N/A	40	09-FEB-17
2,2-Dichloropropane		<0.010	<0.010	RPD-NA	mg/kg	N/A	40	09-FEB-17
cis-1,2-Dichloroethene		<0.010	<0.010	RPD-NA	mg/kg	N/A	40	09-FEB-17
Chloroform		<0.010	<0.010	RPD-NA	mg/kg	N/A	40	09-FEB-17
Bromochloromethane		<0.010	<0.010	RPD-NA	mg/kg	N/A	40	09-FEB-17
1,2-Dichloroethane		<0.010	<0.010	RPD-NA	mg/kg	N/A	40	09-FEB-17
1,1,1-Trichloroethane		<0.010	<0.010	RPD-NA	mg/kg	N/A	40	09-FEB-17
1,1-Dichloropropene		<0.010	<0.010	RPD-NA	mg/kg	N/A	40	09-FEB-17
Carbon tetrachloride		<0.010	<0.010	RPD-NA	mg/kg	N/A	40	09-FEB-17
Trichloroethene		<0.010	<0.010	RPD-NA	mg/kg	N/A	40	09-FEB-17
1,2-Dichloropropane		<0.010	<0.010	RPD-NA	mg/kg	N/A	40	09-FEB-17
Bromodichloromethane		<0.010	<0.010	RPD-NA	mg/kg	N/A	40	09-FEB-17
Dibromomethane		<0.010	<0.010	RPD-NA	mg/kg	N/A	40	09-FEB-17
cis-1,3-Dichloropropene		<0.010	<0.010	RPD-NA	mg/kg	N/A	40	09-FEB-17
trans-1,3-Dichloropropene		<0.010	<0.010	RPD-NA	mg/kg	N/A	40	09-FEB-17
1,1,2-Trichloroethane		<0.010	<0.010	RPD-NA	mg/kg	N/A	40	09-FEB-17
1,3-Dichloropropane		<0.010	<0.010	RPD-NA	mg/kg	N/A	40	09-FEB-17
Tetrachloroethene		<0.010	<0.010	RPD-NA	mg/kg	N/A	40	09-FEB-17
Dibromochloromethane		<0.010	<0.010	RPD-NA	mg/kg	N/A	40	09-FEB-17
1,2-Dibromoethane		<0.010	<0.010	RPD-NA	mg/kg	N/A	40	09-FEB-17

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-8260-ED	**Soil**							
Batch R3650793								
WG2477478-3 DUP		**L1887184-32**						
Chlorobenzene		<0.010	<0.010	RPD-NA	mg/kg	N/A	40	09-FEB-17
1,1,1,2-Tetrachloroethane		<0.010	<0.010	RPD-NA	mg/kg	N/A	40	09-FEB-17
Bromoform		<0.010	<0.010	RPD-NA	mg/kg	N/A	40	09-FEB-17
Isopropylbenzene		<0.010	<0.010	RPD-NA	mg/kg	N/A	40	09-FEB-17
1,1,2,2-Tetrachloroethane		<0.050	<0.050	RPD-NA	mg/kg	N/A	40	09-FEB-17
1,2,3-Trichloropropane		<0.020	<0.020	RPD-NA	mg/kg	N/A	40	09-FEB-17
n-Propylbenzene		<0.010	<0.010	RPD-NA	mg/kg	N/A	40	09-FEB-17
Bromobenzene		<0.010	<0.010	RPD-NA	mg/kg	N/A	40	09-FEB-17
1,3,5-Trimethylbenzene		<0.010	<0.010	RPD-NA	mg/kg	N/A	40	09-FEB-17
2-Chlorotoluene		<0.010	<0.010	RPD-NA	mg/kg	N/A	40	09-FEB-17
4-Chlorotoluene		<0.010	<0.010	RPD-NA	mg/kg	N/A	40	09-FEB-17
tert-Butylbenzene		<0.010	<0.010	RPD-NA	mg/kg	N/A	40	09-FEB-17
1,2,4-Trimethylbenzene		<0.010	<0.010	RPD-NA	mg/kg	N/A	40	09-FEB-17
sec-Butylbenzene		<0.010	<0.010	RPD-NA	mg/kg	N/A	40	09-FEB-17
p-Isopropyltoluene		<0.010	<0.010	RPD-NA	mg/kg	N/A	40	09-FEB-17
1,3-Dichlorobenzene		<0.010	<0.010	RPD-NA	mg/kg	N/A	40	09-FEB-17
1,4-Dichlorobenzene		<0.010	<0.010	RPD-NA	mg/kg	N/A	40	09-FEB-17
n-Butylbenzene		<0.010	<0.010	RPD-NA	mg/kg	N/A	40	09-FEB-17
1,2-Dichlorobenzene		<0.010	<0.010	RPD-NA	mg/kg	N/A	40	09-FEB-17
1,2-Dibromo-3-chloropropane		<0.010	<0.010	RPD-NA	mg/kg	N/A	40	09-FEB-17
1,2,4-Trichlorobenzene		<0.010	<0.010	RPD-NA	mg/kg	N/A	40	09-FEB-17
Hexachlorobutadiene		<0.010	<0.010	RPD-NA	mg/kg	N/A	40	09-FEB-17
1,2,3-Trichlorobenzene		<0.010	<0.010	RPD-NA	mg/kg	N/A	40	09-FEB-17
WG2477478-2 LCS								
Chloromethane			74.0		%		70-130	09-FEB-17
Vinyl chloride			67.0	MES	%		70-130	09-FEB-17
Bromomethane			71.0		%		70-130	09-FEB-17
Chloroethane			80.0		%		70-130	09-FEB-17
Trichlorofluoromethane			74.0		%		70-130	09-FEB-17
1,1-Dichloroethene			77.0		%		70-130	09-FEB-17
Methylene chloride			94.0		%		70-130	09-FEB-17
trans-1,2-Dichloroethene			85.0		%		70-130	09-FEB-17
1,1-Dichloroethane			92.0		%		70-130	09-FEB-17
2,2-Dichloropropane			96.0		%		70-130	09-FEB-17

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-8260-ED	**Soil**							
Batch R3650793								
WG2477478-2 LCS								
cis-1,2-Dichloroethene			94.0		%		70-130	09-FEB-17
Chloroform			100.0		%		70-130	09-FEB-17
Bromochloromethane			102.0		%		70-130	09-FEB-17
1,2-Dichloroethane			96.0		%		70-130	09-FEB-17
1,1,1-Trichloroethane			90.0		%		70-130	09-FEB-17
1,1-Dichloropropene			88.0		%		70-130	09-FEB-17
Carbon tetrachloride			85.0		%		70-130	09-FEB-17
Trichloroethene			88.0		%		70-130	09-FEB-17
1,2-Dichloropropane			103.0		%		70-130	09-FEB-17
Bromodichloromethane			101.0		%		70-130	09-FEB-17
Dibromomethane			108.0		%		70-130	09-FEB-17
cis-1,3-Dichloropropene			104.0		%		70-130	09-FEB-17
trans-1,3-Dichloropropene			106.0		%		70-130	09-FEB-17
1,1,2-Trichloroethane			111.0		%		70-130	09-FEB-17
1,3-Dichloropropane			118.0		%		70-130	09-FEB-17
Tetrachloroethene			87.0		%		70-130	09-FEB-17
Dibromochloromethane			109.0		%		70-130	09-FEB-17
1,2-Dibromoethane			109.0		%		70-130	09-FEB-17
Chlorobenzene			98.0		%		70-130	09-FEB-17
1,1,1,2-Tetrachloroethane			99.0		%		70-130	09-FEB-17
Bromoform			109.0		%		70-130	09-FEB-17
Isopropylbenzene			95.0		%		70-130	09-FEB-17
1,1,2,2-Tetrachloroethane			112.0		%		70-130	09-FEB-17
1,2,3-Trichloropropane			100.0		%		70-130	09-FEB-17
n-Propylbenzene			96.0		%		70-130	09-FEB-17
Bromobenzene			104.0		%		70-130	09-FEB-17
1,3,5-Trimethylbenzene			92.0		%		70-130	09-FEB-17
2-Chlorotoluene			101.0		%		70-130	09-FEB-17
4-Chlorotoluene			98.0		%		70-130	09-FEB-17
tert-Butylbenzene			93.0		%		70-130	09-FEB-17
1,2,4-Trimethylbenzene			92.0		%		70-130	09-FEB-17
sec-Butylbenzene			89.0		%		70-130	09-FEB-17
p-Isopropyltoluene			87.0		%		70-130	09-FEB-17
1,3-Dichlorobenzene			96.0		%		70-130	09-FEB-17

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-8260-ED	**Soil**							
Batch R3650793								
WG2477478-2 LCS								
1,4-Dichlorobenzene			98.0		%		70-130	09-FEB-17
n-Butylbenzene			88.0		%		70-130	09-FEB-17
1,2-Dichlorobenzene			95.0		%		70-130	09-FEB-17
1,2-Dibromo-3-chloropropane			123.0		%		70-130	09-FEB-17
1,2,4-Trichlorobenzene			97.0		%		70-130	09-FEB-17
Hexachlorobutadiene			94.0		%		70-130	09-FEB-17
1,2,3-Trichlorobenzene			106.0		%		70-130	09-FEB-17
WG2477478-1 MB								
Dichlorodifluoromethane			<0.010		mg/kg		0.01	09-FEB-17
Chloromethane			<0.10		mg/kg		0.1	09-FEB-17
Vinyl chloride			<0.20		mg/kg		0.2	09-FEB-17
Bromomethane			<0.10		mg/kg		0.1	09-FEB-17
Chloroethane			<0.10		mg/kg		0.1	09-FEB-17
Trichlorofluoromethane			<0.010		mg/kg		0.01	09-FEB-17
1,1-Dichloroethene			<0.010		mg/kg		0.01	09-FEB-17
Methylene chloride			<0.010		mg/kg		0.01	09-FEB-17
trans-1,2-Dichloroethene			<0.010		mg/kg		0.01	09-FEB-17
1,1-Dichloroethane			<0.010		mg/kg		0.01	09-FEB-17
2,2-Dichloropropane			<0.010		mg/kg		0.01	09-FEB-17
cis-1,2-Dichloroethene			<0.010		mg/kg		0.01	09-FEB-17
Chloroform			<0.010		mg/kg		0.01	09-FEB-17
Bromochloromethane			<0.010		mg/kg		0.01	09-FEB-17
1,2-Dichloroethane			<0.010		mg/kg		0.01	09-FEB-17
1,1,1-Trichloroethane			<0.010		mg/kg		0.01	09-FEB-17
1,1-Dichloropropene			<0.010		mg/kg		0.01	09-FEB-17
Carbon tetrachloride			<0.010		mg/kg		0.01	09-FEB-17
Trichloroethene			<0.010		mg/kg		0.01	09-FEB-17
1,2-Dichloropropane			<0.010		mg/kg		0.01	09-FEB-17
Bromodichloromethane			<0.010		mg/kg		0.01	09-FEB-17
Dibromomethane			<0.010		mg/kg		0.01	09-FEB-17
cis-1,3-Dichloropropene			<0.010		mg/kg		0.01	09-FEB-17
trans-1,3-Dichloropropene			<0.010		mg/kg		0.01	09-FEB-17
1,1,2-Trichloroethane			<0.010		mg/kg		0.01	09-FEB-17
1,3-Dichloropropane			<0.010		mg/kg		0.01	09-FEB-17

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-8260-ED	**Soil**							
Batch R3650793								
WG2477478-1 MB								
Tetrachloroethene			<0.010		mg/kg		0.01	09-FEB-17
Dibromochloromethane			<0.010		mg/kg		0.01	09-FEB-17
1,2-Dibromoethane			<0.010		mg/kg		0.01	09-FEB-17
Chlorobenzene			<0.010		mg/kg		0.01	09-FEB-17
1,1,1,2-Tetrachloroethane			<0.010		mg/kg		0.01	09-FEB-17
Bromoform			<0.010		mg/kg		0.01	09-FEB-17
Isopropylbenzene			<0.010		mg/kg		0.01	09-FEB-17
1,1,2,2-Tetrachloroethane			<0.050		mg/kg		0.05	09-FEB-17
1,2,3-Trichloropropane			<0.020		mg/kg		0.02	09-FEB-17
n-Propylbenzene			<0.010		mg/kg		0.01	09-FEB-17
Bromobenzene			<0.010		mg/kg		0.01	09-FEB-17
1,3,5-Trimethylbenzene			<0.010		mg/kg		0.01	09-FEB-17
2-Chlorotoluene			<0.010		mg/kg		0.01	09-FEB-17
4-Chlorotoluene			<0.010		mg/kg		0.01	09-FEB-17
tert-Butylbenzene			<0.010		mg/kg		0.01	09-FEB-17
1,2,4-Trimethylbenzene			<0.010		mg/kg		0.01	09-FEB-17
sec-Butylbenzene			<0.010		mg/kg		0.01	09-FEB-17
p-Isopropyltoluene			<0.010		mg/kg		0.01	09-FEB-17
1,3-Dichlorobenzene			<0.010		mg/kg		0.01	09-FEB-17
1,4-Dichlorobenzene			<0.010		mg/kg		0.01	09-FEB-17
n-Butylbenzene			<0.010		mg/kg		0.01	09-FEB-17
1,2-Dichlorobenzene			<0.010		mg/kg		0.01	09-FEB-17
1,2-Dibromo-3-chloropropane			<0.010		mg/kg		0.01	09-FEB-17
1,2,4-Trichlorobenzene			<0.010		mg/kg		0.01	09-FEB-17
Hexachlorobutadiene			<0.010		mg/kg		0.01	09-FEB-17
1,2,3-Trichlorobenzene			<0.010		mg/kg		0.01	09-FEB-17
Surrogate: 1,4-Difluorobenzene (SS)			90.0		%		50-150	09-FEB-17
Surrogate: 4-Bromofluorobenzene (SS)			87.0		%		70-130	09-FEB-17
Surrogate: 3,4-Dichlorotoluene (SS)			95.0		%		50-150	09-FEB-17
WG2477478-4 MS		**L1887184-32**						
Chloromethane			61.0		%		50-150	09-FEB-17
Vinyl chloride			55.0		%		50-150	09-FEB-17
Bromomethane			60.0		%		50-150	09-FEB-17
Chloroethane			68.0		%		50-150	09-FEB-17

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-8260-ED	**Soil**							
Batch R3650793								
WG2477478-4 MS		**L1887184-32**						
Trichlorofluoromethane			62.0		%		50-150	09-FEB-17
1,1-Dichloroethene			64.0		%		50-150	09-FEB-17
Methylene chloride			81.0		%		50-150	09-FEB-17
trans-1,2-Dichloroethene			71.0		%		50-150	09-FEB-17
1,1-Dichloroethane			78.0		%		50-150	09-FEB-17
2,2-Dichloropropane			79.0		%		50-150	09-FEB-17
cis-1,2-Dichloroethene			78.0		%		50-150	09-FEB-17
Chloroform			83.0		%		50-150	09-FEB-17
Bromochloromethane			85.0		%		50-150	09-FEB-17
1,2-Dichloroethane			85.0		%		50-150	09-FEB-17
1,1,1-Trichloroethane			75.0		%		50-150	09-FEB-17
1,1-Dichloropropene			74.0		%		50-150	09-FEB-17
Carbon tetrachloride			70.0		%		50-150	09-FEB-17
Trichloroethene			73.0		%		50-150	09-FEB-17
1,2-Dichloropropane			86.0		%		50-150	09-FEB-17
Bromodichloromethane			84.0		%		50-150	09-FEB-17
Dibromomethane			90.0		%		50-150	09-FEB-17
cis-1,3-Dichloropropene			86.0		%		50-150	09-FEB-17
trans-1,3-Dichloropropene			88.0		%		50-150	09-FEB-17
1,1,2-Trichloroethane			93.0		%		50-150	09-FEB-17
1,3-Dichloropropane			99.0		%		50-150	09-FEB-17
Tetrachloroethene			72.0		%		50-150	09-FEB-17
Dibromochloromethane			92.0		%		50-150	09-FEB-17
1,2-Dibromoethane			91.0		%		50-150	09-FEB-17
Chlorobenzene			84.0		%		50-150	09-FEB-17
1,1,1,2-Tetrachloroethane			85.0		%		50-150	09-FEB-17
Bromoform			96.0		%		50-150	09-FEB-17
Isopropylbenzene			82.0		%		50-150	09-FEB-17
1,1,2,2-Tetrachloroethane			100.0		%		50-150	09-FEB-17
1,2,3-Trichloropropane			88.0		%		50-150	09-FEB-17
n-Propylbenzene			82.0		%		50-150	09-FEB-17
Bromobenzene			89.0		%		50-150	09-FEB-17
1,3,5-Trimethylbenzene			79.0		%		50-150	09-FEB-17
2-Chlorotoluene			87.0		%		50-150	09-FEB-17

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-8260-ED	**Soil**							
Batch R3650793								
WG2477478-4 MS		**L1887184-32**						
4-Chlorotoluene			84.0		%		50-150	09-FEB-17
tert-Butylbenzene			80.0		%		50-150	09-FEB-17
1,2,4-Trimethylbenzene			79.0		%		50-150	09-FEB-17
sec-Butylbenzene			76.0		%		50-150	09-FEB-17
p-Isopropyltoluene			76.0		%		50-150	09-FEB-17
1,3-Dichlorobenzene			82.0		%		50-150	09-FEB-17
1,4-Dichlorobenzene			84.0		%		50-150	09-FEB-17
n-Butylbenzene			76.0		%		50-150	09-FEB-17
1,2-Dichlorobenzene			84.0		%		50-150	09-FEB-17
1,2-Dibromo-3-chloropropane			109.0		%		50-150	09-FEB-17
1,2,4-Trichlorobenzene			84.0		%		50-150	09-FEB-17
Hexachlorobutadiene			82.0		%		50-150	09-FEB-17
1,2,3-Trichlorobenzene			90.0		%		50-150	09-FEB-17

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
J	Duplicate results and limits are expressed in terms of absolute difference.
MES	Data Quality Objective was marginally exceeded (by < 10% absolute) for < 10% of analytes in a Multi-Element Scan / Multi-Parameter Scan (considered acceptable as per OMOE & CCME).
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

ALS Product Description	Sample ID	Sampling Date	Date Processed	Rec. HT	Actual HT	Units	Qualifier
Physical Tests							
% Moisture							
	35	01-FEB-17 12:00	01-MAR-17 08:00	14	28	days	EHT
	46	01-FEB-17 12:00	01-MAR-17 08:00	14	28	days	EHT
	72	02-FEB-17 12:00	03-MAR-17 16:00	14	29	days	EHT
Hydrocarbons							
CCME F2-4 Hydrocarbons							
	72	02-FEB-17 12:00	03-MAR-17 16:00	14	29	days	EHT
Extractable Hydrocarbons. Tumbler/GC-FID							
	72	02-FEB-17 12:00	03-MAR-17 16:00	14	29	days	EHT

Legend & Qualifier Definitions:

EHTR-FM:	Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended.
EHTR:	Exceeded ALS recommended hold time prior to sample receipt.
EHTL:	Exceeded ALS recommended hold time prior to analysis. Sample was received less than 24 hours prior to expiry.
EHT:	Exceeded ALS recommended hold time prior to analysis.
Rec. HT:	ALS recommended hold time (see units).

Notes*:
Where actual sampling date is not provided to ALS, the date (& time) of receipt is used for calculation purposes.
Where actual sampling time is not provided to ALS, the earlier of 12 noon on the sampling date or the time (& date) of receipt is used for calculation purposes. Samples for L1887184 were received on 06-FEB-17 10:33.

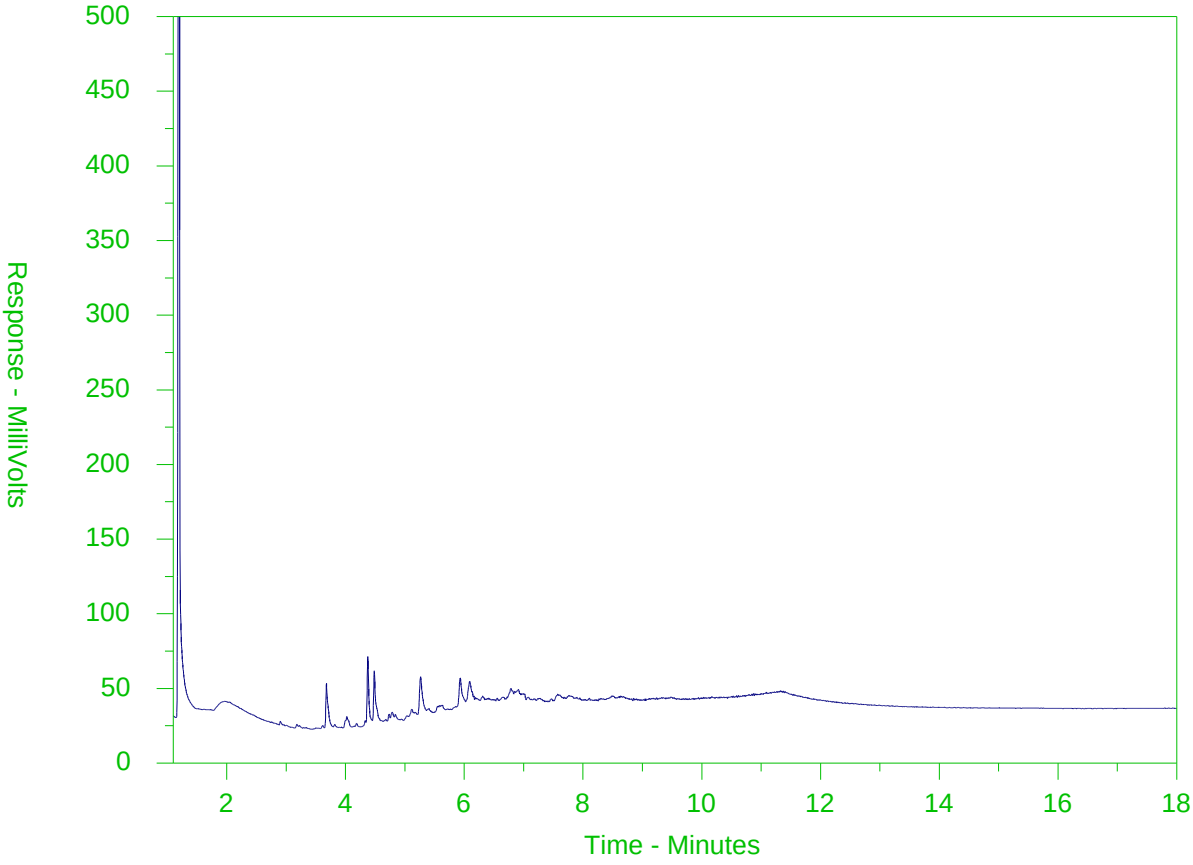
ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

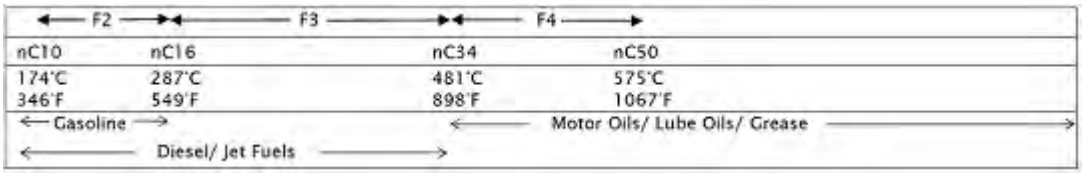
The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L1887184-6
Client Sample ID: 17-02-01





The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

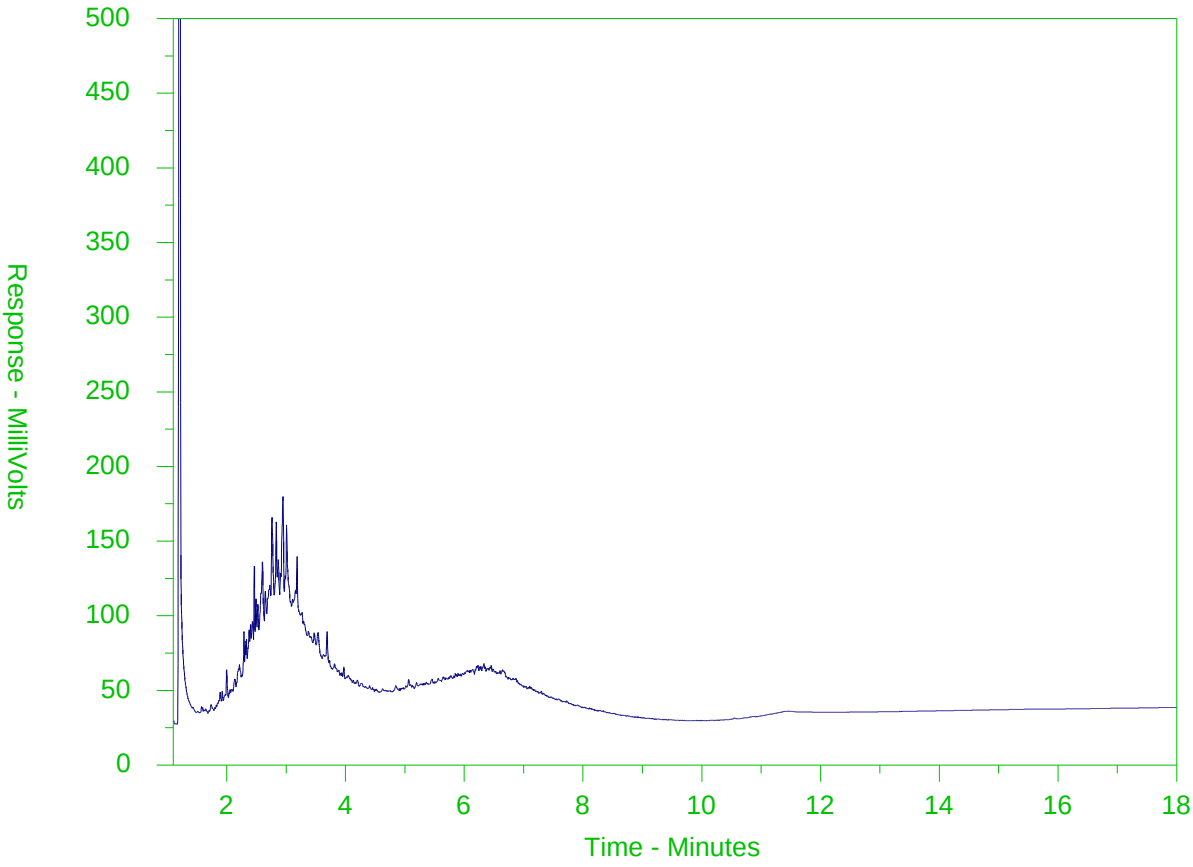
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L1887184-26
Client Sample ID: 17-06-03



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

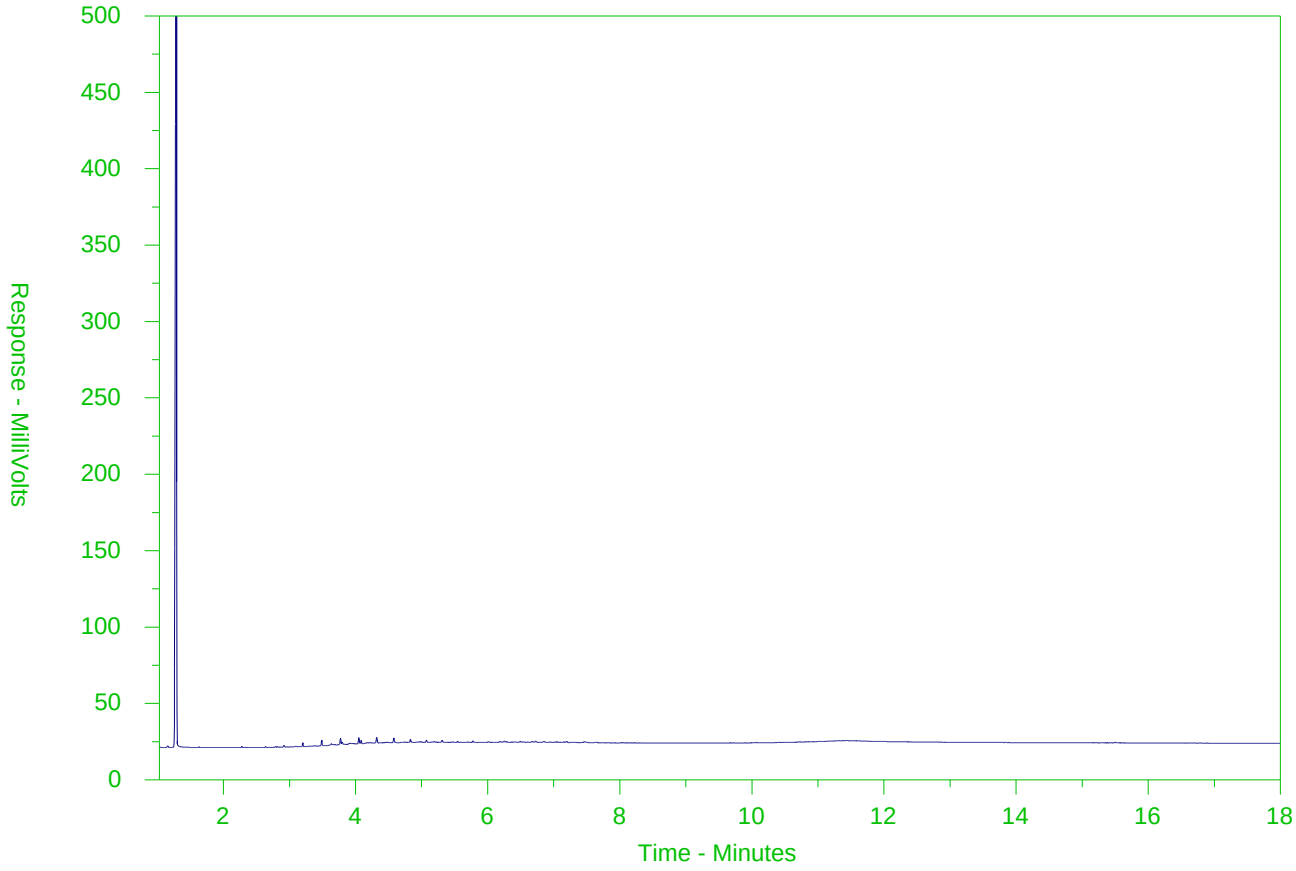
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L1887184-38
Client Sample ID: 17-08-06



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

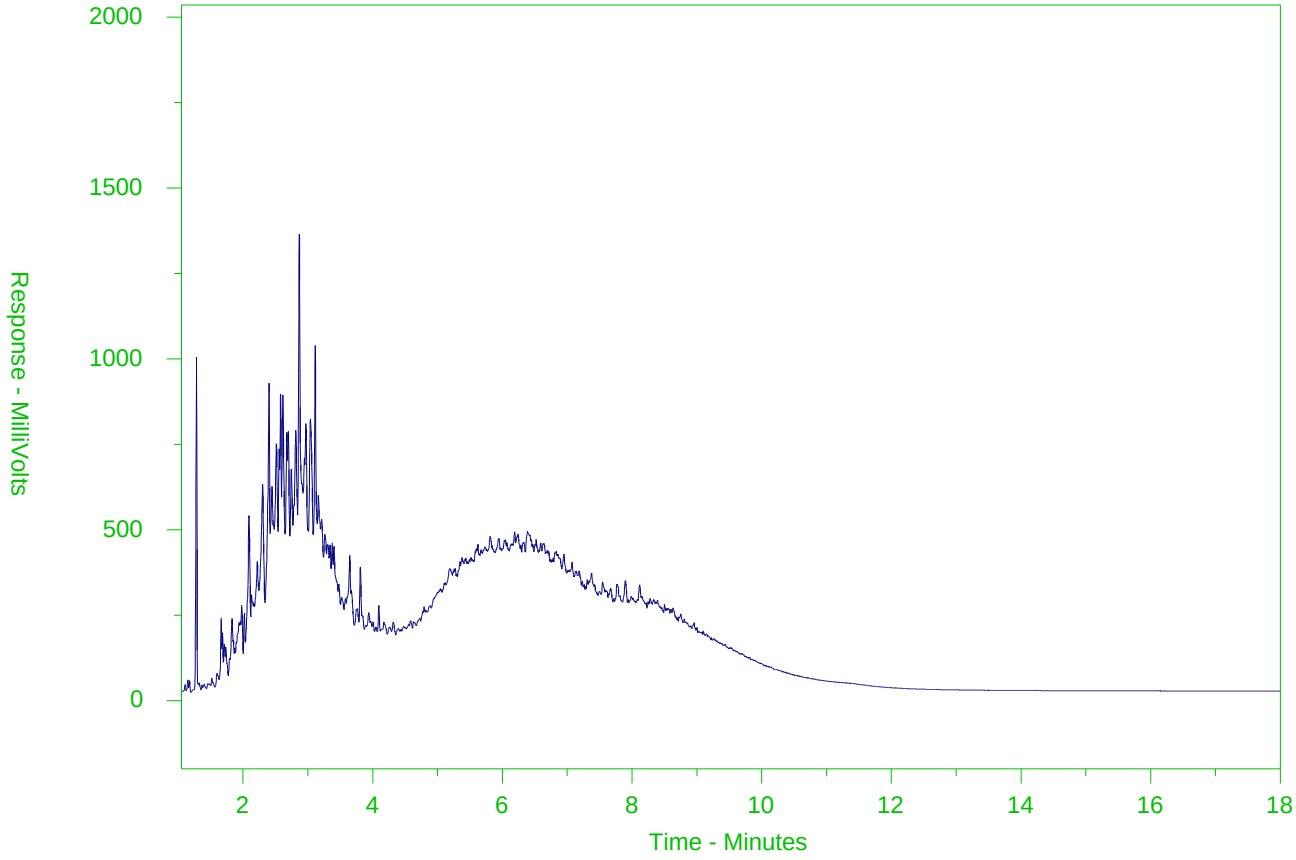
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L1887184-42
Client Sample ID: 17-09-04



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C 346°F	287°C 549°F	481°C 898°F	575°C 1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

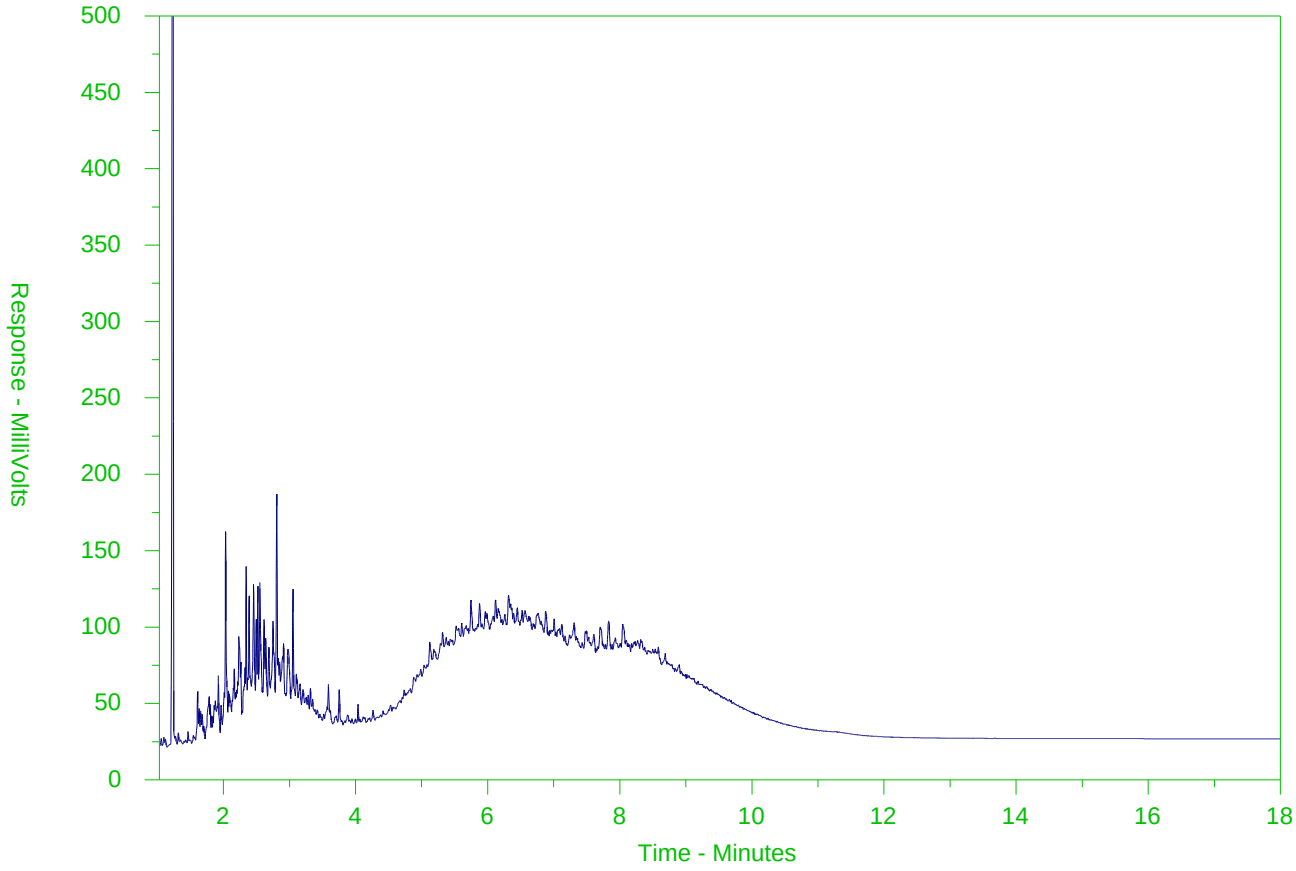
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L1887184-43
Client Sample ID: 17-09-05



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

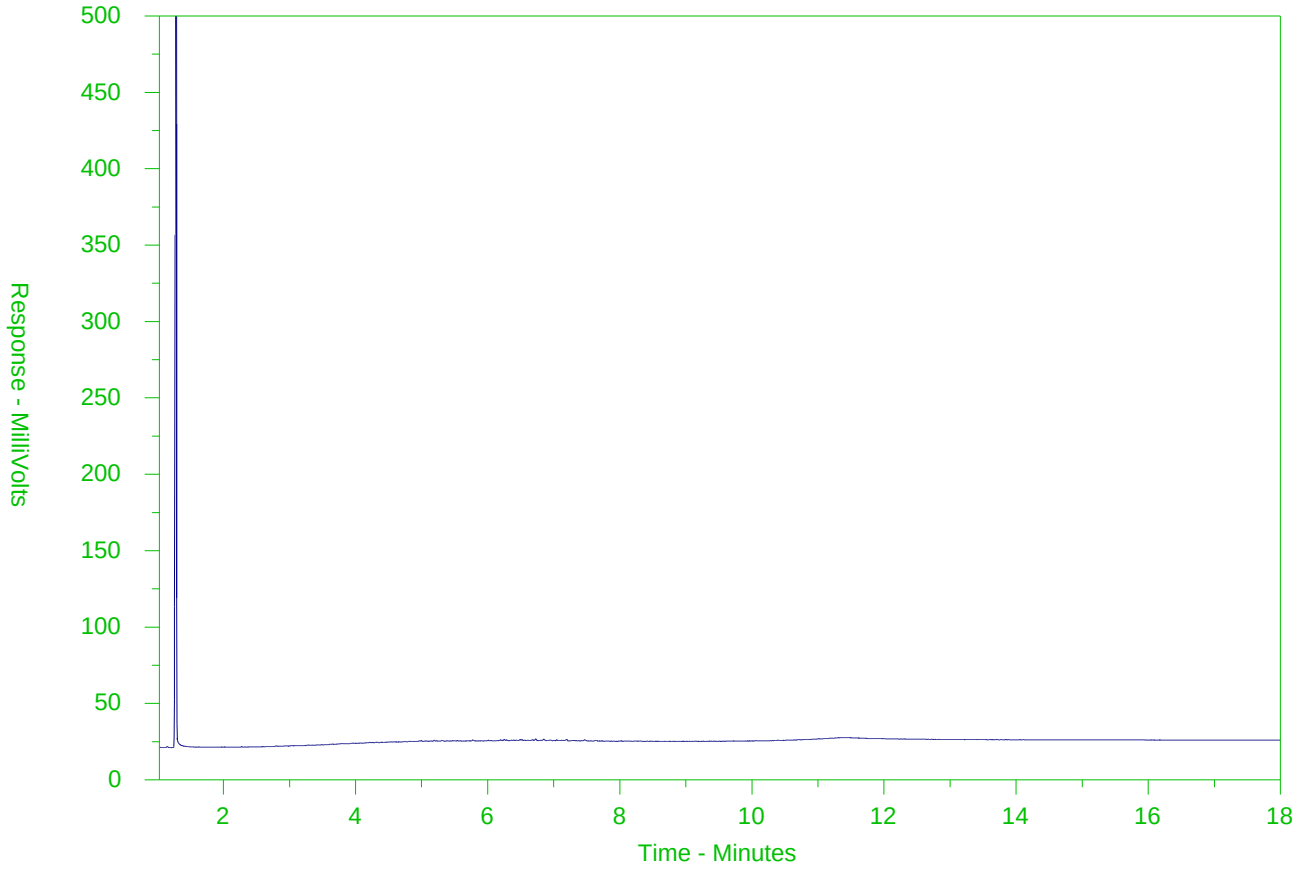
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L1887184-45
Client Sample ID: 17-09-07



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

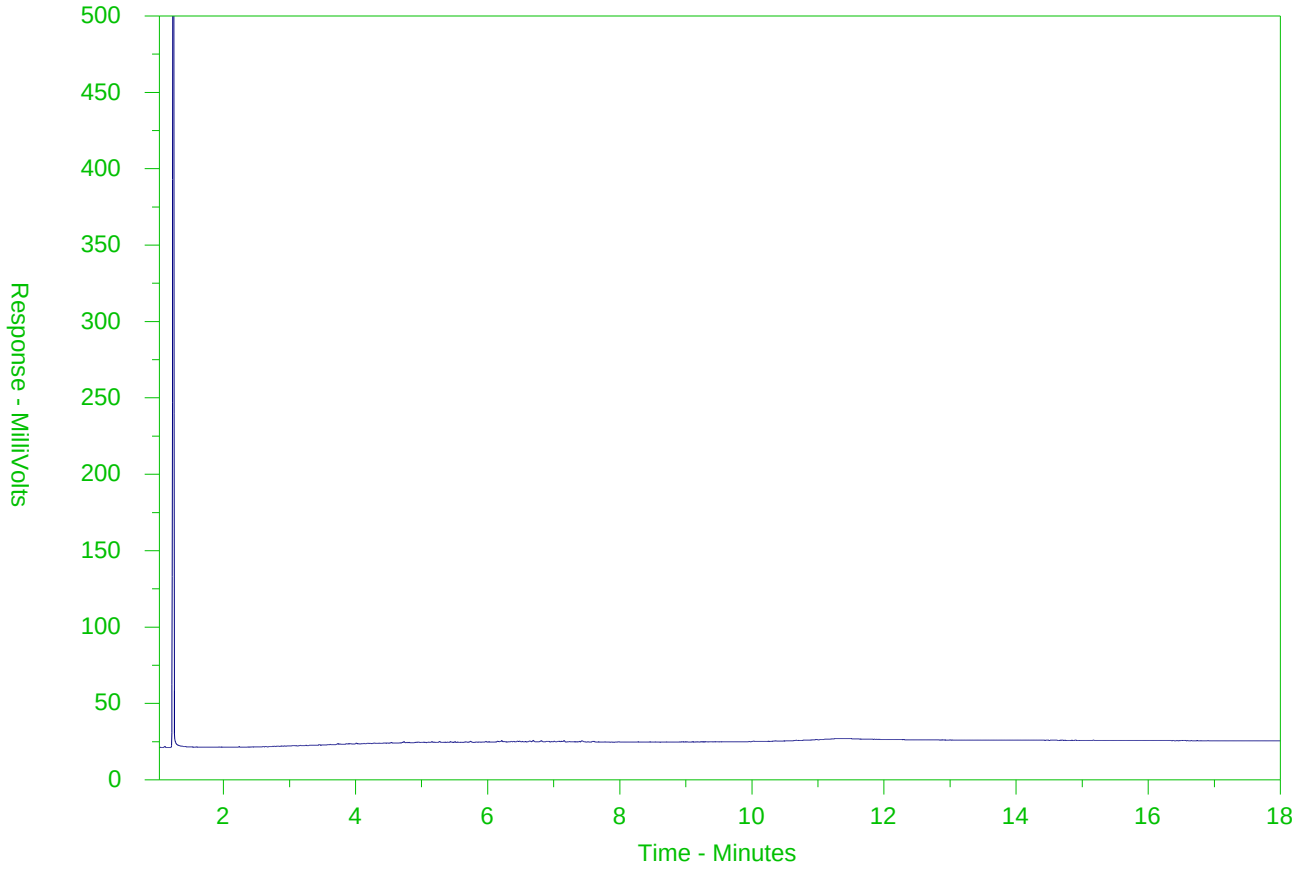
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L1887184-48
Client Sample ID: 17-09-10



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

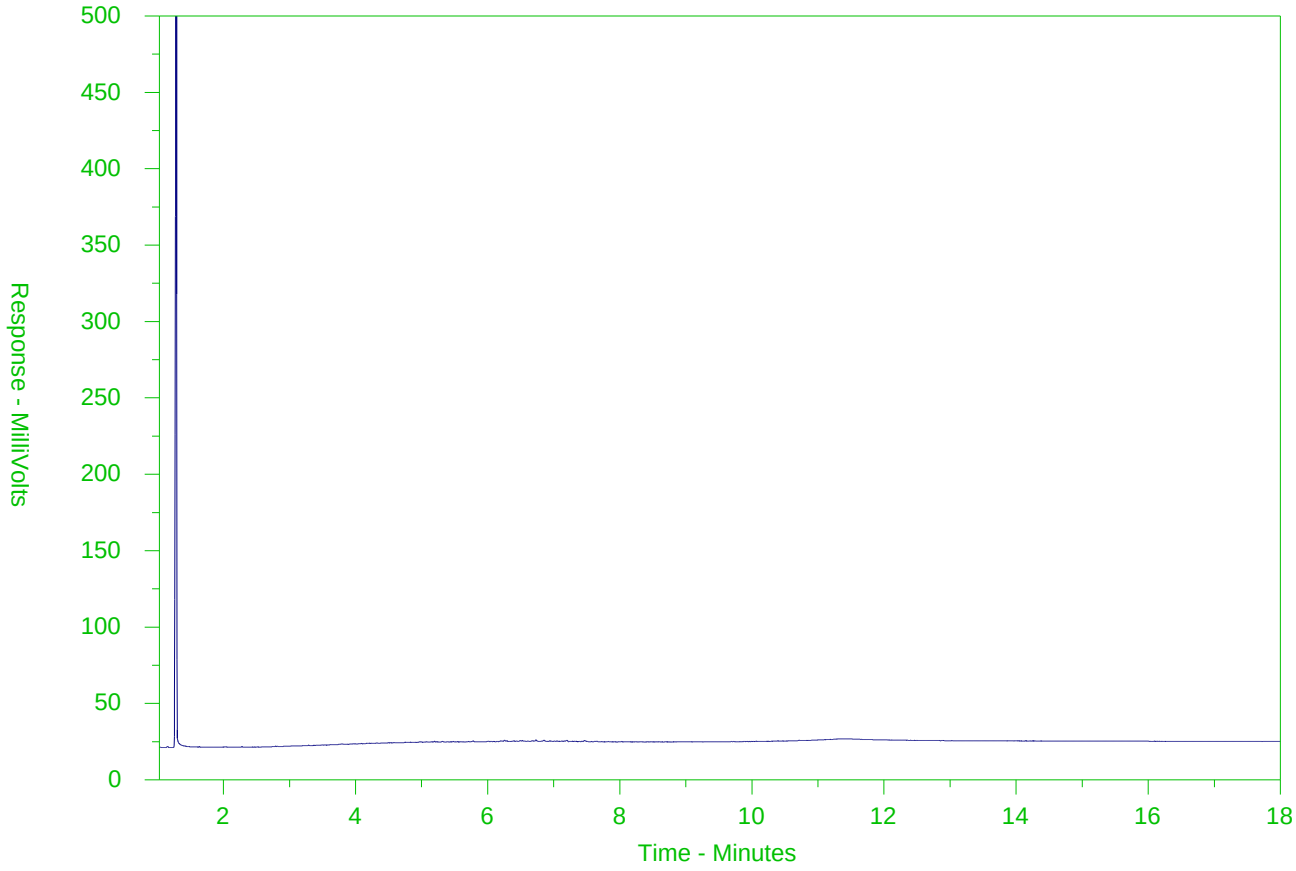
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L1887184-53
Client Sample ID: 17-10-05



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

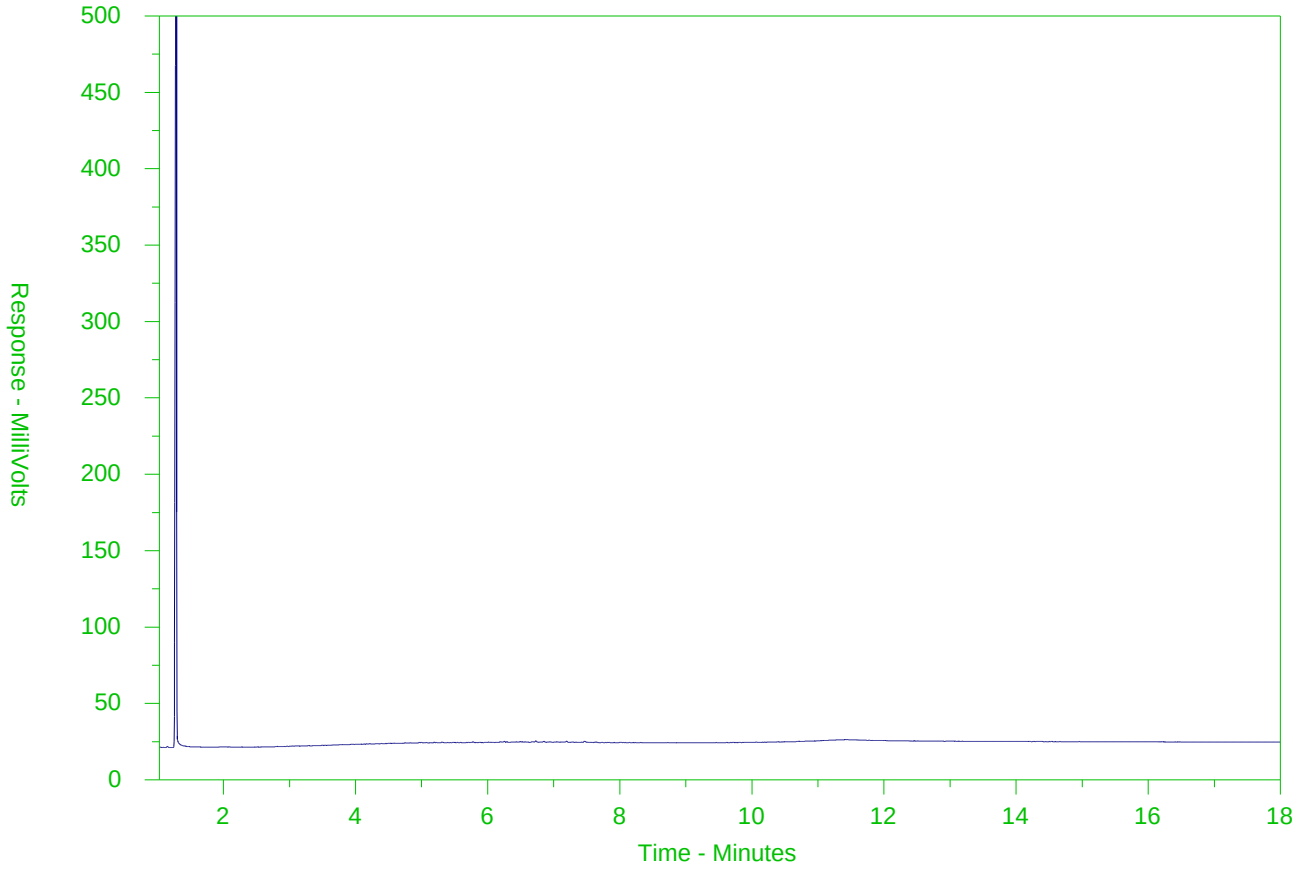
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L1887184-56
Client Sample ID: 17-10-08



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

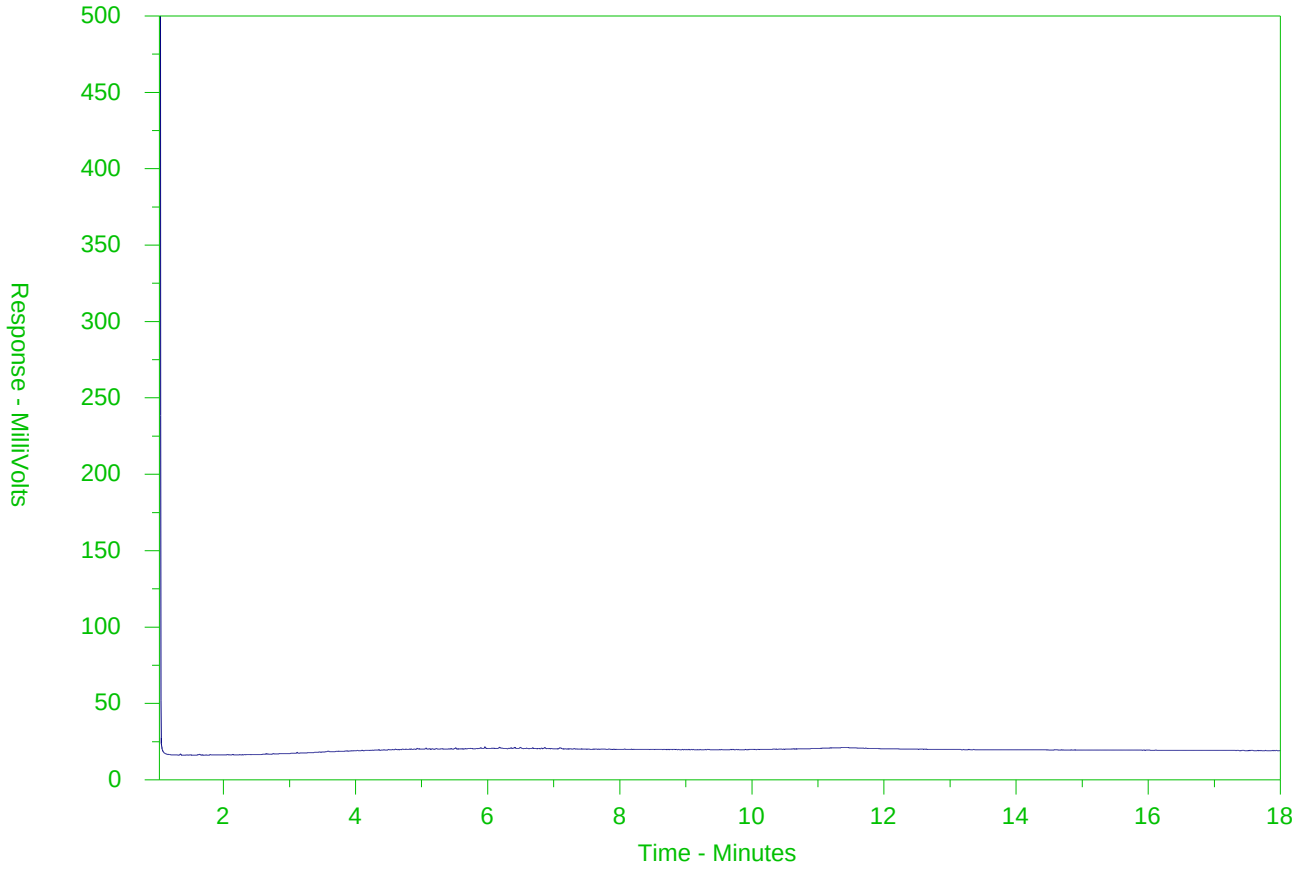
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

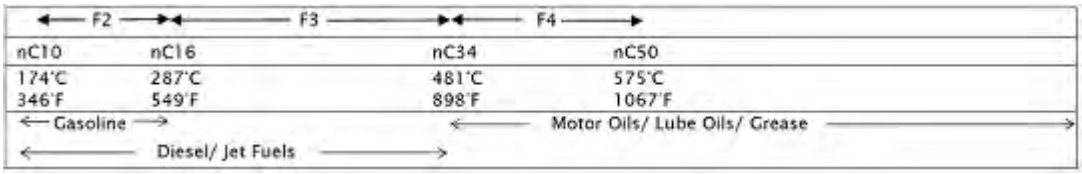
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L1887184-59
Client Sample ID: 17-11-03





The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

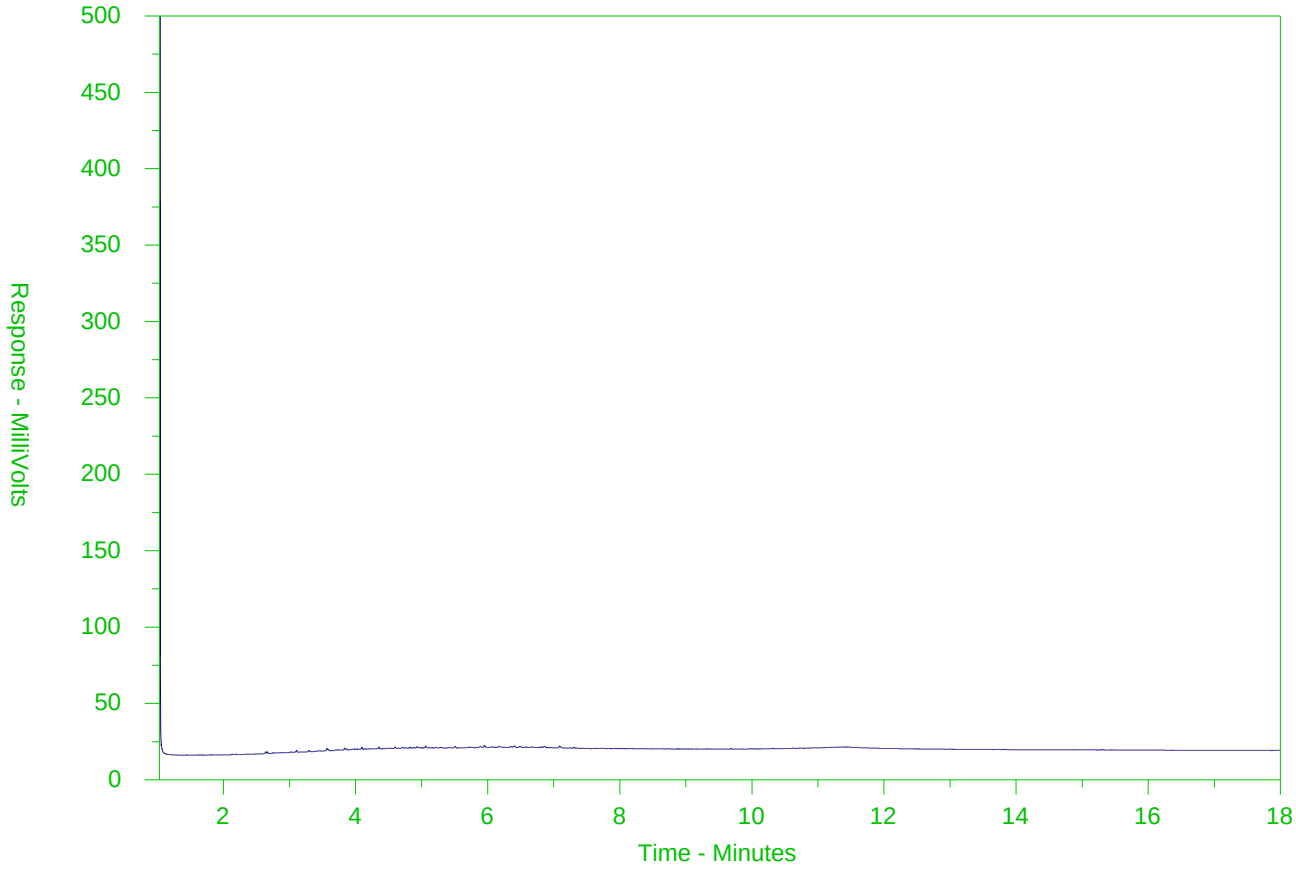
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L1887184-61
Client Sample ID: 17-11-05



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

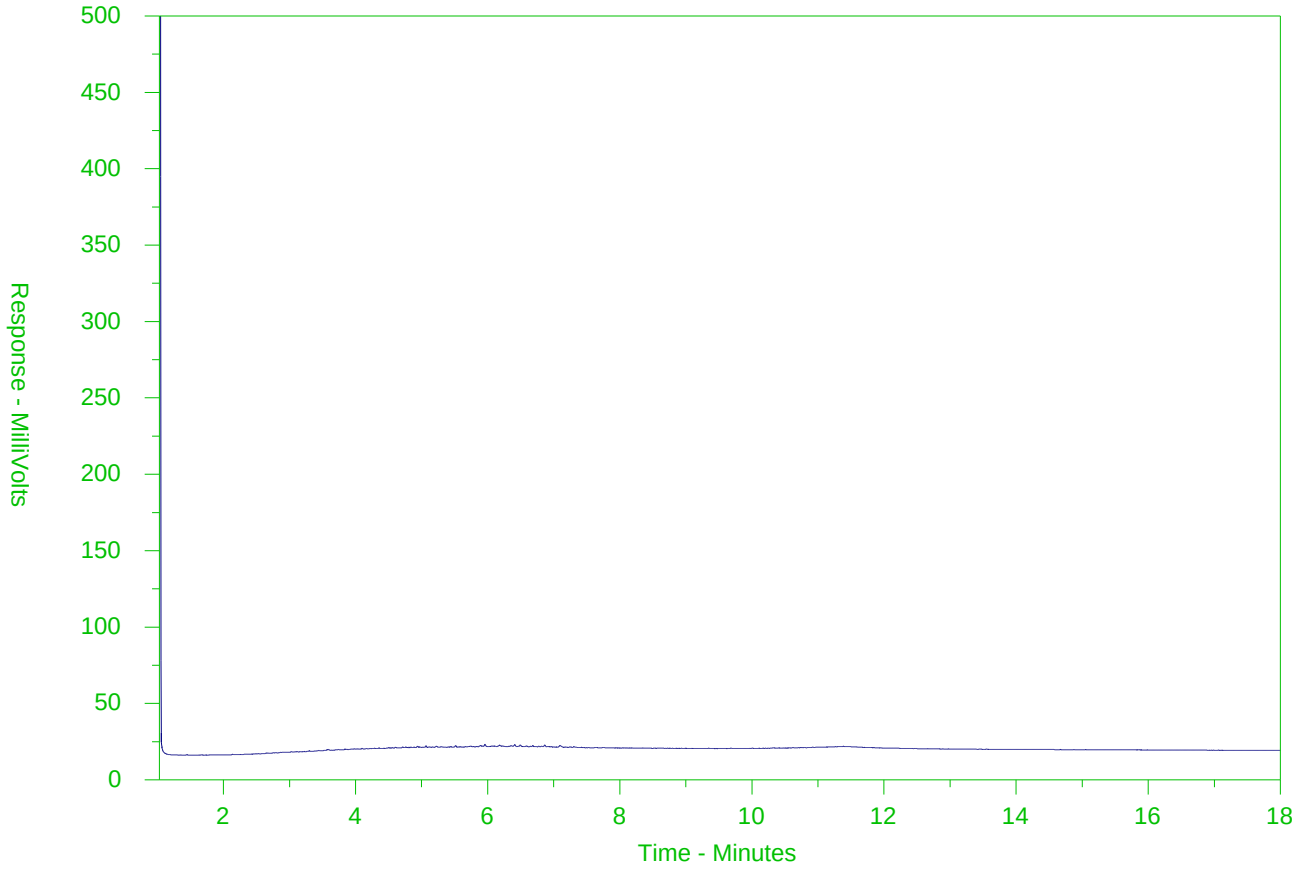
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L1887184-62
Client Sample ID: 17-11-06



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

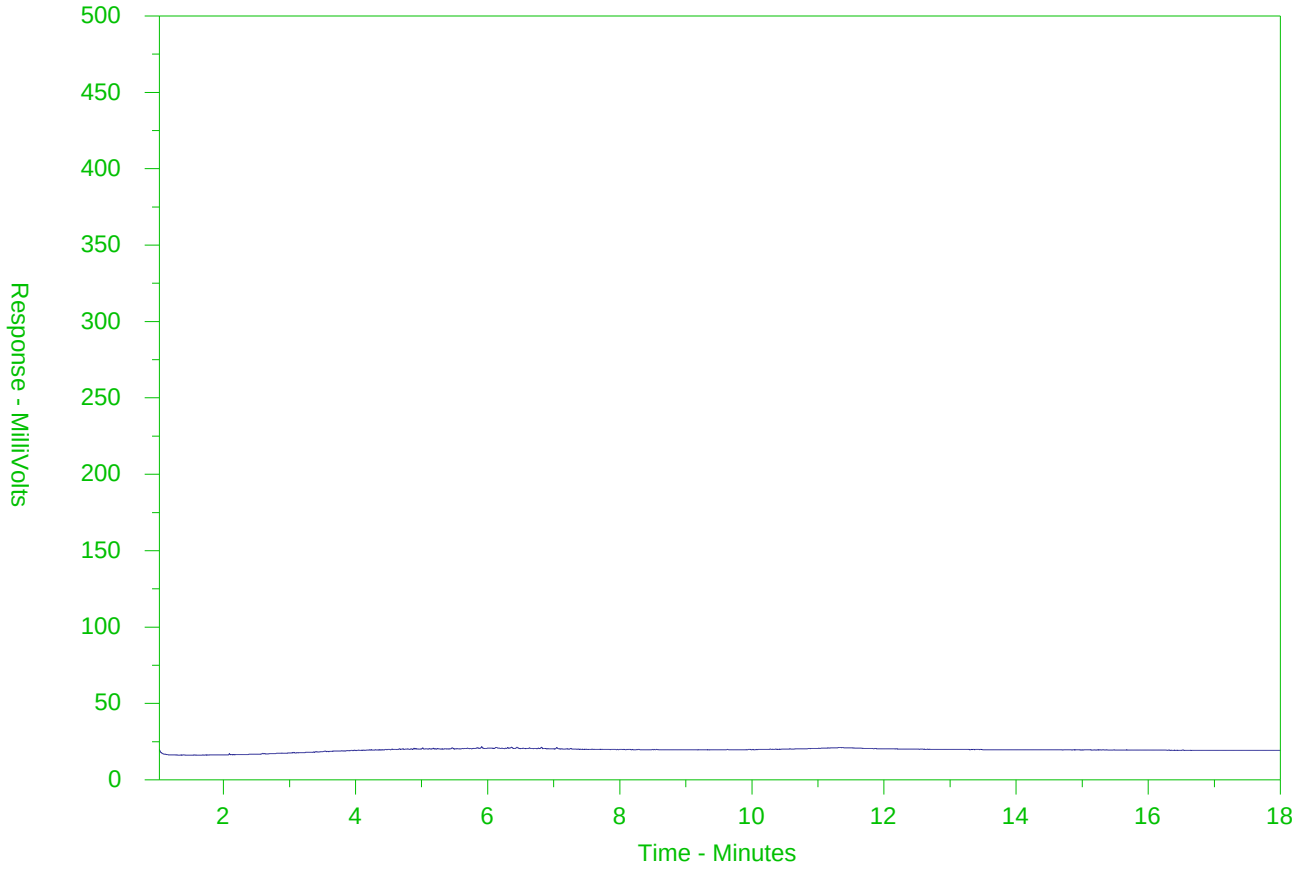
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L1887184-68
Client Sample ID: 17-12-06



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

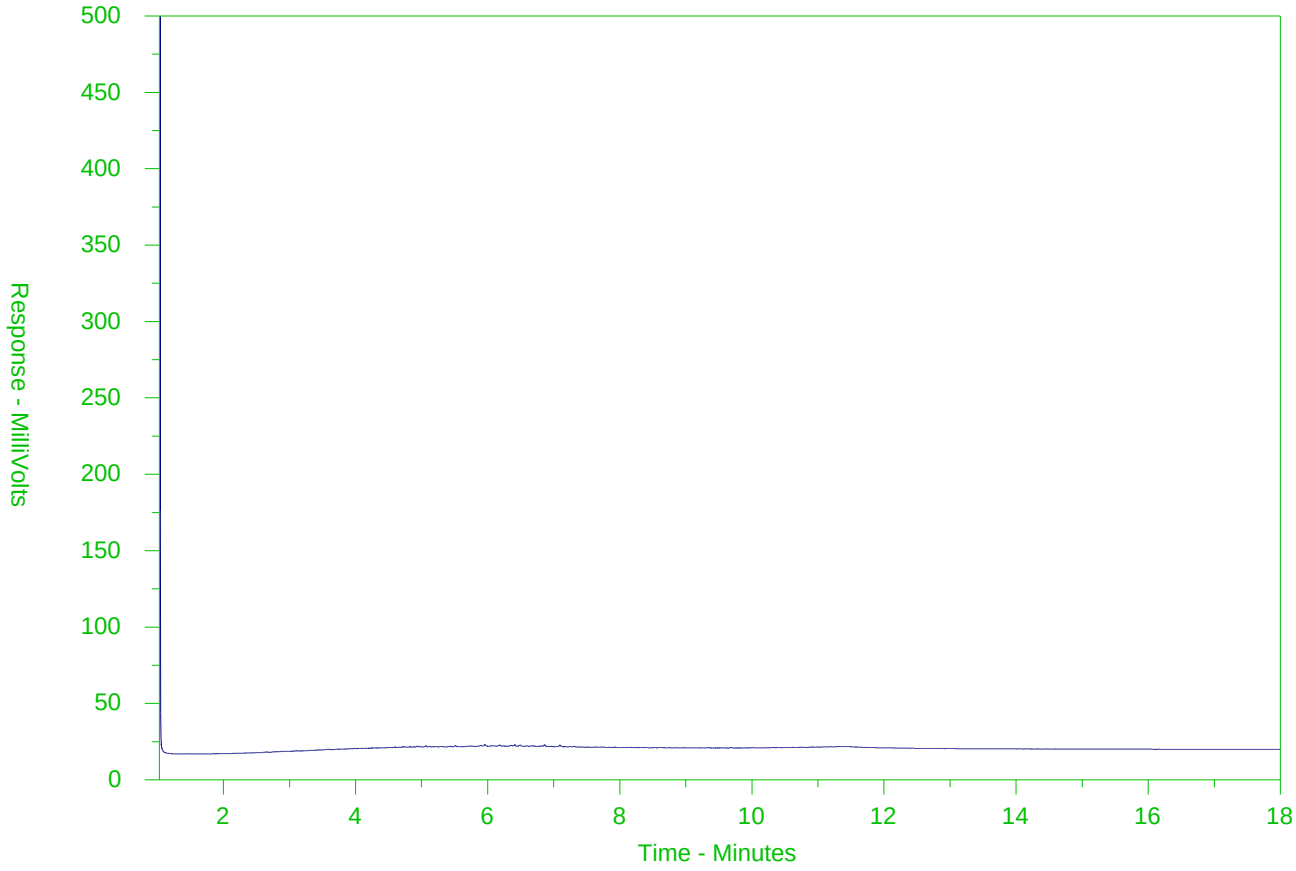
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L1887184-74
Client Sample ID: 17-13-06



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

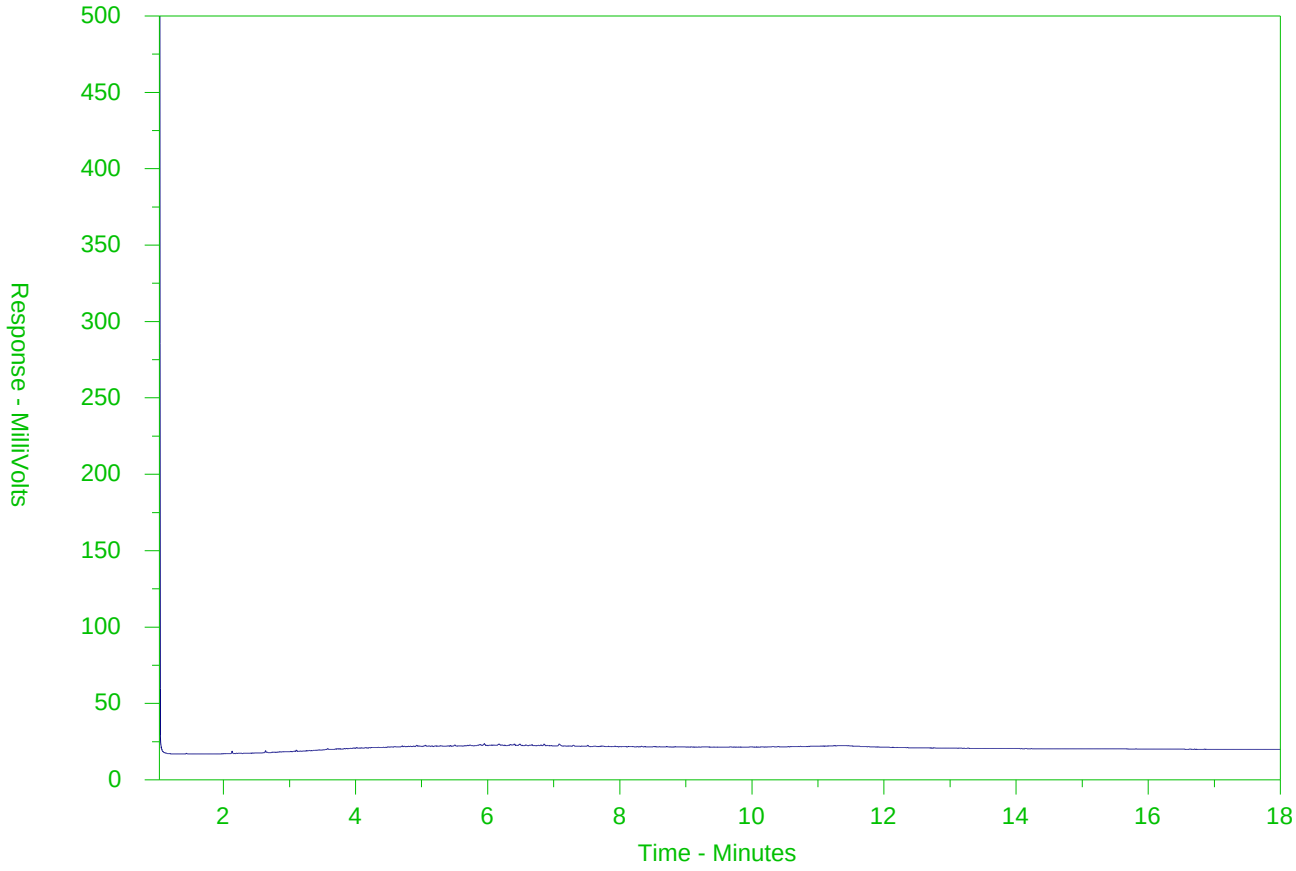
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L1887184-83
Client Sample ID: 17-15-04



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

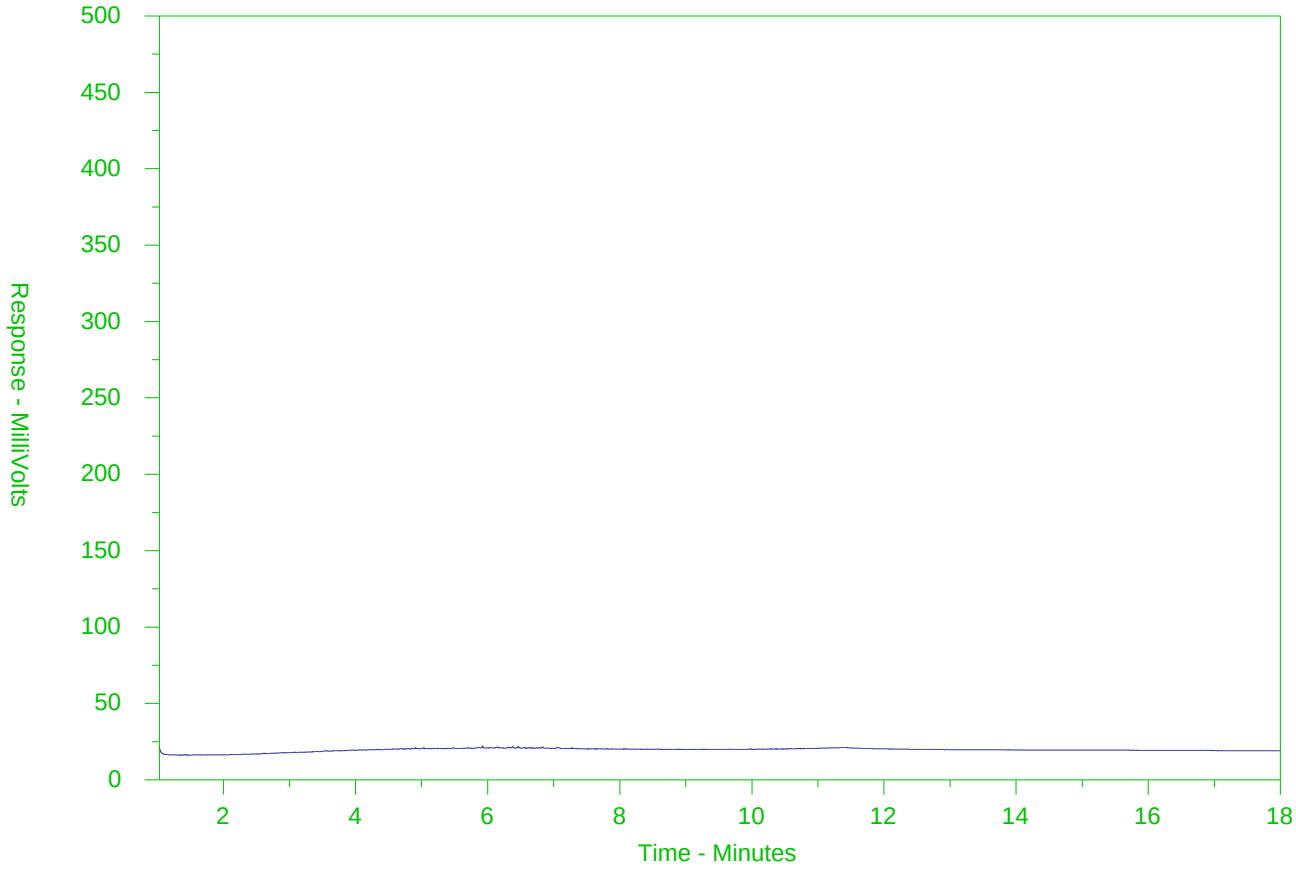
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

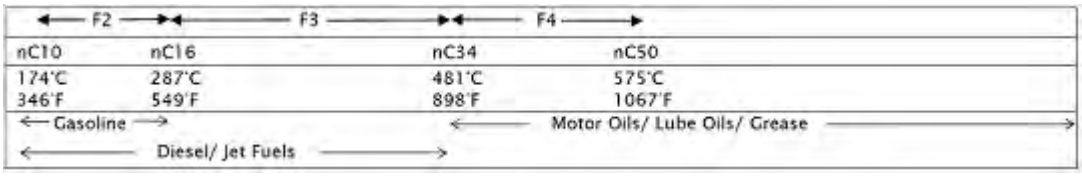
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L1887184-90
Client Sample ID: 17-16-07





The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

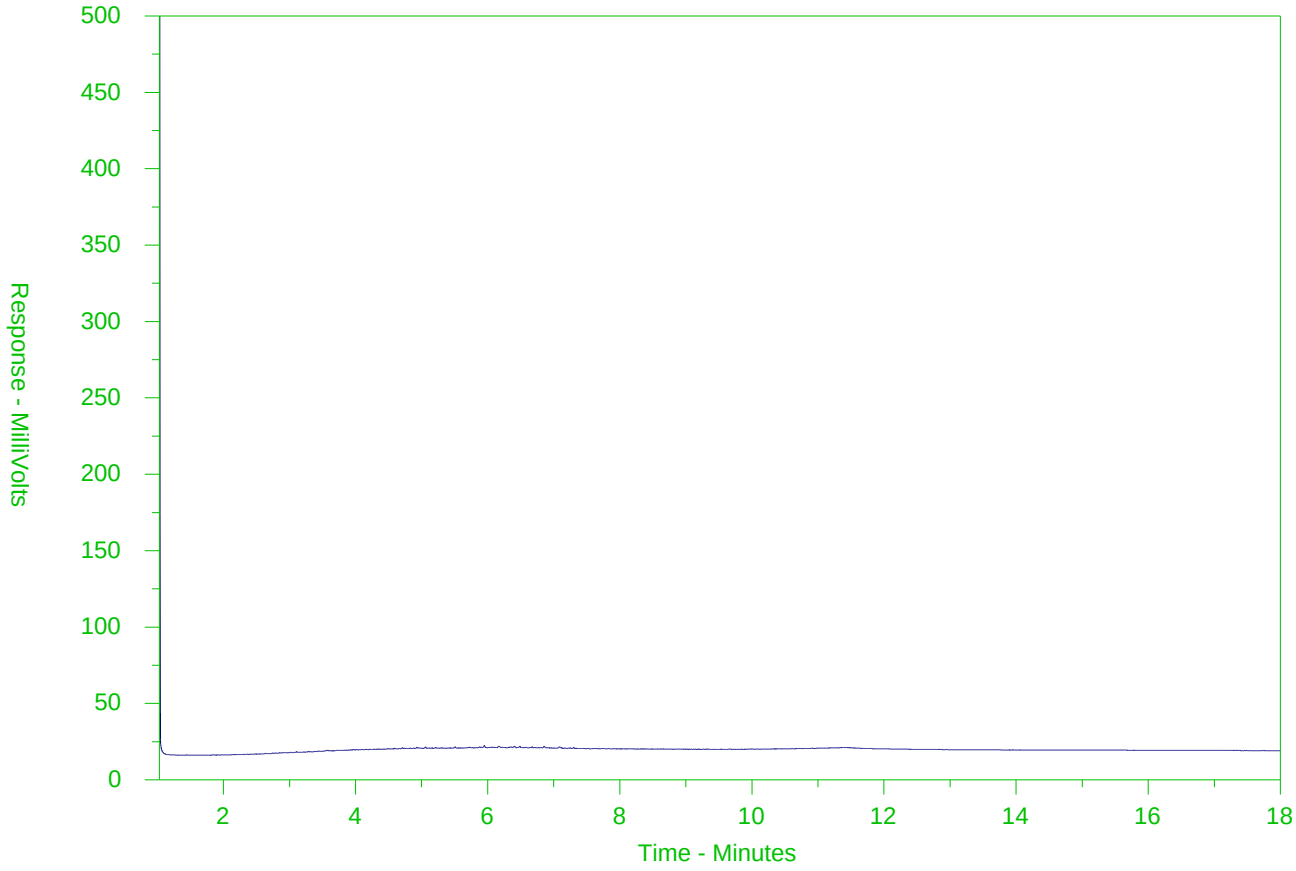
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L1887184-96
Client Sample ID: 17-17-06



← F2 →	← F3 →	← F4 →	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Environmental
www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here
(lab use only)

COC Number: 14 - 422164

Page 1 of 8

Report To	
Company:	SNC-Lavalin
Contact:	June Lu
Address:	216 1st Ave S, Saskatoon, SK S7K 1K3
Phone:	306-668-6800
Invoice To	Same as Report To ☑ Yes ☐ No
	Copy of Invoice with Report ☑ Yes ☐ No
Company:	
Contact:	

Report Format / Distribution	
Select Report Format:	☑ PDF ☑ EXCEL ☑ EDD (DIGITAL)
Quality Control (QC) Report with Report	☑ Yes ☐ No
☐ Criteria on Report - provide details below if box checked	
Select Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	june.lu@snclavalin.com
Email 2	sklab.data@ " "

Invoice Distribution	
Select Invoice Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	payables@snclavalin.com
Email 2	

Select Service Level Below (Rush Turnaround Time (TAT) is not available for all tests)

- R ☐ Regular (Standard TAT if received by 3pm)
- P ☐ Priority (2-4 business days if received by 3pm)
- E ☐ Emergency (1-2 business days if received by 3pm)
- E2 ☐ Same day or weekend emergency if received by 10am – contact ALS for surcharge.

Specify Date Required for E2,E or P:

Project Information	
ALS Quote #:	
Job #:	644079
PO / AFE:	
LSD:	

Oil and Gas Required Fields (client use)	
Approver ID:	Cost Center:
GL Account:	Routing Code:
Activity Code:	
Location:	

ALS Lab Work Order # (lab use only):

ALS Contact:

Sampler: TL/AS

Analysis Request — Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	Hold	Possible headspace and/or insufficient sample	BTEX F1-F4	PAH	Total Metals	lead	Number of Containers
	17-01-01	31-JAN-17		Soil	X						8
	17-01-02						X	X	X		8
	17-01-03										4
	17-01-04						X			X	4
	17-01-05					X					4
	17-02-01						X		X		4
	17-02-02										4
	17-02-03 JZ										4
	17-02-04										4
	17-02-05					X	X				4
	17-03-01						X		X	X	8
	17-03-02										8

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ Yes ☐ No

Are samples for human drinking water use? ☐ Yes ☐ No

Special Instructions / Specify Criteria to add on report (client Use)

Hold all samples; analyses to be requested via email. Feb 3/17

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐		SIF Observations	Yes ☐ No ☐
Ice packs	Yes ☐ No ☐	Custody seal intact	Yes ☐ No ☐
Cooling Initiated ☐			

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C		
1°					

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: Troy Lange	Date: 17/02/03	Time: 15:50	Received by: ADM	Date: Feb 3/17	Time: 3:50	Received by:	Date:	Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

NA-FM-0326e v08 Front/03 October 2013

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

ALS Environmental
www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here
(lab use only)

COC Number: 14 - 422165

Page 2 of 8

Report To		Report Format / Distribution		Select Service Level Below (Rush Turnaround Time (TAT) is not available for all tests)
Company: SNC-Lavalin		Select Report Format: ☐ PDF ☐ EXCEL ☐ EDD (DIGITAL)		R ☐ Regular (Standard TAT if received by 3pm)
Contact:		Quality Control (QC) Report with Report ☐ Yes ☐ No		P ☐ Priority (2-4 business days if received by 3pm)
Address:		☐ Criteria on Report - provide details below if box checked		E ☐ Emergency (1-2 business days if received by 3pm)
		Select Distribution: ☐ EMAIL ☐ MAIL ☐ FAX		E2 ☐ Same day or weekend emergency if received by 10am – contact ALS for surcharge.
Phone:		Email 1 or Fax		Specify Date Required for E2,E or P:
		Email 2		

Invoice To	Same as Report To ☐ Yes ☐ No	Invoice Distribution	
	Copy of Invoice with Report ☐ Yes ☐ No	Select Invoice Distribution: ☐ EMAIL ☐ MAIL ☐ FAX	
Company:		Email 1 or Fax	
Contact:		Email 2	

Project Information		Oil and Gas Required Fields (client use)	
ALS Quote #:		Approver ID:	Cost Center:
Job #:	644079	GL Account:	Routing Code:
PO / AFE:		Activity Code:	
LSD:		Location:	
ALS Lab Work Order # (lab use only)		ALS Contact:	Sampler:

Analysis Request — Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	Hold	Possible headspace (VOCs) insufficient sample	BTEX and F1	F2-F4	PAH	Lead	VOCs	Glycol	Number of Containers
	17-03-03	31-JAN-17		Soil	X								7
	17-03-04					X							7
	17-03-05						X			X			7
	17-04-01												4
	17-04-02												4
	17-04-03												4
	17-04-04												5
	17-04-05						X		X	X			7
	17-05-01							X		X			8
	17-05-02												8
	17-05-03												8
	17-06-01												4

Drinking Water (DW) Samples[1] (client use)	Special Instructions / Specify Criteria to add on report (client Use)
Are samples taken from a Regulated DW System? ☐ Yes ☐ No	Hold all samples. Analyses to be requested via email.
Are samples for human drinking water use? ☐ Yes ☐ No	

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen	☐	SIF Observations	Yes ☐	No ☐	
Ice packs	Yes ☐	No ☐	Custody seal intact	Yes ☐	No ☐
Cooling Initiated	☐				

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C		
1°					

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by:	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:
Troy Lamb	17/02/03	15:50	ADM	Feb. 3/17	3:50			

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

ALS Environmental
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Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here
(lab use only)

COC Number: 14 - 422166

Page 3 of 8

Report To		Report Format / Distribution	Select Service Level Below (Rush Turnaround Time (TAT) is not available for all tests)
Company:	SNC-Lavalin	Select Report Format: ☐ PDF ☐ EXCEL ☐ EDD (DIGITAL)	R ☐ Regular (Standard TAT if received by 3pm)
Contact:		Quality Control (QC) Report with Report ☐ Yes ☐ No	P ☐ Priority (2-4 business days if received by 3pm)
Address:		☐ Criteria on Report - provide details below if box checked	E ☐ Emergency (1-2 business days if received by 3pm)
		Select Distribution: ☐ EMAIL ☐ MAIL ☐ FAX	E2 ☐ Same day or weekend emergency if received by 10am – contact ALS for surcharge.
Phone:		Email 1 or Fax	Specify Date Required for E2,E or P:
		Email 2	

Invoice To	Same as Report To ☐ Yes ☐ No	Invoice Distribution
	Copy of Invoice with Report ☐ Yes ☐ No	Select Invoice Distribution: ☐ EMAIL ☐ MAIL ☐ FAX
Company:		Email 1 or Fax
Contact:		Email 2

Project Information		Oil and Gas Required Fields (client use)	
ALS Quote #:		Approver ID:	Cost Center:
Job #:	644079	GL Account:	Routing Code:
PO / AFE:		Activity Code:	
LSD:		Location:	

ALS Lab Work Order # (lab use only)	ALS Contact:	Sampler:

Analysis Request — Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	Hold	Possible headspace due to insufficient sample	BTEX, F1	F2-F4	PAH	Lead	VOCs	Glycols	Number of Containers
	17-06-02	31-JAN-17	~~Soil~~	Soil	X								4
	17-06-03						X	X	X	X			4
	17-06-04					X	X			X			4
	17-06-05					X	X			X			4
	17-06-06					X							4
	17-07-01												8
	17-07-02												6
	17-07-03						X	X	X	X	X	X	8
	17-08-01	01-FEB-17											5
	17-08-02					X	X	X		X			5
	17-08-03					X							5
	17-08-04					X							4

Drinking Water (DW) Samples[1] (client use)	Special Instructions / Specify Criteria to add on report (client Use)
Are samples taken from a Regulated DW System? ☐ Yes ☐ No	Hold all samples. Analyses to be requested via email.
Are samples for human drinking water use? ☐ Yes ☐ No	

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen	☐	SIF Observations	Yes ☐	No ☐	
Ice packs	Yes ☐	No ☐	Custody seal intact	Yes ☐	No ☐
Cooling Initiated	☐				

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C		
1°					

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by:	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:
[illegible]	17/02/03	15:50	PDM	Feb 2	3:50			

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

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1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

ALS Environmental
www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here (lab use only)

COC Number: 14 - 422167

Page 4 of 8

Report To		Report Format / Distribution	Select Service Level Below (Rush Turnaround Time (TAT) is not available for all tests)
Company:	SNC-Lavalin	Select Report Format: ☐ PDF ☐ EXCEL ☐ EDD (DIGITAL)	R ☐ Regular (Standard TAT if received by 3pm)
Contact:		Quality Control (QC) Report with Report ☐ Yes ☐ No	P ☐ Priority (2-4 business days if received by 3pm)
Address:		☐ Criteria on Report - provide details below if box checked	E ☐ Emergency (1-2 business days if received by 3pm)
		Select Distribution: ☐ EMAIL ☐ MAIL ☐ FAX	E2 ☐ Same day or weekend emergency if received by 10am – contact ALS for surcharge.
Phone:		Email 1 or Fax	Specify Date Required for E2,E or P:
		Email 2	

Invoice To	Same as Report To ☐ Yes ☐ No	Invoice Distribution
	Copy of Invoice with Report ☐ Yes ☐ No	Select Invoice Distribution: ☐ EMAIL ☐ MAIL ☐ FAX
Company:		Email 1 or Fax
Contact:		Email 2

Project Information		Oil and Gas Required Fields (client use)	
ALS Quote #:		Approver ID:	Cost Center:
Job #:	644079	GL Account:	Routing Code:
PO / AFE:		Activity Code:	
LSD:		Location:	
ALS Lab Work Order # (lab use only)		ALS Contact:	Sampler:

Analysis Request — Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	Hold	Possible headspace and/or insufficient sample	BTEX, F1	F2-F4	Lead	Total Metals	PAH	Number of Containers
	17-08-05	01-FEB-17		Soil	X	X						5
	17-08-06					X	X	X	X			5
	17-09-01											5
	17-09-02											4
	17-09-03											4
	17-09-04					X	X	X	X		X	4
	17-09-05					X	X	X	X		X	3
	17-09-06											4
	17-09-07						X	X	X			4
	17-09-08											4
	17-09-09					X						4
	17-09-10						X	X	X			4

Drinking Water (DW) Samples[1] (client use)	Special Instructions / Specify Criteria to add on report (client Use)
Are samples taken from a Regulated DW System? ☐ Yes ☐ No	
Are samples for human drinking water use? ☐ Yes ☐ No	

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen	☐		SIF Observations	Yes ☐	No ☐
Ice packs	Yes ☐	No ☐	Custody seal intact	Yes ☐	No ☐
Cooling Initiated	☐				

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C		
1°					

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: Troy Lamb	Date: Feb/01/17	Time: 15:50	Received by: ADM	Date: Feb 3/17	Time: 3:50	Received by:	Date:	Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

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1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

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Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here
(lab use only)

COC Number: 14 - 422168

Page 5 of 8

Report To		Report Format / Distribution		Select Service Level Below (Rush Turnaround Time (TAT) is not available for all tests)	
Company:	SNC-Lavalin	Select Report Format:	☐ PDF ☐ EXCEL ☐ EDD (DIGITAL)	R ☐	Regular (Standard TAT if received by 3pm)
Contact:		Quality Control (QC) Report with Report	☐ Yes ☐ No	P ☐	Priority (2-4 business days if received by 3pm)
Address:		☐ Criteria on Report - provide details below if box checked		E ☐	Emergency (1-2 business days if received by 3pm)
		Select Distribution:	☐ EMAIL ☐ MAIL ☐ FAX	E2 ☐	Same day or weekend emergency if received by 10am – contact ALS for surcharge.
Phone:		Email 1 or Fax		Specify Date Required for E2,E or P:	
		Email 2			

Invoice To	Same as Report To ☐ Yes ☐ No	Invoice Distribution	
	Copy of Invoice with Report ☐ Yes ☐ No	Select Invoice Distribution:	☐ EMAIL ☐ MAIL ☐ FAX
Company:		Email 1 or Fax	
Contact:		Email 2	

Project Information		Oil and Gas Required Fields (client use)	
ALS Quote #:		Approver ID:	Cost Center:
Job #:	6444079	GL Account:	Routing Code:
PO / AFE:		Activity Code:	
LSD:		Location:	

ALS Lab Work Order # (lab use only)		ALS Contact:	Sampler:

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	Hold	Possible headspace and/or insufficient sample	BTEX, F1	F2-F4	PAH	Lead	Total Metals	Number of Containers
	17-10-01	01-FEB-17		Soil	X							4
	17-10-02											4
	17-10-03						X	X	X	X		4
	17-10-04					X						4
	17-10-05					X	X	X	X	X		4
	17-10-06											4
	17-10-07											4
	17-10-08						X	X		X		4
	17-11-01											4
	17-11-02											4
	17-11-03						X	X	X	X		4
	17-11-04											4

Drinking Water (DW) Samples[1] (client use)	Special Instructions / Specify Criteria to add on report (client Use)
Are samples taken from a Regulated DW System? ☐ Yes ☐ No	
Are samples for human drinking water use? ☐ Yes ☐ No	

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen	☐		SIF Observations	Yes ☐	No ☐
Ice packs	Yes ☐	No ☐	Custody seal intact	Yes ☐	No ☐
Cooling Initiated	☐				

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C		
1°					

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by:	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:
Trevor Hope	17/02/03	15:50	ADM	Feb-3/17	3:50			

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

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NA-FM-0326e v08 Front/03 October 2013

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1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

ALS Environmental
www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here (lab use only)

COC Number: 14 - 422170

Page 6 of 8

Report To		Report Format / Distribution	Select Service Level Below (Rush Turnaround Time (TAT) is not available for all tests)
Company:	SNC-Lavalin	Select Report Format: ☐ PDF ☐ EXCEL ☐ EDD (DIGITAL)	R ☐ Regular (Standard TAT if received by 3pm)
Contact:		Quality Control (QC) Report with Report ☐ Yes ☐ No	P ☐ Priority (2-4 business days if received by 3pm)
Address:		☐ Criteria on Report - provide details below if box checked	E ☐ Emergency (1-2 business days if received by 3pm)
		Select Distribution: ☐ EMAIL ☐ MAIL ☐ FAX	E2 ☐ Same day or weekend emergency if received by 10am – contact ALS for surcharge.
Phone:		Email 1 or Fax	Specify Date Required for E2,E or P:
		Email 2	

Invoice To	Same as Report To ☐ Yes ☐ No	Invoice Distribution	Analysis Request
	Copy of Invoice with Report ☐ Yes ☐ No	Select Invoice Distribution: ☐ EMAIL ☐ MAIL ☐ FAX	Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below
Company:		Email 1 or Fax	
Contact:		Email 2	

Project Information		Oil and Gas Required Fields (client use)	
ALS Quote #:		Approver ID:	Cost Center:
Job #:	644079	GL Account:	Routing Code:
PO / AFE:		Activity Code:	
LSD:		Location:	

ALS Lab Work Order # (lab use only)	ALS Contact:	Sampler:

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	Hold	BTEX, F1	F2-F4	PAH	Lead	Total metals							Number of Containers
	17-11-05	01-FEB-17		Soil	X	X	X		X								4
	17-11-06					X	X		X								4
	17-12-01																4
	17-12-02					X	X	X	X								4
	17-12-03																3
	17-12-04																3
	17-12-05																4
	17-12-06					X	X		X								4
	17-13-01	02-FEB-17															4
	17-13-02					X	X	X	X								4
	17-13-03																4
	17-13-04																4

Drinking Water (DW) Samples[1] (client use)	Special Instructions / Specify Criteria to add on report (client Use)
Are samples taken from a Regulated DW System? ☐ Yes ☐ No	
Are samples for human drinking water use? ☐ Yes ☐ No	

SAMPLE CONDITION AS RECEIVED (lab use only)					
Frozen ☐		SIF Observations	Yes ☐	No ☐	
Ice packs	Yes ☐ No ☐	Custody seal intact	Yes ☐	No ☐	
Cooling Initiated ☐					
INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C		
1°					

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by:	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:
Troy Lawrence	17/02/03	15:50	ADM	Feb 3/17	3:50			

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

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NA-FM-0326e v08 Front/03 October 2013

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

ALS Environmental
www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here
(lab use only)

COC Number: 14 - 422171

Page 7 of 8

Report To		Report Format / Distribution	Select Service Level Below (Rush Turnaround Time (TAT) is not available for all tests)
Company:	SNC-Lavalin	Select Report Format: ☐ PDF ☐ EXCEL ☐ EDD (DIGITAL)	R ☐ Regular (Standard TAT if received by 3pm)
Contact:		Quality Control (QC) Report with Report ☐ Yes ☐ No	P ☐ Priority (2-4 business days if received by 3pm)
Address:		☐ Criteria on Report - provide details below if box checked	E ☐ Emergency (1-2 business days if received by 3pm)
		Select Distribution: ☐ EMAIL ☐ MAIL ☐ FAX	E2 ☐ Same day or weekend emergency if received by 10am – contact ALS for surcharge.
Phone:		Email 1 or Fax	Specify Date Required for E2,E or P:
		Email 2	

Invoice To	Same as Report To ☐ Yes ☐ No	Invoice Distribution
	Copy of Invoice with Report ☐ Yes ☐ No	Select Invoice Distribution: ☐ EMAIL ☐ MAIL ☐ FAX
Company:		Email 1 or Fax
Contact:		Email 2

Project Information		Oil and Gas Required Fields (client use)	
ALS Quote #:		Approver ID:	Cost Center:
Job #:	6440179	GL Account:	Routing Code:
PO / AFE:		Activity Code:	
LSD:		Location:	
ALS Lab Work Order # (lab use only)		ALS Contact:	Sampler:

See P.1

Analysis Request — Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	Hold	Possible headspace and/or insufficient sample	BTEX, F1	F2-F4	PAH	lead	total metals	Number of Containers
	17-13-05	02-FEB-17		Soil	X							4
	17-13-06						X	X		X		
	17-14-01											
	17-14-02											
	17-14-03						X	X	X	X		
	17-14-04											
	17-14-05											
	17-15-01					X						
	17-15-02											
	17-15-03											
	17-15-04						X	X	X	X		
	17-16-01											1

Drinking Water (DW) Samples[1] (client use)	Special Instructions / Specify Criteria to add on report (client Use)
Are samples taken from a Regulated DW System? ☐ Yes ☐ No	
Are samples for human drinking water use? ☐ Yes ☐ No	

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen	☐	SIF Observations	Yes ☐	No ☐	
Ice packs	Yes ☐	No ☐	Custody seal intact	Yes ☐	No ☐
Cooling Initiated	☐				

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C		
1°					

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by:	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:
Tray Lange	17/02/03	15:50	ADM	Feb 3/17	3:50			

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

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NA-FM-0326e v08 Front/03 October 2013

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ALS Environmental
www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here
(lab use only)

COC Number: 14 - 422169

Page 8 of 8

Report To		Report Format / Distribution		Select Service Level Below (Rush Turnaround Time (TAT) is not available for all tests)
Company:	SNC - Lavalin	Select Report Format:	☐ PDF ☐ EXCEL ☐ EDD (DIGITAL)	R ☐ Regular (Standard TAT if received by 3pm)
Contact:		Quality Control (QC) Report with Report	☐ Yes ☐ No	P ☐ Priority (2-4 business days if received by 3pm)
Address:		☐ Criteria on Report - provide details below if box checked		E ☐ Emergency (1-2 business days if received by 3pm)
		Select Distribution:	☐ EMAIL ☐ MAIL ☐ FAX	E2 ☐ Same day or weekend emergency if received by 10am – contact ALS for surcharge.
Phone:		Email 1 or Fax		Specify Date Required for E2,E or P:
		Email 2		

Invoice To	Same as Report To ☐ Yes ☐ No	Invoice Distribution	
	Copy of Invoice with Report ☐ Yes ☐ No	Select Invoice Distribution:	☐ EMAIL ☐ MAIL ☐ FAX
Company:		Email 1 or Fax	
Contact:		Email 2	

Project Information		Oil and Gas Required Fields (client use)	
ALS Quote #:		Approver ID:	Cost Center:
Job #:	644079	GL Account:	Routing Code:
PO / AFE:		Activity Code:	
LSD:		Location:	
ALS Lab Work Order # (lab use only)		ALS Contact:	Sampler:

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	Hold	BTEX, F1	F2-F4	PAH	lead	Total Metals	Number of Containers
	17-16-02	02-FEB-17		Soil	X						4
	17-16-03										
	17-16-04					X	X	X	X		
	17-16-05										
	17-16-06										
	17-16-07					X	X		X		
	17-~~16~~-17-01										
	17-17-02										
	17-17-03					X	X	X	X		
	17-17-04										
	17-17-05										
	17-17-06					X	X		X		4

Drinking Water (DW) Samples[1] (client use)	Special Instructions / Specify Criteria to add on report (client Use)
Are samples taken from a Regulated DW System? ☐ Yes ☐ No	
Are samples for human drinking water use? ☐ Yes ☐ No	

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐		SIF Observations	Yes ☐ No ☐
Ice packs	Yes ☐ No ☐	Custody seal intact	Yes ☐ No ☐
Cooling Initiated ☐			

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C		
1.0					

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by:	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:
Troy Lange	17/02/03	15:50	ADM	Feb 3/17	3:50			

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

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1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

SNC-Lavalin Inc.
ATTN: June Lu
216 1st Ave South
SASKATOON SK S7K 1K3

Date Received: 03-FEB-17
Report Date: 10-FEB-17 14:58 (MT)
Version: FINAL

Client Phone: 306-934-7527

Certificate of Analysis

Lab Work Order #: L1887196

Project P.O. #: NOT SUBMITTED
Job Reference: 644079
C of C Numbers: 14-422172
Legal Site Desc:

Brian Morgan, B.Sc. Hons.
Client Services Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1887196-1 LANDFILL - 170202							
Sampled By: TL on 02-FEB-17 @ 12:00							
Matrix: SOIL							
SK Landfill Class II requirements							
BTEX							
Benzene	<0.0050		0.0050	mg/kg	08-FEB-17	08-FEB-17	R3649541
Toluene	<0.050		0.050	mg/kg	08-FEB-17	08-FEB-17	R3649541
Ethylbenzene	<0.015		0.015	mg/kg	08-FEB-17	08-FEB-17	R3649541
Xylenes	<0.10		0.10	mg/kg	08-FEB-17	08-FEB-17	R3649541
Leachable Mercury (Hg) in soil by CVAA							
Mercury (Hg)-Leachable	<0.010		0.010	mg/L		09-FEB-17	R3649510
Paint Filter Test							
Paint Filter Test	PASS					08-FEB-17	R3649339
Pensky-Martens Closed Cup Flashpoint							
Flash Point	>75		30.0	Deg. C		07-FEB-17	R3649346
TCLP Leachable BTEX							
Benzene	<0.0050		0.0050	mg/L	08-FEB-17	09-FEB-17	R3649542
Toluene	<0.0050		0.0050	mg/L	08-FEB-17	09-FEB-17	R3649542
Ethylbenzene	<0.0050		0.0050	mg/L	08-FEB-17	09-FEB-17	R3649542
Xylenes	<0.0050		0.0050	mg/L	08-FEB-17	09-FEB-17	R3649542
TCLP Leachable Metals							
Silver (Ag)-Leachable	<0.50		0.50	mg/L		09-FEB-17	R3649458
Arsenic (As)-Leachable	<0.20		0.20	mg/L		09-FEB-17	R3649458
Boron (B)-Leachable	<5.0		5.0	mg/L		09-FEB-17	R3649458
Barium (Ba)-Leachable	<5.0		5.0	mg/L		09-FEB-17	R3649458
Beryllium (Be)-Leachable	<0.50		0.50	mg/L		09-FEB-17	R3649458
Cadmium (Cd)-Leachable	<0.050		0.050	mg/L		09-FEB-17	R3649458
Cobalt (Co)-Leachable	<5.0		5.0	mg/L		09-FEB-17	R3649458
Chromium (Cr)-Leachable	<0.50		0.50	mg/L		09-FEB-17	R3649458
Copper (Cu)-Leachable	<5.0		5.0	mg/L		09-FEB-17	R3649458
Iron (Fe)-Leachable	<5.0		5.0	mg/L		09-FEB-17	R3649458
Nickel (Ni)-Leachable	<0.50		0.50	mg/L		09-FEB-17	R3649458
Lead (Pb)-Leachable	<0.50		0.50	mg/L		09-FEB-17	R3649458
Antimony (Sb)-Leachable	<5.0		5.0	mg/L		09-FEB-17	R3649458
Selenium (Se)-Leachable	<0.20		0.20	mg/L		09-FEB-17	R3649458
Thallium (Tl)-Leachable	<0.50		0.50	mg/L		09-FEB-17	R3649458
Uranium (U)-Leachable	<1.0		1.0	mg/L		09-FEB-17	R3649458
Vanadium (V)-Leachable	<5.0		5.0	mg/L		09-FEB-17	R3649458
Zinc (Zn)-Leachable	<5.0		5.0	mg/L		09-FEB-17	R3649458
Zirconium (Zr)-Leachable	<5.0		5.0	mg/L		09-FEB-17	R3649458
pH in Waste (1:1 Waste:Water Extraction)							
pH (1:1 waste:water)	10.0		0.1	pH		09-FEB-17	R3649454
Miscellaneous Parameters							
Moisture	8.67		0.25	%		08-FEB-17	R3649340

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
BTX-CL	Soil	BTEX	EPA 5021/8260-Headspace GC/MSD

The soil methanol extract is added to water and reagents, then heated in a sealed vial to equilibrium. The headspace from the vial is transferred into a gas chromatograph. Target compound concentrations are measured using mass spectrometry detection.

BTX-TCLP-CL	Waste	TCLP Leachable BTEX	EPA 1311 (Leach), and EPA 8260C/5021A

A representative sample of waste is extracted, in a Zero Headspace Sampler, with the amount of extraction fluid equal to 20 times the weight of the solid phase. The extraction is set up in a rotator for a minimum of 18 hours. The pH of the fluid used is a function of the alkalinity of the solid phase of the waste. Following extraction, the liquid extract is separated from the solid phase by filtration and preserved.

The extract, with added reagents, is then heated in a sealed vial to equilibrium. The headspace from the vial is transferred into a gas chromatograph. Target compound concentrations are measured using mass spectrometry detection.

FLASH-PMCC-AUTO-CL	Waste	Pensky-Martens Closed Cup Flashpoint	ASTM D-93

A brass cup of specified dimensions, filled to the inner mark with test sample and fitted with a cover, is heated and the sample stirred at specified rates, using one of 3 defined procedures. An ignition source is directed into the cup at regular intervals until a flash is detected. The flash point is the lowest temperature corrected for barometric pressure, at which the vapour of the sample ignites.

HG-TCLP-CVAA-CL	Waste	Leachable Mercury (Hg) in soil by CVAA	EPA 1311/1631E

This analysis is carried out in accordance with the extraction procedure outlined in "Test Methods for Evaluating Solid Waste - Physical/Chemical Methods Volume 1C" SW-846 EPA Method 1311, published by the United States Environmental Protection Agency (EPA). In summary, the sample is extracted at a 20:1 liquid to solids ratio for 16 to 20 hours using either extraction fluid #1 (glacial acetic acid, water and sodium hydroxide) or extraction fluid #2 (glacial acetic acid), depending on the pH of the original sample. The extract is then filtered through a 0.6 to 0.8 micron glass fibre filter and analysed using atomic absorption spectrophotometry.

Method Limitation: This method is not a total digestion technique. It is a very strong acid digestion that is intended to dissolve those metals that may be environmentally available. By design, elements bound in silicate structures are not normally dissolved by this procedure as they are not usually mobile in the environment.
bromine monochloride prior to a purge and trap concentration step and final reduction of the sample with stannous chloride. Instrumental analysis is by cold vapour atomic absorbance spectrophotometry (CVAAS).

MET-TCLP-ICP-CL	Waste	TCLP Leachable Metals	EPA 1311 (Leach)/ Modified from EPA 6010

Sample is leached according to TCLP protocol as per EPA 1311. The TCLP extract is then subjected to a preliminary acid digestion using a hotblock (APHA Method 3030E). Instrumental analysis is by inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B).

MOISTURE-CL	Soil	% Moisture	CWS for PHC in Soil - Tier 1

This analysis is carried out gravimetrically by drying the sample at 105 C

PAINT FILTER-CL	Waste	Paint Filter Test	EPA SW846-9095

A predetermined amount of material is placed in a paint filter. If any liquid portion of the material passes through and drops from the filter within the 5-min test period, the material is deemed to contain free liquids.

PH-1:1-WW-CL	Waste	pH in Waste (1:1 Waste:Water Extraction)	EPA 9045D

pH of soil or waste samples are measured in accordance with US EPA Method 9045D (rev 4, Nov 2004). Soil or solid waste samples are mixed (as-received) at a 1:1 ratio by weight with deionized water, mechanically mixed for at least 30 minutes, followed by equilibration and clarification. For samples which readily absorb water, a greater extraction ratio may be used (typically a 1:2 ratio, or higher if necessary to obtain sufficient liquid for analysis, e.g. for peat soils). pH is measured using a pH electrode. Aqueous wastes or those with a sufficient amount of overlying water are measured directly.

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
CL	ALS ENVIRONMENTAL - CALGARY, ALBERTA, CANADA

Chain of Custody Numbers:

14-422172

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Quality Control Report

Workorder: L1887196 Report Date: 10-FEB-17

Client: SNC-Lavalin Inc.
216 1st Ave South
SASKATOON SK S7K 1K3

Contact: June Lu

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
BTX-CL	**Soil**							
Batch R3649541								
WG2476432-3 DUP		**L1887196-1**						
Benzene		<0.0050	<0.0050	RPD-NA	mg/kg	N/A	40	08-FEB-17
Toluene		<0.050	<0.050	RPD-NA	mg/kg	N/A	40	08-FEB-17
Ethylbenzene		<0.015	<0.015	RPD-NA	mg/kg	N/A	40	08-FEB-17
Xylenes		<0.10	<0.10	RPD-NA	mg/kg	N/A	40	08-FEB-17
WG2476432-2 LCS								
Benzene			88.9		%		70-130	08-FEB-17
Toluene			86.7		%		70-130	08-FEB-17
Ethylbenzene			85.1		%		70-130	08-FEB-17
Xylenes			87.8		%		70-130	08-FEB-17
WG2476432-1 MB								
Benzene			<0.0050		mg/kg		0.005	08-FEB-17
Toluene			<0.050		mg/kg		0.05	08-FEB-17
Ethylbenzene			<0.015		mg/kg		0.015	08-FEB-17
Xylenes			<0.10		mg/kg		0.1	08-FEB-17
MOISTURE-CL	**Soil**							
Batch R3649340								
WG2476438-3 DUP		**L1887196-1**						
Moisture		8.67	9.79		%	12	20	08-FEB-17
WG2476438-2 LCS								
Moisture			102.4		%		90-110	08-FEB-17
WG2476438-1 MB								
Moisture			<0.25		%		0.25	08-FEB-17
BTX-TCLP-CL	**Waste**							
Batch R3649542								
WG2477475-1 MB								
Benzene			<0.0050		mg/L		0.005	09-FEB-17
Toluene			<0.0050		mg/L		0.005	09-FEB-17
Ethylbenzene			<0.0050		mg/L		0.005	09-FEB-17
Xylenes			<0.0050		mg/L		0.005	09-FEB-17
FLASH-PMCC-AUTO-CL	**Waste**							
Batch R3649346								
WG2477266-1 LCS								
Flash Point			50.0		Deg. C		48-58	07-FEB-17
HG-TCLP-CVAA-CL	**Waste**							

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HG-TCLP-CVAA-CL	**Waste**							
Batch R3649510								
WG2477305-1 LCS								
Mercury (Hg)-Leachable			94.3		%		85-115	09-FEB-17
WG2476202-1 MB								
Mercury (Hg)-Leachable			<0.010		mg/L		0.01	09-FEB-17
MET-TCLP-ICP-CL	**Waste**							
Batch R3649458								
WG2476202-1 MB								
Silver (Ag)-Leachable			<0.50		mg/L		0.5	09-FEB-17
Arsenic (As)-Leachable			<0.20		mg/L		0.2	09-FEB-17
Boron (B)-Leachable			<5.0		mg/L		5	09-FEB-17
Barium (Ba)-Leachable			<5.0		mg/L		5	09-FEB-17
Beryllium (Be)-Leachable			<0.50		mg/L		0.5	09-FEB-17
Cadmium (Cd)-Leachable			<0.050		mg/L		0.05	09-FEB-17
Cobalt (Co)-Leachable			<5.0		mg/L		5	09-FEB-17
Chromium (Cr)-Leachable			<0.50		mg/L		0.5	09-FEB-17
Copper (Cu)-Leachable			<5.0		mg/L		5	09-FEB-17
Iron (Fe)-Leachable			<5.0		mg/L		5	09-FEB-17
Nickel (Ni)-Leachable			<0.50		mg/L		0.5	09-FEB-17
Lead (Pb)-Leachable			<0.50		mg/L		0.5	09-FEB-17
Antimony (Sb)-Leachable			<5.0		mg/L		5	09-FEB-17
Selenium (Se)-Leachable			<0.20		mg/L		0.2	09-FEB-17
Thallium (Tl)-Leachable			<0.50		mg/L		0.5	09-FEB-17
Uranium (U)-Leachable			<1.0		mg/L		1	09-FEB-17
Vanadium (V)-Leachable			<5.0		mg/L		5	09-FEB-17
Zinc (Zn)-Leachable			<5.0		mg/L		5	09-FEB-17
Zirconium (Zr)-Leachable			<5.0		mg/L		5	09-FEB-17
PH-1:1-WW-CL	**Waste**							
Batch R3649454								
WG2477396-1 IRM		**SAL-STD8**						
pH (1:1 waste:water)			7.6		pH		7.3-7.9	09-FEB-17

Quality Control Report

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

ALS Environmental
www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

L1887196-COFC

COC Number: 14 - 422172

Page 1 of 1

Report To		Report Format / Distribution		Select Service Level Below (Rush Turnaround Time (TAT) is not available for all tests)
Company:	SNC-Lavalin	Select Report Format:	☑ PDF ☑ EXCEL ☑ EDD (DIGITAL)	R ☑ Regular (Standard TAT if received by 3pm)
Contact:	June Lu	Quality Control (QC) Report with Report	☑ Yes ☐ No	P ☐ Priority (2-4 business days if received by 3pm)
Address:	2116 1st Ave S, Saskatoon, SK S7K 1K3	☐ Criteria on Report - provide details below if box checked		E ☐ Emergency (1-2 business days if received by 3pm)
Phone:	306-668-6800	Select Distribution:	☑ EMAIL ☐ MAIL ☐ FAX	E2 ☐ Same day or weekend emergency if received by 10am – contact ALS for surcharge.
		Email 1 or Fax	june.lu@snclavalin.com	Specify Date Required for E2,E or P:
		Email 2	skyaldata@ " "	

Invoice To		Invoice Distribution	
	Same as Report To ☑ Yes ☐ No	Select Invoice Distribution:	☐ EMAIL ☐ MAIL ☐ FAX
	Copy of Invoice with Report ☑ Yes ☐ No	Email 1 or Fax	
Company:		Email 2	
Contact:			

Project Information		Oil and Gas Required Fields (client use)	
ALS Quote #:		Approver ID:	Cost Center:
Job #:	644079	GL Account:	Routing Code:
PO / AFE:		Activity Code:	
LSD:		Location:	

ALS Lab Work Order # (lab use only)	ALS Contact:	Sampler:
		TL

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	SK Landfill Package	Number of Containers
	LANDFILL-170202	02-FEB-17		Soil	X	7

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ Yes ☐ No

Are samples for human drinking water use? ☐ Yes ☐ No

Special Instructions / Specify Criteria to add on report (client Use)

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen	☐	SIF Observations	Yes ☐	No ☐	
Ice packs	Yes ☐	No ☐	Custody seal intact	Yes ☐	No ☐
Cooling Initiated	☐				

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C		
1°					

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by:	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:
Troy Harvey	17/02/03	15:50	FDM	Feb 3/17	3:50			

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

NA-FM-0328e v08 Front/03 October 2013

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

SNC-Lavalin Inc.
ATTN: June Lu
216 1st Ave South
Saskatoon SK S7K 1K3

Date Received: 07-FEB-17
Report Date: 14-FEB-17 09:19 (MT)
Version: FINAL

Client Phone: 306-668-6800

Certificate of Analysis

Lab Work Order #: L1887783

Project P.O. #: 644079
Job Reference: 644079
C of C Numbers: 14-422174
Legal Site Desc:

Brian Morgan, B.Sc. Hons.
Client Services Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1887783-1 MW17-00C-170206							
Sampled By: AMBER SALZAULER on 06-FEB-17 @ 16:20							
Matrix: GW							
BTEX, F1-F4 and SK Reg. PHC's							
BTEX and F1 (C6-C10)							
Benzene	<0.00050		0.00050	mg/L	11-FEB-17	11-FEB-17	R3650416
Toluene	<0.00050		0.00050	mg/L	11-FEB-17	11-FEB-17	R3650416
Ethylbenzene	<0.00050		0.00050	mg/L	11-FEB-17	11-FEB-17	R3650416
o-xylene	<0.00050		0.00050	mg/L	11-FEB-17	11-FEB-17	R3650416
m+p-Xylene	<0.00050		0.00050	mg/L	11-FEB-17	11-FEB-17	R3650416
Xylenes	<0.00071		0.00071	mg/L	11-FEB-17	11-FEB-17	R3650416
F1(C6-C10)	<0.10		0.10	mg/L	11-FEB-17	11-FEB-17	R3650416
F1-BTEX	<0.10		0.10	mg/L	11-FEB-17	11-FEB-17	R3650416
Surrogate: 4-Bromofluorobenzene	92.2		70-130	%	11-FEB-17	11-FEB-17	R3650416
Surrogate: 3,4-Dichlorotoluene	117.7		70-130	%	11-FEB-17	11-FEB-17	R3650416
Surrogate: 1,4-Difluorobenzene	101.0		70-130	%	11-FEB-17	11-FEB-17	R3650416
CCME Total Hydrocarbons							
Total Hydrocarbons (C6-C50)	<1.0		1.0	mg/L		13-FEB-17	
Extractable Hydrocarbons by GC-FID							
F2 (C10-C16)	<0.20		0.20	mg/L	09-FEB-17	09-FEB-17	R3650216
F3 (C16-C34)	<0.30		0.30	mg/L	09-FEB-17	09-FEB-17	R3650216
F4 (C34-C50)	<0.30		0.30	mg/L	09-FEB-17	09-FEB-17	R3650216
TEH (C11-C22)	<0.30		0.30	mg/L	09-FEB-17	09-FEB-17	R3650216
TEH (C23-C60)	<0.50		0.50	mg/L	09-FEB-17	09-FEB-17	R3650216
Surrogate: 2-Bromobenzotrifluoride	91.0		50-150	%	09-FEB-17	09-FEB-17	R3650216
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	LAB	SFP				09-FEB-17	R3649261
Aluminum (Al)-Dissolved	<0.0020		0.0020	mg/L		09-FEB-17	R3649644
Antimony (Sb)-Dissolved	<0.00010		0.00010	mg/L		09-FEB-17	R3649644
Arsenic (As)-Dissolved	<0.00010		0.00010	mg/L		09-FEB-17	R3649644
Barium (Ba)-Dissolved	<0.000050		0.000050	mg/L		09-FEB-17	R3649644
Beryllium (Be)-Dissolved	<0.00010		0.00010	mg/L		09-FEB-17	R3649644
Bismuth (Bi)-Dissolved	<0.000050		0.000050	mg/L		09-FEB-17	R3649644
Boron (B)-Dissolved	<0.010		0.010	mg/L		09-FEB-17	R3649644
Cadmium (Cd)-Dissolved	<0.0000050		0.0000050	mg/L		09-FEB-17	R3649644
Calcium (Ca)-Dissolved	<0.050		0.050	mg/L		09-FEB-17	R3649644
Cesium (Cs)-Dissolved	<0.000010		0.000010	mg/L		09-FEB-17	R3649644
Chromium (Cr)-Dissolved	<0.00010		0.00010	mg/L		09-FEB-17	R3649644
Cobalt (Co)-Dissolved	<0.00010		0.00010	mg/L		09-FEB-17	R3649644
Copper (Cu)-Dissolved	<0.00020		0.00020	mg/L		09-FEB-17	R3649644
Iron (Fe)-Dissolved	<0.010		0.010	mg/L		09-FEB-17	R3649644
Lead (Pb)-Dissolved	<0.000050		0.000050	mg/L		09-FEB-17	R3649644
Lithium (Li)-Dissolved	<0.0010		0.0010	mg/L		09-FEB-17	R3649644
Magnesium (Mg)-Dissolved	<0.0050		0.0050	mg/L		09-FEB-17	R3649644
Manganese (Mn)-Dissolved	<0.00010		0.00010	mg/L		09-FEB-17	R3649644
Molybdenum (Mo)-Dissolved	<0.000050		0.000050	mg/L		09-FEB-17	R3649644
Nickel (Ni)-Dissolved	<0.00050		0.00050	mg/L		09-FEB-17	R3649644
Phosphorus (P)-Dissolved	<0.050		0.050	mg/L		09-FEB-17	R3649644
Potassium (K)-Dissolved	<0.050		0.050	mg/L		09-FEB-17	R3649644
Rubidium (Rb)-Dissolved	<0.00020		0.00020	mg/L		09-FEB-17	R3649644
Selenium (Se)-Dissolved	<0.000050		0.000050	mg/L		09-FEB-17	R3649644
Silicon (Si)-Dissolved	<0.050		0.050	mg/L		09-FEB-17	R3649644
Silver (Ag)-Dissolved	<0.000010		0.000010	mg/L		09-FEB-17	R3649644
Sodium (Na)-Dissolved	<0.050		0.050	mg/L		09-FEB-17	R3649644
Strontium (Sr)-Dissolved	<0.00020		0.00020	mg/L		09-FEB-17	R3649644

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1887783-1 MW17-00C-170206							
Sampled By: AMBER SALZAULER on 06-FEB-17 @ 16:20							
Matrix: GW							
Dissolved Metals in Water by CRC ICPMS							
Sulfur (S)-Dissolved	<0.50		0.50	mg/L		09-FEB-17	R3649644
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L		09-FEB-17	R3649644
Thallium (Tl)-Dissolved	<0.000010		0.000010	mg/L		09-FEB-17	R3649644
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L		09-FEB-17	R3649644
Tin (Sn)-Dissolved	<0.00010		0.00010	mg/L		09-FEB-17	R3649644
Titanium (Ti)-Dissolved	<0.00030		0.00030	mg/L		09-FEB-17	R3649644
Tungsten (W)-Dissolved	<0.00010		0.00010	mg/L		09-FEB-17	R3649644
Uranium (U)-Dissolved	<0.000010		0.000010	mg/L		09-FEB-17	R3649644
Vanadium (V)-Dissolved	<0.00050		0.00050	mg/L		09-FEB-17	R3649644
Zinc (Zn)-Dissolved	<0.0010		0.0010	mg/L		09-FEB-17	R3649644
Zirconium (Zr)-Dissolved	<0.00030		0.00030	mg/L		09-FEB-17	R3649644
PAH & Carcinogenic List							
Naphthalene	<0.000050		0.000050	mg/L	09-FEB-17	10-FEB-17	R3650940
Quinoline	<0.000020		0.000020	mg/L	09-FEB-17	10-FEB-17	R3650940
Acenaphthene	<0.000020		0.000020	mg/L	09-FEB-17	10-FEB-17	R3650940
Fluorene	<0.000020		0.000020	mg/L	09-FEB-17	10-FEB-17	R3650940
Phenanthrene	<0.000050		0.000050	mg/L	09-FEB-17	10-FEB-17	R3650940
Anthracene	<0.000010		0.000010	mg/L	09-FEB-17	10-FEB-17	R3650940
Acridine	<0.000020		0.000020	mg/L	09-FEB-17	10-FEB-17	R3650940
Fluoranthene	<0.000020		0.000020	mg/L	09-FEB-17	10-FEB-17	R3650940
Pyrene	<0.000010		0.000010	mg/L	09-FEB-17	10-FEB-17	R3650940
Benzo(a)anthracene	<0.000010		0.000010	mg/L	09-FEB-17	10-FEB-17	R3650940
Chrysene	<0.000020		0.000020	mg/L	09-FEB-17	10-FEB-17	R3650940
Benzo(b&j)fluoranthene	<0.000010		0.000010	mg/L	09-FEB-17	10-FEB-17	R3650940
Benzo(k)fluoranthene	<0.000010		0.000010	mg/L	09-FEB-17	10-FEB-17	R3650940
Benzo(a)pyrene	<0.0000050		0.0000050	mg/L	09-FEB-17	10-FEB-17	R3650940
Benzo(g,h,i)perylene	<0.000020		0.000020	mg/L	09-FEB-17	10-FEB-17	R3650940
Indeno(1,2,3-cd)pyrene	<0.000010		0.000010	mg/L	09-FEB-17	10-FEB-17	R3650940
Dibenzo(a,h)anthracene	<0.0000050		0.0000050	mg/L	09-FEB-17	10-FEB-17	R3650940
B(A)P Total Potency Equivalent	<0.000010		0.000010	mg/L	09-FEB-17	10-FEB-17	R3650940
Surrogate: d10-Acenaphthene	74.1		60-130	%	09-FEB-17	10-FEB-17	R3650940
Surrogate: d10-Phenanthrene	75.5		60-130	%	09-FEB-17	10-FEB-17	R3650940
Surrogate: d12-Chrysene	77.6		60-130	%	09-FEB-17	10-FEB-17	R3650940
L1887783-2 MW17-00B-170206							
Sampled By: AMBER SALZAULER on 06-FEB-17 @ 16:10							
Matrix: GW							
BTEX, F1-F4 and SK Reg. PHC's							
BTEX and F1 (C6-C10)							
Benzene	<0.00050		0.00050	mg/L	11-FEB-17	11-FEB-17	R3650416
Toluene	<0.00050		0.00050	mg/L	11-FEB-17	11-FEB-17	R3650416
Ethylbenzene	<0.00050		0.00050	mg/L	11-FEB-17	11-FEB-17	R3650416
o-xylene	<0.00050		0.00050	mg/L	11-FEB-17	11-FEB-17	R3650416
m+p-Xylene	<0.00050		0.00050	mg/L	11-FEB-17	11-FEB-17	R3650416
Xylenes	<0.00071		0.00071	mg/L	11-FEB-17	11-FEB-17	R3650416
F1(C6-C10)	<0.10		0.10	mg/L	11-FEB-17	11-FEB-17	R3650416
F1-BTEX	<0.10		0.10	mg/L	11-FEB-17	11-FEB-17	R3650416
Surrogate: 4-Bromofluorobenzene	94.5		70-130	%	11-FEB-17	11-FEB-17	R3650416
Surrogate: 3,4-Dichlorotoluene	121.1		70-130	%	11-FEB-17	11-FEB-17	R3650416
Surrogate: 1,4-Difluorobenzene	102.4		70-130	%	11-FEB-17	11-FEB-17	R3650416
CCME Total Hydrocarbons							
Total Hydrocarbons (C6-C50)	<1.0		1.0	mg/L		13-FEB-17	

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1887783-2 MW17-00B-170206							
Sampled By: AMBER SALZAULER on 06-FEB-17 @ 16:10							
Matrix: GW							
Extractable Hydrocarbons by GC-FID							
F2 (C10-C16)	<0.20		0.20	mg/L	09-FEB-17	09-FEB-17	R3650216
F3 (C16-C34)	<0.30		0.30	mg/L	09-FEB-17	09-FEB-17	R3650216
F4 (C34-C50)	<0.30		0.30	mg/L	09-FEB-17	09-FEB-17	R3650216
TEH (C11-C22)	<0.30		0.30	mg/L	09-FEB-17	09-FEB-17	R3650216
TEH (C23-C60)	<0.50		0.50	mg/L	09-FEB-17	09-FEB-17	R3650216
Surrogate: 2-Bromobenzotrifluoride	92.4		50-150	%	09-FEB-17	09-FEB-17	R3650216
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	LAB	SFP				09-FEB-17	R3649261
Aluminum (Al)-Dissolved	<0.0020		0.0020	mg/L		09-FEB-17	R3649644
Antimony (Sb)-Dissolved	<0.00010		0.00010	mg/L		09-FEB-17	R3649644
Arsenic (As)-Dissolved	<0.00010		0.00010	mg/L		09-FEB-17	R3649644
Barium (Ba)-Dissolved	<0.000050		0.000050	mg/L		09-FEB-17	R3649644
Beryllium (Be)-Dissolved	<0.00010		0.00010	mg/L		09-FEB-17	R3649644
Bismuth (Bi)-Dissolved	<0.000050		0.000050	mg/L		09-FEB-17	R3649644
Boron (B)-Dissolved	<0.010		0.010	mg/L		09-FEB-17	R3649644
Cadmium (Cd)-Dissolved	<0.0000050		0.0000050	mg/L		09-FEB-17	R3649644
Calcium (Ca)-Dissolved	<0.050		0.050	mg/L		09-FEB-17	R3649644
Cesium (Cs)-Dissolved	<0.000010		0.000010	mg/L		09-FEB-17	R3649644
Chromium (Cr)-Dissolved	<0.00010		0.00010	mg/L		09-FEB-17	R3649644
Cobalt (Co)-Dissolved	<0.00010		0.00010	mg/L		09-FEB-17	R3649644
Copper (Cu)-Dissolved	<0.00020		0.00020	mg/L		09-FEB-17	R3649644
Iron (Fe)-Dissolved	<0.010		0.010	mg/L		09-FEB-17	R3649644
Lead (Pb)-Dissolved	<0.000050		0.000050	mg/L		09-FEB-17	R3649644
Lithium (Li)-Dissolved	<0.0010		0.0010	mg/L		09-FEB-17	R3649644
Magnesium (Mg)-Dissolved	<0.0050		0.0050	mg/L		09-FEB-17	R3649644
Manganese (Mn)-Dissolved	<0.00010		0.00010	mg/L		09-FEB-17	R3649644
Molybdenum (Mo)-Dissolved	<0.000050		0.000050	mg/L		09-FEB-17	R3649644
Nickel (Ni)-Dissolved	<0.00050		0.00050	mg/L		09-FEB-17	R3649644
Phosphorus (P)-Dissolved	<0.050		0.050	mg/L		09-FEB-17	R3649644
Potassium (K)-Dissolved	<0.050		0.050	mg/L		09-FEB-17	R3649644
Rubidium (Rb)-Dissolved	<0.00020		0.00020	mg/L		09-FEB-17	R3649644
Selenium (Se)-Dissolved	<0.000050		0.000050	mg/L		09-FEB-17	R3649644
Silicon (Si)-Dissolved	<0.050		0.050	mg/L		09-FEB-17	R3649644
Silver (Ag)-Dissolved	<0.000010		0.000010	mg/L		09-FEB-17	R3649644
Sodium (Na)-Dissolved	<0.050		0.050	mg/L		09-FEB-17	R3649644
Strontium (Sr)-Dissolved	<0.00020		0.00020	mg/L		09-FEB-17	R3649644
Sulfur (S)-Dissolved	<0.50		0.50	mg/L		09-FEB-17	R3649644
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L		09-FEB-17	R3649644
Thallium (Tl)-Dissolved	<0.000010		0.000010	mg/L		09-FEB-17	R3649644
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L		09-FEB-17	R3649644
Tin (Sn)-Dissolved	<0.00010		0.00010	mg/L		09-FEB-17	R3649644
Titanium (Ti)-Dissolved	<0.00030		0.00030	mg/L		09-FEB-17	R3649644
Tungsten (W)-Dissolved	<0.00010		0.00010	mg/L		09-FEB-17	R3649644
Uranium (U)-Dissolved	<0.000010		0.000010	mg/L		09-FEB-17	R3649644
Vanadium (V)-Dissolved	<0.00050		0.00050	mg/L		09-FEB-17	R3649644
Zinc (Zn)-Dissolved	<0.0010		0.0010	mg/L		09-FEB-17	R3649644
Zirconium (Zr)-Dissolved	<0.00030		0.00030	mg/L		09-FEB-17	R3649644
PAH & Carcinogenic List							
Naphthalene	<0.000050		0.000050	mg/L	09-FEB-17	10-FEB-17	R3650940
Quinoline	<0.000020		0.000020	mg/L	09-FEB-17	10-FEB-17	R3650940

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1887783-2 MW17-00B-170206							
Sampled By: AMBER SALZAULER on 06-FEB-17 @ 16:10							
Matrix: GW							
PAH & Carcinogenic List							
Acenaphthene	<0.000020		0.000020	mg/L	09-FEB-17	10-FEB-17	R3650940
Fluorene	<0.000020		0.000020	mg/L	09-FEB-17	10-FEB-17	R3650940
Phenanthrene	<0.000050		0.000050	mg/L	09-FEB-17	10-FEB-17	R3650940
Anthracene	<0.000010		0.000010	mg/L	09-FEB-17	10-FEB-17	R3650940
Acridine	<0.000020		0.000020	mg/L	09-FEB-17	10-FEB-17	R3650940
Fluoranthene	<0.000020		0.000020	mg/L	09-FEB-17	10-FEB-17	R3650940
Pyrene	<0.000010		0.000010	mg/L	09-FEB-17	10-FEB-17	R3650940
Benzo(a)anthracene	<0.000010		0.000010	mg/L	09-FEB-17	10-FEB-17	R3650940
Chrysene	<0.000020		0.000020	mg/L	09-FEB-17	10-FEB-17	R3650940
Benzo(b&j)fluoranthene	<0.000010		0.000010	mg/L	09-FEB-17	10-FEB-17	R3650940
Benzo(k)fluoranthene	<0.000010		0.000010	mg/L	09-FEB-17	10-FEB-17	R3650940
Benzo(a)pyrene	<0.0000050		0.0000050	mg/L	09-FEB-17	10-FEB-17	R3650940
Benzo(g,h,i)perylene	<0.000020		0.000020	mg/L	09-FEB-17	10-FEB-17	R3650940
Indeno(1,2,3-cd)pyrene	<0.000010		0.000010	mg/L	09-FEB-17	10-FEB-17	R3650940
Dibenzo(a,h)anthracene	<0.0000050		0.0000050	mg/L	09-FEB-17	10-FEB-17	R3650940
B(A)P Total Potency Equivalent	<0.000010		0.000010	mg/L	09-FEB-17	10-FEB-17	R3650940
Surrogate: d10-Acenaphthene	71.5		60-130	%	09-FEB-17	10-FEB-17	R3650940
Surrogate: d10-Phenanthrene	68.1		60-130	%	09-FEB-17	10-FEB-17	R3650940
Surrogate: d12-Chrysene	67.0		60-130	%	09-FEB-17	10-FEB-17	R3650940
L1887783-3 MW17-00D-170206							
Sampled By: AMBER SALZAULER on 06-FEB-17 @ 16:30							
Matrix: GW							
BTEX, F1-F4 and SK Reg. PHC's							
BTEX and F1 (C6-C10)							
Benzene	<0.00050		0.00050	mg/L	11-FEB-17	11-FEB-17	R3650416
Toluene	<0.00050		0.00050	mg/L	11-FEB-17	11-FEB-17	R3650416
Ethylbenzene	<0.00050		0.00050	mg/L	11-FEB-17	11-FEB-17	R3650416
o-xylene	<0.00050		0.00050	mg/L	11-FEB-17	11-FEB-17	R3650416
m+p-Xylene	<0.00050		0.00050	mg/L	11-FEB-17	11-FEB-17	R3650416
Xylenes	<0.00071		0.00071	mg/L	11-FEB-17	11-FEB-17	R3650416
F1(C6-C10)	<0.10		0.10	mg/L	11-FEB-17	11-FEB-17	R3650416
F1-BTEX	<0.10		0.10	mg/L	11-FEB-17	11-FEB-17	R3650416
Surrogate: 4-Bromofluorobenzene	91.4		70-130	%	11-FEB-17	11-FEB-17	R3650416
Surrogate: 3,4-Dichlorotoluene	118.3		70-130	%	11-FEB-17	11-FEB-17	R3650416
Surrogate: 1,4-Difluorobenzene	99.9		70-130	%	11-FEB-17	11-FEB-17	R3650416
CCME Total Hydrocarbons							
Total Hydrocarbons (C6-C50)	<1.0		1.0	mg/L		13-FEB-17	
Extractable Hydrocarbons by GC-FID							
F2 (C10-C16)	<0.20		0.20	mg/L	09-FEB-17	09-FEB-17	R3650216
F3 (C16-C34)	<0.30		0.30	mg/L	09-FEB-17	09-FEB-17	R3650216
F4 (C34-C50)	<0.30		0.30	mg/L	09-FEB-17	09-FEB-17	R3650216
TEH (C11-C22)	<0.30		0.30	mg/L	09-FEB-17	09-FEB-17	R3650216
TEH (C23-C60)	<0.50		0.50	mg/L	09-FEB-17	09-FEB-17	R3650216
Surrogate: 2-Bromobenzotrifluoride	94.4		50-150	%	09-FEB-17	09-FEB-17	R3650216
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	LAB	SFP				09-FEB-17	R3649261
Aluminum (Al)-Dissolved	<0.0020		0.0020	mg/L		09-FEB-17	R3649644
Antimony (Sb)-Dissolved	<0.00010		0.00010	mg/L		09-FEB-17	R3649644
Arsenic (As)-Dissolved	<0.00010		0.00010	mg/L		09-FEB-17	R3649644
Barium (Ba)-Dissolved	<0.000050		0.000050	mg/L		09-FEB-17	R3649644

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1887783-3 MW17-00D-170206							
Sampled By: AMBER SALZAULER on 06-FEB-17 @ 16:30							
Matrix: GW							
Dissolved Metals in Water by CRC ICPMS							
Beryllium (Be)-Dissolved	<0.00010		0.00010	mg/L		09-FEB-17	R3649644
Bismuth (Bi)-Dissolved	<0.000050		0.000050	mg/L		09-FEB-17	R3649644
Boron (B)-Dissolved	<0.010		0.010	mg/L		09-FEB-17	R3649644
Cadmium (Cd)-Dissolved	<0.0000050		0.0000050	mg/L		09-FEB-17	R3649644
Calcium (Ca)-Dissolved	<0.050		0.050	mg/L		09-FEB-17	R3649644
Cesium (Cs)-Dissolved	<0.000010		0.000010	mg/L		09-FEB-17	R3649644
Chromium (Cr)-Dissolved	<0.00010		0.00010	mg/L		09-FEB-17	R3649644
Cobalt (Co)-Dissolved	<0.00010		0.00010	mg/L		09-FEB-17	R3649644
Copper (Cu)-Dissolved	<0.00020		0.00020	mg/L		09-FEB-17	R3649644
Iron (Fe)-Dissolved	<0.010		0.010	mg/L		09-FEB-17	R3649644
Lead (Pb)-Dissolved	<0.000050		0.000050	mg/L		09-FEB-17	R3649644
Lithium (Li)-Dissolved	<0.0010		0.0010	mg/L		09-FEB-17	R3649644
Magnesium (Mg)-Dissolved	<0.0050		0.0050	mg/L		09-FEB-17	R3649644
Manganese (Mn)-Dissolved	<0.00010		0.00010	mg/L		09-FEB-17	R3649644
Molybdenum (Mo)-Dissolved	<0.000050		0.000050	mg/L		09-FEB-17	R3649644
Nickel (Ni)-Dissolved	<0.00050		0.00050	mg/L		09-FEB-17	R3649644
Phosphorus (P)-Dissolved	<0.050		0.050	mg/L		09-FEB-17	R3649644
Potassium (K)-Dissolved	<0.050		0.050	mg/L		09-FEB-17	R3649644
Rubidium (Rb)-Dissolved	<0.00020		0.00020	mg/L		09-FEB-17	R3649644
Selenium (Se)-Dissolved	<0.000050		0.000050	mg/L		09-FEB-17	R3649644
Silicon (Si)-Dissolved	<0.050		0.050	mg/L		09-FEB-17	R3649644
Silver (Ag)-Dissolved	<0.000010		0.000010	mg/L		09-FEB-17	R3649644
Sodium (Na)-Dissolved	<0.050		0.050	mg/L		09-FEB-17	R3649644
Strontium (Sr)-Dissolved	<0.00020		0.00020	mg/L		09-FEB-17	R3649644
Sulfur (S)-Dissolved	<0.50		0.50	mg/L		09-FEB-17	R3649644
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L		09-FEB-17	R3649644
Thallium (Tl)-Dissolved	<0.000010		0.000010	mg/L		09-FEB-17	R3649644
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L		09-FEB-17	R3649644
Tin (Sn)-Dissolved	<0.00010		0.00010	mg/L		09-FEB-17	R3649644
Titanium (Ti)-Dissolved	<0.00030		0.00030	mg/L		09-FEB-17	R3649644
Tungsten (W)-Dissolved	<0.00010		0.00010	mg/L		09-FEB-17	R3649644
Uranium (U)-Dissolved	<0.000010		0.000010	mg/L		09-FEB-17	R3649644
Vanadium (V)-Dissolved	<0.00050		0.00050	mg/L		09-FEB-17	R3649644
Zinc (Zn)-Dissolved	<0.0010		0.0010	mg/L		09-FEB-17	R3649644
Zirconium (Zr)-Dissolved	<0.00030		0.00030	mg/L		09-FEB-17	R3649644
PAH & Carcinogenic List							
Naphthalene	<0.000050		0.000050	mg/L	09-FEB-17	10-FEB-17	R3650940
Quinoline	<0.000020		0.000020	mg/L	09-FEB-17	10-FEB-17	R3650940
Acenaphthene	<0.000020		0.000020	mg/L	09-FEB-17	10-FEB-17	R3650940
Fluorene	<0.000020		0.000020	mg/L	09-FEB-17	10-FEB-17	R3650940
Phenanthrene	<0.000050		0.000050	mg/L	09-FEB-17	10-FEB-17	R3650940
Anthracene	<0.000010		0.000010	mg/L	09-FEB-17	10-FEB-17	R3650940
Acridine	<0.000020		0.000020	mg/L	09-FEB-17	10-FEB-17	R3650940
Fluoranthene	<0.000020		0.000020	mg/L	09-FEB-17	10-FEB-17	R3650940
Pyrene	<0.000010		0.000010	mg/L	09-FEB-17	10-FEB-17	R3650940
Benzo(a)anthracene	<0.000010		0.000010	mg/L	09-FEB-17	10-FEB-17	R3650940
Chrysene	<0.000020		0.000020	mg/L	09-FEB-17	10-FEB-17	R3650940
Benzo(b&j)fluoranthene	<0.000010		0.000010	mg/L	09-FEB-17	10-FEB-17	R3650940
Benzo(k)fluoranthene	<0.000010		0.000010	mg/L	09-FEB-17	10-FEB-17	R3650940
Benzo(a)pyrene	<0.0000050		0.0000050	mg/L	09-FEB-17	10-FEB-17	R3650940
Benzo(g,h,i)perylene	<0.000020		0.000020	mg/L	09-FEB-17	10-FEB-17	R3650940

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1887783-3 MW17-00D-170206							
Sampled By: AMBER SALZAULER on 06-FEB-17 @ 16:30							
Matrix: GW							
PAH & Carcinogenic List							
Indeno(1,2,3-cd)pyrene	<0.000010		0.000010	mg/L	09-FEB-17	10-FEB-17	R3650940
Dibenzo(a,h)anthracene	<0.0000050		0.0000050	mg/L	09-FEB-17	10-FEB-17	R3650940
B(A)P Total Potency Equivalent	<0.000010		0.000010	mg/L	09-FEB-17	10-FEB-17	R3650940
Surrogate: d10-Acenaphthene	80.3		60-130	%	09-FEB-17	10-FEB-17	R3650940
Surrogate: d10-Phenanthrene	73.9		60-130	%	09-FEB-17	10-FEB-17	R3650940
Surrogate: d12-Chrysene	69.5		60-130	%	09-FEB-17	10-FEB-17	R3650940

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

Qualifiers for Sample Submission Listed:

Qualifier	Description
SFPL	Sample was Filtered and Preserved at the laboratory

Sample Parameter Qualifier Key:

Qualifier	Description
SFP	Sample was Filtered and Preserved at the laboratory

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
BTX,F1-CL	Water	BTEX and F1 (C6-C10)	EPA 8260C/5021A, and CWS PHC Tier 1

The water sample, with added reagents, is heated in a sealed vial to equilibrium. The headspace from the vial is transferred into a gas chromatograph. BTEX Target compound concentrations are measured using mass spectrometry detection. The instrumental portion of F1 analysis is carried out in accordance with the Canada Wide Standard for Petroleum Hydrocarbons in Soil - Tier 1 Method

C6-C50-CALC-CL	Water	CCME Total Hydrocarbons	CCME CWS-PHC, Pub #1310, Dec 2001

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

Hydrocarbon results are expressed on a dry weight basis.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.
In samples where BTEX and F1 were analyzed , F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:
1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:
1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

MET-D-CCMS-SK	Water	Dissolved Metals in Water by CRC ICPMS	APHA 3030B / EPA 6020A

This procedure involves preliminary filtration through a 0.45 um filter followed by instrumental analysis using collision cell inductively coupled plasma - mass spectrometry (modifed from EPA Method 6020A).

PAH-ME-CCME-CL	Water	PAH & Carcinogenic List	EPA 3511 / EPA 8270D GCMS

PAHs are extracted from water using a hexane micro-extraction technique. The extract is then solvent exchanged to toluene. The final extract is analysed by capillary column gas chromatography with mass spectrometric detection (GC/MS). Surrogate recoveries may not be reported in cases where interferences from the sample matrix prevent accurate quantitation.

TEH-WS-ME-FID-CL	Water	Extractable Hydrocarbons by GC-FID	EPA 3511/ CCME PHC CWS GC-FID

Water samples are spiked with 2-BBTF surrogate, and extracted by reciprocal action shaker for 30 minutes using a single micro-extraction with 2 mL hexane. Instrumental analysis is by GC-FID, as per the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil, Tier 1 Method, CCME, December 2001.

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
SK	ALS ENVIRONMENTAL - SASKATOON, SASKATCHEWAN, CANADA
CL	ALS ENVIRONMENTAL - CALGARY, ALBERTA, CANADA

Chain of Custody Numbers:

14-422174

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Quality Control Report

Client: SNC-Lavalin Inc.
216 1st Ave South
Saskatoon SK S7K 1K3
Contact: June Lu

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
BTX,F1-CL	**Water**							
Batch R3650416								
WG2478433-2 LCS								
Benzene			93.7		%		70-130	10-FEB-17
Toluene			91.5		%		70-130	10-FEB-17
Ethylbenzene			92.1		%		70-130	10-FEB-17
o-xylene			92.4		%		70-130	10-FEB-17
m+p-Xylene			96.5		%		70-130	10-FEB-17
Xylenes			94.5		%		70-130	10-FEB-17
F1(C6-C10)			114.9		%		70-130	10-FEB-17
WG2478433-1 MB								
Benzene			<0.00050		mg/L		0.0005	11-FEB-17
Toluene			<0.00050		mg/L		0.0005	11-FEB-17
Ethylbenzene			<0.00050		mg/L		0.0005	11-FEB-17
o-xylene			<0.00050		mg/L		0.0005	11-FEB-17
m+p-Xylene			<0.00050		mg/L		0.0005	11-FEB-17
Xylenes			<0.00071		mg/L		0.00071	11-FEB-17
F1(C6-C10)			<0.10		mg/L		0.1	11-FEB-17
Surrogate: 4-Bromofluorobenzene			86.8		%		70-130	11-FEB-17
Surrogate: 3,4-Dichlorotoluene			122.3		%		70-130	11-FEB-17
Surrogate: 1,4-Difluorobenzene			99.1		%		70-130	11-FEB-17
MET-D-CCMS-SK	**Water**							
Batch R3649644								
WG2476236-3 CRM		**TMRM_20**						
Aluminum (Al)-Dissolved			96.0		%		80-120	09-FEB-17
Antimony (Sb)-Dissolved			99.9		%		80-120	09-FEB-17
Arsenic (As)-Dissolved			100.1		%		80-120	09-FEB-17
Barium (Ba)-Dissolved			106.7		%		80-120	09-FEB-17
Beryllium (Be)-Dissolved			95.6		%		80-120	09-FEB-17
Bismuth (Bi)-Dissolved			94.9		%		80-120	09-FEB-17
Boron (B)-Dissolved			95.7		%		80-120	09-FEB-17
Cadmium (Cd)-Dissolved			99.5		%		80-120	09-FEB-17
Calcium (Ca)-Dissolved			99.0		%		80-120	09-FEB-17
Cesium (Cs)-Dissolved			102.7		%		80-120	09-FEB-17
Chromium (Cr)-Dissolved			97.5		%		80-120	09-FEB-17
Cobalt (Co)-Dissolved			97.4		%		80-120	09-FEB-17
Copper (Cu)-Dissolved			97.7		%		80-120	09-FEB-17

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-SK	**Water**							
Batch R3649644								
WG2476236-3 CRM		**TMRM_20**						
Iron (Fe)-Dissolved			96.8		%		80-120	09-FEB-17
Lead (Pb)-Dissolved			97.8		%		80-120	09-FEB-17
Lithium (Li)-Dissolved			98.0		%		80-120	09-FEB-17
Magnesium (Mg)-Dissolved			101.7		%		80-120	09-FEB-17
Manganese (Mn)-Dissolved			99.0		%		80-120	09-FEB-17
Molybdenum (Mo)-Dissolved			99.8		%		80-120	09-FEB-17
Nickel (Ni)-Dissolved			99.1		%		80-120	09-FEB-17
Phosphorus (P)-Dissolved			101.5		%		70-130	09-FEB-17
Potassium (K)-Dissolved			101.7		%		80-120	09-FEB-17
Rubidium (Rb)-Dissolved			94.9		%		80-120	09-FEB-17
Selenium (Se)-Dissolved			101.2		%		80-120	09-FEB-17
Silicon (Si)-Dissolved			115.1		%		60-140	09-FEB-17
Silver (Ag)-Dissolved			95.8		%		80-120	09-FEB-17
Sodium (Na)-Dissolved			98.9		%		80-120	09-FEB-17
Strontium (Sr)-Dissolved			97.1		%		80-120	09-FEB-17
Sulfur (S)-Dissolved			97.1		%		80-120	09-FEB-17
Tellurium (Te)-Dissolved			97.6		%		80-120	09-FEB-17
Thallium (Tl)-Dissolved			92.2		%		80-120	09-FEB-17
Thorium (Th)-Dissolved			99.0		%		80-120	09-FEB-17
Tin (Sn)-Dissolved			97.8		%		80-120	09-FEB-17
Titanium (Ti)-Dissolved			88.8		%		80-120	09-FEB-17
Tungsten (W)-Dissolved			99.6		%		80-120	09-FEB-17
Uranium (U)-Dissolved			95.8		%		80-120	09-FEB-17
Vanadium (V)-Dissolved			99.6		%		80-120	09-FEB-17
Zinc (Zn)-Dissolved			96.6		%		80-120	09-FEB-17
Zirconium (Zr)-Dissolved			96.9		%		80-120	09-FEB-17
WG2476236-1 MB								
Aluminum (Al)-Dissolved			<0.0020		mg/L		0.002	09-FEB-17
Antimony (Sb)-Dissolved			<0.00010		mg/L		0.0001	09-FEB-17
Arsenic (As)-Dissolved			<0.00010		mg/L		0.0001	09-FEB-17
Barium (Ba)-Dissolved			<0.000050		mg/L		0.00005	09-FEB-17
Beryllium (Be)-Dissolved			<0.00010		mg/L		0.0001	09-FEB-17
Bismuth (Bi)-Dissolved			<0.000050		mg/L		0.00005	09-FEB-17
Boron (B)-Dissolved			<0.010		mg/L		0.01	09-FEB-17

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-SK	**Water**							
Batch R3649644								
WG2476236-1 MB								
Cadmium (Cd)-Dissolved			<0.0000050		mg/L		0.000005	09-FEB-17
Calcium (Ca)-Dissolved			<0.050		mg/L		0.05	09-FEB-17
Cesium (Cs)-Dissolved			<0.000010		mg/L		0.00001	09-FEB-17
Chromium (Cr)-Dissolved			<0.00010		mg/L		0.0001	09-FEB-17
Cobalt (Co)-Dissolved			<0.00010		mg/L		0.0001	09-FEB-17
Copper (Cu)-Dissolved			<0.00020		mg/L		0.0002	09-FEB-17
Iron (Fe)-Dissolved			<0.010		mg/L		0.01	09-FEB-17
Lead (Pb)-Dissolved			<0.000050		mg/L		0.00005	09-FEB-17
Lithium (Li)-Dissolved			<0.0010		mg/L		0.001	09-FEB-17
Magnesium (Mg)-Dissolved			<0.0050		mg/L		0.005	09-FEB-17
Manganese (Mn)-Dissolved			<0.00010		mg/L		0.0001	09-FEB-17
Molybdenum (Mo)-Dissolved			<0.000050		mg/L		0.00005	09-FEB-17
Nickel (Ni)-Dissolved			<0.00050		mg/L		0.0005	09-FEB-17
Phosphorus (P)-Dissolved			<0.050		mg/L		0.05	09-FEB-17
Potassium (K)-Dissolved			<0.050		mg/L		0.05	09-FEB-17
Rubidium (Rb)-Dissolved			<0.00020		mg/L		0.0002	09-FEB-17
Selenium (Se)-Dissolved			<0.000050		mg/L		0.00005	09-FEB-17
Silicon (Si)-Dissolved			<0.050		mg/L		0.05	09-FEB-17
Silver (Ag)-Dissolved			<0.000010		mg/L		0.00001	09-FEB-17
Sodium (Na)-Dissolved			<0.050		mg/L		0.05	09-FEB-17
Strontium (Sr)-Dissolved			<0.00020		mg/L		0.0002	09-FEB-17
Sulfur (S)-Dissolved			<0.50		mg/L		0.5	09-FEB-17
Tellurium (Te)-Dissolved			<0.00020		mg/L		0.0002	09-FEB-17
Thallium (Tl)-Dissolved			<0.000010		mg/L		0.00001	09-FEB-17
Thorium (Th)-Dissolved			<0.00010		mg/L		0.0001	09-FEB-17
Tin (Sn)-Dissolved			<0.00010		mg/L		0.0001	09-FEB-17
Titanium (Ti)-Dissolved			<0.00030		mg/L		0.0003	09-FEB-17
Tungsten (W)-Dissolved			<0.00010		mg/L		0.0001	09-FEB-17
Uranium (U)-Dissolved			<0.000010		mg/L		0.00001	09-FEB-17
Vanadium (V)-Dissolved			<0.00050		mg/L		0.0005	09-FEB-17
Zinc (Zn)-Dissolved			<0.0010		mg/L		0.001	09-FEB-17
Zirconium (Zr)-Dissolved			<0.00030		mg/L		0.0003	09-FEB-17
WG2476236-4 MS		**L1887783-1**						
Aluminum (Al)-Dissolved			92.4		%		70-130	09-FEB-17

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-SK	**Water**							
Batch R3649644								
WG2476236-4 MS		**L1887783-1**						
Antimony (Sb)-Dissolved			103.6		%		70-130	09-FEB-17
Arsenic (As)-Dissolved			96.5		%		70-130	09-FEB-17
Barium (Ba)-Dissolved			102.7		%		70-130	09-FEB-17
Beryllium (Be)-Dissolved			91.7		%		70-130	09-FEB-17
Bismuth (Bi)-Dissolved			100.2		%		70-130	09-FEB-17
Boron (B)-Dissolved			88.9		%		70-130	09-FEB-17
Cadmium (Cd)-Dissolved			102.3		%		70-130	09-FEB-17
Calcium (Ca)-Dissolved			92.0		%		70-130	09-FEB-17
Cesium (Cs)-Dissolved			104.6		%		70-130	09-FEB-17
Chromium (Cr)-Dissolved			97.8		%		70-130	09-FEB-17
Cobalt (Co)-Dissolved			99.7		%		70-130	09-FEB-17
Copper (Cu)-Dissolved			100.5		%		70-130	09-FEB-17
Iron (Fe)-Dissolved			96.9		%		70-130	09-FEB-17
Lead (Pb)-Dissolved			100.7		%		70-130	09-FEB-17
Lithium (Li)-Dissolved			95.7		%		70-130	09-FEB-17
Magnesium (Mg)-Dissolved			99.5		%		70-130	09-FEB-17
Manganese (Mn)-Dissolved			97.1		%		70-130	09-FEB-17
Molybdenum (Mo)-Dissolved			91.9		%		70-130	09-FEB-17
Nickel (Ni)-Dissolved			100.3		%		70-130	09-FEB-17
Phosphorus (P)-Dissolved			89.0		%		70-130	09-FEB-17
Potassium (K)-Dissolved			98.8		%		70-130	09-FEB-17
Rubidium (Rb)-Dissolved			95.2		%		70-130	09-FEB-17
Selenium (Se)-Dissolved			101.8		%		70-130	09-FEB-17
Silicon (Si)-Dissolved			92.9		%		70-130	09-FEB-17
Silver (Ag)-Dissolved			101.3		%		70-130	09-FEB-17
Sodium (Na)-Dissolved			96.6		%		70-130	09-FEB-17
Strontium (Sr)-Dissolved			96.3		%		70-130	09-FEB-17
Sulfur (S)-Dissolved			97.6		%		70-130	09-FEB-17
Tellurium (Te)-Dissolved			97.8		%		70-130	09-FEB-17
Thallium (Tl)-Dissolved			98.9		%		70-130	09-FEB-17
Thorium (Th)-Dissolved			102.6		%		70-130	09-FEB-17
Tin (Sn)-Dissolved			98.7		%		70-130	09-FEB-17
Titanium (Ti)-Dissolved			90.8		%		70-130	09-FEB-17
Tungsten (W)-Dissolved			97.2		%		70-130	09-FEB-17

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-SK	**Water**							
Batch R3649644								
WG2476236-4 MS		**L1887783-1**						
Uranium (U)-Dissolved			94.6		%		70-130	09-FEB-17
Vanadium (V)-Dissolved			97.5		%		70-130	09-FEB-17
Zinc (Zn)-Dissolved			94.8		%		70-130	09-FEB-17
Zirconium (Zr)-Dissolved			92.6		%		70-130	09-FEB-17
PAH-ME-CCME-CL	**Water**							
Batch R3650940								
WG2478958-1 LCS								
Naphthalene			73.0		%		50-130	10-FEB-17
Quinoline			105.6		%		60-130	10-FEB-17
Acenaphthene			77.6		%		60-130	10-FEB-17
Fluorene			78.7		%		60-130	10-FEB-17
Phenanthrene			75.6		%		60-130	10-FEB-17
Anthracene			68.6		%		60-130	10-FEB-17
Acridine			69.6		%		60-130	10-FEB-17
Fluoranthene			79.0		%		60-130	10-FEB-17
Pyrene			82.0		%		60-130	10-FEB-17
Benzo(a)anthracene			75.1		%		60-130	10-FEB-17
Chrysene			80.1		%		60-130	10-FEB-17
Benzo(b&j)fluoranthene			76.4		%		60-130	10-FEB-17
Benzo(k)fluoranthene			78.6		%		60-130	10-FEB-17
Benzo(a)pyrene			74.9		%		60-130	10-FEB-17
Benzo(g,h,i)perylene			83.8		%		60-130	10-FEB-17
Indeno(1,2,3-cd)pyrene			77.8		%		60-130	10-FEB-17
Dibenzo(a,h)anthracene			83.1		%		60-130	10-FEB-17
WG2478958-2 MB								
Naphthalene			<0.000050		mg/L		0.00005	10-FEB-17
Quinoline			<0.000020		mg/L		0.00002	10-FEB-17
Acenaphthene			<0.000020		mg/L		0.00002	10-FEB-17
Fluorene			<0.000020		mg/L		0.00002	10-FEB-17
Phenanthrene			<0.000050		mg/L		0.00005	10-FEB-17
Anthracene			<0.000010		mg/L		0.00001	10-FEB-17
Acridine			<0.000020		mg/L		0.00002	10-FEB-17
Fluoranthene			<0.000020		mg/L		0.00002	10-FEB-17
Pyrene			<0.000010		mg/L		0.00001	10-FEB-17

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-ME-CCME-CL	**Water**							
Batch R3650940								
WG2478958-2 MB								
Benzo(a)anthracene			<0.000010		mg/L		0.00001	10-FEB-17
Chrysene			<0.000020		mg/L		0.00002	10-FEB-17
Benzo(b&j)fluoranthene			<0.000010		mg/L		0.00001	10-FEB-17
Benzo(k)fluoranthene			<0.000010		mg/L		0.00001	10-FEB-17
Benzo(a)pyrene			<0.000005C		mg/L		0.000005	10-FEB-17
Benzo(g,h,i)perylene			<0.000020		mg/L		0.00002	10-FEB-17
Indeno(1,2,3-cd)pyrene			<0.000010		mg/L		0.00001	10-FEB-17
Dibenzo(a,h)anthracene			<0.000005C		mg/L		0.000005	10-FEB-17
Surrogate: d10-Acenaphthene			82.0		%		60-130	10-FEB-17
Surrogate: d10-Phenanthrene			81.2		%		60-130	10-FEB-17
Surrogate: d12-Chrysene			83.8		%		60-130	10-FEB-17
TEH-WS-ME-FID-CL	**Water**							
Batch R3650216								
WG2477231-1 MB								
F2 (C10-C16)			<0.20		mg/L		0.2	09-FEB-17
F3 (C16-C34)			<0.30		mg/L		0.3	09-FEB-17
F4 (C34-C50)			<0.30		mg/L		0.3	09-FEB-17
TEH (C11-C22)			<0.30		mg/L		0.3	09-FEB-17
TEH (C23-C60)			<0.50		mg/L		0.5	09-FEB-17
Surrogate: 2-Bromobenzotrifluoride			100.0		%		50-150	09-FEB-17

Quality Control Report

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

ALS Environmental
www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

L1887783-COFC

COC Number: 14 - 422174

Page 1 of 1

Report To		Report Format / Distribution		Select Service Level Below (Rush Turnaround Time (TAT) is not available for all tests)
Company:	SNC Lavalin Inc.	Select Report Format:	☑ PDF ☑ EXCEL ☑ EDD (DIGITAL)	R ☑ Regular (Standard TAT if received by 3pm)
Contact:	June Lu	Quality Control (QC) Report with Report	☑ Yes ☐ No	P ☐ Priority (2-4 business days if received by 3pm)
Address:	216 - 1ST Ave S. Saskatoon, SK S7K 1K3	☐ Criteria on Report - provide details below if box checked		E ☐ Emergency (1-2 business days if received by 3pm)
		Select Distribution:	☑ EMAIL ☐ MAIL ☐ FAX	E2 ☐ Same day or weekend emergency if received by 10am – contact ALS for surcharge.
Phone:	306 - 668 - 6800 Ext. 54369	Email 1 or Fax	june.lu@snclavalin.com	Specify Date Required for E2,E or P:
		Email 2		

Invoice To			Invoice Distribution		Analysis Request
	Same as Report To	☑ Yes ☐ No	Select Invoice Distribution:	☑ EMAIL ☐ MAIL ☐ FAX	Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below
	Copy of Invoice with Report	☑ Yes ☐ No	Email 1 or Fax	june.lu@snclavalin.com	
Company:			Email 2		
Contact:					

Project Information		Oil and Gas Required Fields (client use)	
ALS Quote #:		Approver ID:	Cost Center:
Job #:	644079	GL Account:	Routing Code:
PO / AFE:	644079	Activity Code:	
LSD:		Location:	

ALS Lab Work Order # (lab use only)	ALS Contact:	Sampler:
	Jessica Spira	Amber Salzsauler

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	BTEX	F1-F4	Dissolved Metals	PAHs	Limited quantity									Number of Containers
					P	P		P										
	MW17-00C-170206	06-FEB-17	16:20	GW	X	X	X	X										10
	MW17-00B-170206	06-FEB-17	16:10	GW	X	X	X	X	X									7
	MW17-00D-170206	06-FEB-17	16:30	GW	X	X	X	X										10

Drinking Water (DW) Samples¹ (client use)	Special Instructions / Specify Criteria to add on report (client Use)
Are samples taken from a Regulated DW System? ☐ Yes ☑ No	MW17-00B-170206 contains limited Sample quantity for dissolved metals & F2-F4. Proceed with analysis as much as possible.
Are samples for human drinking water use? ☐ Yes ☑ No	

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐
Ice packs Yes ☐ No ☐ Custody seal intact Yes ☐ No ☐
Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C		
8					

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by:	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:
Amber Salzsauler	Feb 7/17	12:00		07-Feb	11:55A			

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

NA-FM-0226e v08 Front 03 October 2013

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

SNC-Lavalin Inc.
ATTN: June Lu
216 1st Ave South
SASKATOON SK S7K 1K3

Date Received: 07-FEB-17
Report Date: 15-FEB-17 07:42 (MT)
Version: FINAL

Client Phone: 306-934-7527

Certificate of Analysis

Lab Work Order #: L1887819

Project P.O. #: 644079
Job Reference: 644079
C of C Numbers: 14-422173, 14-422175
Legal Site Desc:

Brian Morgan, B.Sc. Hons.
Client Services Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1887819-1 17-16-170206							
Sampled By: AMBER SALZSAULER on 06-FEB-17 @ 09:16							
Matrix: GW							
BTEX, F1-F4 and SK Reg. PHC's							
BTEX and F1 (C6-C10)							
Benzene	<0.00050		0.00050	mg/L	11-FEB-17	11-FEB-17	R3650416
Toluene	<0.00050		0.00050	mg/L	11-FEB-17	11-FEB-17	R3650416
Ethylbenzene	<0.00050		0.00050	mg/L	11-FEB-17	11-FEB-17	R3650416
o-xylene	<0.00050		0.00050	mg/L	11-FEB-17	11-FEB-17	R3650416
m+p-Xylene	<0.00050		0.00050	mg/L	11-FEB-17	11-FEB-17	R3650416
Xylenes	<0.00071		0.00071	mg/L	11-FEB-17	11-FEB-17	R3650416
F1(C6-C10)	<0.10		0.10	mg/L	11-FEB-17	11-FEB-17	R3650416
F1-BTEX	<0.10		0.10	mg/L	11-FEB-17	11-FEB-17	R3650416
Surrogate: 4-Bromofluorobenzene	91.6		70-130	%	11-FEB-17	11-FEB-17	R3650416
Surrogate: 3,4-Dichlorotoluene	119.4		70-130	%	11-FEB-17	11-FEB-17	R3650416
Surrogate: 1,4-Difluorobenzene	101.3		70-130	%	11-FEB-17	11-FEB-17	R3650416
CCME Total Hydrocarbons							
Total Hydrocarbons (C6-C50)	<1.0		1.0	mg/L		13-FEB-17	
Extractable Hydrocarbons by GC-FID							
F2 (C10-C16)	0.39		0.20	mg/L	09-FEB-17	09-FEB-17	R3650216
F3 (C16-C34)	<0.30		0.30	mg/L	09-FEB-17	09-FEB-17	R3650216
F4 (C34-C50)	<0.30		0.30	mg/L	09-FEB-17	09-FEB-17	R3650216
TEH (C11-C22)	0.47		0.30	mg/L	09-FEB-17	09-FEB-17	R3650216
TEH (C23-C60)	<0.50		0.50	mg/L	09-FEB-17	09-FEB-17	R3650216
Surrogate: 2-Bromobenzotrifluoride	95.1		50-150	%	09-FEB-17	09-FEB-17	R3650216
Single Metal in Water by ICPMS (Diss.)							
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	LAB	SFP				09-FEB-17	R3649261
Lead (Pb)-Dissolved	<0.00010	DLDS	0.00010	mg/L		09-FEB-17	R3649644
PAH & Carcinogenic List							
Naphthalene	<0.000060	DLCI	0.000060	mg/L	09-FEB-17	10-FEB-17	R3650940
Quinoline	<0.000020		0.000020	mg/L	09-FEB-17	10-FEB-17	R3650940
Acenaphthene	<0.000020		0.000020	mg/L	09-FEB-17	10-FEB-17	R3650940
Fluorene	0.000031		0.000020	mg/L	09-FEB-17	10-FEB-17	R3650940
Phenanthrene	<0.000050		0.000050	mg/L	09-FEB-17	10-FEB-17	R3650940
Anthracene	<0.000010		0.000010	mg/L	09-FEB-17	10-FEB-17	R3650940
Acridine	<0.000020		0.000020	mg/L	09-FEB-17	10-FEB-17	R3650940
Fluoranthene	<0.000020		0.000020	mg/L	09-FEB-17	10-FEB-17	R3650940
Pyrene	<0.000010		0.000010	mg/L	09-FEB-17	10-FEB-17	R3650940
Benzo(a)anthracene	<0.000010		0.000010	mg/L	09-FEB-17	10-FEB-17	R3650940
Chrysene	<0.000020		0.000020	mg/L	09-FEB-17	10-FEB-17	R3650940
Benzo(b&j)fluoranthene	<0.000010		0.000010	mg/L	09-FEB-17	10-FEB-17	R3650940
Benzo(k)fluoranthene	<0.000010		0.000010	mg/L	09-FEB-17	10-FEB-17	R3650940
Benzo(a)pyrene	<0.0000050		0.0000050	mg/L	09-FEB-17	10-FEB-17	R3650940
Benzo(g,h,i)perylene	<0.000020		0.000020	mg/L	09-FEB-17	10-FEB-17	R3650940
Indeno(1,2,3-cd)pyrene	<0.000010		0.000010	mg/L	09-FEB-17	10-FEB-17	R3650940
Dibenzo(a,h)anthracene	<0.0000050		0.0000050	mg/L	09-FEB-17	10-FEB-17	R3650940
B(A)P Total Potency Equivalent	<0.000010		0.000010	mg/L	09-FEB-17	10-FEB-17	R3650940
Surrogate: d10-Acenaphthene	81.2		60-130	%	09-FEB-17	10-FEB-17	R3650940
Surrogate: d10-Phenanthrene	78.5		60-130	%	09-FEB-17	10-FEB-17	R3650940
Surrogate: d12-Chrysene	64.8		60-130	%	09-FEB-17	10-FEB-17	R3650940
L1887819-2 17-11-170206							
Sampled By: AMBER SALZSAULER on 06-FEB-17 @ 11:00							
Matrix: GW							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1887819-2 17-11-170206							
Sampled By: AMBER SALZSAULER on 06-FEB-17 @ 11:00							
Matrix: GW							
BTEX, F1-F4 and SK Reg. PHC's							
BTEX and F1 (C6-C10)							
Benzene	<0.00050		0.00050	mg/L	11-FEB-17	11-FEB-17	R3650416
Toluene	<0.00050		0.00050	mg/L	11-FEB-17	11-FEB-17	R3650416
Ethylbenzene	0.00547		0.00050	mg/L	11-FEB-17	11-FEB-17	R3650416
o-xylene	<0.00050		0.00050	mg/L	11-FEB-17	11-FEB-17	R3650416
m+p-Xylene	0.00154		0.00050	mg/L	11-FEB-17	11-FEB-17	R3650416
Xylenes	0.00179		0.00071	mg/L	11-FEB-17	11-FEB-17	R3650416
F1(C6-C10)	0.18		0.10	mg/L	11-FEB-17	11-FEB-17	R3650416
F1-BTEX	0.17		0.10	mg/L	11-FEB-17	11-FEB-17	R3650416
Surrogate: 4-Bromofluorobenzene	94.1		70-130	%	11-FEB-17	11-FEB-17	R3650416
Surrogate: 3,4-Dichlorotoluene	107.1		70-130	%	11-FEB-17	11-FEB-17	R3650416
Surrogate: 1,4-Difluorobenzene	97.3		70-130	%	11-FEB-17	11-FEB-17	R3650416
CCME Total Hydrocarbons							
Total Hydrocarbons (C6-C50)	<1.0		1.0	mg/L		13-FEB-17	
Extractable Hydrocarbons by GC-FID							
F2 (C10-C16)	0.47		0.20	mg/L	09-FEB-17	09-FEB-17	R3650216
F3 (C16-C34)	<0.30		0.30	mg/L	09-FEB-17	09-FEB-17	R3650216
F4 (C34-C50)	<0.30		0.30	mg/L	09-FEB-17	09-FEB-17	R3650216
TEH (C11-C22)	0.48		0.30	mg/L	09-FEB-17	09-FEB-17	R3650216
TEH (C23-C60)	<0.50		0.50	mg/L	09-FEB-17	09-FEB-17	R3650216
Surrogate: 2-Bromobenzotrifluoride	95.9		50-150	%	09-FEB-17	09-FEB-17	R3650216
Single Metal in Water by ICPMS (Diss.)							
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	LAB	SFP				09-FEB-17	R3649261
Lead (Pb)-Dissolved	<0.000050		0.000050	mg/L		09-FEB-17	R3649644
PAH & Carcinogenic List							
Naphthalene	0.00422		0.000050	mg/L	09-FEB-17	10-FEB-17	R3650940
Quinoline	<0.00017	DLCI	0.00017	mg/L	09-FEB-17	10-FEB-17	R3650940
Acenaphthene	0.000279		0.000020	mg/L	09-FEB-17	10-FEB-17	R3650940
Fluorene	0.000335		0.000020	mg/L	09-FEB-17	10-FEB-17	R3650940
Phenanthrene	<0.000050		0.000050	mg/L	09-FEB-17	10-FEB-17	R3650940
Anthracene	<0.000010		0.000010	mg/L	09-FEB-17	10-FEB-17	R3650940
Acridine	<0.000020		0.000020	mg/L	09-FEB-17	10-FEB-17	R3650940
Fluoranthene	<0.000020		0.000020	mg/L	09-FEB-17	10-FEB-17	R3650940
Pyrene	<0.000010		0.000010	mg/L	09-FEB-17	10-FEB-17	R3650940
Benzo(a)anthracene	<0.000010		0.000010	mg/L	09-FEB-17	10-FEB-17	R3650940
Chrysene	<0.000020		0.000020	mg/L	09-FEB-17	10-FEB-17	R3650940
Benzo(b&j)fluoranthene	<0.000010		0.000010	mg/L	09-FEB-17	10-FEB-17	R3650940
Benzo(k)fluoranthene	<0.000010		0.000010	mg/L	09-FEB-17	10-FEB-17	R3650940
Benzo(a)pyrene	<0.0000050		0.0000050	mg/L	09-FEB-17	10-FEB-17	R3650940
Benzo(g,h,i)perylene	<0.000020		0.000020	mg/L	09-FEB-17	10-FEB-17	R3650940
Indeno(1,2,3-cd)pyrene	<0.000010		0.000010	mg/L	09-FEB-17	10-FEB-17	R3650940
Dibenzo(a,h)anthracene	<0.0000050		0.0000050	mg/L	09-FEB-17	10-FEB-17	R3650940
B(A)P Total Potency Equivalent	<0.000010		0.000010	mg/L	09-FEB-17	10-FEB-17	R3650940
Surrogate: d10-Acenaphthene	85.8		60-130	%	09-FEB-17	10-FEB-17	R3650940
Surrogate: d10-Phenanthrene	79.2		60-130	%	09-FEB-17	10-FEB-17	R3650940
Surrogate: d12-Chrysene	73.2		60-130	%	09-FEB-17	10-FEB-17	R3650940
L1887819-3 MW17-00A-170206							
Sampled By: AMBER SALZSAULER on 06-FEB-17 @ 12:15							
Matrix: GW							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1887819-3 MW17-00A-170206							
Sampled By: AMBER SALZSAULER on 06-FEB-17 @ 12:15							
Matrix: GW							
BTEX, F1-F4 and SK Reg. PHC's							
BTEX and F1 (C6-C10)							
Benzene	<0.00050		0.00050	mg/L	11-FEB-17	11-FEB-17	R3650416
Toluene	<0.00050		0.00050	mg/L	11-FEB-17	11-FEB-17	R3650416
Ethylbenzene	<0.00050		0.00050	mg/L	11-FEB-17	11-FEB-17	R3650416
o-xylene	<0.00050		0.00050	mg/L	11-FEB-17	11-FEB-17	R3650416
m+p-Xylene	<0.00050		0.00050	mg/L	11-FEB-17	11-FEB-17	R3650416
Xylenes	<0.00071		0.00071	mg/L	11-FEB-17	11-FEB-17	R3650416
F1(C6-C10)	<0.10		0.10	mg/L	11-FEB-17	11-FEB-17	R3650416
F1-BTEX	<0.10		0.10	mg/L	11-FEB-17	11-FEB-17	R3650416
Surrogate: 4-Bromofluorobenzene	91.9		70-130	%	11-FEB-17	11-FEB-17	R3650416
Surrogate: 3,4-Dichlorotoluene	114.7		70-130	%	11-FEB-17	11-FEB-17	R3650416
Surrogate: 1,4-Difluorobenzene	100.1		70-130	%	11-FEB-17	11-FEB-17	R3650416
CCME Total Hydrocarbons							
Total Hydrocarbons (C6-C50)	<1.0		1.0	mg/L		13-FEB-17	
Extractable Hydrocarbons by GC-FID							
F2 (C10-C16)	0.46		0.20	mg/L	09-FEB-17	09-FEB-17	R3650216
F3 (C16-C34)	<0.30		0.30	mg/L	09-FEB-17	09-FEB-17	R3650216
F4 (C34-C50)	<0.30		0.30	mg/L	09-FEB-17	09-FEB-17	R3650216
TEH (C11-C22)	0.54		0.30	mg/L	09-FEB-17	09-FEB-17	R3650216
TEH (C23-C60)	<0.50		0.50	mg/L	09-FEB-17	09-FEB-17	R3650216
Surrogate: 2-Bromobenzotrifluoride	95.3		50-150	%	09-FEB-17	09-FEB-17	R3650216
Single Metal in Water by ICPMS (Diss.)							
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	LAB	SFP				09-FEB-17	R3649261
Lead (Pb)-Dissolved	0.000071		0.000050	mg/L		09-FEB-17	R3649644
PAH & Carcinogenic List							
Naphthalene	0.00162		0.000050	mg/L	09-FEB-17	10-FEB-17	R3650940
Quinoline	<0.00014	DLCI	0.00014	mg/L	09-FEB-17	10-FEB-17	R3650940
Acenaphthene	0.000153		0.000020	mg/L	09-FEB-17	10-FEB-17	R3650940
Fluorene	0.000354		0.000020	mg/L	09-FEB-17	10-FEB-17	R3650940
Phenanthrene	0.000193		0.000050	mg/L	09-FEB-17	10-FEB-17	R3650940
Anthracene	<0.000040	DLQ	0.000040	mg/L	09-FEB-17	10-FEB-17	R3650940
Acridine	<0.000070	DLCI	0.000070	mg/L	09-FEB-17	10-FEB-17	R3650940
Fluoranthene	0.000086		0.000020	mg/L	09-FEB-17	10-FEB-17	R3650940
Pyrene	0.000089		0.000010	mg/L	09-FEB-17	10-FEB-17	R3650940
Benzo(a)anthracene	0.000034		0.000010	mg/L	09-FEB-17	10-FEB-17	R3650940
Chrysene	0.000041		0.000020	mg/L	09-FEB-17	10-FEB-17	R3650940
Benzo(b&j)fluoranthene	0.000038		0.000010	mg/L	09-FEB-17	10-FEB-17	R3650940
Benzo(k)fluoranthene	0.000018		0.000010	mg/L	09-FEB-17	10-FEB-17	R3650940
Benzo(a)pyrene	0.0000279		0.0000050	mg/L	09-FEB-17	10-FEB-17	R3650940
Benzo(g,h,i)perylene	0.000022		0.000020	mg/L	09-FEB-17	10-FEB-17	R3650940
Indeno(1,2,3-cd)pyrene	0.000020		0.000010	mg/L	09-FEB-17	10-FEB-17	R3650940
Dibenzo(a,h)anthracene	0.0000052		0.0000050	mg/L	09-FEB-17	10-FEB-17	R3650940
B(A)P Total Potency Equivalent	0.000045		0.000010	mg/L	09-FEB-17	10-FEB-17	R3650940
Surrogate: d10-Acenaphthene	88.8		60-130	%	09-FEB-17	10-FEB-17	R3650940
Surrogate: d10-Phenanthrene	81.9		60-130	%	09-FEB-17	10-FEB-17	R3650940
Surrogate: d12-Chrysene	74.9		60-130	%	09-FEB-17	10-FEB-17	R3650940
L1887819-4 17-13-170206							
Sampled By: AMBER SALZSAULER on 06-FEB-17 @ 14:50							
Matrix: GW							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1887819-4 17-13-170206							
Sampled By: AMBER SALZSAULER on 06-FEB-17 @ 14:50							
Matrix: GW							
BTEX, F1-F4 and SK Reg. PHC's							
BTEX and F1 (C6-C10)							
Benzene	<0.00050		0.00050	mg/L	11-FEB-17	11-FEB-17	R3650416
Toluene	<0.00050		0.00050	mg/L	11-FEB-17	11-FEB-17	R3650416
Ethylbenzene	<0.00050		0.00050	mg/L	11-FEB-17	11-FEB-17	R3650416
o-xylene	<0.00050		0.00050	mg/L	11-FEB-17	11-FEB-17	R3650416
m+p-Xylene	<0.00050		0.00050	mg/L	11-FEB-17	11-FEB-17	R3650416
Xylenes	<0.00071		0.00071	mg/L	11-FEB-17	11-FEB-17	R3650416
F1(C6-C10)	<0.10		0.10	mg/L	11-FEB-17	11-FEB-17	R3650416
F1-BTEX	<0.10		0.10	mg/L	11-FEB-17	11-FEB-17	R3650416
Surrogate: 4-Bromofluorobenzene	91.5		70-130	%	11-FEB-17	11-FEB-17	R3650416
Surrogate: 3,4-Dichlorotoluene	124.7		70-130	%	11-FEB-17	11-FEB-17	R3650416
Surrogate: 1,4-Difluorobenzene	100.9		70-130	%	11-FEB-17	11-FEB-17	R3650416
CCME Total Hydrocarbons							
Total Hydrocarbons (C6-C50)	<1.0		1.0	mg/L		13-FEB-17	
Extractable Hydrocarbons by GC-FID							
F2 (C10-C16)	<0.20		0.20	mg/L	09-FEB-17	09-FEB-17	R3650216
F3 (C16-C34)	<0.30		0.30	mg/L	09-FEB-17	09-FEB-17	R3650216
F4 (C34-C50)	<0.30		0.30	mg/L	09-FEB-17	09-FEB-17	R3650216
TEH (C11-C22)	<0.30		0.30	mg/L	09-FEB-17	09-FEB-17	R3650216
TEH (C23-C60)	<0.50		0.50	mg/L	09-FEB-17	09-FEB-17	R3650216
Surrogate: 2-Bromobenzotrifluoride	91.6		50-150	%	09-FEB-17	09-FEB-17	R3650216
Single Metal in Water by ICPMS (Diss.)							
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	LAB	SFP				09-FEB-17	R3649261
Lead (Pb)-Dissolved	<0.000050		0.000050	mg/L		09-FEB-17	R3649644
PAH & Carcinogenic List							
Naphthalene	<0.000050		0.000050	mg/L	09-FEB-17	10-FEB-17	R3650940
Quinoline	<0.000020		0.000020	mg/L	09-FEB-17	10-FEB-17	R3650940
Acenaphthene	<0.000020		0.000020	mg/L	09-FEB-17	10-FEB-17	R3650940
Fluorene	<0.000020		0.000020	mg/L	09-FEB-17	10-FEB-17	R3650940
Phenanthrene	<0.000050		0.000050	mg/L	09-FEB-17	10-FEB-17	R3650940
Anthracene	<0.000010		0.000010	mg/L	09-FEB-17	10-FEB-17	R3650940
Acridine	<0.000020		0.000020	mg/L	09-FEB-17	10-FEB-17	R3650940
Fluoranthene	<0.000020		0.000020	mg/L	09-FEB-17	10-FEB-17	R3650940
Pyrene	<0.000010		0.000010	mg/L	09-FEB-17	10-FEB-17	R3650940
Benzo(a)anthracene	<0.000010		0.000010	mg/L	09-FEB-17	10-FEB-17	R3650940
Chrysene	<0.000020		0.000020	mg/L	09-FEB-17	10-FEB-17	R3650940
Benzo(b&j)fluoranthene	<0.000010		0.000010	mg/L	09-FEB-17	10-FEB-17	R3650940
Benzo(k)fluoranthene	<0.000010		0.000010	mg/L	09-FEB-17	10-FEB-17	R3650940
Benzo(a)pyrene	<0.0000050		0.0000050	mg/L	09-FEB-17	10-FEB-17	R3650940
Benzo(g,h,i)perylene	<0.000020		0.000020	mg/L	09-FEB-17	10-FEB-17	R3650940
Indeno(1,2,3-cd)pyrene	<0.000010		0.000010	mg/L	09-FEB-17	10-FEB-17	R3650940
Dibenzo(a,h)anthracene	<0.0000050		0.0000050	mg/L	09-FEB-17	10-FEB-17	R3650940
B(A)P Total Potency Equivalent	<0.000010		0.000010	mg/L	09-FEB-17	10-FEB-17	R3650940
Surrogate: d10-Acenaphthene	80.2		60-130	%	09-FEB-17	10-FEB-17	R3650940
Surrogate: d10-Phenanthrene	80.8		60-130	%	09-FEB-17	10-FEB-17	R3650940
Surrogate: d12-Chrysene	77.2		60-130	%	09-FEB-17	10-FEB-17	R3650940
L1887819-5 14-37-170206							
Sampled By: AMBER SALZSAULER on 06-FEB-17 @ 12:45							
Matrix: GW							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1887819-5 14-37-170206							
Sampled By: AMBER SALZSAULER on 06-FEB-17 @ 12:45							
Matrix: GW							
BTEX, F1-F4 and SK Reg. PHC's							
BTEX and F1 (C6-C10)							
Benzene	<0.00050		0.00050	mg/L	11-FEB-17	11-FEB-17	R3650416
Toluene	<0.00050		0.00050	mg/L	11-FEB-17	11-FEB-17	R3650416
Ethylbenzene	<0.00050		0.00050	mg/L	11-FEB-17	11-FEB-17	R3650416
o-xylene	<0.00050		0.00050	mg/L	11-FEB-17	11-FEB-17	R3650416
m+p-Xylene	<0.00050		0.00050	mg/L	11-FEB-17	11-FEB-17	R3650416
Xylenes	<0.00071		0.00071	mg/L	11-FEB-17	11-FEB-17	R3650416
F1(C6-C10)	<0.10		0.10	mg/L	11-FEB-17	11-FEB-17	R3650416
F1-BTEX	<0.10		0.10	mg/L	11-FEB-17	11-FEB-17	R3650416
Surrogate: 4-Bromofluorobenzene	91.5		70-130	%	11-FEB-17	11-FEB-17	R3650416
Surrogate: 3,4-Dichlorotoluene	123.0		70-130	%	11-FEB-17	11-FEB-17	R3650416
Surrogate: 1,4-Difluorobenzene	101.0		70-130	%	11-FEB-17	11-FEB-17	R3650416
CCME Total Hydrocarbons							
Total Hydrocarbons (C6-C50)	<1.0		1.0	mg/L		10-FEB-17	
Extractable Hydrocarbons by GC-FID							
F2 (C10-C16)	0.54		0.20	mg/L	09-FEB-17	09-FEB-17	R3650216
F3 (C16-C34)	0.34		0.30	mg/L	09-FEB-17	09-FEB-17	R3650216
F4 (C34-C50)	<0.30		0.30	mg/L	09-FEB-17	09-FEB-17	R3650216
TEH (C11-C22)	0.87		0.30	mg/L	09-FEB-17	09-FEB-17	R3650216
TEH (C23-C60)	<0.50		0.50	mg/L	09-FEB-17	09-FEB-17	R3650216
Surrogate: 2-Bromobenzotrifluoride	N/A	SDO:RNA	-	%	09-FEB-17	09-FEB-17	R3650216
Note: Sample with sediments, alternate method used for extraction							
L1887819-6 17-10S-170206							
Sampled By: AMBER SALZSAULER on 06-FEB-17 @ 10:30							
Matrix: GW							
BTEX, F1-F4 and SK Reg. PHC's							
BTEX and F1 (C6-C10)							
Benzene	<0.00050		0.00050	mg/L	11-FEB-17	11-FEB-17	R3650416
Toluene	<0.00050		0.00050	mg/L	11-FEB-17	11-FEB-17	R3650416
Ethylbenzene	<0.00050		0.00050	mg/L	11-FEB-17	11-FEB-17	R3650416
o-xylene	<0.00050		0.00050	mg/L	11-FEB-17	11-FEB-17	R3650416
m+p-Xylene	<0.00050		0.00050	mg/L	11-FEB-17	11-FEB-17	R3650416
Xylenes	<0.00071		0.00071	mg/L	11-FEB-17	11-FEB-17	R3650416
F1(C6-C10)	<0.10		0.10	mg/L	11-FEB-17	11-FEB-17	R3650416
F1-BTEX	<0.10		0.10	mg/L	11-FEB-17	11-FEB-17	R3650416
Surrogate: 4-Bromofluorobenzene	90.0		70-130	%	11-FEB-17	11-FEB-17	R3650416
Surrogate: 3,4-Dichlorotoluene	124.4		70-130	%	11-FEB-17	11-FEB-17	R3650416
Surrogate: 1,4-Difluorobenzene	100.3		70-130	%	11-FEB-17	11-FEB-17	R3650416
CCME Total Hydrocarbons							
Total Hydrocarbons (C6-C50)	<1.0		1.0	mg/L		13-FEB-17	
Extractable Hydrocarbons by GC-FID							
F2 (C10-C16)	<0.20		0.20	mg/L	09-FEB-17	09-FEB-17	R3650216
F3 (C16-C34)	<0.30		0.30	mg/L	09-FEB-17	09-FEB-17	R3650216
F4 (C34-C50)	<0.30		0.30	mg/L	09-FEB-17	09-FEB-17	R3650216
TEH (C11-C22)	<0.30		0.30	mg/L	09-FEB-17	09-FEB-17	R3650216
TEH (C23-C60)	<0.50		0.50	mg/L	09-FEB-17	09-FEB-17	R3650216
Surrogate: 2-Bromobenzotrifluoride	96.0		50-150	%	09-FEB-17	09-FEB-17	R3650216
Single Metal in Water by ICPMS (Diss.)							
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	LAB	SFP				09-FEB-17	R3649261

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1887819-6 17-10S-170206							
Sampled By: AMBER SALZSAULER on 06-FEB-17 @ 10:30							
Matrix: GW							
Dissolved Metals in Water by CRC ICPMS							
Lead (Pb)-Dissolved	<0.000050		0.000050	mg/L		09-FEB-17	R3649644
PAH & Carcinogenic List							
Naphthalene	<0.000050		0.000050	mg/L	09-FEB-17	10-FEB-17	R3650940
Quinoline	<0.000020		0.000020	mg/L	09-FEB-17	10-FEB-17	R3650940
Acenaphthene	<0.000020		0.000020	mg/L	09-FEB-17	10-FEB-17	R3650940
Fluorene	<0.000020		0.000020	mg/L	09-FEB-17	10-FEB-17	R3650940
Phenanthrene	<0.000050		0.000050	mg/L	09-FEB-17	10-FEB-17	R3650940
Anthracene	<0.000010		0.000010	mg/L	09-FEB-17	10-FEB-17	R3650940
Acridine	<0.000020		0.000020	mg/L	09-FEB-17	10-FEB-17	R3650940
Fluoranthene	<0.000020		0.000020	mg/L	09-FEB-17	10-FEB-17	R3650940
Pyrene	<0.000010		0.000010	mg/L	09-FEB-17	10-FEB-17	R3650940
Benzo(a)anthracene	<0.000010		0.000010	mg/L	09-FEB-17	10-FEB-17	R3650940
Chrysene	<0.000020		0.000020	mg/L	09-FEB-17	10-FEB-17	R3650940
Benzo(b&j)fluoranthene	<0.000010		0.000010	mg/L	09-FEB-17	10-FEB-17	R3650940
Benzo(k)fluoranthene	<0.000010		0.000010	mg/L	09-FEB-17	10-FEB-17	R3650940
Benzo(a)pyrene	<0.0000050		0.0000050	mg/L	09-FEB-17	10-FEB-17	R3650940
Benzo(g,h,i)perylene	<0.000020		0.000020	mg/L	09-FEB-17	10-FEB-17	R3650940
Indeno(1,2,3-cd)pyrene	<0.000010		0.000010	mg/L	09-FEB-17	10-FEB-17	R3650940
Dibenzo(a,h)anthracene	<0.0000050		0.0000050	mg/L	09-FEB-17	10-FEB-17	R3650940
B(A)P Total Potency Equivalent	<0.000010		0.000010	mg/L	09-FEB-17	10-FEB-17	R3650940
Surrogate: d10-Acenaphthene	85.7		60-130	%	09-FEB-17	10-FEB-17	R3650940
Surrogate: d10-Phenanthrene	85.6		60-130	%	09-FEB-17	10-FEB-17	R3650940
Surrogate: d12-Chrysene	85.4		60-130	%	09-FEB-17	10-FEB-17	R3650940
L1887819-7 17-05-170206							
Sampled By: AMBER SALZSAULER on 06-FEB-17 @ 13:10							
Matrix: GW							
BTEX, F1-F4 and SK Reg. PHC's							
BTEX and F1 (C6-C10)							
Benzene	<0.00050		0.00050	mg/L	11-FEB-17	11-FEB-17	R3650416
Toluene	<0.00050		0.00050	mg/L	11-FEB-17	11-FEB-17	R3650416
Ethylbenzene	<0.00050		0.00050	mg/L	11-FEB-17	11-FEB-17	R3650416
o-xylene	<0.00050		0.00050	mg/L	11-FEB-17	11-FEB-17	R3650416
m+p-Xylene	<0.00050		0.00050	mg/L	11-FEB-17	11-FEB-17	R3650416
Xylenes	<0.00071		0.00071	mg/L	11-FEB-17	11-FEB-17	R3650416
F1(C6-C10)	<0.10		0.10	mg/L	11-FEB-17	11-FEB-17	R3650416
F1-BTEX	<0.10		0.10	mg/L	11-FEB-17	11-FEB-17	R3650416
Surrogate: 4-Bromofluorobenzene	88.5		70-130	%	11-FEB-17	11-FEB-17	R3650416
Surrogate: 3,4-Dichlorotoluene	121.6		70-130	%	11-FEB-17	11-FEB-17	R3650416
Surrogate: 1,4-Difluorobenzene	100.6		70-130	%	11-FEB-17	11-FEB-17	R3650416
CCME Total Hydrocarbons							
Total Hydrocarbons (C6-C50)	<1.0		1.0	mg/L		13-FEB-17	
Extractable Hydrocarbons by GC-FID							
F2 (C10-C16)	<0.20		0.20	mg/L	09-FEB-17	09-FEB-17	R3650216
F3 (C16-C34)	<0.30		0.30	mg/L	09-FEB-17	09-FEB-17	R3650216
F4 (C34-C50)	<0.30		0.30	mg/L	09-FEB-17	09-FEB-17	R3650216
TEH (C11-C22)	<0.30		0.30	mg/L	09-FEB-17	09-FEB-17	R3650216
TEH (C23-C60)	<0.50		0.50	mg/L	09-FEB-17	09-FEB-17	R3650216
Surrogate: 2-Bromobenzotrifluoride	88.8		50-150	%	09-FEB-17	09-FEB-17	R3650216
Dissolved Metals in Water by CRC ICPMS							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1887819-7 17-05-170206							
Sampled By: AMBER SALZSAULER on 06-FEB-17 @ 13:10							
Matrix: GW							
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	LAB	SFP				09-FEB-17	R3649261
Aluminum (Al)-Dissolved	<0.0040	DLDS	0.0040	mg/L		09-FEB-17	R3649644
Antimony (Sb)-Dissolved	0.00042	DLDS	0.00020	mg/L		09-FEB-17	R3649644
Arsenic (As)-Dissolved	0.00083	DLDS	0.00020	mg/L		09-FEB-17	R3649644
Barium (Ba)-Dissolved	0.0888	DLDS	0.00010	mg/L		09-FEB-17	R3649644
Beryllium (Be)-Dissolved	<0.00020	DLDS	0.00020	mg/L		09-FEB-17	R3649644
Bismuth (Bi)-Dissolved	<0.00010	DLDS	0.00010	mg/L		09-FEB-17	R3649644
Boron (B)-Dissolved	0.957	DLDS	0.020	mg/L		09-FEB-17	R3649644
Cadmium (Cd)-Dissolved	0.000096	DLDS	0.000010	mg/L		09-FEB-17	R3649644
Calcium (Ca)-Dissolved	188	DLDS	0.10	mg/L		09-FEB-17	R3649644
Cesium (Cs)-Dissolved	<0.000020	DLDS	0.000020	mg/L		09-FEB-17	R3649644
Chromium (Cr)-Dissolved	<0.00020	DLDS	0.00020	mg/L		09-FEB-17	R3649644
Cobalt (Co)-Dissolved	0.00052	DLDS	0.00020	mg/L		09-FEB-17	R3649644
Copper (Cu)-Dissolved	0.00181	DLDS	0.00040	mg/L		09-FEB-17	R3649644
Iron (Fe)-Dissolved	<0.020	DLDS	0.020	mg/L		09-FEB-17	R3649644
Lead (Pb)-Dissolved	<0.00010	DLDS	0.00010	mg/L		09-FEB-17	R3649644
Lithium (Li)-Dissolved	0.0901	DLDS	0.0020	mg/L		09-FEB-17	R3649644
Magnesium (Mg)-Dissolved	90.4	DLDS	0.010	mg/L		09-FEB-17	R3649644
Manganese (Mn)-Dissolved	0.287	DLDS	0.00020	mg/L		09-FEB-17	R3649644
Molybdenum (Mo)-Dissolved	0.00282	DLDS	0.00010	mg/L		09-FEB-17	R3649644
Nickel (Ni)-Dissolved	0.0125	DLDS	0.0010	mg/L		09-FEB-17	R3649644
Phosphorus (P)-Dissolved	<0.10	DLDS	0.10	mg/L		09-FEB-17	R3649644
Potassium (K)-Dissolved	8.32	DLDS	0.10	mg/L		09-FEB-17	R3649644
Rubidium (Rb)-Dissolved	0.00221	DLDS	0.00040	mg/L		09-FEB-17	R3649644
Selenium (Se)-Dissolved	0.00680	DLDS	0.00010	mg/L		09-FEB-17	R3649644
Silicon (Si)-Dissolved	7.88	DLDS	0.10	mg/L		09-FEB-17	R3649644
Silver (Ag)-Dissolved	<0.000020	DLDS	0.000020	mg/L		09-FEB-17	R3649644
Sodium (Na)-Dissolved	84.7	DLDS	0.10	mg/L		09-FEB-17	R3649644
Strontium (Sr)-Dissolved	0.810	DLDS	0.00040	mg/L		09-FEB-17	R3649644
Sulfur (S)-Dissolved	193	DLDS	1.0	mg/L		09-FEB-17	R3649644
Tellurium (Te)-Dissolved	<0.00040	DLDS	0.00040	mg/L		09-FEB-17	R3649644
Thallium (Tl)-Dissolved	0.000052	DLDS	0.000020	mg/L		09-FEB-17	R3649644
Thorium (Th)-Dissolved	<0.00020	DLDS	0.00020	mg/L		09-FEB-17	R3649644
Tin (Sn)-Dissolved	0.00044	DLDS	0.00020	mg/L		09-FEB-17	R3649644
Titanium (Ti)-Dissolved	<0.00060	DLDS	0.00060	mg/L		09-FEB-17	R3649644
Tungsten (W)-Dissolved	<0.00020	DLDS	0.00020	mg/L		09-FEB-17	R3649644
Uranium (U)-Dissolved	0.0167	DLDS	0.000020	mg/L		09-FEB-17	R3649644
Vanadium (V)-Dissolved	<0.0010	DLDS	0.0010	mg/L		09-FEB-17	R3649644
Zinc (Zn)-Dissolved	0.0045	DLDS	0.0020	mg/L		09-FEB-17	R3649644
Zirconium (Zr)-Dissolved	<0.00060	DLDS	0.00060	mg/L		09-FEB-17	R3649644
EPA 8260 Volatile Organics							
Dichlorodifluoromethane	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
Chloromethane	<0.010		0.010	mg/L	08-FEB-17	08-FEB-17	R3648964
Vinyl chloride	<0.00050		0.00050	mg/L	08-FEB-17	08-FEB-17	R3648964
Bromomethane	<0.010		0.010	mg/L	08-FEB-17	08-FEB-17	R3648964
Chloroethane	<0.010		0.010	mg/L	08-FEB-17	08-FEB-17	R3648964
Trichlorofluoromethane	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
1,1-Dichloroethene	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
Methylene chloride	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
trans-1,2-Dichloroethene	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
1,1-Dichloroethane	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1887819-7 17-05-170206							
Sampled By: AMBER SALZSAULER on 06-FEB-17 @ 13:10							
Matrix: GW							
EPA 8260 Volatile Organics							
2,2-Dichloropropane	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
cis-1,2-Dichloroethene	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
Chloroform	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
Bromochloromethane	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
1,2-Dichloroethane	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
1,1,1-Trichloroethane	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
1,1-Dichloropropene	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
Carbon tetrachloride	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
Benzene	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
Trichloroethene	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
1,2-Dichloropropane	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
Bromodichloromethane	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
Dibromomethane	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
cis-1,3-Dichloropropene	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
trans-1,3-Dichloropropene	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
Toluene	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
1,1,2-Trichloroethane	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
1,3-Dichloropropane	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
Tetrachloroethene	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
Dibromochloromethane	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
1,2-Dibromoethane	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
Chlorobenzene	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
Ethylbenzene	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
1,1,1,2-Tetrachloroethane	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
m+p-Xylenes	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
o-Xylene	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
Styrene	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
Bromoform	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
Isopropylbenzene	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
1,1,2,2-Tetrachloroethane	<0.0050		0.0050	mg/L	08-FEB-17	08-FEB-17	R3648964
1,2,3-Trichloropropane	<0.0020		0.0020	mg/L	08-FEB-17	08-FEB-17	R3648964
n-Propylbenzene	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
Bromobenzene	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
1,3,5-Trimethylbenzene	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
2-Chlorotoluene	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
4-Chlorotoluene	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
tert-Butylbenzene	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
1,2,4-Trimethylbenzene	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
sec-Butylbenzene	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
p-Isopropyltoluene	0.0148		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
1,3-Dichlorobenzene	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
1,4-Dichlorobenzene	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
n-Butylbenzene	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
1,2-Dichlorobenzene	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
1,2-Dibromo-3-chloropropane	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
1,2,4-Trichlorobenzene	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
Hexachlorobutadiene	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
1,2,3-Trichlorobenzene	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
Surrogate: 1,4-Difluorobenzene	98.7		70-130	%	08-FEB-17	08-FEB-17	R3648964
Surrogate: 4-Bromofluorobenzene	75.6		70-130	%	08-FEB-17	08-FEB-17	R3648964
Surrogate: 3,4-Dichlorotoluene	128.8		70-130	%	08-FEB-17	08-FEB-17	R3648964

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1887819-7 17-05-170206							
Sampled By: AMBER SALZSAULER on 06-FEB-17 @ 13:10							
Matrix: GW							
PAH & Carcinogenic List							
Naphthalene	0.000066		0.000050	mg/L	09-FEB-17	10-FEB-17	R3650940
Quinoline	<0.000020		0.000020	mg/L	09-FEB-17	10-FEB-17	R3650940
Acenaphthene	<0.000020		0.000020	mg/L	09-FEB-17	10-FEB-17	R3650940
Fluorene	<0.000020		0.000020	mg/L	09-FEB-17	10-FEB-17	R3650940
Phenanthrene	<0.000050		0.000050	mg/L	09-FEB-17	10-FEB-17	R3650940
Anthracene	<0.000010		0.000010	mg/L	09-FEB-17	10-FEB-17	R3650940
Acridine	<0.000020		0.000020	mg/L	09-FEB-17	10-FEB-17	R3650940
Fluoranthene	<0.000020		0.000020	mg/L	09-FEB-17	10-FEB-17	R3650940
Pyrene	<0.000010		0.000010	mg/L	09-FEB-17	10-FEB-17	R3650940
Benzo(a)anthracene	<0.000010		0.000010	mg/L	09-FEB-17	10-FEB-17	R3650940
Chrysene	<0.000020		0.000020	mg/L	09-FEB-17	10-FEB-17	R3650940
Benzo(b&j)fluoranthene	<0.000010		0.000010	mg/L	09-FEB-17	10-FEB-17	R3650940
Benzo(k)fluoranthene	<0.000010		0.000010	mg/L	09-FEB-17	10-FEB-17	R3650940
Benzo(a)pyrene	<0.0000050		0.0000050	mg/L	09-FEB-17	10-FEB-17	R3650940
Benzo(g,h,i)perylene	<0.000020		0.000020	mg/L	09-FEB-17	10-FEB-17	R3650940
Indeno(1,2,3-cd)pyrene	<0.000010		0.000010	mg/L	09-FEB-17	10-FEB-17	R3650940
Dibenzo(a,h)anthracene	<0.0000050		0.0000050	mg/L	09-FEB-17	10-FEB-17	R3650940
B(A)P Total Potency Equivalent	<0.000010		0.000010	mg/L	09-FEB-17	10-FEB-17	R3650940
Surrogate: d10-Acenaphthene	66.6		60-130	%	09-FEB-17	10-FEB-17	R3650940
Surrogate: d10-Phenanthrene	66.1		60-130	%	09-FEB-17	10-FEB-17	R3650940
Surrogate: d12-Chrysene	62.5		60-130	%	09-FEB-17	10-FEB-17	R3650940
L1887819-8 17-07-170206							
Sampled By: AMBER SALZSAULER on 06-FEB-17 @ 13:45							
Matrix: GW							
BTEX, F1-F4 and SK Reg. PHC's							
BTEX and F1 (C6-C10)							
Benzene	<0.00050		0.00050	mg/L	11-FEB-17	11-FEB-17	R3650416
Toluene	<0.00050		0.00050	mg/L	11-FEB-17	11-FEB-17	R3650416
Ethylbenzene	<0.00050		0.00050	mg/L	11-FEB-17	11-FEB-17	R3650416
o-xylene	<0.00050		0.00050	mg/L	11-FEB-17	11-FEB-17	R3650416
m+p-Xylene	<0.00050		0.00050	mg/L	11-FEB-17	11-FEB-17	R3650416
Xylenes	<0.00071		0.00071	mg/L	11-FEB-17	11-FEB-17	R3650416
F1(C6-C10)	<0.10		0.10	mg/L	11-FEB-17	11-FEB-17	R3650416
F1-BTEX	<0.10		0.10	mg/L	11-FEB-17	11-FEB-17	R3650416
Surrogate: 4-Bromofluorobenzene	89.0		70-130	%	11-FEB-17	11-FEB-17	R3650416
Surrogate: 3,4-Dichlorotoluene	106.3		70-130	%	11-FEB-17	11-FEB-17	R3650416
Surrogate: 1,4-Difluorobenzene	100.4		70-130	%	11-FEB-17	11-FEB-17	R3650416
CCME Total Hydrocarbons							
Total Hydrocarbons (C6-C50)	<1.0		1.0	mg/L		13-FEB-17	
Extractable Hydrocarbons by GC-FID							
F2 (C10-C16)	<0.20		0.20	mg/L	09-FEB-17	10-FEB-17	R3650216
F3 (C16-C34)	<0.30		0.30	mg/L	09-FEB-17	10-FEB-17	R3650216
F4 (C34-C50)	<0.30		0.30	mg/L	09-FEB-17	10-FEB-17	R3650216
TEH (C11-C22)	<0.30		0.30	mg/L	09-FEB-17	10-FEB-17	R3650216
TEH (C23-C60)	<0.50		0.50	mg/L	09-FEB-17	10-FEB-17	R3650216
Surrogate: 2-Bromobenzotrifluoride	96.9		50-150	%	09-FEB-17	10-FEB-17	R3650216
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	LAB	SFP				09-FEB-17	R3649261
Aluminum (Al)-Dissolved	<0.0020		0.0020	mg/L		09-FEB-17	R3649644
Antimony (Sb)-Dissolved	0.00026		0.00010	mg/L		09-FEB-17	R3649644

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1887819-8 17-07-170206							
Sampled By: AMBER SALZSAULER on 06-FEB-17 @ 13:45							
Matrix: GW							
Dissolved Metals in Water by CRC ICPMS							
Arsenic (As)-Dissolved	0.00058		0.00010	mg/L		09-FEB-17	R3649644
Barium (Ba)-Dissolved	0.0761		0.000050	mg/L		09-FEB-17	R3649644
Beryllium (Be)-Dissolved	<0.00010		0.00010	mg/L		09-FEB-17	R3649644
Bismuth (Bi)-Dissolved	<0.000050		0.000050	mg/L		09-FEB-17	R3649644
Boron (B)-Dissolved	0.720		0.010	mg/L		09-FEB-17	R3649644
Cadmium (Cd)-Dissolved	0.0000343		0.0000050	mg/L		09-FEB-17	R3649644
Calcium (Ca)-Dissolved	129	DLHC	0.50	mg/L		09-FEB-17	R3649644
Cesium (Cs)-Dissolved	<0.000010		0.000010	mg/L		09-FEB-17	R3649644
Chromium (Cr)-Dissolved	<0.00010		0.00010	mg/L		09-FEB-17	R3649644
Cobalt (Co)-Dissolved	0.00025		0.00010	mg/L		09-FEB-17	R3649644
Copper (Cu)-Dissolved	0.00085		0.00020	mg/L		09-FEB-17	R3649644
Iron (Fe)-Dissolved	<0.010		0.010	mg/L		09-FEB-17	R3649644
Lead (Pb)-Dissolved	<0.000050		0.000050	mg/L		09-FEB-17	R3649644
Lithium (Li)-Dissolved	0.0640		0.0010	mg/L		09-FEB-17	R3649644
Magnesium (Mg)-Dissolved	49.2		0.0050	mg/L		09-FEB-17	R3649644
Manganese (Mn)-Dissolved	0.0493		0.00010	mg/L		09-FEB-17	R3649644
Molybdenum (Mo)-Dissolved	0.00217		0.000050	mg/L		09-FEB-17	R3649644
Nickel (Ni)-Dissolved	0.00241		0.00050	mg/L		09-FEB-17	R3649644
Phosphorus (P)-Dissolved	<0.050		0.050	mg/L		09-FEB-17	R3649644
Potassium (K)-Dissolved	6.38		0.050	mg/L		09-FEB-17	R3649644
Rubidium (Rb)-Dissolved	0.00103		0.00020	mg/L		09-FEB-17	R3649644
Selenium (Se)-Dissolved	0.0157		0.000050	mg/L		09-FEB-17	R3649644
Silicon (Si)-Dissolved	7.29		0.050	mg/L		09-FEB-17	R3649644
Silver (Ag)-Dissolved	<0.000010		0.000010	mg/L		09-FEB-17	R3649644
Sodium (Na)-Dissolved	61.0		0.050	mg/L		09-FEB-17	R3649644
Strontium (Sr)-Dissolved	0.835		0.00020	mg/L		09-FEB-17	R3649644
Sulfur (S)-Dissolved	91.8		0.50	mg/L		09-FEB-17	R3649644
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L		09-FEB-17	R3649644
Thallium (Tl)-Dissolved	0.000019		0.000010	mg/L		09-FEB-17	R3649644
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L		09-FEB-17	R3649644
Tin (Sn)-Dissolved	0.00025		0.00010	mg/L		09-FEB-17	R3649644
Titanium (Ti)-Dissolved	<0.00030		0.00030	mg/L		09-FEB-17	R3649644
Tungsten (W)-Dissolved	<0.00010		0.00010	mg/L		09-FEB-17	R3649644
Uranium (U)-Dissolved	0.00768		0.000010	mg/L		09-FEB-17	R3649644
Vanadium (V)-Dissolved	<0.00050		0.00050	mg/L		09-FEB-17	R3649644
Zinc (Zn)-Dissolved	0.0016		0.0010	mg/L		09-FEB-17	R3649644
Zirconium (Zr)-Dissolved	<0.00030		0.00030	mg/L		09-FEB-17	R3649644
EPA 8260 Volatile Organics							
Dichlorodifluoromethane	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
Chloromethane	<0.010		0.010	mg/L	08-FEB-17	08-FEB-17	R3648964
Vinyl chloride	<0.00050		0.00050	mg/L	08-FEB-17	08-FEB-17	R3648964
Bromomethane	<0.010		0.010	mg/L	08-FEB-17	08-FEB-17	R3648964
Chloroethane	<0.010		0.010	mg/L	08-FEB-17	08-FEB-17	R3648964
Trichlorofluoromethane	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
1,1-Dichloroethene	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
Methylene chloride	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
trans-1,2-Dichloroethene	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
1,1-Dichloroethane	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
2,2-Dichloropropane	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
cis-1,2-Dichloroethene	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
Chloroform	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1887819-8 17-07-170206							
Sampled By: AMBER SALZSAULER on 06-FEB-17 @ 13:45							
Matrix: GW							
EPA 8260 Volatile Organics							
Bromochloromethane	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
1,2-Dichloroethane	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
1,1,1-Trichloroethane	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
1,1-Dichloropropene	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
Carbon tetrachloride	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
Benzene	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
Trichloroethene	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
1,2-Dichloropropane	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
Bromodichloromethane	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
Dibromomethane	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
cis-1,3-Dichloropropene	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
trans-1,3-Dichloropropene	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
Toluene	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
1,1,2-Trichloroethane	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
1,3-Dichloropropane	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
Tetrachloroethene	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
Dibromochloromethane	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
1,2-Dibromoethane	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
Chlorobenzene	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
Ethylbenzene	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
1,1,1,2-Tetrachloroethane	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
m+p-Xylenes	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
o-Xylene	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
Styrene	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
Bromoform	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
Isopropylbenzene	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
1,1,2,2-Tetrachloroethane	<0.0050		0.0050	mg/L	08-FEB-17	08-FEB-17	R3648964
1,2,3-Trichloropropane	<0.0020		0.0020	mg/L	08-FEB-17	08-FEB-17	R3648964
n-Propylbenzene	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
Bromobenzene	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
1,3,5-Trimethylbenzene	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
2-Chlorotoluene	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
4-Chlorotoluene	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
tert-Butylbenzene	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
1,2,4-Trimethylbenzene	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
sec-Butylbenzene	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
p-Isopropyltoluene	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
1,3-Dichlorobenzene	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
1,4-Dichlorobenzene	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
n-Butylbenzene	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
1,2-Dichlorobenzene	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
1,2-Dibromo-3-chloropropane	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
1,2,4-Trichlorobenzene	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
Hexachlorobutadiene	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
1,2,3-Trichlorobenzene	<0.0010		0.0010	mg/L	08-FEB-17	08-FEB-17	R3648964
Surrogate: 1,4-Difluorobenzene	97.8		70-130	%	08-FEB-17	08-FEB-17	R3648964
Surrogate: 4-Bromofluorobenzene	91.6		70-130	%	08-FEB-17	08-FEB-17	R3648964
Surrogate: 3,4-Dichlorotoluene	119.0		70-130	%	08-FEB-17	08-FEB-17	R3648964
PAH & Carcinogenic List							
Naphthalene	<0.000050		0.000050	mg/L	09-FEB-17	10-FEB-17	R3650940
Quinoline	<0.000020		0.000020	mg/L	09-FEB-17	10-FEB-17	R3650940

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1887819-8 17-07-170206							
Sampled By: AMBER SALZSAULER on 06-FEB-17 @ 13:45							
Matrix: GW							
PAH & Carcinogenic List							
Acenaphthene	<0.000020		0.000020	mg/L	09-FEB-17	10-FEB-17	R3650940
Fluorene	<0.000020		0.000020	mg/L	09-FEB-17	10-FEB-17	R3650940
Phenanthrene	0.000120		0.000050	mg/L	09-FEB-17	10-FEB-17	R3650940
Anthracene	0.000022		0.000010	mg/L	09-FEB-17	10-FEB-17	R3650940
Acridine	<0.000020		0.000020	mg/L	09-FEB-17	10-FEB-17	R3650940
Fluoranthene	0.000181		0.000020	mg/L	09-FEB-17	10-FEB-17	R3650940
Pyrene	0.000158		0.000010	mg/L	09-FEB-17	10-FEB-17	R3650940
Benzo(a)anthracene	0.000079		0.000010	mg/L	09-FEB-17	10-FEB-17	R3650940
Chrysene	0.000081		0.000020	mg/L	09-FEB-17	10-FEB-17	R3650940
Benzo(b&j)fluoranthene	0.000099		0.000010	mg/L	09-FEB-17	10-FEB-17	R3650940
Benzo(k)fluoranthene	0.000037		0.000010	mg/L	09-FEB-17	10-FEB-17	R3650940
Benzo(a)pyrene	0.0000691		0.0000050	mg/L	09-FEB-17	10-FEB-17	R3650940
Benzo(g,h,i)perylene	0.000054		0.000020	mg/L	09-FEB-17	10-FEB-17	R3650940
Indeno(1,2,3-cd)pyrene	0.000049		0.000010	mg/L	09-FEB-17	10-FEB-17	R3650940
Dibenzo(a,h)anthracene	0.0000138		0.0000050	mg/L	09-FEB-17	10-FEB-17	R3650940
B(A)P Total Potency Equivalent	0.000111		0.000010	mg/L	09-FEB-17	10-FEB-17	R3650940
Surrogate: d10-Acenaphthene	76.9		60-130	%	09-FEB-17	10-FEB-17	R3650940
Surrogate: d10-Phenanthrene	83.1		60-130	%	09-FEB-17	10-FEB-17	R3650940
Surrogate: d12-Chrysene	82.2		60-130	%	09-FEB-17	10-FEB-17	R3650940
Glycol Screen							
Diethylene Glycol	<5.0		5.0	mg/L	09-FEB-17	09-FEB-17	R3650591
Ethylene Glycol	<10		10	mg/L	09-FEB-17	09-FEB-17	R3650591
Propylene Glycol	<10		10	mg/L	09-FEB-17	09-FEB-17	R3650591
Triethylene Glycol	<10		10	mg/L	09-FEB-17	09-FEB-17	R3650591
L1887819-9 14-1-170206							
Sampled By: AMBER SALZSAULER on 06-FEB-17 @ 14:20							
Matrix: GW							
BTEX, F1-F4 and SK Reg. PHC's							
BTEX and F1 (C6-C10)							
Benzene	<0.00050		0.00050	mg/L	11-FEB-17	11-FEB-17	R3650416
Toluene	<0.00050		0.00050	mg/L	11-FEB-17	11-FEB-17	R3650416
Ethylbenzene	<0.00050		0.00050	mg/L	11-FEB-17	11-FEB-17	R3650416
o-xylene	<0.00050		0.00050	mg/L	11-FEB-17	11-FEB-17	R3650416
m+p-Xylene	<0.00050		0.00050	mg/L	11-FEB-17	11-FEB-17	R3650416
Xylenes	<0.00071		0.00071	mg/L	11-FEB-17	11-FEB-17	R3650416
F1(C6-C10)	<0.10		0.10	mg/L	11-FEB-17	11-FEB-17	R3650416
F1-BTEX	<0.10		0.10	mg/L	11-FEB-17	11-FEB-17	R3650416
Surrogate: 4-Bromofluorobenzene	92.0		70-130	%	11-FEB-17	11-FEB-17	R3650416
Surrogate: 3,4-Dichlorotoluene	100.9		70-130	%	11-FEB-17	11-FEB-17	R3650416
Surrogate: 1,4-Difluorobenzene	100.7		70-130	%	11-FEB-17	11-FEB-17	R3650416
CCME Total Hydrocarbons							
Total Hydrocarbons (C6-C50)	<1.0		1.0	mg/L		13-FEB-17	
Extractable Hydrocarbons by GC-FID							
F2 (C10-C16)	<0.20		0.20	mg/L	09-FEB-17	10-FEB-17	R3650216
F3 (C16-C34)	<0.30		0.30	mg/L	09-FEB-17	10-FEB-17	R3650216
F4 (C34-C50)	<0.30		0.30	mg/L	09-FEB-17	10-FEB-17	R3650216
TEH (C11-C22)	<0.30		0.30	mg/L	09-FEB-17	10-FEB-17	R3650216
TEH (C23-C60)	<0.50		0.50	mg/L	09-FEB-17	10-FEB-17	R3650216
Surrogate: 2-Bromobenzotrifluoride	94.9		50-150	%	09-FEB-17	10-FEB-17	R3650216
Dissolved Metals in Water by CRC ICPMS							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1887819-9 14-1-170206							
Sampled By: AMBER SALZSAULER on 06-FEB-17 @ 14:20							
Matrix: GW							
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	LAB	SFP				09-FEB-17	R3649261
Aluminum (Al)-Dissolved	<0.0040	DLDS	0.0040	mg/L		09-FEB-17	R3649644
Antimony (Sb)-Dissolved	<0.00020	DLDS	0.00020	mg/L		09-FEB-17	R3649644
Arsenic (As)-Dissolved	0.00020	DLDS	0.00020	mg/L		09-FEB-17	R3649644
Barium (Ba)-Dissolved	0.0738	DLDS	0.00010	mg/L		09-FEB-17	R3649644
Beryllium (Be)-Dissolved	<0.00020	DLDS	0.00020	mg/L		09-FEB-17	R3649644
Bismuth (Bi)-Dissolved	<0.00010	DLDS	0.00010	mg/L		09-FEB-17	R3649644
Boron (B)-Dissolved	0.625	DLDS	0.020	mg/L		09-FEB-17	R3649644
Cadmium (Cd)-Dissolved	0.000174	DLDS	0.000010	mg/L		09-FEB-17	R3649644
Calcium (Ca)-Dissolved	139	DLDS	0.10	mg/L		09-FEB-17	R3649644
Cesium (Cs)-Dissolved	<0.000020	DLDS	0.000020	mg/L		09-FEB-17	R3649644
Chromium (Cr)-Dissolved	0.00021	DLDS	0.00020	mg/L		09-FEB-17	R3649644
Cobalt (Co)-Dissolved	0.00029	DLDS	0.00020	mg/L		09-FEB-17	R3649644
Copper (Cu)-Dissolved	0.00151	DLDS	0.00040	mg/L		09-FEB-17	R3649644
Iron (Fe)-Dissolved	<0.020	DLDS	0.020	mg/L		09-FEB-17	R3649644
Lead (Pb)-Dissolved	<0.00010	DLDS	0.00010	mg/L		09-FEB-17	R3649644
Lithium (Li)-Dissolved	0.113	DLDS	0.0020	mg/L		09-FEB-17	R3649644
Magnesium (Mg)-Dissolved	101	DLDS	0.010	mg/L		09-FEB-17	R3649644
Manganese (Mn)-Dissolved	0.00167	DLDS	0.00020	mg/L		09-FEB-17	R3649644
Molybdenum (Mo)-Dissolved	0.00260	DLDS	0.00010	mg/L		09-FEB-17	R3649644
Nickel (Ni)-Dissolved	0.0094	DLDS	0.0010	mg/L		09-FEB-17	R3649644
Phosphorus (P)-Dissolved	<0.10	DLDS	0.10	mg/L		09-FEB-17	R3649644
Potassium (K)-Dissolved	4.43	DLDS	0.10	mg/L		09-FEB-17	R3649644
Rubidium (Rb)-Dissolved	<0.00040	DLDS	0.00040	mg/L		09-FEB-17	R3649644
Selenium (Se)-Dissolved	0.00661	DLDS	0.00010	mg/L		09-FEB-17	R3649644
Silicon (Si)-Dissolved	8.36	DLDS	0.10	mg/L		09-FEB-17	R3649644
Silver (Ag)-Dissolved	<0.000020	DLDS	0.000020	mg/L		09-FEB-17	R3649644
Sodium (Na)-Dissolved	92.1	DLDS	0.10	mg/L		09-FEB-17	R3649644
Strontium (Sr)-Dissolved	0.713	DLDS	0.00040	mg/L		09-FEB-17	R3649644
Sulfur (S)-Dissolved	79.0	DLDS	1.0	mg/L		09-FEB-17	R3649644
Tellurium (Te)-Dissolved	<0.00040	DLDS	0.00040	mg/L		09-FEB-17	R3649644
Thallium (Tl)-Dissolved	0.000033	DLDS	0.000020	mg/L		09-FEB-17	R3649644
Thorium (Th)-Dissolved	<0.00020	DLDS	0.00020	mg/L		09-FEB-17	R3649644
Tin (Sn)-Dissolved	<0.00020	DLDS	0.00020	mg/L		09-FEB-17	R3649644
Titanium (Ti)-Dissolved	<0.00060	DLDS	0.00060	mg/L		09-FEB-17	R3649644
Tungsten (W)-Dissolved	<0.00020	DLDS	0.00020	mg/L		09-FEB-17	R3649644
Uranium (U)-Dissolved	0.0123	DLDS	0.000020	mg/L		09-FEB-17	R3649644
Vanadium (V)-Dissolved	<0.0010	DLDS	0.0010	mg/L		09-FEB-17	R3649644
Zinc (Zn)-Dissolved	<0.0020	DLDS	0.0020	mg/L		09-FEB-17	R3649644
Zirconium (Zr)-Dissolved	<0.00060	DLDS	0.00060	mg/L		09-FEB-17	R3649644
PAH & Carcinogenic List							
Naphthalene	<0.000050		0.000050	mg/L	09-FEB-17	10-FEB-17	R3650940
Quinoline	<0.000020		0.000020	mg/L	09-FEB-17	10-FEB-17	R3650940
Acenaphthene	<0.000020		0.000020	mg/L	09-FEB-17	10-FEB-17	R3650940
Fluorene	<0.000020		0.000020	mg/L	09-FEB-17	10-FEB-17	R3650940
Phenanthrene	<0.000050		0.000050	mg/L	09-FEB-17	10-FEB-17	R3650940
Anthracene	<0.000010		0.000010	mg/L	09-FEB-17	10-FEB-17	R3650940
Acridine	<0.000020		0.000020	mg/L	09-FEB-17	10-FEB-17	R3650940
Fluoranthene	<0.000020		0.000020	mg/L	09-FEB-17	10-FEB-17	R3650940
Pyrene	<0.000010		0.000010	mg/L	09-FEB-17	10-FEB-17	R3650940
Benzo(a)anthracene	<0.000010		0.000010	mg/L	09-FEB-17	10-FEB-17	R3650940

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1887819-9 14-1-170206							
Sampled By: AMBER SALZSAULER on 06-FEB-17 @ 14:20							
Matrix: GW							
PAH & Carcinogenic List							
Chrysene	<0.000020		0.000020	mg/L	09-FEB-17	10-FEB-17	R3650940
Benzo(b&j)fluoranthene	<0.000010		0.000010	mg/L	09-FEB-17	10-FEB-17	R3650940
Benzo(k)fluoranthene	<0.000010		0.000010	mg/L	09-FEB-17	10-FEB-17	R3650940
Benzo(a)pyrene	<0.0000050		0.0000050	mg/L	09-FEB-17	10-FEB-17	R3650940
Benzo(g,h,i)perylene	<0.000020		0.000020	mg/L	09-FEB-17	10-FEB-17	R3650940
Indeno(1,2,3-cd)pyrene	<0.000010		0.000010	mg/L	09-FEB-17	10-FEB-17	R3650940
Dibenzo(a,h)anthracene	<0.0000050		0.0000050	mg/L	09-FEB-17	10-FEB-17	R3650940
B(A)P Total Potency Equivalent	<0.000010		0.000010	mg/L	09-FEB-17	10-FEB-17	R3650940
Surrogate: d10-Acenaphthene	74.2		60-130	%	09-FEB-17	10-FEB-17	R3650940
Surrogate: d10-Phenanthrene	79.6		60-130	%	09-FEB-17	10-FEB-17	R3650940
Surrogate: d12-Chrysene	82.7		60-130	%	09-FEB-17	10-FEB-17	R3650940
L1887819-10 14-20-170206							
Sampled By: AMBER SALZSAULER on 06-FEB-17 @ 15:40							
Matrix: GW							
BTEX, F1-F4 and SK Reg. PHC's							
BTEX and F1 (C6-C10)							
Benzene	<0.00050		0.00050	mg/L	11-FEB-17	11-FEB-17	R3650416
Toluene	<0.00050		0.00050	mg/L	11-FEB-17	11-FEB-17	R3650416
Ethylbenzene	<0.00050		0.00050	mg/L	11-FEB-17	11-FEB-17	R3650416
o-xylene	<0.00050		0.00050	mg/L	11-FEB-17	11-FEB-17	R3650416
m+p-Xylene	<0.00050		0.00050	mg/L	11-FEB-17	11-FEB-17	R3650416
Xylenes	<0.00071		0.00071	mg/L	11-FEB-17	11-FEB-17	R3650416
F1(C6-C10)	<0.10		0.10	mg/L	11-FEB-17	11-FEB-17	R3650416
F1-BTEX	<0.10		0.10	mg/L	11-FEB-17	11-FEB-17	R3650416
Surrogate: 4-Bromofluorobenzene	91.2		70-130	%	11-FEB-17	11-FEB-17	R3650416
Surrogate: 3,4-Dichlorotoluene	110.6		70-130	%	11-FEB-17	11-FEB-17	R3650416
Surrogate: 1,4-Difluorobenzene	100.7		70-130	%	11-FEB-17	11-FEB-17	R3650416
CCME Total Hydrocarbons							
Total Hydrocarbons (C6-C50)	<1.0		1.0	mg/L		13-FEB-17	
Extractable Hydrocarbons by GC-FID							
F2 (C10-C16)	<0.20		0.20	mg/L	09-FEB-17	10-FEB-17	R3650216
F3 (C16-C34)	<0.30		0.30	mg/L	09-FEB-17	10-FEB-17	R3650216
F4 (C34-C50)	<0.30		0.30	mg/L	09-FEB-17	10-FEB-17	R3650216
TEH (C11-C22)	<0.30		0.30	mg/L	09-FEB-17	10-FEB-17	R3650216
TEH (C23-C60)	<0.50		0.50	mg/L	09-FEB-17	10-FEB-17	R3650216
Surrogate: 2-Bromobenzotrifluoride	89.9		50-150	%	09-FEB-17	10-FEB-17	R3650216
PAH & Carcinogenic List							
Naphthalene	<0.000050		0.000050	mg/L	09-FEB-17	10-FEB-17	R3650940
Quinoline	<0.000020		0.000020	mg/L	09-FEB-17	10-FEB-17	R3650940
Acenaphthene	<0.000020		0.000020	mg/L	09-FEB-17	10-FEB-17	R3650940
Fluorene	<0.000020		0.000020	mg/L	09-FEB-17	10-FEB-17	R3650940
Phenanthrene	<0.000050		0.000050	mg/L	09-FEB-17	10-FEB-17	R3650940
Anthracene	<0.000010		0.000010	mg/L	09-FEB-17	10-FEB-17	R3650940
Acridine	<0.000020		0.000020	mg/L	09-FEB-17	10-FEB-17	R3650940
Fluoranthene	<0.000020		0.000020	mg/L	09-FEB-17	10-FEB-17	R3650940
Pyrene	<0.000010		0.000010	mg/L	09-FEB-17	10-FEB-17	R3650940
Benzo(a)anthracene	<0.000010		0.000010	mg/L	09-FEB-17	10-FEB-17	R3650940
Chrysene	<0.000020		0.000020	mg/L	09-FEB-17	10-FEB-17	R3650940
Benzo(b&j)fluoranthene	<0.000010		0.000010	mg/L	09-FEB-17	10-FEB-17	R3650940
Benzo(k)fluoranthene	<0.000010		0.000010	mg/L	09-FEB-17	10-FEB-17	R3650940

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1887819-10 14-20-170206							
Sampled By: AMBER SALZSAULER on 06-FEB-17 @ 15:40							
Matrix: GW							
PAH & Carcinogenic List							
Benzo(a)pyrene	<0.0000050		0.0000050	mg/L	09-FEB-17	10-FEB-17	R3650940
Benzo(g,h,i)perylene	<0.000020		0.000020	mg/L	09-FEB-17	10-FEB-17	R3650940
Indeno(1,2,3-cd)pyrene	<0.000010		0.000010	mg/L	09-FEB-17	10-FEB-17	R3650940
Dibenzo(a,h)anthracene	<0.0000050		0.0000050	mg/L	09-FEB-17	10-FEB-17	R3650940
B(A)P Total Potency Equivalent	<0.000010		0.000010	mg/L	09-FEB-17	10-FEB-17	R3650940
Surrogate: d10-Acenaphthene	73.4		60-130	%	09-FEB-17	10-FEB-17	R3650940
Surrogate: d10-Phenanthrene	79.5		60-130	%	09-FEB-17	10-FEB-17	R3650940
Surrogate: d12-Chrysene	76.0		60-130	%	09-FEB-17	10-FEB-17	R3650940
L1887819-11 17-12-170206							
Sampled By: AMBER SALZSAULER on 06-FEB-17 @ 15:20							
Matrix: GW							
BTEX, F1-F4 and SK Reg. PHC's							
BTEX and F1 (C6-C10)							
Benzene	<0.00050		0.00050	mg/L	11-FEB-17	11-FEB-17	R3650416
Toluene	<0.00050		0.00050	mg/L	11-FEB-17	11-FEB-17	R3650416
Ethylbenzene	<0.00050		0.00050	mg/L	11-FEB-17	11-FEB-17	R3650416
o-xylene	<0.00050		0.00050	mg/L	11-FEB-17	11-FEB-17	R3650416
m+p-Xylene	<0.00050		0.00050	mg/L	11-FEB-17	11-FEB-17	R3650416
Xylenes	<0.00071		0.00071	mg/L	11-FEB-17	11-FEB-17	R3650416
F1(C6-C10)	<0.10		0.10	mg/L	11-FEB-17	11-FEB-17	R3650416
F1-BTEX	<0.10		0.10	mg/L	11-FEB-17	11-FEB-17	R3650416
Surrogate: 4-Bromofluorobenzene	89.8		70-130	%	11-FEB-17	11-FEB-17	R3650416
Surrogate: 3,4-Dichlorotoluene	117.9		70-130	%	11-FEB-17	11-FEB-17	R3650416
Surrogate: 1,4-Difluorobenzene	99.9		70-130	%	11-FEB-17	11-FEB-17	R3650416
CCME Total Hydrocarbons							
Total Hydrocarbons (C6-C50)	<1.0		1.0	mg/L		14-FEB-17	
Extractable Hydrocarbons by GC-FID							
F2 (C10-C16)	<0.20		0.20	mg/L	13-FEB-17	13-FEB-17	R3651492
F3 (C16-C34)	<0.30		0.30	mg/L	13-FEB-17	13-FEB-17	R3651492
F4 (C34-C50)	<0.30		0.30	mg/L	13-FEB-17	13-FEB-17	R3651492
TEH (C11-C22)	<0.30		0.30	mg/L	13-FEB-17	13-FEB-17	R3651492
TEH (C23-C60)	<0.50		0.50	mg/L	13-FEB-17	13-FEB-17	R3651492
Surrogate: 2-Bromobenzotrifluoride	91.9		50-150	%	13-FEB-17	13-FEB-17	R3651492
Single Metal in Water by ICPMS (Diss.)							
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	LAB	SFP				09-FEB-17	R3649261
Lead (Pb)-Dissolved	<0.000050		0.000050	mg/L		09-FEB-17	R3649644
PAH & Carcinogenic List							
Naphthalene	<0.000050		0.000050	mg/L	13-FEB-17	13-FEB-17	R3650940
Quinoline	<0.000020		0.000020	mg/L	13-FEB-17	13-FEB-17	R3650940
Acenaphthene	<0.000020		0.000020	mg/L	13-FEB-17	13-FEB-17	R3650940
Fluorene	<0.000020		0.000020	mg/L	13-FEB-17	13-FEB-17	R3650940
Phenanthrene	<0.000050		0.000050	mg/L	13-FEB-17	13-FEB-17	R3650940
Anthracene	<0.000010		0.000010	mg/L	13-FEB-17	13-FEB-17	R3650940
Acridine	<0.000020		0.000020	mg/L	13-FEB-17	13-FEB-17	R3650940
Fluoranthene	<0.000020		0.000020	mg/L	13-FEB-17	13-FEB-17	R3650940
Pyrene	<0.000010		0.000010	mg/L	13-FEB-17	13-FEB-17	R3650940
Benzo(a)anthracene	<0.000010		0.000010	mg/L	13-FEB-17	13-FEB-17	R3650940
Chrysene	<0.000020		0.000020	mg/L	13-FEB-17	13-FEB-17	R3650940
Benzo(b&j)fluoranthene	<0.000010		0.000010	mg/L	13-FEB-17	13-FEB-17	R3650940

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1887819-11 17-12-170206							
Sampled By: AMBER SALZSAULER on 06-FEB-17 @ 15:20							
Matrix: GW							
PAH & Carcinogenic List							
Benzo(k)fluoranthene	<0.000010		0.000010	mg/L	13-FEB-17	13-FEB-17	R3650940
Benzo(a)pyrene	<0.0000050		0.0000050	mg/L	13-FEB-17	13-FEB-17	R3650940
Benzo(g,h,i)perylene	<0.000020		0.000020	mg/L	13-FEB-17	13-FEB-17	R3650940
Indeno(1,2,3-cd)pyrene	<0.000010		0.000010	mg/L	13-FEB-17	13-FEB-17	R3650940
Dibenzo(a,h)anthracene	<0.0000050		0.0000050	mg/L	13-FEB-17	13-FEB-17	R3650940
B(A)P Total Potency Equivalent	<0.000010		0.000010	mg/L	13-FEB-17	13-FEB-17	R3650940
Surrogate: d10-Acenaphthene	77.9		60-130	%	13-FEB-17	13-FEB-17	R3650940
Surrogate: d10-Phenanthrene	71.9		60-130	%	13-FEB-17	13-FEB-17	R3650940
Surrogate: d12-Chrysene	64.6		60-130	%	13-FEB-17	13-FEB-17	R3650940
L1887819-12 17-09-170206							
Sampled By: AMBER SALZSAULER on 06-FEB-17 @ 12:15							
Matrix: GW							
BTEX, F1-F4 and SK Reg. PHC's							
BTEX and F1 (C6-C10)							
Benzene	<0.00050		0.00050	mg/L	11-FEB-17	11-FEB-17	R3650416
Toluene	<0.00050		0.00050	mg/L	11-FEB-17	11-FEB-17	R3650416
Ethylbenzene	<0.00050		0.00050	mg/L	11-FEB-17	11-FEB-17	R3650416
o-xylene	<0.00050		0.00050	mg/L	11-FEB-17	11-FEB-17	R3650416
m+p-Xylene	<0.00050		0.00050	mg/L	11-FEB-17	11-FEB-17	R3650416
Xylenes	<0.00071		0.00071	mg/L	11-FEB-17	11-FEB-17	R3650416
F1(C6-C10)	<0.10		0.10	mg/L	11-FEB-17	11-FEB-17	R3650416
F1-BTEX	<0.10		0.10	mg/L	11-FEB-17	11-FEB-17	R3650416
Surrogate: 4-Bromofluorobenzene	88.4		70-130	%	11-FEB-17	11-FEB-17	R3650416
Surrogate: 3,4-Dichlorotoluene	113.8		70-130	%	11-FEB-17	11-FEB-17	R3650416
Surrogate: 1,4-Difluorobenzene	98.9		70-130	%	11-FEB-17	11-FEB-17	R3650416
CCME Total Hydrocarbons							
Total Hydrocarbons (C6-C50)	<1.0		1.0	mg/L		14-FEB-17	
Extractable Hydrocarbons by GC-FID							
F2 (C10-C16)	0.26		0.20	mg/L	13-FEB-17	13-FEB-17	R3651492
F3 (C16-C34)	<0.30		0.30	mg/L	13-FEB-17	13-FEB-17	R3651492
F4 (C34-C50)	<0.30		0.30	mg/L	13-FEB-17	13-FEB-17	R3651492
TEH (C11-C22)	<0.30		0.30	mg/L	13-FEB-17	13-FEB-17	R3651492
TEH (C23-C60)	<0.50		0.50	mg/L	13-FEB-17	13-FEB-17	R3651492
Surrogate: 2-Bromobenzotrifluoride	88.9		50-150	%	13-FEB-17	13-FEB-17	R3651492
Single Metal in Water by ICPMS (Diss.)							
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	LAB	SFP				09-FEB-17	R3649261
Lead (Pb)-Dissolved	0.000064		0.000050	mg/L		09-FEB-17	R3649644
PAH & Carcinogenic List							
Naphthalene	0.00169		0.000050	mg/L	13-FEB-17	13-FEB-17	R3650940
Quinoline	<0.000080	DLCI	0.000080	mg/L	13-FEB-17	13-FEB-17	R3650940
Acenaphthene	0.000115		0.000020	mg/L	13-FEB-17	13-FEB-17	R3650940
Fluorene	0.000252		0.000020	mg/L	13-FEB-17	13-FEB-17	R3650940
Phenanthrene	0.000107		0.000050	mg/L	13-FEB-17	13-FEB-17	R3650940
Anthracene	<0.000030	DLQ	0.000030	mg/L	13-FEB-17	13-FEB-17	R3650940
Acridine	<0.000040	DLQ	0.000040	mg/L	13-FEB-17	13-FEB-17	R3650940
Fluoranthene	<0.000020		0.000020	mg/L	13-FEB-17	13-FEB-17	R3650940
Pyrene	<0.000010		0.000010	mg/L	13-FEB-17	13-FEB-17	R3650940
Benzo(a)anthracene	<0.000010		0.000010	mg/L	13-FEB-17	13-FEB-17	R3650940
Chrysene	<0.000020		0.000020	mg/L	13-FEB-17	13-FEB-17	R3650940

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1887819-12 17-09-170206							
Sampled By: AMBER SALZSAULER on 06-FEB-17 @ 12:15							
Matrix: GW							
PAH & Carcinogenic List							
Benzo(b&j)fluoranthene	<0.000010		0.000010	mg/L	13-FEB-17	13-FEB-17	R3650940
Benzo(k)fluoranthene	<0.000010		0.000010	mg/L	13-FEB-17	13-FEB-17	R3650940
Benzo(a)pyrene	<0.0000050		0.0000050	mg/L	13-FEB-17	13-FEB-17	R3650940
Benzo(g,h,i)perylene	<0.000020		0.000020	mg/L	13-FEB-17	13-FEB-17	R3650940
Indeno(1,2,3-cd)pyrene	<0.000010		0.000010	mg/L	13-FEB-17	13-FEB-17	R3650940
Dibenzo(a,h)anthracene	<0.0000050		0.0000050	mg/L	13-FEB-17	13-FEB-17	R3650940
B(A)P Total Potency Equivalent	<0.000010		0.000010	mg/L	13-FEB-17	13-FEB-17	R3650940
Surrogate: d10-Acenaphthene	75.5		60-130	%	13-FEB-17	13-FEB-17	R3650940
Surrogate: d10-Phenanthrene	70.4		60-130	%	13-FEB-17	13-FEB-17	R3650940
Surrogate: d12-Chrysene	61.2		60-130	%	13-FEB-17	13-FEB-17	R3650940
L1887819-13 17-10D-170206							
Sampled By: AMBER SALZSAULER on 06-FEB-17 @ 10:00							
Matrix: GW							
BTEX, F1-F4 and SK Reg. PHC's							
BTEX and F1 (C6-C10)							
Benzene	<0.00050		0.00050	mg/L	11-FEB-17	11-FEB-17	R3650416
Toluene	<0.00050		0.00050	mg/L	11-FEB-17	11-FEB-17	R3650416
Ethylbenzene	<0.00050		0.00050	mg/L	11-FEB-17	11-FEB-17	R3650416
o-xylene	<0.00050		0.00050	mg/L	11-FEB-17	11-FEB-17	R3650416
m+p-Xylene	<0.00050		0.00050	mg/L	11-FEB-17	11-FEB-17	R3650416
Xylenes	<0.00071		0.00071	mg/L	11-FEB-17	11-FEB-17	R3650416
F1(C6-C10)	<0.10		0.10	mg/L	11-FEB-17	11-FEB-17	R3650416
F1-BTEX	<0.10		0.10	mg/L	11-FEB-17	11-FEB-17	R3650416
Surrogate: 4-Bromofluorobenzene	89.4		70-130	%	11-FEB-17	11-FEB-17	R3650416
Surrogate: 3,4-Dichlorotoluene	107.9		70-130	%	11-FEB-17	11-FEB-17	R3650416
Surrogate: 1,4-Difluorobenzene	99.7		70-130	%	11-FEB-17	11-FEB-17	R3650416
CCME Total Hydrocarbons							
Total Hydrocarbons (C6-C50)	<1.0		1.0	mg/L		14-FEB-17	
Extractable Hydrocarbons by GC-FID							
F2 (C10-C16)	<0.20		0.20	mg/L	13-FEB-17	13-FEB-17	R3651492
F3 (C16-C34)	<0.30		0.30	mg/L	13-FEB-17	13-FEB-17	R3651492
F4 (C34-C50)	<0.30		0.30	mg/L	13-FEB-17	13-FEB-17	R3651492
TEH (C11-C22)	<0.30		0.30	mg/L	13-FEB-17	13-FEB-17	R3651492
TEH (C23-C60)	<0.50		0.50	mg/L	13-FEB-17	13-FEB-17	R3651492
Surrogate: 2-Bromobenzotrifluoride	92.8		50-150	%	13-FEB-17	13-FEB-17	R3651492
Single Metal in Water by ICPMS (Diss.)							
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	LAB	SFP				09-FEB-17	R3649261
Lead (Pb)-Dissolved	<0.000050		0.000050	mg/L		09-FEB-17	R3649644
PAH & Carcinogenic List							
Naphthalene	<0.000050		0.000050	mg/L	13-FEB-17	13-FEB-17	R3650940
Quinoline	<0.000020		0.000020	mg/L	13-FEB-17	13-FEB-17	R3650940
Acenaphthene	<0.000020		0.000020	mg/L	13-FEB-17	13-FEB-17	R3650940
Fluorene	<0.000020		0.000020	mg/L	13-FEB-17	13-FEB-17	R3650940
Phenanthrene	<0.000050		0.000050	mg/L	13-FEB-17	13-FEB-17	R3650940
Anthracene	<0.000010		0.000010	mg/L	13-FEB-17	13-FEB-17	R3650940
Acridine	<0.000020		0.000020	mg/L	13-FEB-17	13-FEB-17	R3650940
Fluoranthene	<0.000020		0.000020	mg/L	13-FEB-17	13-FEB-17	R3650940
Pyrene	<0.000010		0.000010	mg/L	13-FEB-17	13-FEB-17	R3650940
Benzo(a)anthracene	<0.000010		0.000010	mg/L	13-FEB-17	13-FEB-17	R3650940

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1887819-13 17-10D-170206							
Sampled By: AMBER SALZSAULER on 06-FEB-17 @ 10:00							
Matrix: GW							
PAH & Carcinogenic List							
Chrysene	<0.000020		0.000020	mg/L	13-FEB-17	13-FEB-17	R3650940
Benzo(b&j)fluoranthene	<0.000010		0.000010	mg/L	13-FEB-17	13-FEB-17	R3650940
Benzo(k)fluoranthene	<0.000010		0.000010	mg/L	13-FEB-17	13-FEB-17	R3650940
Benzo(a)pyrene	<0.0000050		0.0000050	mg/L	13-FEB-17	13-FEB-17	R3650940
Benzo(g,h,i)perylene	<0.000020		0.000020	mg/L	13-FEB-17	13-FEB-17	R3650940
Indeno(1,2,3-cd)pyrene	<0.000010		0.000010	mg/L	13-FEB-17	13-FEB-17	R3650940
Dibenzo(a,h)anthracene	<0.0000050		0.0000050	mg/L	13-FEB-17	13-FEB-17	R3650940
B(A)P Total Potency Equivalent	<0.000010		0.000010	mg/L	13-FEB-17	13-FEB-17	R3650940
Surrogate: d10-Acenaphthene	81.5		60-130	%	13-FEB-17	13-FEB-17	R3650940
Surrogate: d10-Phenanthrene	78.0		60-130	%	13-FEB-17	13-FEB-17	R3650940
Surrogate: d12-Chrysene	71.9		60-130	%	13-FEB-17	13-FEB-17	R3650940
L1887819-14 17-06-170206							
Sampled By: AMBER SALZSAULER on 06-FEB-17 @ 11:30							
Matrix: GW							
BTEX, F1-F4 and SK Reg. PHC's							
BTEX and F1 (C6-C10)							
Benzene	0.00057		0.00050	mg/L	11-FEB-17	11-FEB-17	R3650416
Toluene	0.00052		0.00050	mg/L	11-FEB-17	11-FEB-17	R3650416
Ethylbenzene	0.00406		0.00050	mg/L	11-FEB-17	11-FEB-17	R3650416
o-xylene	0.0115		0.00050	mg/L	11-FEB-17	11-FEB-17	R3650416
m+p-Xylene	0.0108		0.00050	mg/L	11-FEB-17	11-FEB-17	R3650416
Xylenes	0.0222		0.00071	mg/L	11-FEB-17	11-FEB-17	R3650416
F1(C6-C10)	0.40		0.10	mg/L	11-FEB-17	11-FEB-17	R3650416
F1-BTEX	0.37		0.10	mg/L	11-FEB-17	11-FEB-17	R3650416
Surrogate: 4-Bromofluorobenzene	105.8		70-130	%	11-FEB-17	11-FEB-17	R3650416
Surrogate: 3,4-Dichlorotoluene	97.7		70-130	%	11-FEB-17	11-FEB-17	R3650416
Surrogate: 1,4-Difluorobenzene	99.0		70-130	%	11-FEB-17	11-FEB-17	R3650416
CCME Total Hydrocarbons							
Total Hydrocarbons (C6-C50)	8.9		1.0	mg/L		14-FEB-17	
Extractable Hydrocarbons by GC-FID							
F2 (C10-C16)	6.21		0.20	mg/L	13-FEB-17	13-FEB-17	R3651492
F3 (C16-C34)	2.31		0.30	mg/L	13-FEB-17	13-FEB-17	R3651492
F4 (C34-C50)	<0.30		0.30	mg/L	13-FEB-17	13-FEB-17	R3651492
TEH (C11-C22)	7.47		0.30	mg/L	13-FEB-17	13-FEB-17	R3651492
TEH (C23-C60)	1.28		0.50	mg/L	13-FEB-17	13-FEB-17	R3651492
Surrogate: 2-Bromobenzotrifluoride	86.9		50-150	%	13-FEB-17	13-FEB-17	R3651492
Single Metal in Water by ICPMS (Diss.)							
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	LAB	SFP				09-FEB-17	R3649261
Lead (Pb)-Dissolved	0.00160		0.000050	mg/L		09-FEB-17	R3649644
PAH & Carcinogenic List							
Naphthalene	0.00943	DLHC	0.00050	mg/L	13-FEB-17	13-FEB-17	R3650940
Quinoline	<0.00071	DLCI	0.00071	mg/L	13-FEB-17	13-FEB-17	R3650940
Acenaphthene	0.00120		0.000020	mg/L	13-FEB-17	13-FEB-17	R3650940
Fluorene	0.00279		0.000020	mg/L	13-FEB-17	13-FEB-17	R3650940
Phenanthrene	0.00164		0.000050	mg/L	13-FEB-17	13-FEB-17	R3650940
Anthracene	<0.00027	DLQ	0.00027	mg/L	13-FEB-17	13-FEB-17	R3650940
Acridine	<0.00038	DLQ	0.00038	mg/L	13-FEB-17	13-FEB-17	R3650940
Fluoranthene	0.000036		0.000020	mg/L	13-FEB-17	13-FEB-17	R3650940
Pyrene	0.000119		0.000010	mg/L	13-FEB-17	13-FEB-17	R3650940

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1887819-14 17-06-170206							
Sampled By: AMBER SALZSAULER on 06-FEB-17 @ 11:30							
Matrix: GW							
PAH & Carcinogenic List							
Benzo(a)anthracene	<0.000010		0.000010	mg/L	13-FEB-17	13-FEB-17	R3650940
Chrysene	0.000062		0.000020	mg/L	13-FEB-17	13-FEB-17	R3650940
Benzo(b&j)fluoranthene	<0.000020	DLCI	0.000020	mg/L	13-FEB-17	13-FEB-17	R3650940
Benzo(k)fluoranthene	<0.000010		0.000010	mg/L	13-FEB-17	13-FEB-17	R3650940
Benzo(a)pyrene	<0.0000050		0.0000050	mg/L	13-FEB-17	13-FEB-17	R3650940
Benzo(g,h,i)perylene	<0.000020		0.000020	mg/L	13-FEB-17	13-FEB-17	R3650940
Indeno(1,2,3-cd)pyrene	<0.000010		0.000010	mg/L	13-FEB-17	13-FEB-17	R3650940
Dibenzo(a,h)anthracene	<0.0000050		0.0000050	mg/L	13-FEB-17	13-FEB-17	R3650940
B(A)P Total Potency Equivalent	<0.000010		0.000010	mg/L	13-FEB-17	13-FEB-17	R3650940
Surrogate: d10-Acenaphthene	75.7		60-130	%	13-FEB-17	13-FEB-17	R3650940
Surrogate: d10-Phenanthrene	N/A	SMI	-	%	13-FEB-17	13-FEB-17	R3650940
Surrogate: d12-Chrysene	N/A	SMI	-	%	13-FEB-17	13-FEB-17	R3650940

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

Sample Parameter Qualifier Key:

Qualifier	Description
DLCI	Detection Limit Raised: Chromatographic Interference due to co-elution.
DLDS	Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.
DLHC	Detection Limit Raised: Dilution required due to high concentration of test analyte(s).
DLQ	Detection Limit raised due to co-eluting interference. GCMS qualifier ion ratio did not meet acceptance criteria.
SDO:RNA	Surrogate diluted out:% recovery not available
SFP	Sample was Filtered and Preserved at the laboratory
SMI	Surrogate recovery could not be measured due to sample matrix interference.

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
BTX,F1-CL	Water	BTEX and F1 (C6-C10)	EPA 8260C/5021A, and CWS PHC Tier 1

The water sample, with added reagents, is heated in a sealed vial to equilibrium. The headspace from the vial is transferred into a gas chromatograph. BTEX Target compound concentrations are measured using mass spectrometry detection. The instrumental portion of F1 analysis is carried out in accordance with the Canada Wide Standard for Petroleum Hydrocarbons in Soil - Tier 1 Method

C6-C50-CALC-CL	Water	CCME Total Hydrocarbons	CCME CWS-PHC, Pub #1310, Dec 2001

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

Hydrocarbon results are expressed on a dry weight basis.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.
In samples where BTEX and F1 were analyzed , F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:
1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:
1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

GLYCOL-CL	Water	Glycol Screen	EPA 3550C, EPA 8015D

This analysis is carried out using procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846, Method 8015D and 3550C, published by the United States Environmental Protection Agency (EPA). Water samples are bath ultra-sonicated and analyzed by GC-FID direct aqueous injection.

MET-D-CCMS-SK	Water	Dissolved Metals in Water by CRC ICPMS	APHA 3030B / EPA 6020A

This procedure involves preliminary filtration through a 0.45 um filter followed by instrumental analysis using collision cell inductively coupled plasma - mass spectrometry (modifed from EPA Method 6020A).

PAH-ME-CCME-CL	Water	PAH & Carcinogenic List	EPA 3511 / EPA 8270D GCMS

PAHs are extracted from water using a hexane micro-extraction technique. The extract is then solvent exchanged to toluene. The final extract is analysed by capillary column gas chromatography with mass spectrometric detection (GC/MS). Surrogate recoveries may not be reported in cases where interferences from the sample matrix prevent accurate quantitation.

TEH-WS-ME-FID-CL	Water	Extractable Hydrocarbons by GC-FID	EPA 3511/ CCME PHC CWS GC-FID

Water samples are spiked with 2-BBTF surrogate, and extracted by reciprocal action shaker for 30 minutes using a single micro-extraction with 2 mL hexane. Instrumental analysis is by GC-FID, as per the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil, Tier 1 Method, CCME, December 2001.

VOC-8260-CL	Water	EPA 8260 Volatile Organics	EPA 5021A/8260C

The water sample, with added reagents, is heated in a sealed vial to equilibrium. The headspace from the vial is transferred into a gas chromatograph. Target compound concentrations are measured using mass spectrometry detection

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
SK	ALS ENVIRONMENTAL - SASKATOON, SASKATCHEWAN, CANADA
CL	ALS ENVIRONMENTAL - CALGARY, ALBERTA, CANADA

Chain of Custody Numbers:

14-422173 14-422175

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Quality Control Report

Client: SNC-Lavalin Inc.
216 1st Ave South
SASKATOON SK S7K 1K3
Contact: June Lu

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
BTX,F1-CL	**Water**							
Batch R3650416								
WG2478433-2 LCS								
Benzene			93.7		%		70-130	10-FEB-17
Toluene			91.5		%		70-130	10-FEB-17
Ethylbenzene			92.1		%		70-130	10-FEB-17
o-xylene			92.4		%		70-130	10-FEB-17
m+p-Xylene			96.5		%		70-130	10-FEB-17
Xylenes			94.5		%		70-130	10-FEB-17
F1(C6-C10)			114.9		%		70-130	10-FEB-17
WG2478433-1 MB								
Benzene			<0.00050		mg/L		0.0005	11-FEB-17
Toluene			<0.00050		mg/L		0.0005	11-FEB-17
Ethylbenzene			<0.00050		mg/L		0.0005	11-FEB-17
o-xylene			<0.00050		mg/L		0.0005	11-FEB-17
m+p-Xylene			<0.00050		mg/L		0.0005	11-FEB-17
Xylenes			<0.00071		mg/L		0.00071	11-FEB-17
F1(C6-C10)			<0.10		mg/L		0.1	11-FEB-17
Surrogate: 4-Bromofluorobenzene			86.8		%		70-130	11-FEB-17
Surrogate: 3,4-Dichlorotoluene			122.3		%		70-130	11-FEB-17
Surrogate: 1,4-Difluorobenzene			99.1		%		70-130	11-FEB-17
GLYCOL-CL	**Water**							
Batch R3650591								
WG2478397-4 DUP		**L1887819-8**						
Diethylene Glycol		<5.0	<5.0	RPD-NA	mg/L	N/A	30	09-FEB-17
Ethylene Glycol		<10	<10	RPD-NA	mg/L	N/A	30	09-FEB-17
Propylene Glycol		<10	<10	RPD-NA	mg/L	N/A	30	09-FEB-17
Triethylene Glycol		<10	<10	RPD-NA	mg/L	N/A	30	09-FEB-17
WG2478397-5 LCS								
Diethylene Glycol			88.1		%		70-130	09-FEB-17
Ethylene Glycol			84.3		%		70-130	09-FEB-17
Propylene Glycol			88.9		%		70-130	09-FEB-17
Triethylene Glycol			89.0		%		70-130	09-FEB-17
WG2478397-2 MB								
Diethylene Glycol			<5.0		mg/L		5	09-FEB-17
Ethylene Glycol			<10		mg/L		10	09-FEB-17
Propylene Glycol			<10		mg/L		10	09-FEB-17
Triethylene Glycol			<10		mg/L		10	09-FEB-17

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-SK	**Water**							
Batch R3649644								
WG2476236-3 CRM		**TMRM_20**						
Aluminum (Al)-Dissolved			96.0		%		80-120	09-FEB-17
Antimony (Sb)-Dissolved			99.9		%		80-120	09-FEB-17
Arsenic (As)-Dissolved			100.1		%		80-120	09-FEB-17
Barium (Ba)-Dissolved			106.7		%		80-120	09-FEB-17
Beryllium (Be)-Dissolved			95.6		%		80-120	09-FEB-17
Bismuth (Bi)-Dissolved			94.9		%		80-120	09-FEB-17
Boron (B)-Dissolved			95.7		%		80-120	09-FEB-17
Cadmium (Cd)-Dissolved			99.5		%		80-120	09-FEB-17
Calcium (Ca)-Dissolved			99.0		%		80-120	09-FEB-17
Cesium (Cs)-Dissolved			102.7		%		80-120	09-FEB-17
Chromium (Cr)-Dissolved			97.5		%		80-120	09-FEB-17
Cobalt (Co)-Dissolved			97.4		%		80-120	09-FEB-17
Copper (Cu)-Dissolved			97.7		%		80-120	09-FEB-17
Iron (Fe)-Dissolved			96.8		%		80-120	09-FEB-17
Lead (Pb)-Dissolved			97.8		%		80-120	09-FEB-17
Lithium (Li)-Dissolved			98.0		%		80-120	09-FEB-17
Magnesium (Mg)-Dissolved			101.7		%		80-120	09-FEB-17
Manganese (Mn)-Dissolved			99.0		%		80-120	09-FEB-17
Molybdenum (Mo)-Dissolved			99.8		%		80-120	09-FEB-17
Nickel (Ni)-Dissolved			99.1		%		80-120	09-FEB-17
Phosphorus (P)-Dissolved			101.5		%		70-130	09-FEB-17
Potassium (K)-Dissolved			101.7		%		80-120	09-FEB-17
Rubidium (Rb)-Dissolved			94.9		%		80-120	09-FEB-17
Selenium (Se)-Dissolved			101.2		%		80-120	09-FEB-17
Silicon (Si)-Dissolved			115.1		%		60-140	09-FEB-17
Silver (Ag)-Dissolved			95.8		%		80-120	09-FEB-17
Sodium (Na)-Dissolved			98.9		%		80-120	09-FEB-17
Strontium (Sr)-Dissolved			97.1		%		80-120	09-FEB-17
Sulfur (S)-Dissolved			97.1		%		80-120	09-FEB-17
Tellurium (Te)-Dissolved			97.6		%		80-120	09-FEB-17
Thallium (Tl)-Dissolved			92.2		%		80-120	09-FEB-17
Thorium (Th)-Dissolved			99.0		%		80-120	09-FEB-17
Tin (Sn)-Dissolved			97.8		%		80-120	09-FEB-17
Titanium (Ti)-Dissolved			88.8		%		80-120	09-FEB-17

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-SK	**Water**							
Batch R3649644								
WG2476236-3 CRM		**TMRM_20**						
Tungsten (W)-Dissolved			99.6		%		80-120	09-FEB-17
Uranium (U)-Dissolved			95.8		%		80-120	09-FEB-17
Vanadium (V)-Dissolved			99.6		%		80-120	09-FEB-17
Zinc (Zn)-Dissolved			96.6		%		80-120	09-FEB-17
Zirconium (Zr)-Dissolved			96.9		%		80-120	09-FEB-17
WG2476236-2 DUP		**L1887819-12**						
Lead (Pb)-Dissolved		0.000064	0.000053		mg/L	19	20	09-FEB-17
WG2476236-1 MB								
Aluminum (Al)-Dissolved			<0.0020		mg/L		0.002	09-FEB-17
Antimony (Sb)-Dissolved			<0.00010		mg/L		0.0001	09-FEB-17
Arsenic (As)-Dissolved			<0.00010		mg/L		0.0001	09-FEB-17
Barium (Ba)-Dissolved			<0.000050		mg/L		0.00005	09-FEB-17
Beryllium (Be)-Dissolved			<0.00010		mg/L		0.0001	09-FEB-17
Bismuth (Bi)-Dissolved			<0.000050		mg/L		0.00005	09-FEB-17
Boron (B)-Dissolved			<0.010		mg/L		0.01	09-FEB-17
Cadmium (Cd)-Dissolved			<0.0000050		mg/L		0.000005	09-FEB-17
Calcium (Ca)-Dissolved			<0.050		mg/L		0.05	09-FEB-17
Cesium (Cs)-Dissolved			<0.000010		mg/L		0.00001	09-FEB-17
Chromium (Cr)-Dissolved			<0.00010		mg/L		0.0001	09-FEB-17
Cobalt (Co)-Dissolved			<0.00010		mg/L		0.0001	09-FEB-17
Copper (Cu)-Dissolved			<0.00020		mg/L		0.0002	09-FEB-17
Iron (Fe)-Dissolved			<0.010		mg/L		0.01	09-FEB-17
Lead (Pb)-Dissolved			<0.000050		mg/L		0.00005	09-FEB-17
Lithium (Li)-Dissolved			<0.0010		mg/L		0.001	09-FEB-17
Magnesium (Mg)-Dissolved			<0.0050		mg/L		0.005	09-FEB-17
Manganese (Mn)-Dissolved			<0.00010		mg/L		0.0001	09-FEB-17
Molybdenum (Mo)-Dissolved			<0.000050		mg/L		0.00005	09-FEB-17
Nickel (Ni)-Dissolved			<0.00050		mg/L		0.0005	09-FEB-17
Phosphorus (P)-Dissolved			<0.050		mg/L		0.05	09-FEB-17
Potassium (K)-Dissolved			<0.050		mg/L		0.05	09-FEB-17
Rubidium (Rb)-Dissolved			<0.00020		mg/L		0.0002	09-FEB-17
Selenium (Se)-Dissolved			<0.000050		mg/L		0.00005	09-FEB-17
Silicon (Si)-Dissolved			<0.050		mg/L		0.05	09-FEB-17
Silver (Ag)-Dissolved			<0.000010		mg/L		0.00001	09-FEB-17
Sodium (Na)-Dissolved			<0.050		mg/L		0.05	09-FEB-17

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-SK	**Water**							
Batch R3649644								
WG2476236-1 MB								
Strontium (Sr)-Dissolved			<0.00020		mg/L		0.0002	09-FEB-17
Sulfur (S)-Dissolved			<0.50		mg/L		0.5	09-FEB-17
Tellurium (Te)-Dissolved			<0.00020		mg/L		0.0002	09-FEB-17
Thallium (Tl)-Dissolved			<0.000010		mg/L		0.00001	09-FEB-17
Thorium (Th)-Dissolved			<0.00010		mg/L		0.0001	09-FEB-17
Tin (Sn)-Dissolved			<0.00010		mg/L		0.0001	09-FEB-17
Titanium (Ti)-Dissolved			<0.00030		mg/L		0.0003	09-FEB-17
Tungsten (W)-Dissolved			<0.00010		mg/L		0.0001	09-FEB-17
Uranium (U)-Dissolved			<0.000010		mg/L		0.00001	09-FEB-17
Vanadium (V)-Dissolved			<0.00050		mg/L		0.0005	09-FEB-17
Zinc (Zn)-Dissolved			<0.0010		mg/L		0.001	09-FEB-17
Zirconium (Zr)-Dissolved			<0.00030		mg/L		0.0003	09-FEB-17
PAH-ME-CCME-CL	**Water**							
Batch R3650940								
WG2478958-1 LCS								
Naphthalene			73.0		%		50-130	10-FEB-17
Quinoline			105.6		%		60-130	10-FEB-17
Acenaphthene			77.6		%		60-130	10-FEB-17
Fluorene			78.7		%		60-130	10-FEB-17
Phenanthrene			75.6		%		60-130	10-FEB-17
Anthracene			68.6		%		60-130	10-FEB-17
Acridine			69.6		%		60-130	10-FEB-17
Fluoranthene			79.0		%		60-130	10-FEB-17
Pyrene			82.0		%		60-130	10-FEB-17
Benzo(a)anthracene			75.1		%		60-130	10-FEB-17
Chrysene			80.1		%		60-130	10-FEB-17
Benzo(b&j)fluoranthene			76.4		%		60-130	10-FEB-17
Benzo(k)fluoranthene			78.6		%		60-130	10-FEB-17
Benzo(a)pyrene			74.9		%		60-130	10-FEB-17
Benzo(g,h,i)perylene			83.8		%		60-130	10-FEB-17
Indeno(1,2,3-cd)pyrene			77.8		%		60-130	10-FEB-17
Dibenzo(a,h)anthracene			83.1		%		60-130	10-FEB-17
WG2478958-4 LCS								
Naphthalene			67.0		%		50-130	13-FEB-17

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-ME-CCME-CL	**Water**							
Batch R3650940								
WG2478958-4 LCS								
Quinoline			108.7		%		60-130	13-FEB-17
Acenaphthene			75.1		%		60-130	13-FEB-17
Fluorene			76.0		%		60-130	13-FEB-17
Phenanthrene			72.3		%		60-130	13-FEB-17
Anthracene			70.3		%		60-130	13-FEB-17
Acridine			63.6		%		60-130	13-FEB-17
Fluoranthene			68.7		%		60-130	13-FEB-17
Pyrene			70.5		%		60-130	13-FEB-17
Benzo(a)anthracene			67.8		%		60-130	13-FEB-17
Chrysene			68.7		%		60-130	13-FEB-17
Benzo(b&j)fluoranthene			65.6		%		60-130	13-FEB-17
Benzo(k)fluoranthene			74.0		%		60-130	13-FEB-17
Benzo(a)pyrene			67.2		%		60-130	13-FEB-17
Benzo(g,h,i)perylene			74.2		%		60-130	13-FEB-17
Indeno(1,2,3-cd)pyrene			72.1		%		60-130	13-FEB-17
Dibenzo(a,h)anthracene			72.6		%		60-130	13-FEB-17
WG2478958-2 MB								
Naphthalene			<0.000050		mg/L		0.00005	10-FEB-17
Quinoline			<0.000020		mg/L		0.00002	10-FEB-17
Acenaphthene			<0.000020		mg/L		0.00002	10-FEB-17
Fluorene			<0.000020		mg/L		0.00002	10-FEB-17
Phenanthrene			<0.000050		mg/L		0.00005	10-FEB-17
Anthracene			<0.000010		mg/L		0.00001	10-FEB-17
Acridine			<0.000020		mg/L		0.00002	10-FEB-17
Fluoranthene			<0.000020		mg/L		0.00002	10-FEB-17
Pyrene			<0.000010		mg/L		0.00001	10-FEB-17
Benzo(a)anthracene			<0.000010		mg/L		0.00001	10-FEB-17
Chrysene			<0.000020		mg/L		0.00002	10-FEB-17
Benzo(b&j)fluoranthene			<0.000010		mg/L		0.00001	10-FEB-17
Benzo(k)fluoranthene			<0.000010		mg/L		0.00001	10-FEB-17
Benzo(a)pyrene			<0.000005C		mg/L		0.000005	10-FEB-17
Benzo(g,h,i)perylene			<0.000020		mg/L		0.00002	10-FEB-17
Indeno(1,2,3-cd)pyrene			<0.000010		mg/L		0.00001	10-FEB-17
Dibenzo(a,h)anthracene			<0.000005C		mg/L		0.000005	10-FEB-17

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-ME-CCME-CL	**Water**							
Batch	**R3650940**							
WG2478958-2	**MB**							
Surrogate: d10-Acenaphthene			82.0		%		60-130	10-FEB-17
Surrogate: d10-Phenanthrene			81.2		%		60-130	10-FEB-17
Surrogate: d12-Chrysene			83.8		%		60-130	10-FEB-17
WG2478958-3	**MB**							
Naphthalene			<0.000050		mg/L		0.00005	13-FEB-17
Quinoline			<0.000020		mg/L		0.00002	13-FEB-17
Acenaphthene			<0.000020		mg/L		0.00002	13-FEB-17
Fluorene			<0.000020		mg/L		0.00002	13-FEB-17
Phenanthrene			<0.000050		mg/L		0.00005	13-FEB-17
Anthracene			<0.000010		mg/L		0.00001	13-FEB-17
Acridine			<0.000020		mg/L		0.00002	13-FEB-17
Fluoranthene			<0.000020		mg/L		0.00002	13-FEB-17
Pyrene			<0.000010		mg/L		0.00001	13-FEB-17
Benzo(a)anthracene			<0.000010		mg/L		0.00001	13-FEB-17
Chrysene			<0.000020		mg/L		0.00002	13-FEB-17
Benzo(b&j)fluoranthene			<0.000010		mg/L		0.00001	13-FEB-17
Benzo(k)fluoranthene			<0.000010		mg/L		0.00001	13-FEB-17
Benzo(a)pyrene			<0.000005		mg/L		0.000005	13-FEB-17
Benzo(g,h,i)perylene			<0.000020		mg/L		0.00002	13-FEB-17
Indeno(1,2,3-cd)pyrene			<0.000010		mg/L		0.00001	13-FEB-17
Dibenzo(a,h)anthracene			<0.000005		mg/L		0.000005	13-FEB-17
Surrogate: d10-Acenaphthene			82.1		%		60-130	13-FEB-17
Surrogate: d10-Phenanthrene			82.0		%		60-130	13-FEB-17
Surrogate: d12-Chrysene			75.9		%		60-130	13-FEB-17
TEH-WS-ME-FID-CL	**Water**							
Batch	**R3650216**							
WG2477231-1	**MB**							
F2 (C10-C16)			<0.20		mg/L		0.2	09-FEB-17
F3 (C16-C34)			<0.30		mg/L		0.3	09-FEB-17
F4 (C34-C50)			<0.30		mg/L		0.3	09-FEB-17
TEH (C11-C22)			<0.30		mg/L		0.3	09-FEB-17
TEH (C23-C60)			<0.50		mg/L		0.5	09-FEB-17
Surrogate: 2-Bromobenzotrifluoride			100.0		%		50-150	09-FEB-17

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
TEH-WS-ME-FID-CL	**Water**							
Batch R3651492								
WG2478857-1 MB								
F2 (C10-C16)			<0.20		mg/L		0.2	13-FEB-17
F3 (C16-C34)			<0.30		mg/L		0.3	13-FEB-17
F4 (C34-C50)			<0.30		mg/L		0.3	13-FEB-17
TEH (C11-C22)			<0.30		mg/L		0.3	13-FEB-17
TEH (C23-C60)			<0.50		mg/L		0.5	13-FEB-17
Surrogate: 2-Bromobenzotrifluoride			89.3		%		50-150	13-FEB-17
VOC-8260-CL	**Water**							
Batch R3648964								
WG2475469-10 DUP		**L1887819-7**						
Dichlorodifluoromethane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	08-FEB-17
Chloromethane		<0.010	<0.010	RPD-NA	mg/L	N/A	30	08-FEB-17
Vinyl chloride		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	08-FEB-17
Bromomethane		<0.010	<0.010	RPD-NA	mg/L	N/A	30	08-FEB-17
Chloroethane		<0.010	<0.010	RPD-NA	mg/L	N/A	30	08-FEB-17
Trichlorofluoromethane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	08-FEB-17
1,1-Dichloroethene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	08-FEB-17
Methylene chloride		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	08-FEB-17
trans-1,2-Dichloroethene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	08-FEB-17
1,1-Dichloroethane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	08-FEB-17
2,2-Dichloropropane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	08-FEB-17
cis-1,2-Dichloroethene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	08-FEB-17
Chloroform		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	08-FEB-17
Bromochloromethane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	08-FEB-17
1,2-Dichloroethane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	08-FEB-17
1,1,1-Trichloroethane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	08-FEB-17
1,1-Dichloropropene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	08-FEB-17
Carbon tetrachloride		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	08-FEB-17
Benzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	08-FEB-17
Trichloroethene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	08-FEB-17
1,2-Dichloropropane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	08-FEB-17
Bromodichloromethane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	08-FEB-17
Dibromomethane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	08-FEB-17
cis-1,3-Dichloropropene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	08-FEB-17
trans-1,3-Dichloropropene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	08-FEB-17

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-8260-CL	**Water**							
Batch R3648964								
WG2475469-10 DUP		**L1887819-7**						
Toluene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	08-FEB-17
1,1,2-Trichloroethane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	08-FEB-17
1,3-Dichloropropane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	08-FEB-17
Tetrachloroethene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	08-FEB-17
Dibromochloromethane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	08-FEB-17
1,2-Dibromoethane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	08-FEB-17
Chlorobenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	08-FEB-17
Ethylbenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	08-FEB-17
1,1,1,2-Tetrachloroethane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	08-FEB-17
m+p-Xylenes		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	08-FEB-17
o-Xylene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	08-FEB-17
Styrene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	08-FEB-17
Bromoform		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	08-FEB-17
Isopropylbenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	08-FEB-17
1,1,2,2-Tetrachloroethane		<0.0050	<0.0050	RPD-NA	mg/L	N/A	30	08-FEB-17
1,2,3-Trichloropropane		<0.0020	<0.0020	RPD-NA	mg/L	N/A	30	08-FEB-17
n-Propylbenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	08-FEB-17
Bromobenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	08-FEB-17
1,3,5-Trimethylbenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	08-FEB-17
2-Chlorotoluene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	08-FEB-17
4-Chlorotoluene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	08-FEB-17
tert-Butylbenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	08-FEB-17
1,2,4-Trimethylbenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	08-FEB-17
sec-Butylbenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	08-FEB-17
p-Isopropyltoluene		0.0148	0.0154		mg/L	3.7	50	08-FEB-17
1,3-Dichlorobenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	08-FEB-17
1,4-Dichlorobenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	08-FEB-17
n-Butylbenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	08-FEB-17
1,2-Dichlorobenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	08-FEB-17
1,2-Dibromo-3-chloropropane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	08-FEB-17
1,2,4-Trichlorobenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	08-FEB-17
Hexachlorobutadiene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	08-FEB-17
1,2,3-Trichlorobenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	08-FEB-17
WG2475469-12 LCS								

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-8260-CL	**Water**							
Batch R3648964								
WG2475469-12 LCS								
Dichlorodifluoromethane			93.8		%		60-140	08-FEB-17
Chloromethane			105.0		%		60-140	08-FEB-17
Vinyl chloride			105.7		%		60-140	08-FEB-17
Bromomethane			109.7		%		60-140	08-FEB-17
Chloroethane			109.8		%		60-140	08-FEB-17
Trichlorofluoromethane			107.8		%		60-140	08-FEB-17
1,1-Dichloroethene			104.6		%		70-130	08-FEB-17
Methylene chloride			115.4		%		60-140	08-FEB-17
trans-1,2-Dichloroethene			114.1		%		70-130	08-FEB-17
1,1-Dichloroethane			119.0		%		70-130	08-FEB-17
2,2-Dichloropropane			106.6		%		70-130	08-FEB-17
cis-1,2-Dichloroethene			112.8		%		70-130	08-FEB-17
Chloroform			115.8		%		70-130	08-FEB-17
Bromochloromethane			110.8		%		70-130	08-FEB-17
1,2-Dichloroethane			115.0		%		70-130	08-FEB-17
1,1,1-Trichloroethane			115.1		%		70-130	08-FEB-17
1,1-Dichloropropene			112.1		%		70-130	08-FEB-17
Carbon tetrachloride			112.9		%		70-130	08-FEB-17
Benzene			116.5		%		70-130	08-FEB-17
Trichloroethene			107.4		%		70-130	08-FEB-17
1,2-Dichloropropane			115.7		%		70-130	08-FEB-17
Bromodichloromethane			107.1		%		70-130	08-FEB-17
Dibromomethane			103.8		%		70-130	08-FEB-17
cis-1,3-Dichloropropene			104.9		%		70-130	08-FEB-17
trans-1,3-Dichloropropene			104.0		%		70-130	08-FEB-17
Toluene			107.3		%		70-130	08-FEB-17
1,1,2-Trichloroethane			109.9		%		70-130	08-FEB-17
1,3-Dichloropropane			111.3		%		70-130	08-FEB-17
Tetrachloroethene			103.4		%		70-130	08-FEB-17
Dibromochloromethane			107.0		%		70-130	08-FEB-17
1,2-Dibromoethane			108.8		%		70-130	08-FEB-17
Chlorobenzene			100.6		%		70-130	08-FEB-17
Ethylbenzene			104.1		%		70-130	08-FEB-17
1,1,1,2-Tetrachloroethane			105.9		%		70-130	08-FEB-17

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-8260-CL	**Water**							
Batch R3648964								
WG2475469-12 LCS								
m+p-Xylenes			106.1		%		70-130	08-FEB-17
o-Xylene			103.0		%		70-130	08-FEB-17
Styrene			103.7		%		70-130	08-FEB-17
Bromoform			96.3		%		70-130	08-FEB-17
Isopropylbenzene			104.5		%		70-130	08-FEB-17
1,1,2,2-Tetrachloroethane			102.6		%		70-130	08-FEB-17
1,2,3-Trichloropropane			103.8		%		70-130	08-FEB-17
n-Propylbenzene			103.4		%		70-130	08-FEB-17
Bromobenzene			102.3		%		70-130	08-FEB-17
1,3,5-Trimethylbenzene			100.2		%		70-130	08-FEB-17
2-Chlorotoluene			104.2		%		70-130	08-FEB-17
4-Chlorotoluene			104.3		%		70-130	08-FEB-17
tert-Butylbenzene			103.1		%		70-130	08-FEB-17
1,2,4-Trimethylbenzene			104.3		%		70-130	08-FEB-17
sec-Butylbenzene			111.4		%		70-130	08-FEB-17
p-Isopropyltoluene			100.3		%		50-150	08-FEB-17
1,3-Dichlorobenzene			99.9		%		70-130	08-FEB-17
1,4-Dichlorobenzene			101.1		%		70-130	08-FEB-17
n-Butylbenzene			101.1		%		70-130	08-FEB-17
1,2-Dichlorobenzene			110.4		%		70-130	08-FEB-17
1,2-Dibromo-3-chloropropane			103.9		%		70-130	08-FEB-17
1,2,4-Trichlorobenzene			112.8		%		70-130	08-FEB-17
Hexachlorobutadiene			105.5		%		70-130	08-FEB-17
1,2,3-Trichlorobenzene			118.4		%		70-130	08-FEB-17
WG2475469-2 LCS								
Dichlorodifluoromethane			97.0		%		60-140	03-FEB-17
Chloromethane			104.4		%		60-140	03-FEB-17
Vinyl chloride			101.6		%		60-140	03-FEB-17
Bromomethane			104.9		%		60-140	03-FEB-17
Chloroethane			105.6		%		60-140	03-FEB-17
Trichlorofluoromethane			105.4		%		60-140	03-FEB-17
1,1-Dichloroethene			101.9		%		70-130	03-FEB-17
Methylene chloride			111.8		%		60-140	03-FEB-17
trans-1,2-Dichloroethene			112.6		%		70-130	03-FEB-17

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-8260-CL	**Water**							
Batch R3648964								
WG2475469-2 LCS								
1,1-Dichloroethane			113.8		%		70-130	03-FEB-17
2,2-Dichloropropane			114.6		%		70-130	03-FEB-17
cis-1,2-Dichloroethene			109.6		%		70-130	03-FEB-17
Chloroform			111.6		%		70-130	03-FEB-17
Bromochloromethane			107.1		%		70-130	03-FEB-17
1,2-Dichloroethane			113.9		%		70-130	03-FEB-17
1,1,1-Trichloroethane			111.4		%		70-130	03-FEB-17
1,1-Dichloropropene			107.8		%		70-130	03-FEB-17
Carbon tetrachloride			108.4		%		70-130	03-FEB-17
Benzene			112.2		%		70-130	03-FEB-17
Trichloroethene			105.3		%		70-130	03-FEB-17
1,2-Dichloropropane			111.9		%		70-130	03-FEB-17
Bromodichloromethane			103.3		%		70-130	03-FEB-17
Dibromomethane			102.9		%		70-130	03-FEB-17
cis-1,3-Dichloropropene			103.3		%		70-130	03-FEB-17
trans-1,3-Dichloropropene			100.7		%		70-130	03-FEB-17
Toluene			103.2		%		70-130	03-FEB-17
1,1,2-Trichloroethane			104.7		%		70-130	03-FEB-17
1,3-Dichloropropane			106.1		%		70-130	03-FEB-17
Tetrachloroethene			102.4		%		70-130	03-FEB-17
Dibromochloromethane			101.0		%		70-130	03-FEB-17
1,2-Dibromoethane			103.6		%		70-130	03-FEB-17
Chlorobenzene			96.1		%		70-130	03-FEB-17
Ethylbenzene			100.2		%		70-130	03-FEB-17
1,1,1,2-Tetrachloroethane			100.5		%		70-130	03-FEB-17
m+p-Xylenes			102.2		%		70-130	03-FEB-17
o-Xylene			100.6		%		70-130	03-FEB-17
Styrene			97.7		%		70-130	03-FEB-17
Bromoform			90.0		%		70-130	03-FEB-17
Isopropylbenzene			102.2		%		70-130	03-FEB-17
1,1,2,2-Tetrachloroethane			92.7		%		70-130	03-FEB-17
1,2,3-Trichloropropane			93.2		%		70-130	03-FEB-17
n-Propylbenzene			98.4		%		70-130	03-FEB-17
Bromobenzene			96.0		%		70-130	03-FEB-17

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-8260-CL	**Water**							
Batch R3648964								
WG2475469-2 LCS								
1,3,5-Trimethylbenzene			94.8		%		70-130	03-FEB-17
2-Chlorotoluene			97.4		%		70-130	03-FEB-17
4-Chlorotoluene			98.1		%		70-130	03-FEB-17
tert-Butylbenzene			95.5		%		70-130	03-FEB-17
1,2,4-Trimethylbenzene			97.7		%		70-130	03-FEB-17
sec-Butylbenzene			102.8		%		70-130	03-FEB-17
p-Isopropyltoluene			95.2		%		50-150	03-FEB-17
1,3-Dichlorobenzene			94.5		%		70-130	03-FEB-17
1,4-Dichlorobenzene			95.8		%		70-130	03-FEB-17
n-Butylbenzene			96.9		%		70-130	03-FEB-17
1,2-Dichlorobenzene			103.0		%		70-130	03-FEB-17
1,2-Dibromo-3-chloropropane			106.4		%		70-130	03-FEB-17
1,2,4-Trichlorobenzene			115.5		%		70-130	03-FEB-17
Hexachlorobutadiene			109.3		%		70-130	03-FEB-17
1,2,3-Trichlorobenzene			117.0		%		70-130	03-FEB-17
WG2475469-1 MB								
Dichlorodifluoromethane			<0.0010		mg/L		0.001	03-FEB-17
Chloromethane			<0.010		mg/L		0.01	03-FEB-17
Vinyl chloride			<0.00050		mg/L		0.0005	03-FEB-17
Bromomethane			<0.010		mg/L		0.01	03-FEB-17
Chloroethane			<0.010		mg/L		0.01	03-FEB-17
Trichlorofluoromethane			<0.0010		mg/L		0.001	03-FEB-17
1,1-Dichloroethene			<0.0010		mg/L		0.001	03-FEB-17
Methylene chloride			<0.0010		mg/L		0.001	03-FEB-17
trans-1,2-Dichloroethene			<0.0010		mg/L		0.001	03-FEB-17
1,1-Dichloroethane			<0.0010		mg/L		0.001	03-FEB-17
2,2-Dichloropropane			<0.0010		mg/L		0.001	03-FEB-17
cis-1,2-Dichloroethene			<0.0010		mg/L		0.001	03-FEB-17
Chloroform			<0.0010		mg/L		0.001	03-FEB-17
Bromochloromethane			<0.0010		mg/L		0.001	03-FEB-17
1,2-Dichloroethane			<0.0010		mg/L		0.001	03-FEB-17
1,1,1-Trichloroethane			<0.0010		mg/L		0.001	03-FEB-17
1,1-Dichloropropene			<0.0010		mg/L		0.001	03-FEB-17
Carbon tetrachloride			<0.0010		mg/L		0.001	03-FEB-17

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-8260-CL	**Water**							
Batch R3648964								
WG2475469-1 MB								
Benzene			<0.0010		mg/L		0.001	03-FEB-17
Trichloroethene			<0.0010		mg/L		0.001	03-FEB-17
1,2-Dichloropropane			<0.0010		mg/L		0.001	03-FEB-17
Bromodichloromethane			<0.0010		mg/L		0.001	03-FEB-17
Dibromomethane			<0.0010		mg/L		0.001	03-FEB-17
cis-1,3-Dichloropropene			<0.0010		mg/L		0.001	03-FEB-17
trans-1,3-Dichloropropene			<0.0010		mg/L		0.001	03-FEB-17
Toluene			<0.0010		mg/L		0.001	03-FEB-17
1,1,2-Trichloroethane			<0.0010		mg/L		0.001	03-FEB-17
1,3-Dichloropropane			<0.0010		mg/L		0.001	03-FEB-17
Tetrachloroethene			<0.0010		mg/L		0.001	03-FEB-17
Dibromochloromethane			<0.0010		mg/L		0.001	03-FEB-17
1,2-Dibromoethane			<0.0010		mg/L		0.001	03-FEB-17
Chlorobenzene			<0.0010		mg/L		0.001	03-FEB-17
Ethylbenzene			<0.0010		mg/L		0.001	03-FEB-17
1,1,1,2-Tetrachloroethane			<0.0010		mg/L		0.001	03-FEB-17
m+p-Xylenes			<0.0010		mg/L		0.001	03-FEB-17
o-Xylene			<0.0010		mg/L		0.001	03-FEB-17
Styrene			<0.0010		mg/L		0.001	03-FEB-17
Bromoform			<0.0010		mg/L		0.001	03-FEB-17
Isopropylbenzene			<0.0010		mg/L		0.001	03-FEB-17
1,1,2,2-Tetrachloroethane			<0.0050		mg/L		0.005	03-FEB-17
1,2,3-Trichloropropane			<0.0020		mg/L		0.002	03-FEB-17
n-Propylbenzene			<0.0010		mg/L		0.001	03-FEB-17
Bromobenzene			<0.0010		mg/L		0.001	03-FEB-17
1,3,5-Trimethylbenzene			<0.0010		mg/L		0.001	03-FEB-17
2-Chlorotoluene			<0.0010		mg/L		0.001	03-FEB-17
4-Chlorotoluene			<0.0010		mg/L		0.001	03-FEB-17
tert-Butylbenzene			<0.0010		mg/L		0.001	03-FEB-17
1,2,4-Trimethylbenzene			<0.0010		mg/L		0.001	03-FEB-17
sec-Butylbenzene			<0.0010		mg/L		0.001	03-FEB-17
p-Isopropyltoluene			<0.0010		mg/L		0.001	03-FEB-17
1,3-Dichlorobenzene			<0.0010		mg/L		0.001	03-FEB-17
1,4-Dichlorobenzene			<0.0010		mg/L		0.001	03-FEB-17

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-8260-CL	**Water**							
Batch R3648964								
WG2475469-1 MB								
n-Butylbenzene			<0.0010		mg/L		0.001	03-FEB-17
1,2-Dichlorobenzene			<0.0010		mg/L		0.001	03-FEB-17
1,2-Dibromo-3-chloropropane			<0.0010		mg/L		0.001	03-FEB-17
1,2,4-Trichlorobenzene			<0.0010		mg/L		0.001	03-FEB-17
Hexachlorobutadiene			<0.0010		mg/L		0.001	03-FEB-17
1,2,3-Trichlorobenzene			<0.0010		mg/L		0.001	03-FEB-17
Surrogate: 1,4-Difluorobenzene			95.4		%		70-130	03-FEB-17
Surrogate: 4-Bromofluorobenzene			92.8		%		70-130	03-FEB-17
Surrogate: 3,4-Dichlorotoluene			116.6		%		70-130	03-FEB-17
WG2475469-11 MB								
Dichlorodifluoromethane			<0.0010		mg/L		0.001	08-FEB-17
Chloromethane			<0.010		mg/L		0.01	08-FEB-17
Vinyl chloride			<0.00050		mg/L		0.0005	08-FEB-17
Bromomethane			<0.010		mg/L		0.01	08-FEB-17
Chloroethane			<0.010		mg/L		0.01	08-FEB-17
Trichlorofluoromethane			<0.0010		mg/L		0.001	08-FEB-17
1,1-Dichloroethene			<0.0010		mg/L		0.001	08-FEB-17
Methylene chloride			<0.0010		mg/L		0.001	08-FEB-17
trans-1,2-Dichloroethene			<0.0010		mg/L		0.001	08-FEB-17
1,1-Dichloroethane			<0.0010		mg/L		0.001	08-FEB-17
2,2-Dichloropropane			<0.0010		mg/L		0.001	08-FEB-17
cis-1,2-Dichloroethene			<0.0010		mg/L		0.001	08-FEB-17
Chloroform			<0.0010		mg/L		0.001	08-FEB-17
Bromochloromethane			<0.0010		mg/L		0.001	08-FEB-17
1,2-Dichloroethane			<0.0010		mg/L		0.001	08-FEB-17
1,1,1-Trichloroethane			<0.0010		mg/L		0.001	08-FEB-17
1,1-Dichloropropene			<0.0010		mg/L		0.001	08-FEB-17
Carbon tetrachloride			<0.0010		mg/L		0.001	08-FEB-17
Benzene			<0.0010		mg/L		0.001	08-FEB-17
Trichloroethene			<0.0010		mg/L		0.001	08-FEB-17
1,2-Dichloropropane			<0.0010		mg/L		0.001	08-FEB-17
Bromodichloromethane			<0.0010		mg/L		0.001	08-FEB-17
Dibromomethane			<0.0010		mg/L		0.001	08-FEB-17
cis-1,3-Dichloropropene			<0.0010		mg/L		0.001	08-FEB-17

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-8260-CL	**Water**							
Batch R3648964								
WG2475469-11 MB								
trans-1,3-Dichloropropene			<0.0010		mg/L		0.001	08-FEB-17
Toluene			<0.0010		mg/L		0.001	08-FEB-17
1,1,2-Trichloroethane			<0.0010		mg/L		0.001	08-FEB-17
1,3-Dichloropropane			<0.0010		mg/L		0.001	08-FEB-17
Tetrachloroethene			<0.0010		mg/L		0.001	08-FEB-17
Dibromochloromethane			<0.0010		mg/L		0.001	08-FEB-17
1,2-Dibromoethane			<0.0010		mg/L		0.001	08-FEB-17
Chlorobenzene			<0.0010		mg/L		0.001	08-FEB-17
Ethylbenzene			<0.0010		mg/L		0.001	08-FEB-17
1,1,1,2-Tetrachloroethane			<0.0010		mg/L		0.001	08-FEB-17
m+p-Xylenes			<0.0010		mg/L		0.001	08-FEB-17
o-Xylene			<0.0010		mg/L		0.001	08-FEB-17
Styrene			<0.0010		mg/L		0.001	08-FEB-17
Bromoform			<0.0010		mg/L		0.001	08-FEB-17
Isopropylbenzene			<0.0010		mg/L		0.001	08-FEB-17
1,1,2,2-Tetrachloroethane			<0.0050		mg/L		0.005	08-FEB-17
1,2,3-Trichloropropane			<0.0020		mg/L		0.002	08-FEB-17
n-Propylbenzene			<0.0010		mg/L		0.001	08-FEB-17
Bromobenzene			<0.0010		mg/L		0.001	08-FEB-17
1,3,5-Trimethylbenzene			<0.0010		mg/L		0.001	08-FEB-17
2-Chlorotoluene			<0.0010		mg/L		0.001	08-FEB-17
4-Chlorotoluene			<0.0010		mg/L		0.001	08-FEB-17
tert-Butylbenzene			<0.0010		mg/L		0.001	08-FEB-17
1,2,4-Trimethylbenzene			<0.0010		mg/L		0.001	08-FEB-17
sec-Butylbenzene			<0.0010		mg/L		0.001	08-FEB-17
p-Isopropyltoluene			<0.0010		mg/L		0.001	08-FEB-17
1,3-Dichlorobenzene			<0.0010		mg/L		0.001	08-FEB-17
1,4-Dichlorobenzene			<0.0010		mg/L		0.001	08-FEB-17
n-Butylbenzene			<0.0010		mg/L		0.001	08-FEB-17
1,2-Dichlorobenzene			<0.0010		mg/L		0.001	08-FEB-17
1,2-Dibromo-3-chloropropane			<0.0010		mg/L		0.001	08-FEB-17
1,2,4-Trichlorobenzene			<0.0010		mg/L		0.001	08-FEB-17
Hexachlorobutadiene			<0.0010		mg/L		0.001	08-FEB-17
1,2,3-Trichlorobenzene			<0.0010		mg/L		0.001	08-FEB-17

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-8260-CL	**Water**							
Batch R3648964								
WG2475469-11 MB								
Surrogate: 1,4-Difluorobenzene			115.5		%		70-130	08-FEB-17
Surrogate: 4-Bromofluorobenzene			96.9		%		70-130	08-FEB-17
Surrogate: 3,4-Dichlorotoluene			115.6		%		70-130	08-FEB-17

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

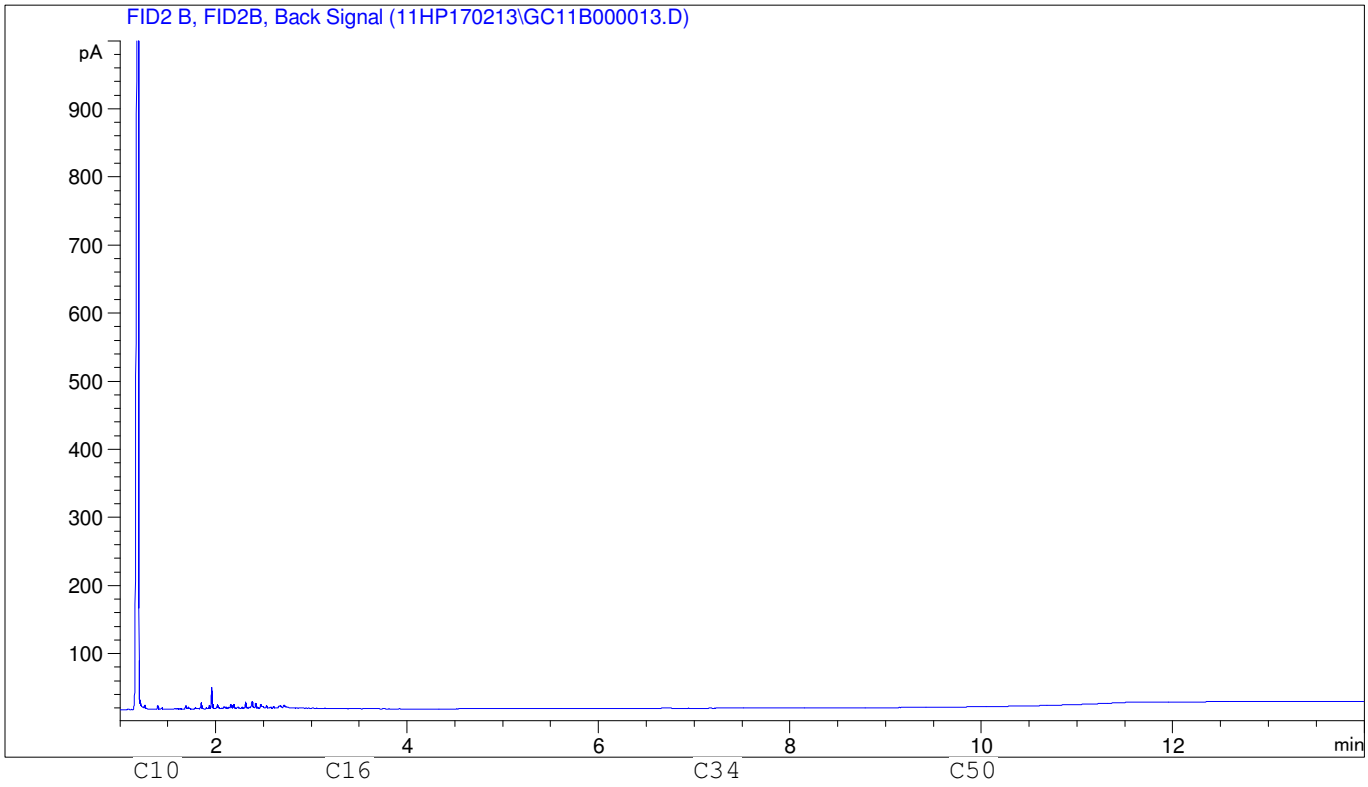
ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

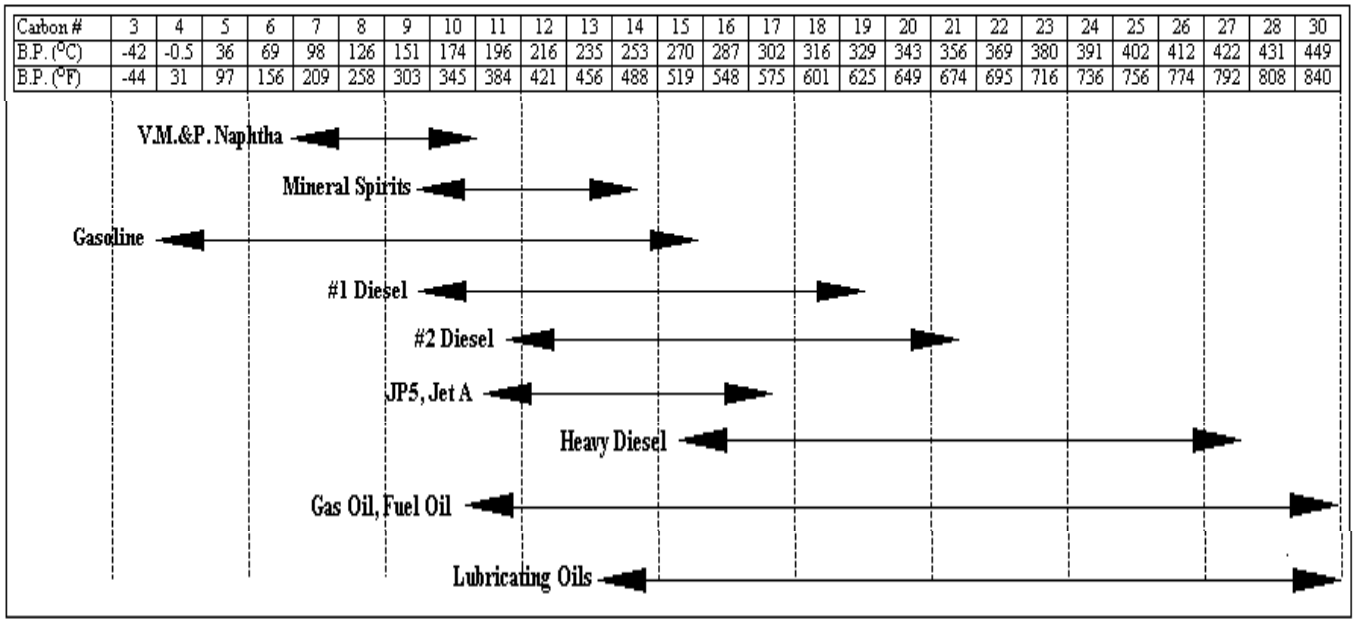
Client ID:17-09-17 206

Sample ID: L1887819-12 V10WS
Injection Date: 2/13/2017
Injection Time: 9:02:32 PM
Instrument ID: Instrument 1
Operator: Organics



Boiling Point Distribution Range for Petroleum Based Fuel Products

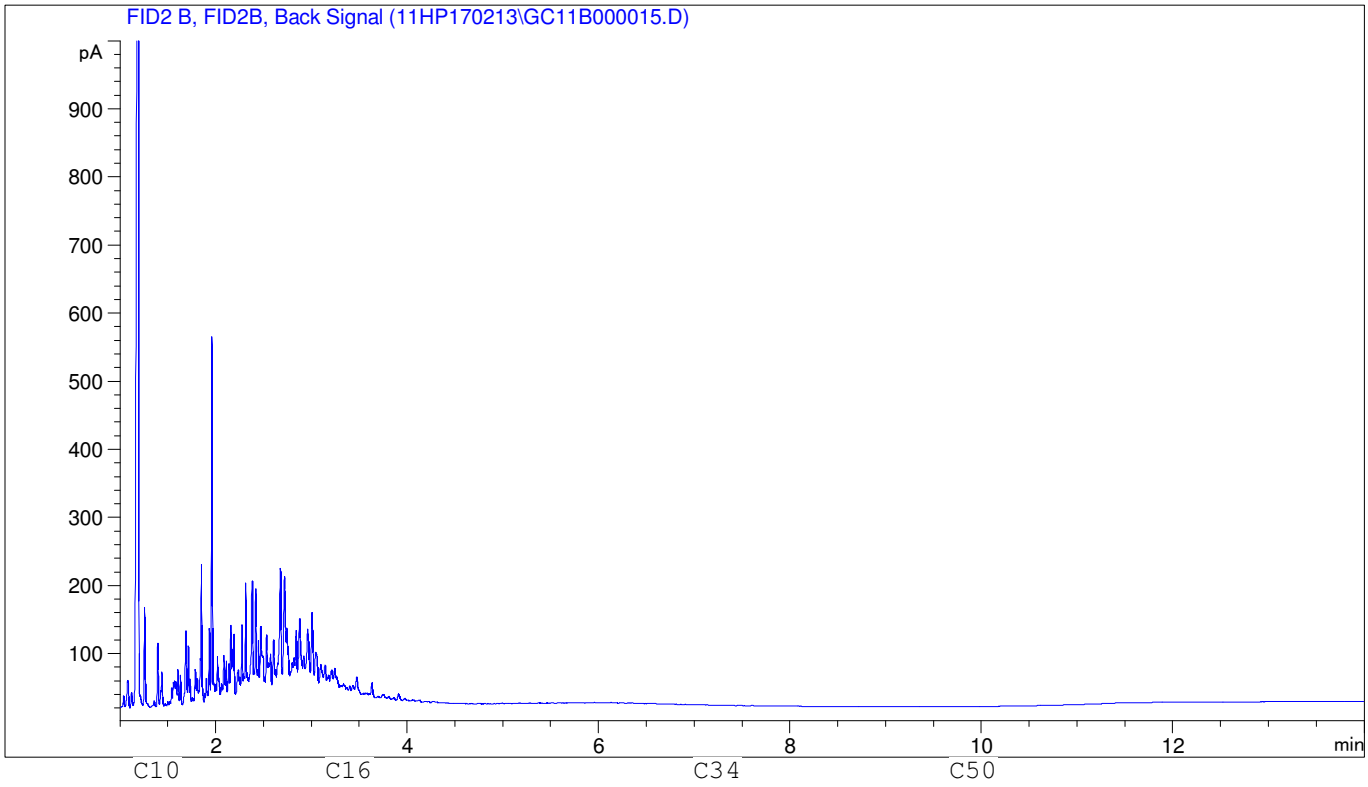
Carbon #	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	30
B.P. (°C)	-42	-0.5	36	69	98	126	151	174	196	216	235	253	270	287	302	316	329	343	356	369	380	391	402	412	422	431	449
B.P. (°F)	-44	31	97	156	209	258	303	345	384	421	456	488	519	548	575	601	625	649	674	695	716	736	756	774	792	808	840



Adapted from: Drews, A.W.,ED. Manual on Hydrocarbon Analysis, 4th ed.; American Society for Testing and Materials: Philadelphia, PA., 1989: p XVIII.

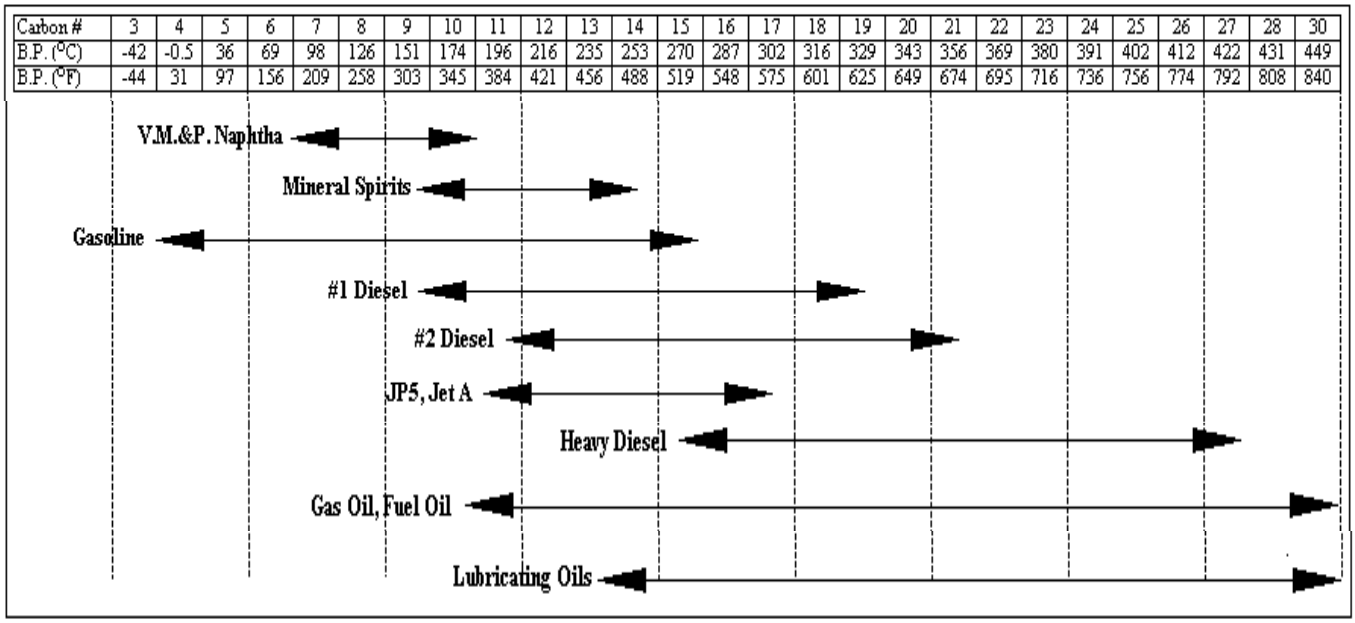
Client ID:17-06-17 206

Sample ID: L1887819-14 V10WS
Injection Date: 2/13/2017
Injection Time: 9:50:38 PM
Instrument ID: Instrument 1
Operator: Organics



Boiling Point Distribution Range for Petroleum Based Fuel Products

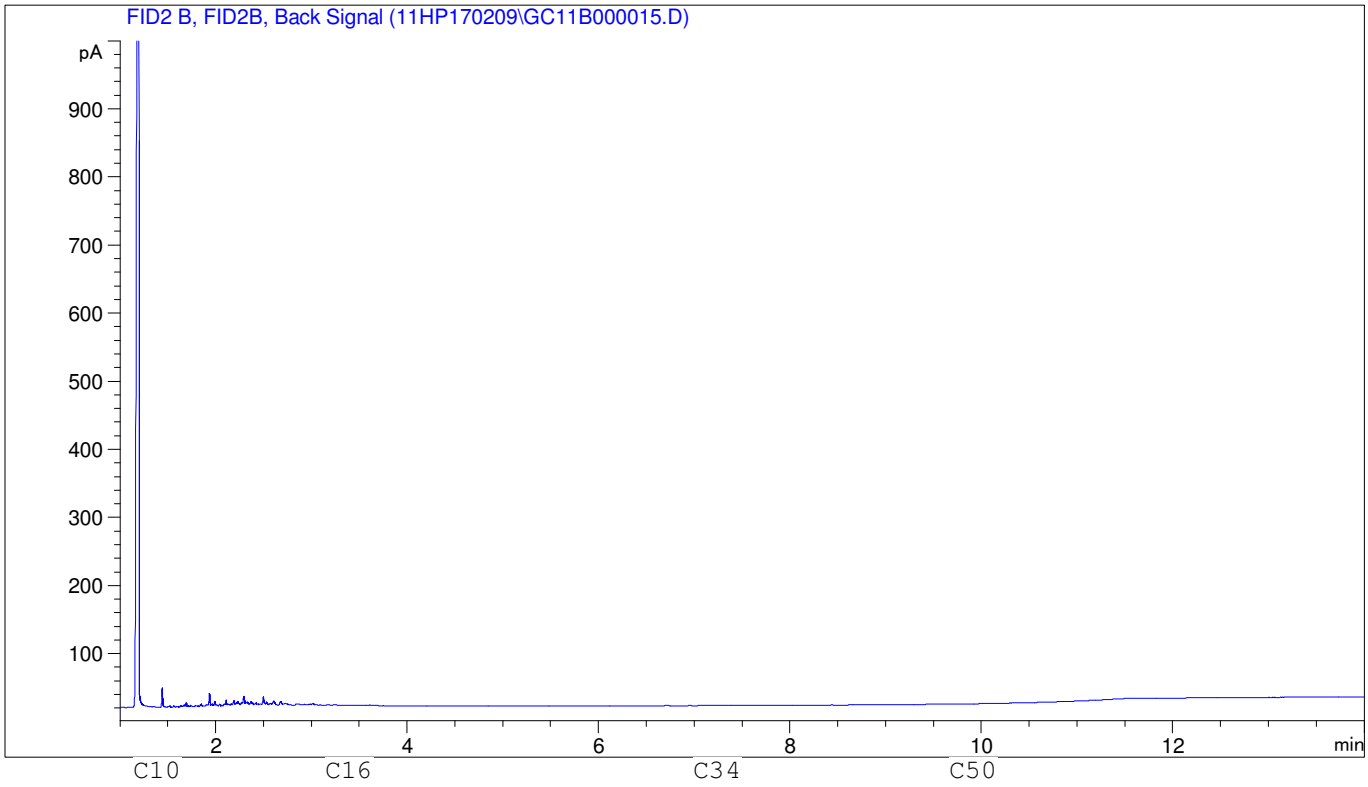
Carbon #	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	30
B.P. (°C)	-42	-0.5	36	69	98	126	151	174	196	216	235	253	270	287	302	316	329	343	356	369	380	391	402	412	422	431	449
B.P. (°F)	-44	31	97	156	209	258	303	345	384	421	456	488	519	548	575	601	625	649	674	695	716	736	756	774	792	808	840



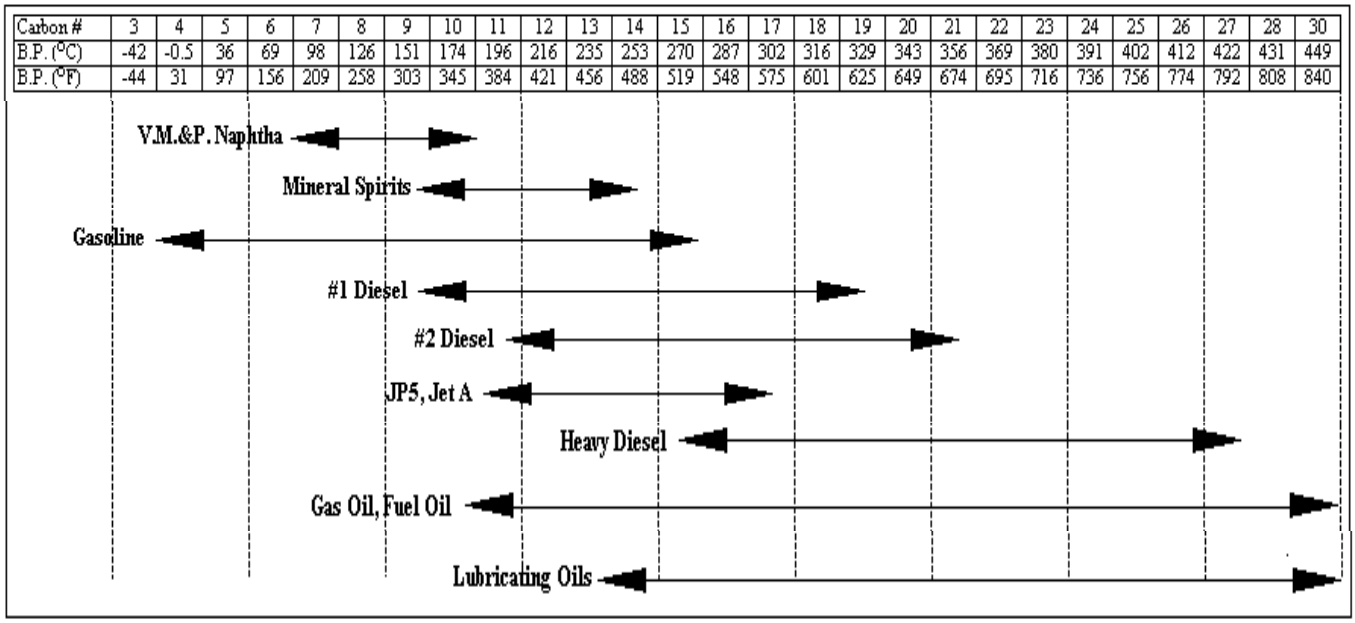
Adapted from: Drews, A.W.,ED. Manual on Hydrocarbon Analysis, 4th ed.; American Society for Testing and Materials: Philadelphia, PA., 1989: p XVIII.

Client ID: 17-16-170206

Sample ID: L1887819-1 V10WS
Injection Date: 2/9/2017
Injection Time: 9:17:10 PM
Instrument ID: Instrument 1
Operator: Organics



Boiling Point Distribution Range for Petroleum Based Fuel Products

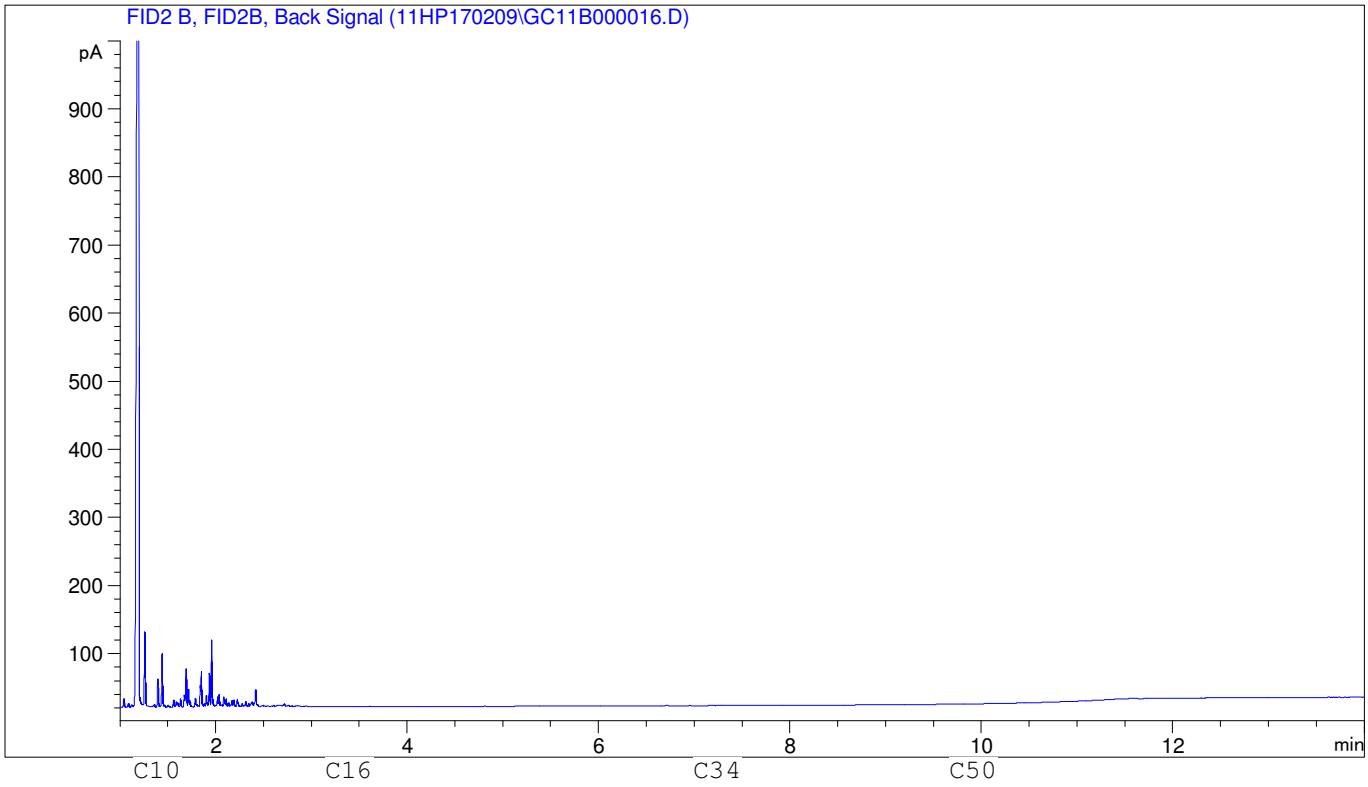


Carbon #	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	30
B.P. (°C)	-42	-0.5	36	69	98	126	151	174	196	216	235	253	270	287	302	316	329	343	356	369	380	391	402	412	422	431	449
B.P. (°F)	-44	31	97	156	209	258	303	345	384	421	456	488	519	548	575	601	625	649	674	695	716	736	756	774	792	808	840

Adapted from: Drews, A.W.,ED. Manual on Hydrocarbon Analysis, 4th ed.; American Society for Testing and Materials: Philadelphia, PA., 1989: p XVIII.

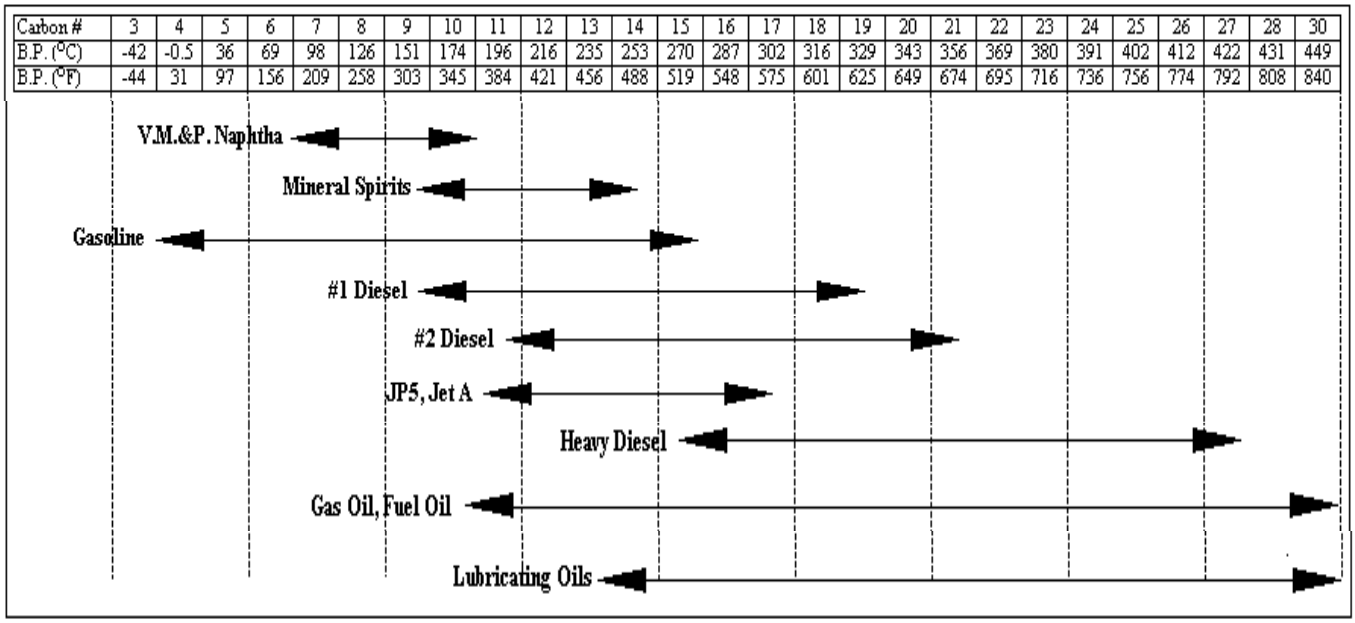
Client ID: 17-11-170206

Sample ID: L1887819-2 V10WS
Injection Date: 2/9/2017
Injection Time: 9:41:35 PM
Instrument ID: Instrument 1
Operator: Organics



Boiling Point Distribution Range for Petroleum Based Fuel Products

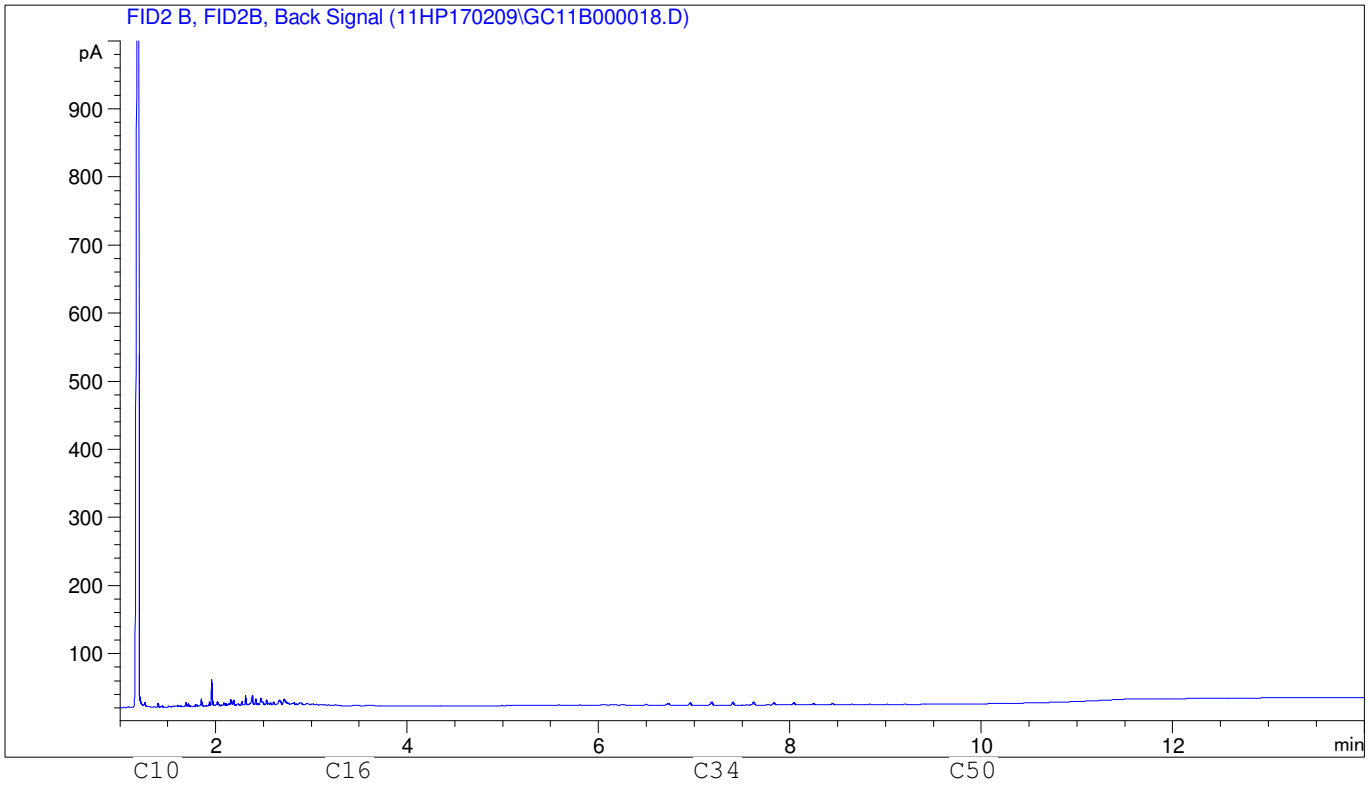
Carbon #	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	30
B.P. (°C)	-42	-0.5	36	69	98	126	151	174	196	216	235	253	270	287	302	316	329	343	356	369	380	391	402	412	422	431	449
B.P. (°F)	-44	31	97	156	209	258	303	345	384	421	456	488	519	548	575	601	625	649	674	695	716	736	756	774	792	808	840



Adapted from: Drews, A.W.,ED. Manual on Hydrocarbon Analysis, 4th ed.; American Society for Testing and Materials: Philadelphia, PA., 1989: p XVIII.

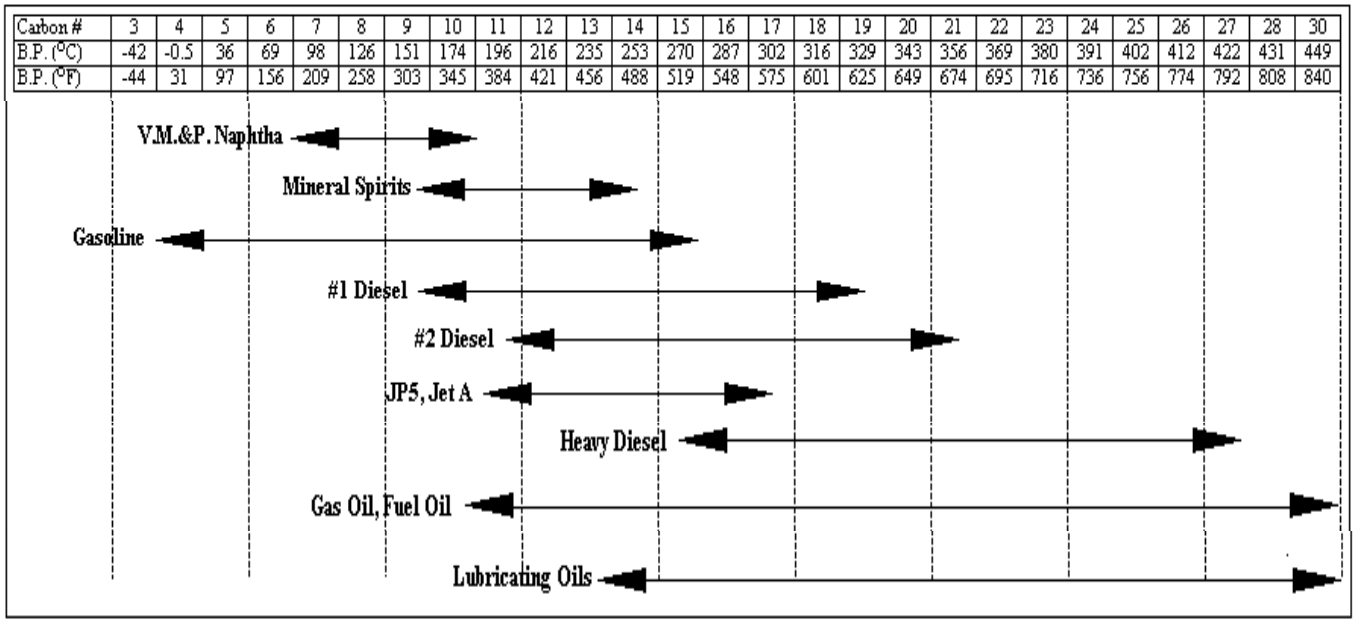
Client ID: MW17-00A-170206

Sample ID: L1887819-3 V10WS
Injection Date: 2/9/2017
Injection Time: 10:30:03 PM
Instrument ID: Instrument 1
Operator: Organics



Boiling Point Distribution Range for Petroleum Based Fuel Products

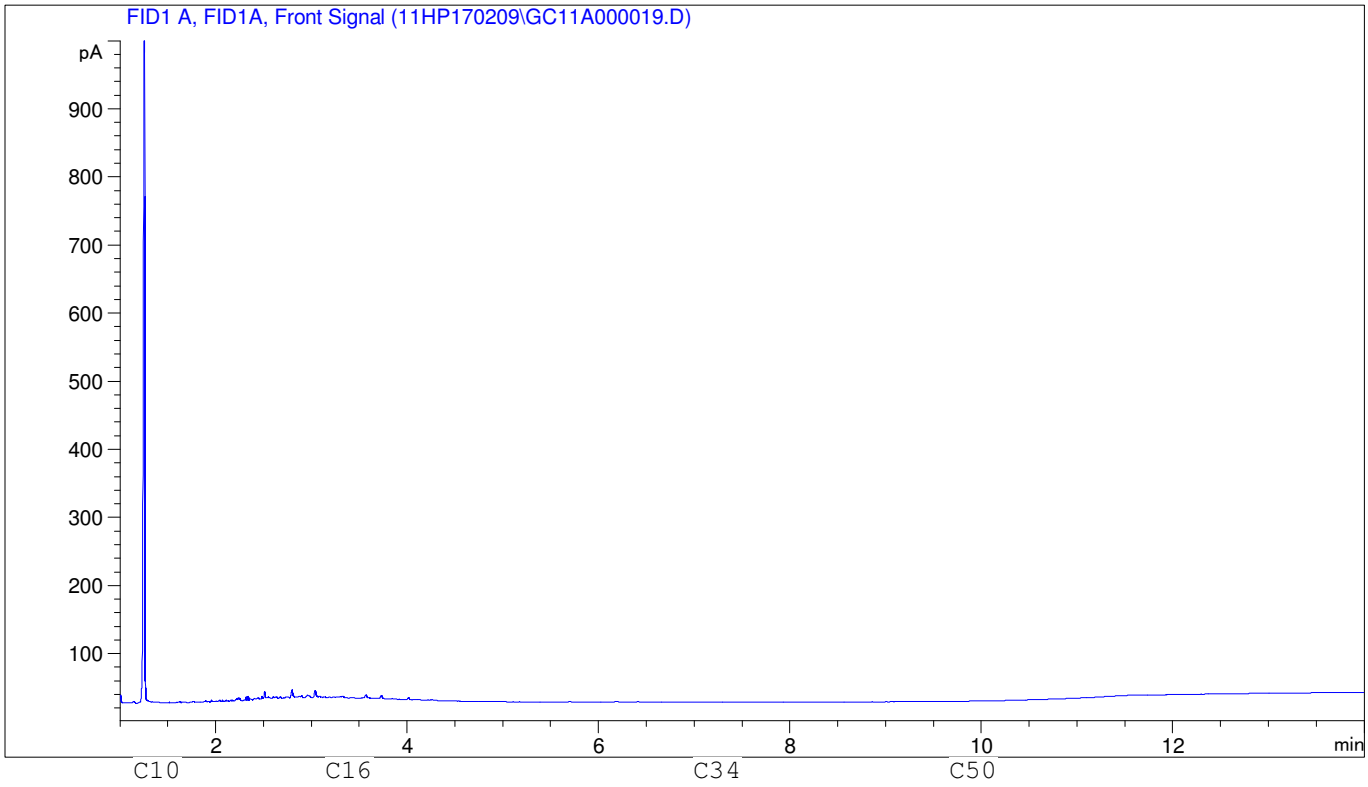
Carbon #	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	30
B.P. (°C)	-42	-0.5	36	69	98	126	151	174	196	216	235	253	270	287	302	316	329	343	356	369	380	391	402	412	422	431	449
B.P. (°F)	-44	31	97	156	209	258	303	345	384	421	456	488	519	548	575	601	625	649	674	695	716	736	756	774	792	808	840



Adapted from: Drews, A.W.,ED. Manual on Hydrocarbon Analysis, 4th ed.; American Society for Testing and Materials: Philadelphia, PA., 1989: p XVIII.

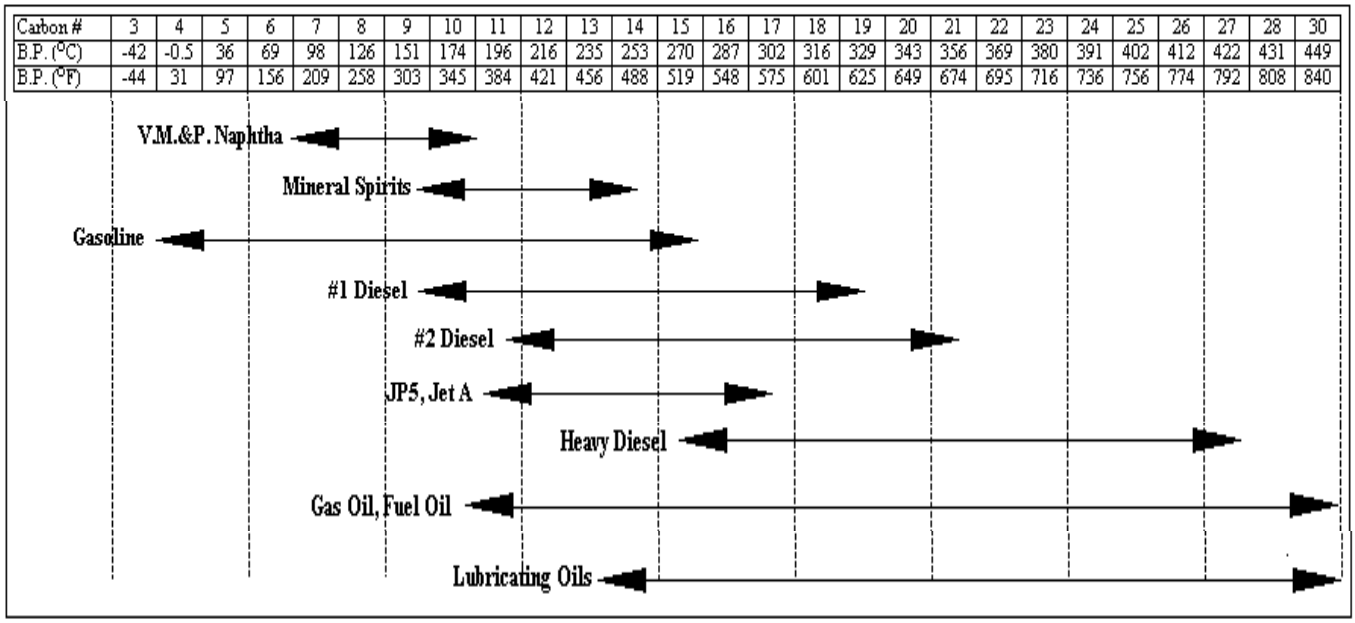
Client ID: 14-37-170206

Sample ID: L1887819-5 V2 WS
Injection Date: 2/9/2017
Injection Time: 10:54:26 PM
Instrument ID: Instrument 1
Operator: Organics



Boiling Point Distribution Range for Petroleum Based Fuel Products

Carbon #	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	30
B.P. (°C)	-42	-0.5	36	69	98	126	151	174	196	216	235	253	270	287	302	316	329	343	356	369	380	391	402	412	422	431	449
B.P. (°F)	-44	31	97	156	209	258	303	345	384	421	456	488	519	548	575	601	625	649	674	695	716	736	756	774	792	808	840



Adapted from: Drews, A.W.,ED. Manual on Hydrocarbon Analysis, 4th ed.; American Society for Testing and Materials: Philadelphia, PA., 1989: p XVIII.

ALS Environmental
www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

L1887819-COFC

COC Number: 14 - 422173

Page 1 of 2

Report To	Report Format / Distribution	Select Service Level Below (Rush Turnaround Time (TAT) is not available for all tests)
Company: SNC Lavalin Inc	Select Report Format: ☑ PDF ☑ EXCEL ☑ EDD (DIGITAL)	R ☑ Regular (Standard TAT if received by 3pm)
Contact: June Lu	Quality Control (QC) Report with Report ☑ Yes ☐ No	P ☐ Priority (2-4 business days if received by 3pm)
Address: 216 - 1ST Ave S Saskatoon, SK S7K 1K3	☐ Criteria on Report - provide details below if box checked	E ☐ Emergency (1-2 business days if received by 3pm)
Phone: 306-668-6800 ext 54369	Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX	E2 ☐ Same day or weekend emergency if received by 10am – contact ALS for surcharge.
Invoice To Same as Report To ☑ Yes ☐ No	Email 1 or Fax: june.lu@snclavalin.com	Specify Date Required for E2,E or P:
Copy of Invoice with Report ☑ Yes ☐ No	Email 2	
Company:	**Invoice Distribution**	**Analysis Request**
Contact:	Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX	Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below
Project Information	Email 1 or Fax: june.lu@snclavalin.com	
ALS Quote #:	Email 2	
Job #: 644079	**Oil and Gas Required Fields (client use)**	
PO / AFE: 644079	Approver ID: Cost Center:	
LSD:	GL Account: Routing Code:	
ALS Lab Work Order # (lab use only):	Activity Code:	
	Location:	
	ALS Contact: Jessica Spira	Sampler: Amber Salzsauler

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	BTEX,	F1-F4	PAH	Lead (dissolved)	Limited quantity	Metals (dissolved)	VOCs	Number of Containers
					P	P	P					
	17-16-170206	06-002-17	09:16	GW	X	X	X	X				8
	17-11-170206	06-002-17	11:00	GW	X	X	X	X				8
	MW17-00A-170206	06-002-17	12:15	GW	X	X	X	X				8
	17-13-170206	06-002-17	14:50	GW	X	X	X	X				8
	14-37-170206	06-002-17	12:45	GW	X	X	X		X			4
	17-105-170206	06-FEB-17	10:30	GW	X	X	X	X				8
	~~MW17-00B-170206~~ 17-05-170206	06-FEB-17	13:10	GW	X	X	X			X	X	12

Drinking Water (DW) Samples[1] (client use)	Special Instructions / Specify Criteria to add on report (client Use)
Are samples taken from a Regulated DW System? ☐ Yes ☑ No	Some samples may contain sediment. Some samples contain limited quantity. Please proceed with analysis.
Are samples for human drinking water use? ☐ Yes ☑ No	

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen	☐	SIF Observations	Yes ☐	No ☐
Ice packs	Yes ☐	No ☐	Custody seal intact	Yes ☐	No ☐
Cooling Initiated	☐			

INITIAL COOLER TEMPERATURES °C		FINAL COOLER TEMPERATURES °C	
9			

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by:	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:
Amber Salzsauler	Feb 7/17	12:00		Feb 8/17	11:55			

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

NA-FM-0329e v08 Front03 October 2013

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

ALS Environmental
www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

L1887819-COFC

COC Number: 14 - 422175

Page 2 of 2

Report To		Report Format / Distribution		Select Service Level Below (Rush Turnaround Time (TAT) is not available for all tests)
Company:	SNC Lavalin Inc.	Select Report Format:	PDF, EXCEL, EDD (DIGITAL)	R ☑ Regular (Standard TAT if received by 3pm)
Contact:	June Lu	Quality Control (QC) Report with Report	Yes / No	P ☐ Priority (2-4 business days if received by 3pm)
Address:	216 - 1st Ave S, Saskatoon, SK S7K 1K3	☐ Criteria on Report - provide details below if box checked		E ☐ Emergency (1-2 business days if received by 3pm)
Phone:	(306) 668 - 6800 Ext. 54369	Select Distribution:	EMAIL, MAIL, FAX	E2 ☐ Same day or weekend emergency if received by 10am – contact ALS for surcharge.
		Email 1 or Fax	june.lu@snclavalin.com	Specify Date Required for E2,E or P:
		Email 2		

Invoice To		Invoice Distribution	
	Same as Report To: ☑ Yes ☐ No	Select Invoice Distribution:	☒ EMAIL ☐ MAIL ☐ FAX
	Copy of Invoice with Report: ☑ Yes ☐ No	Email 1 or Fax	june.lu@snclavalin.com
Company:		Email 2	
Contact:			

Project Information		Oil and Gas Required Fields (client use)	
ALS Quote #:		Approver ID:	Cost Center:
Job #:	644079	GL Account:	Routing Code:
PO / AFE:	644079	Activity Code:	
LSD:		Location:	

ALS Lab Work Order # (lab use only):

ALS Contact: Jessica Spira

Sampler: Amber Salzsauler

Analysis Request — Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	BTEX (P)	F1-F4 (P)	PAH (P)	VOCs	Dissolved metals	Glycols	Lead (dissolved)	Number of Containers
	17-07-170206	06-FEB-17	13:45	GW	X	X	X	X	X	X		15
	14-1-170206	06-FEB-17	14:20	GW	X	X	X		X			9
	14-20-170206	06-FEB-17	15:40	GW	X	X	X					7
	17-12-170206	06-FEB-17	15:20	GW	X	X	X				X	8
	17-09-170206	06-FEB-17	12:15	GW	X	X	X				X	8
	17-10D-170206	06-FEB-17	10:00	GW	X	X	X				X	8
	17-06-170206	06-FEB-17	11:30	GW	X	X	X				X	8

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ Yes ☑ No

Are samples for human drinking water use? ☐ Yes ☑ No

Special Instructions / Specify Criteria to add on report (client Use)

Some samples may contain sediment. Proceed with analysis.

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations: Yes ☐ No ☐

Ice packs: Yes ☐ No ☐ Custody seal intact: Yes ☐ No ☐

Cooling Initiated ☐

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by:	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:
Amber Salzsauler	Feb 7/17	12:00						

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

NA-FM 0026a v08 Front/03 October 2013

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

Maxxam
A Bureau Veritas Group Company

Success Through Science®

Your P.O. #: 644079
Your Project #: 644079
Site#: 644079
Site Location: AVE D NORTH, SASKATOON
Your C.O.C. #: M011572

Attention:JUNE LU

SNC-LAVALIN INC.
CALGARY ENVIRONMENT DIV.
300, 640 - 5th AVENUE S.W.
CALGARY, AB
CANADA T2P 3G4

Report Date: 2017/06/14
Report #: R2397032
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

MAXXAM JOB #: B745843
Received: 2017/06/07, 12:30

Sample Matrix: Soil
Samples Received: 4

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
CCME Hydrocarbons (F2-F4 in soil) (1)	1	2017/06/10	2017/06/12	AB SOP-00036 / AB SOP-00040	CCME PHC-CWS m
CCME Hydrocarbons (F2-F4 in soil) (1)	3	2017/06/10	2017/06/13	AB SOP-00036 / AB SOP-00040	CCME PHC-CWS m
Moisture	4	N/A	2017/06/11	AB SOP-00002	CCME PHC-CWS m

Remarks:

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

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

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

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

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

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

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

Maxxam Analytics International Corporation o/a Maxxam Analytics Calgary: 2021 - 41st Avenue N.E. T2E 6P2 Telephone (403) 291-3077 Fax (403) 291-9468

Your P.O. #: 644079
Your Project #: 644079
Site#: 644079
Site Location: AVE D NORTH, SASKATOON
Your C.O.C. #: M011572

Attention:JUNE LU

SNC-LAVALIN INC.
CALGARY ENVIRONMENT DIV.
300, 640 - 5th AVENUE S.W.
CALGARY, AB
CANADA T2P 3G4

Report Date: 2017/06/14
Report #: R2397032
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

MAXXAM JOB #: B745843
Received: 2017/06/07, 12:30

Encryption Key

Carmen McKay
Project Manager
14 Jun 2017 12:46:24

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Carmen McKay, Project Manager
Email: CMcKay@maxxam.ca
Phone# (403)219-3683

==========

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

Maxxam Analytics International Corporation o/a Maxxam Analytics Calgary: 2021 - 41st Avenue N.E. T2E 6P2 Telephone (403) 291-3077 Fax (403) 291-9468

Maxxam Job #: B745843
Report Date: 2017/06/14

SNC-LAVALIN INC.
Client Project #: 644079
Site Location: AVE D NORTH, SASKATOON
Your P.O. #: 644079
Sampler Initials: AS

RESULTS OF CHEMICAL ANALYSES OF SOIL

Maxxam ID		RG2570		RG2571	RG2572		RG2573		
Sampling Date		2017/06/07 09:55		2017/06/07 10:00	2017/06/07 10:00		2017/06/07 10:10		
COC Number		M011572		M011572	M011572		M011572		
	UNITS	**17-18-01**	**QC Batch**	**17-18-02**	**17-18-03**	**QC Batch**	**17-18-04**	**RDL**	**QC Batch**
Physical Properties									
Moisture	%	16	8659496	17	16	8659498	11	0.30	8659496
RDL = Reportable Detection Limit									

Maxxam Analytics International Corporation o/a Maxxam Analytics Calgary: 2021 - 41st Avenue N.E. T2E 6P2 Telephone (403) 291-3077 Fax (403) 291-9468

Maxxam Job #: B745843
Report Date: 2017/06/14

SNC-LAVALIN INC.
Client Project #: 644079
Site Location: AVE D NORTH, SASKATOON
Your P.O. #: 644079
Sampler Initials: AS

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		RG2570	RG2571	RG2572	RG2573		
Sampling Date		2017/06/07 09:55	2017/06/07 10:00	2017/06/07 10:00	2017/06/07 10:10		
COC Number		M011572	M011572	M011572	M011572		
	UNITS	**17-18-01**	**17-18-02**	**17-18-03**	**17-18-04**	**RDL**	**QC Batch**
Ext. Pet. Hydrocarbon							
F2 (C10-C16 Hydrocarbons)	mg/kg	<10	<10	<10	<10	10	8659324
F3 (C16-C34 Hydrocarbons)	mg/kg	<50	<50	<50	<50	50	8659324
F4 (C34-C50 Hydrocarbons)	mg/kg	<50	<50	<50	<50	50	8659324
Reached Baseline at C50	mg/kg	Yes	Yes	Yes	Yes		8659324
Surrogate Recovery (%)							
O-TERPHENYL (sur.)	%	96	100	96	95		8659324
RDL = Reportable Detection Limit							

Maxxam Analytics International Corporation o/a Maxxam Analytics Calgary: 2021 - 41st Avenue N.E. T2E 6P2 Telephone (403) 291-3077 Fax (403) 291-9468

Maxxam Job #: B745843
Report Date: 2017/06/14

SNC-LAVALIN INC.
Client Project #: 644079
Site Location: AVE D NORTH, SASKATOON
Your P.O. #: 644079
Sampler Initials: AS

GENERAL COMMENTS

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

Package 1	17.0°C

As per client request, the client IDs were changed to the following:

RG2570 was changed from 17-17-01 to 17-18-01
RG2571 was changed from 17-17-02 to 17-18-02
RG2572 was changed from 17-17-03 to 17-18-03
RG2573 was changed from 17-17-04 to 17-18-04

The client request was received 2017/06/14.

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics Calgary: 2021 - 41st Avenue N.E. T2E 6P2 Telephone (403) 291-3077 Fax (403) 291-9468

Maxxam Job #: B745843
Report Date: 2017/06/14

SNC-LAVALIN INC.
Client Project #: 644079
Site Location: AVE D NORTH, SASKATOON
Your P.O. #: 644079
Sampler Initials: AS

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
8659324	LSH	Matrix Spike [RG2572-01]	O-TERPHENYL (sur.)	2017/06/12		104	%	60 - 130
			F2 (C10-C16 Hydrocarbons)	2017/06/12		108	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2017/06/12		101	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2017/06/12		99	%	60 - 130
8659324	LSH	Spiked Blank	O-TERPHENYL (sur.)	2017/06/12		103	%	60 - 130
			F2 (C10-C16 Hydrocarbons)	2017/06/12		108	%	70 - 130
			F3 (C16-C34 Hydrocarbons)	2017/06/12		102	%	70 - 130
			F4 (C34-C50 Hydrocarbons)	2017/06/12		98	%	70 - 130
8659324	LSH	Method Blank	O-TERPHENYL (sur.)	2017/06/12		108	%	60 - 130
			F2 (C10-C16 Hydrocarbons)	2017/06/12	<10		mg/kg	
			F3 (C16-C34 Hydrocarbons)	2017/06/12	<50		mg/kg	
			F4 (C34-C50 Hydrocarbons)	2017/06/12	<50		mg/kg	
8659324	LSH	RPD [RG2572-01]	F2 (C10-C16 Hydrocarbons)	2017/06/12	NC		%	40
			F3 (C16-C34 Hydrocarbons)	2017/06/12	NC		%	40
			F4 (C34-C50 Hydrocarbons)	2017/06/12	NC		%	40
8659496	SRB	Method Blank	Moisture	2017/06/11	<0.30		%	
8659496	SRB	RPD	Moisture	2017/06/11	0		%	20
8659498	SRB	Method Blank	Moisture	2017/06/11	<0.30		%	
8659498	SRB	RPD	Moisture	2017/06/11	2.8		%	20

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

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

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

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

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

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

Maxxam Analytics International Corporation o/a Maxxam Analytics Calgary: 2021 - 41st Avenue N.E. T2E 6P2 Telephone (403) 291-3077 Fax (403) 291-9468

Maxxam Job #: B745843
Report Date: 2017/06/14

SNC-LAVALIN INC.
Client Project #: 644079
Site Location: AVE D NORTH, SASKATOON
Your P.O. #: 644079
Sampler Initials: AS

VALIDATION SIGNATURE PAGE

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

Veronica Falk, B.Sc., P.Chem., QP, Scientific Specialist, Organics

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

Maxxam Analytics International Corporation o/a Maxxam Analytics Calgary: 2021 - 41st Avenue N.E. T2E 6P2 Telephone (403) 291-3077 Fax (403) 291-9468

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Maxxam
A Bureau Veritas Group Company

Calgary: 4000 19th St. NE, T2E 6P8. Toll Free (800) 386-7247
Edmonton: 9331-48 St. T6B 2R4. Toll Free (800) 386-7247
maxxam.ca

CHAIN OF CUSTODY RECORD

M011572

Page 1 of 1

Invoice Information	Report Information (if differs from invoice)	Project Information	Turnaround Time (TAT) Required
Company: SNC Lavalin Inc.	Company:	Quotation #: 644079	☑ 5 - 7 Days Regular (Most analyses)
Contact Name: June Lu	Contact Name:	P.O. #/ AFE#: 644079	PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS
Address: 216 - 1st Ave South Saskatoon, SK S7K 1K3	Address:	Project #: 644079	Rush TAT (Surcharges will be applied): ☐ Same Day ☐ 2 Days ☐ 1 Day ☐ 3-4 Days
Phone: 306-668-6800	Phone:	Site Location: Ave D North, Saskatoon	Date Required:
Email: June.Lu@snclavalin.com	Email:	Site #: 644079	Rush Confirmation #:
Copies: SKlabdata@snclavalin.com	Copies:	Sampled By: Amber Salzsauler	

Laboratory Use Only

	YES	NO	Cooler ID	Temp		
Seal Present	✓					
Seal Intact	✓					
Cooling Media	✓					
Temp				12	12	12

	YES	NO	Cooler ID	Temp		
Seal Present						
Seal Intact						
Cooling Media						

	YES	NO	Cooler ID	Temp		
Seal Present						
Seal Intact						
Cooling Media						

Courier Reception

RECEIVED IN SASKATOON
By:
No ice
No COC seal
2017 -06- 07
12:30
Temp: 16 / 18 / 17

Analysis Requested

	Sample Identification	Depth (Unit)	Date Sampled (YYYY/MM/DD)	Time Sampled (HH:MM)	Matrix	# of containers	BTEX F1 ☐ VOC ☐	BTEX F1-F2	BTEX F1-F4	Routine Water	Regulated Metals Tot ☐ Diss ☐	Mercury Total ☐ Dissolved ☐	Salinity 4	Sieve (75 micron)	Texture (% Sand, Silt, Clay)	Basic Class II Landfill	F2-F4 Limited Sample	HOLD - DO NOT ANALYZE
1	17-17-01	0.75	2017/06/07	09:55	soil	2			X								X	
2	17-17-02	2.25	2017/06/07	10:00	soil	2			X								X	
3	17-17-03	2.25	2017/06/07	10:00	soil	2			X								X	
4	17-17-04	3.0	2017/06/07	10:10	soil	1			X								X	
5																		
6																		
7																		
8																		
9																		
10																		

Please indicate Filtered, Preserved or Both (F, P, F/P) →

Regulatory Criteria

- ☐ AT1/CCME
- ☑ Drinking Water
- ☑ Saskatchewan
- ☐ D50 (Drilling Waste)
- ☐ Other:

Special Instructions

Samples may contain limited quantities. Please proceed with analysis.

Relinquished by: (Signature/ Print)	DATE (YYYY/MM/DD)	Time (HH:MM)	Received by: (Signature/ Print)	DATE (YYYY/MM/DD)	Time (HH:MM)
Amber Salzsauler	2017/06/07	12:30		2017/06/09	09:30

07-Jun-17 12:30
Carmen McKay
B745843
BLK INS-0008

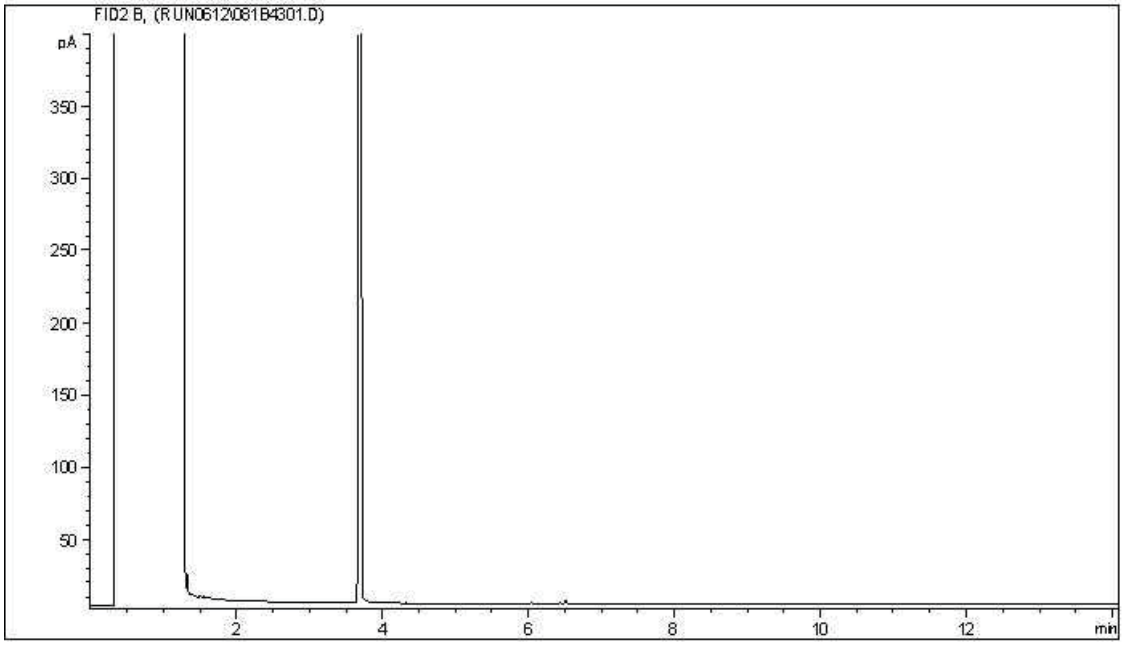
AB FCD-00331/8

Maxxam Job #: B745843
Report Date: 2017/06/14
Maxxam Sample: RG2570

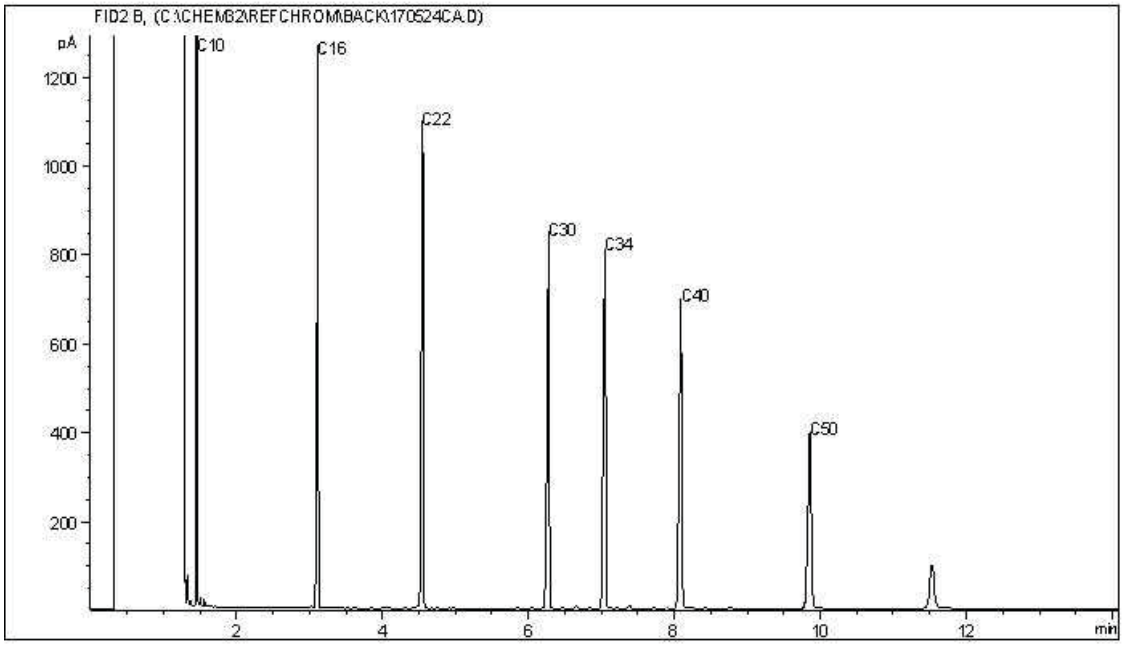
SNC-LAVALIN INC.
Client Project #: 644079
Site Reference: AVE D NORTH, SASKATOON
Client ID: 17-18-01

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC10



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

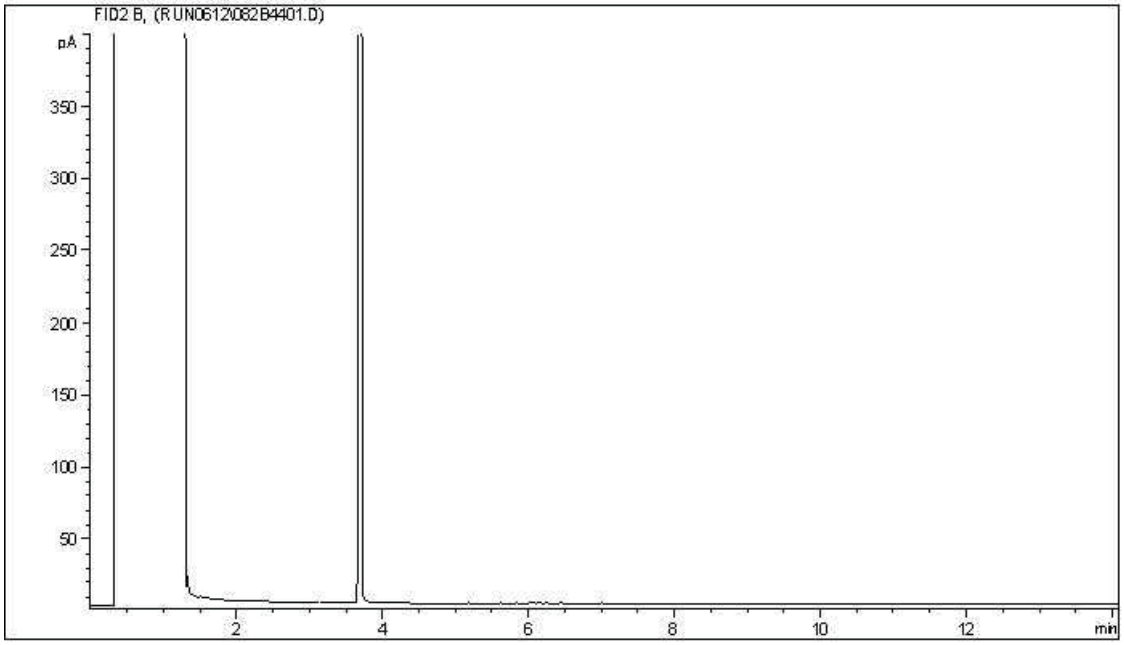
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Maxxam Job #: B745843
Report Date: 2017/06/14
Maxxam Sample: RG2571

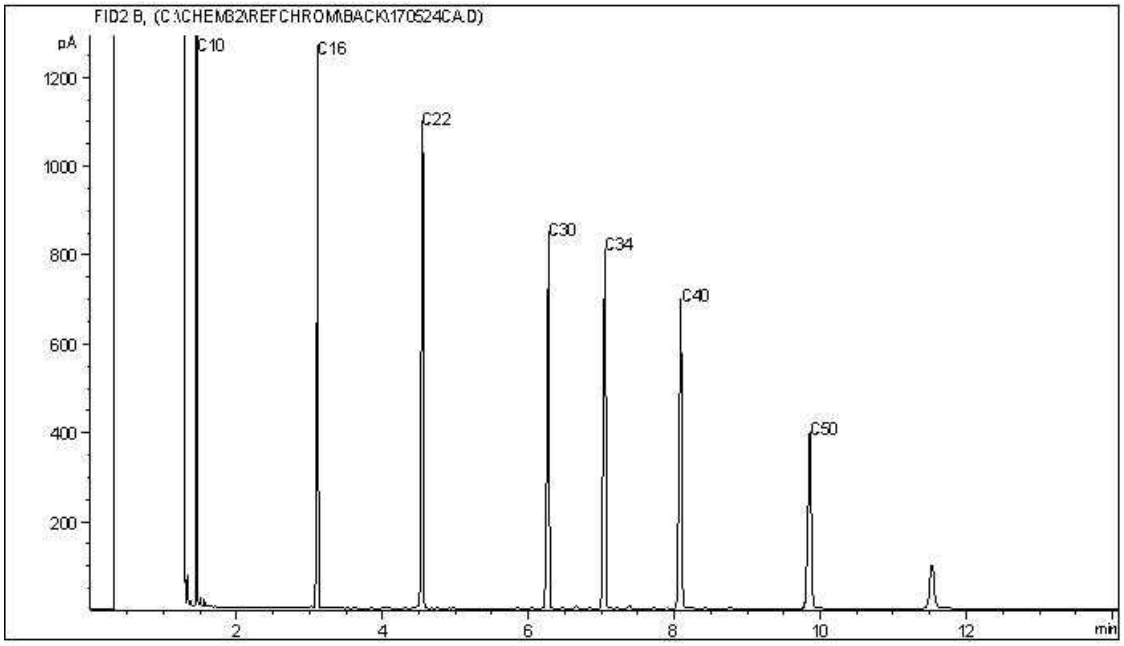
SNC-LAVALIN INC.
Client Project #: 644079
Site Reference: AVE D NORTH, SASKATOON
Client ID: 17-18-02

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC10



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

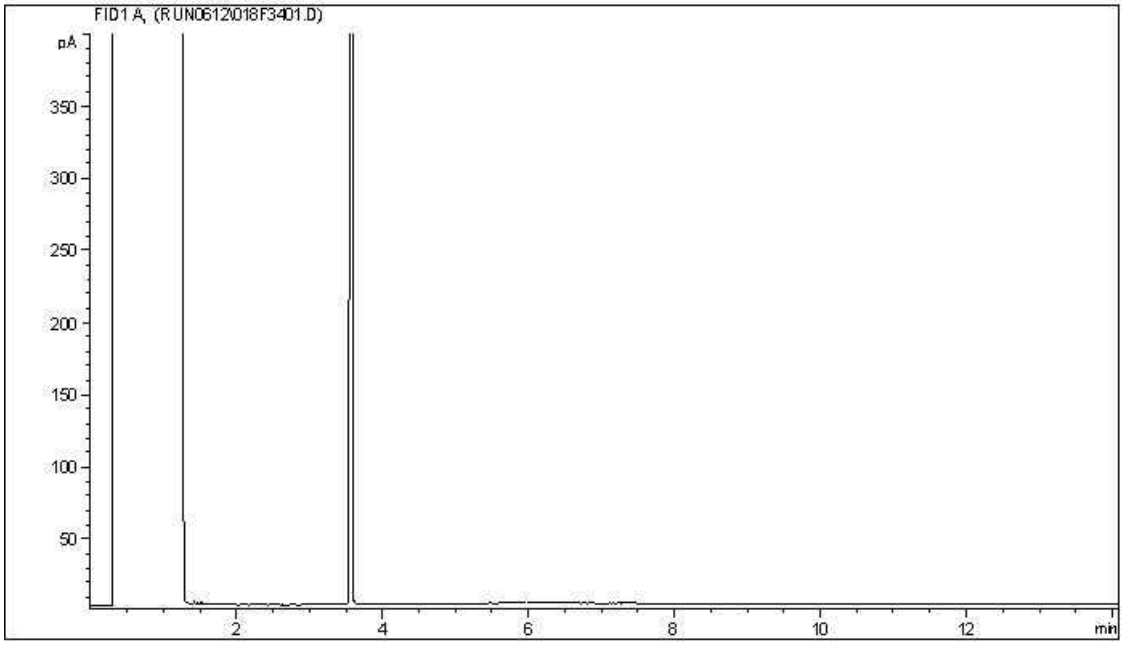
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Maxxam Job #: B745843
Report Date: 2017/06/14
Maxxam Sample: RG2572

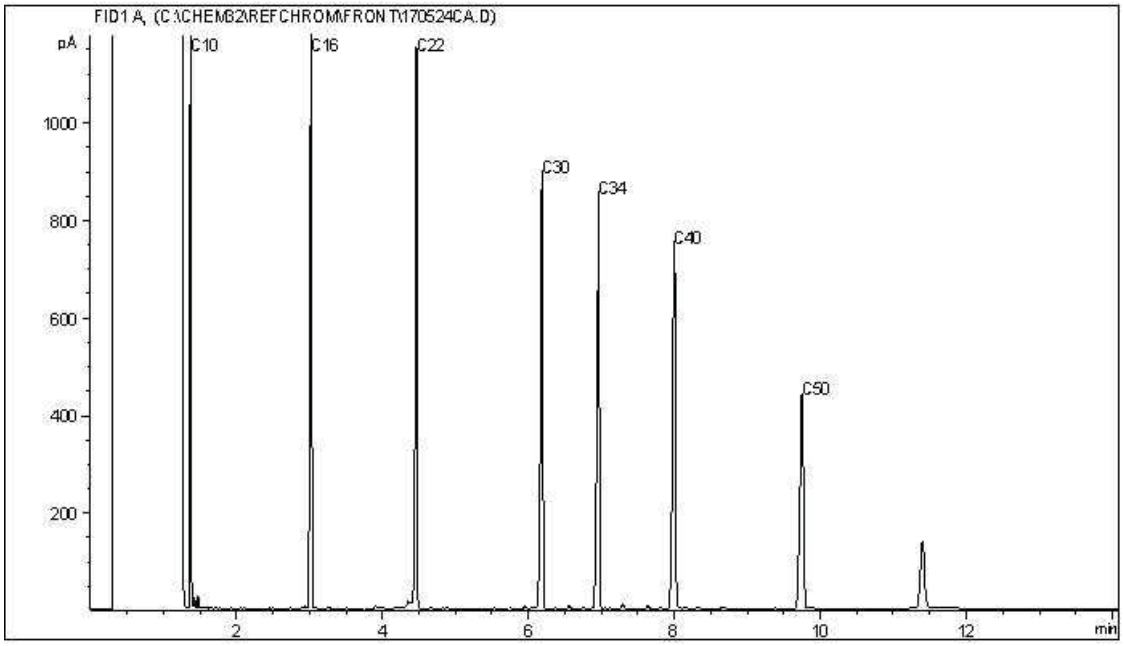
SNC-LAVALIN INC.
Client Project #: 644079
Site Reference: AVE D NORTH, SASKATOON
Client ID: 17-18-03

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC10



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

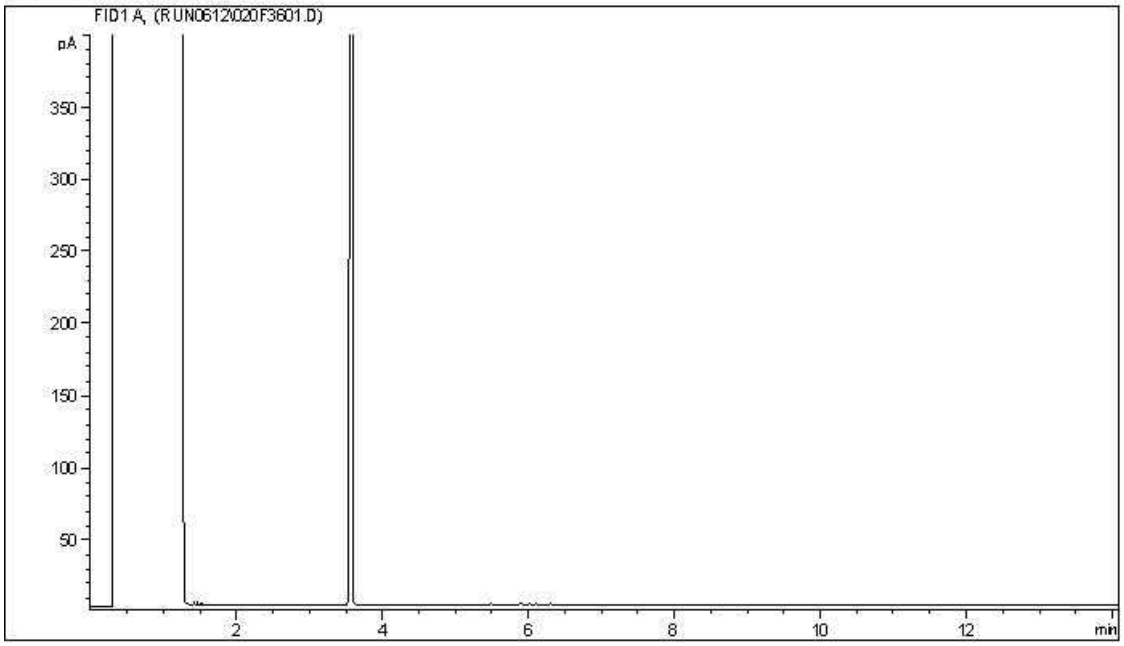
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Maxxam Job #: B745843
Report Date: 2017/06/14
Maxxam Sample: RG2572 Lab-Dup

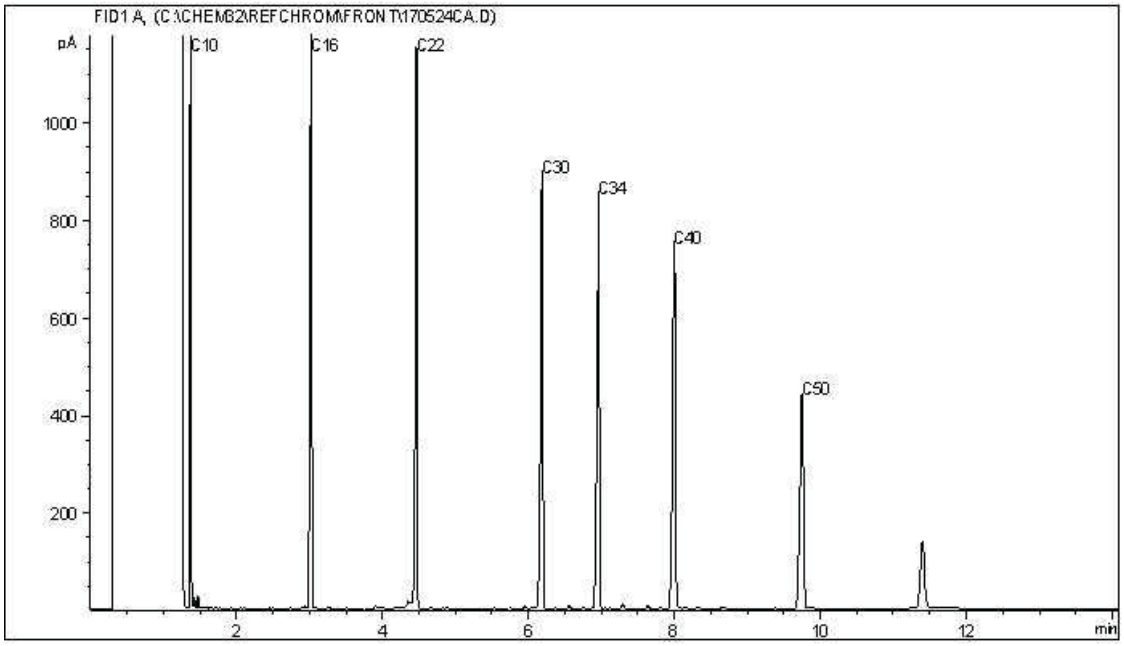
SNC-LAVALIN INC.
Client Project #: 644079
Site Reference: AVE D NORTH, SASKATOON
Client ID: 17-18-03

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC10



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

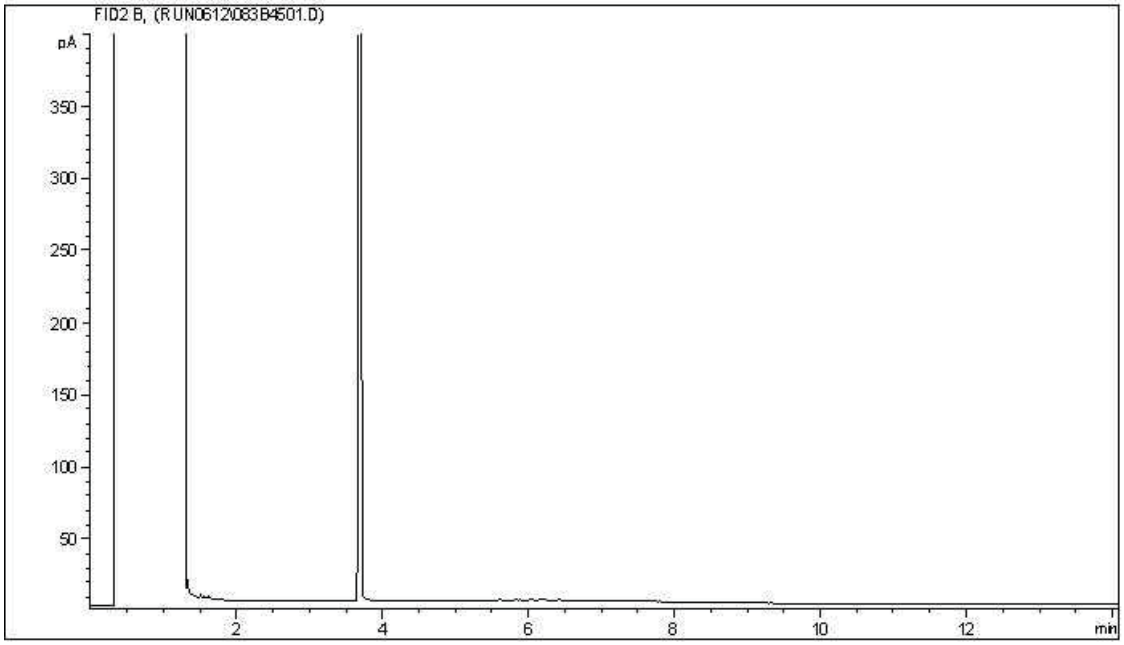
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Maxxam Job #: B745843
Report Date: 2017/06/14
Maxxam Sample: RG2573

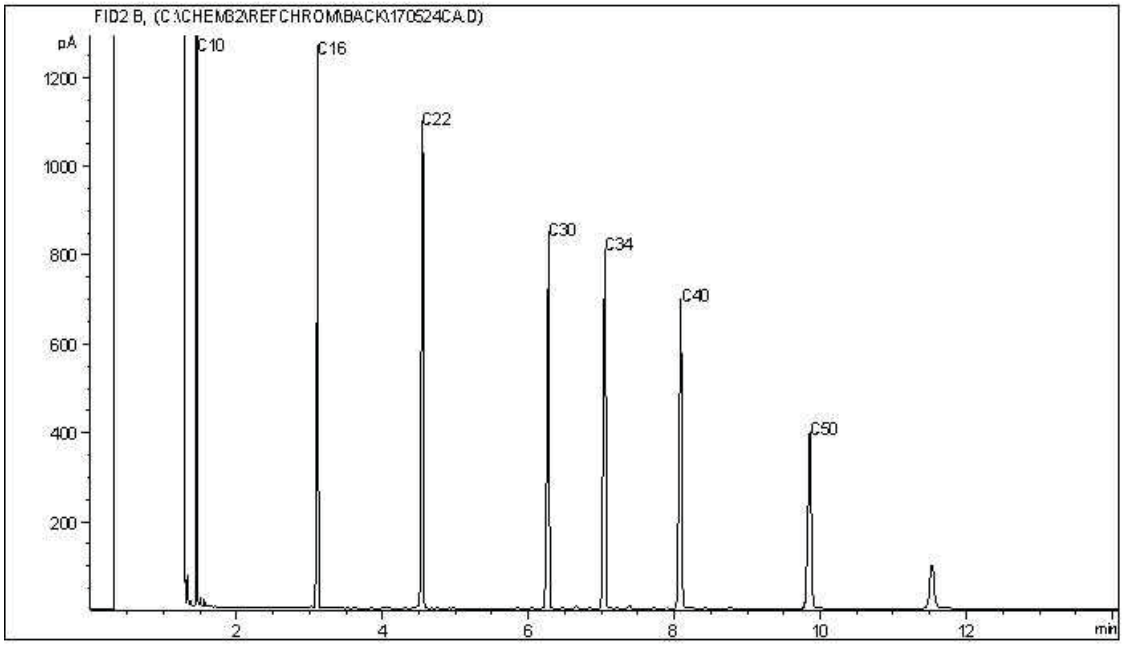
SNC-LAVALIN INC.
Client Project #: 644079
Site Reference: AVE D NORTH, SASKATOON
Client ID: 17-18-04

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC10



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

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

Your P.O. #: 644079
Your Project #: 644079
Site Location: AVE D. N, SASKATOON, SK
Your C.O.C. #: m011786

Attention:JUNE LU

SNC-LAVALIN INC.
CALGARY ENVIRONMENT DIV.
300, 640 - 5th AVENUE S.W.
CALGARY, AB
CANADA T2P 3G4

Report Date: 2017/06/16
Report #: R2398375
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

MAXXAM JOB #: B746019
Received: 2017/06/08, 15:45

Sample Matrix: GROUND WATER
Samples Received: 4

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
CCME Hydrocarbons (F2-F4 in water) (1)	4	2017/06/13	2017/06/14	AB SOP-00037 / AB SOP-00040	CCME PHC-CWS m

Remarks:

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

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

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

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) Silica gel clean up employed.

Maxxam Analytics International Corporation o/a Maxxam Analytics Calgary: 2021 - 41st Avenue N.E. T2E 6P2 Telephone (403) 291-3077 Fax (403) 291-9468

Your P.O. #: 644079
Your Project #: 644079
Site Location: AVE D. N, SASKATOON, SK
Your C.O.C. #: m011786

Attention:JUNE LU

SNC-LAVALIN INC.
CALGARY ENVIRONMENT DIV.
300, 640 - 5th AVENUE S.W.
CALGARY, AB
CANADA T2P 3G4

Report Date: 2017/06/16
Report #: R2398375
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

MAXXAM JOB #: B746019
Received: 2017/06/08, 15:45

Encryption Key

Carmen McKay
Project Manager
16 Jun 2017 08:02:25

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Carmen McKay, Project Manager
Email: CMcKay@maxxam.ca
Phone# (403)219-3683

==========

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

Maxxam Analytics International Corporation o/a Maxxam Analytics Calgary: 2021 - 41st Avenue N.E. T2E 6P2 Telephone (403) 291-3077 Fax (403) 291-9468

Maxxam Job #: B746019
Report Date: 2017/06/16

SNC-LAVALIN INC.
Client Project #: 644079
Site Location: AVE D. N, SASKATOON, SK
Your P.O. #: 644079
Sampler Initials: AS

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		RG3776	RG3777	RG3778	RG3779		
Sampling Date		2017/06/08 14:30	2017/06/08 14:30	2017/06/08 14:35	2017/06/08 14:40		
COC Number		m011786	m011786	m011786	m011786		
	UNITS	MW17-18	MW17-00A	MW17-00B	MW17-00C	RDL	QC Batch
Ext. Pet. Hydrocarbon							
F2 (C10-C16 Hydrocarbons)	mg/L	<0.10	<0.10	<0.10	<0.10	0.10	8660923
F3 (C16-C34 Hydrocarbons)	mg/L	<0.10	<0.10	<0.10	<0.10	0.10	8660923
F4 (C34-C50 Hydrocarbons)	mg/L	<0.20	<0.20	<0.20	<0.20	0.20	8660923
Surrogate Recovery (%)							
O-TERPHENYL (sur.)	%	103	103	103	102		8660923

RDL = Reportable Detection Limit

Maxxam Analytics International Corporation o/a Maxxam Analytics Calgary: 2021 - 41st Avenue N.E. T2E 6P2 Telephone (403) 291-3077 Fax (403) 291-9468

Maxxam Job #: B746019
Report Date: 2017/06/16

SNC-LAVALIN INC.
Client Project #: 644079
Site Location: AVE D. N, SASKATOON, SK
Your P.O. #: 644079
Sampler Initials: AS

GENERAL COMMENTS

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

Package 1	21.3°C

As per client request, the client ID for sample RG3776 was changed from 17-17 to MW17-18. The client request was received 2017/06/16.

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics Calgary: 2021 - 41st Avenue N.E. T2E 6P2 Telephone (403) 291-3077 Fax (403) 291-9468

Maxxam Job #: B746019
Report Date: 2017/06/16

SNC-LAVALIN INC.
Client Project #: 644079
Site Location: AVE D. N, SASKATOON, SK
Your P.O. #: 644079
Sampler Initials: AS

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
8660923	LSH	Matrix Spike	O-TERPHENYL (sur.)	2017/06/14		107	%	60 - 130
			F2 (C10-C16 Hydrocarbons)	2017/06/14		125	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2017/06/14		126	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2017/06/14		102	%	60 - 130
8660923	LSH	Spiked Blank	O-TERPHENYL (sur.)	2017/06/14		105	%	60 - 130
			F2 (C10-C16 Hydrocarbons)	2017/06/14		111	%	70 - 130
			F3 (C16-C34 Hydrocarbons)	2017/06/14		106	%	70 - 130
			F4 (C34-C50 Hydrocarbons)	2017/06/14		100	%	70 - 130
8660923	LSH	Method Blank	O-TERPHENYL (sur.)	2017/06/14		104	%	60 - 130
			F2 (C10-C16 Hydrocarbons)	2017/06/14	<0.10		mg/L	
			F3 (C16-C34 Hydrocarbons)	2017/06/14	<0.18 (1)		mg/L	
			F4 (C34-C50 Hydrocarbons)	2017/06/14	<0.20		mg/L	
8660923	LSH	RPD	F2 (C10-C16 Hydrocarbons)	2017/06/14	NC		%	30
			F3 (C16-C34 Hydrocarbons)	2017/06/14	15		%	30
			F4 (C34-C50 Hydrocarbons)	2017/06/14	NC		%	30

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

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

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

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

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

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

(1) Detection limit raised due to interferent.

Maxxam Analytics International Corporation o/a Maxxam Analytics Calgary: 2021 - 41st Avenue N.E. T2E 6P2 Telephone (403) 291-3077 Fax (403) 291-9468

Maxxam Job #: B746019
Report Date: 2017/06/16

SNC-LAVALIN INC.
Client Project #: 644079
Site Location: AVE D. N, SASKATOON, SK
Your P.O. #: 644079
Sampler Initials: AS

VALIDATION SIGNATURE PAGE

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

Dennis Ngondu, B.Sc., P.Chem., QP, Supervisor, Organics

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

Maxxam Analytics International Corporation o/a Maxxam Analytics Calgary: 2021 - 41st Avenue N.E. T2E 6P2 Telephone (403) 291-3077 Fax (403) 291-9468

Maxxam
A Bureau Veritas Group Company

Calgary: 4000 19th St. NE, T2E 6P8. Toll Free (800) 386-7247
Edmonton: 9331-48 St. T6B 2R4. Toll Free (800) 386-7247
maxxam.ca

CHAIN OF CUSTODY RECORD

327
M011786

Page 1 of 1

Invoice Information		Report Information (if differs from invoice)		Project Information		Turnaround Time (TAT) Required
Company:	SNC Lavalin Inc	Company:		Quotation #:	644079	☑ 5 - 7 Days Regular (Most analyses)
Contact Name:	June Lu.	Contact Name:		P.O. #/ AFE#:	644079	PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS
Address:	216 1ST Ave S. Saskatoon, SK S7K 1K3	Address:		Project #:	644079	Rush TAT (Surcharges will be applied)
Phone:	306-668-6800	Phone:		Site Location:	Ave D. N, Saskatoon, SK	☐ Same Day ☐ 2 Days ☐ 1 Day ☐ 3-4 Days
Email:	june.lu@snclavalin.com	Email:		Site #:	644079	Date Required:
Copies:	SKlabdata@snclavalin.com	Copies:		Sampled By:	Amber Salzsauler	Rush Confirmation #:

Laboratory Use Only

	YES	NO	Cooler ID			
Seal Present	✓		Temp	3	3	2
Seal Intact	✓					
Cooling Media	✓					
	YES	NO	Cooler ID			
Seal Present			Temp			
Seal Intact						
Cooling Media						
	YES	NO	Cooler ID			
Seal Present			Temp			
Seal Intact						
Cooling Media						

RECEIVED IN SASKATOON
By: Depot Reception
2017 -06- 08 15:45
Ice
NOCOC Seal
Temp: 18 / 22 / 24

Analysis Requested

	Sample Identification	Depth (Unit)	Date Sampled (YYYY/MM/DD)	Time Sampled (HH:MM)	Matrix	# of containers	BTEX F1 ☐ VOC ☐	BTEX F1-F2	BTEX F1-F4	Routine Water	Regulated Metals: Tot ☐ Diss ☐	Mercury Total ☐ Dissolved ☐	Salinity 4	Sieve (75 micron)	Texture (% Sand, Silt, Clay)	Basic Class II Landfill	F2-F4	HOLD - DO NOT ANALYZE
1	17-17	—	2017/06/08	[illegible]	GW	2											X	
2	MW17-00A	—	2017/06/08	14:30	GW	2											X	
3	MW17-00B	—	2017/06/08	14:35	GW	2											X	
4	MW17-00C	—	2017/06/08	14:40	GW	2											X	
5																		
6																		
7																		
8																		
9																		
10																		

08-Jun-17 15:45
Carmen McKay
B746019
HD0 INS-0001

Regulatory Criteria

☑ AT1/CCME
☑ Drinking Water
☑ Saskatchewan
☐ DS0 (Drilling Waste)
☐ Other:

Special Instructions

Please indicate Filtered, Preserved or Both (F, P, F/P) →

Relinquished by: (Signature/ Print)	DATE (YYYY/MM/DD)	Time (HH:MM)	Received by: (Signature/ Print)	DATE (YYYY/MM/DD)	Time (HH:MM)	Maxxam Job #
Amber Salzsauler	2017/06/08	15:45	[illegible]	2017/06/10	09:55	

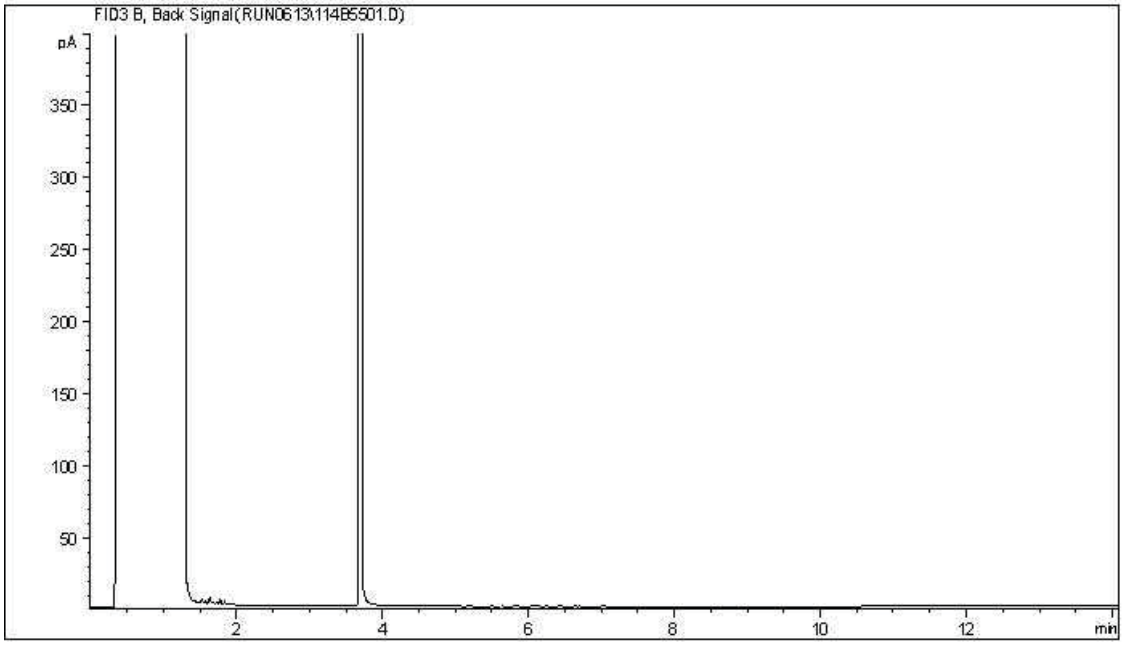
AB FCD-00331/6

Maxxam Job #: B746019
Report Date: 2017/06/16
Maxxam Sample: RG3776

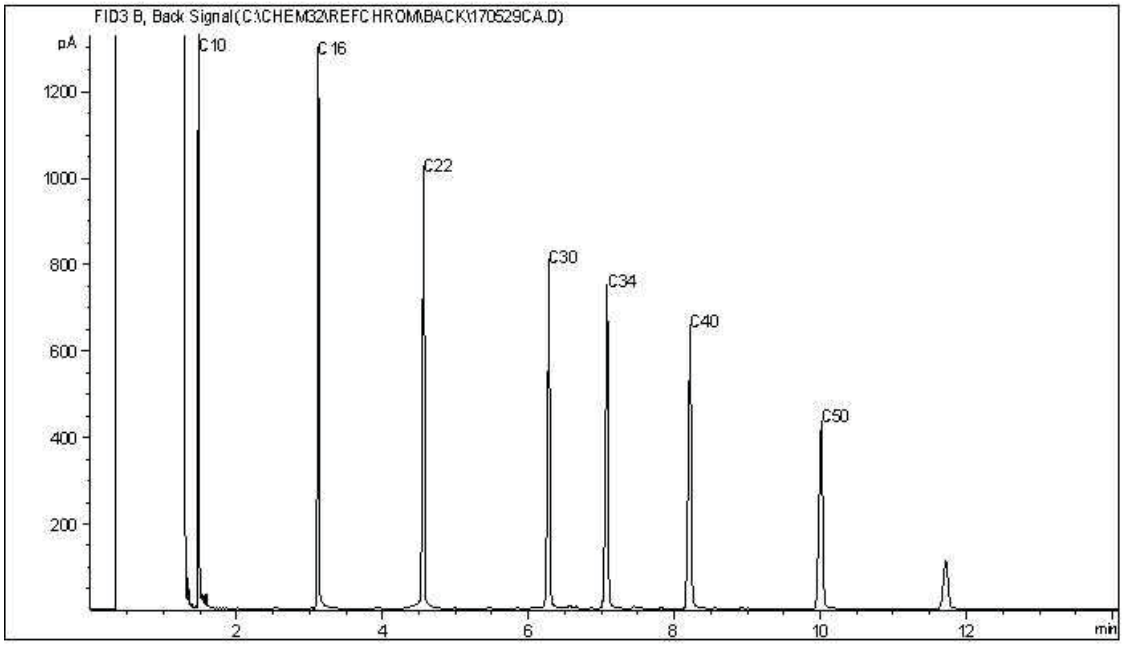
SNC-LAVALIN INC.
Client Project #: 644079
Site Reference: AVE D. N, SASKATOON, SK
Client ID: MW17-18

CCME Hydrocarbons (F2-F4 in water) Chromatogram

Instrument: GC13



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

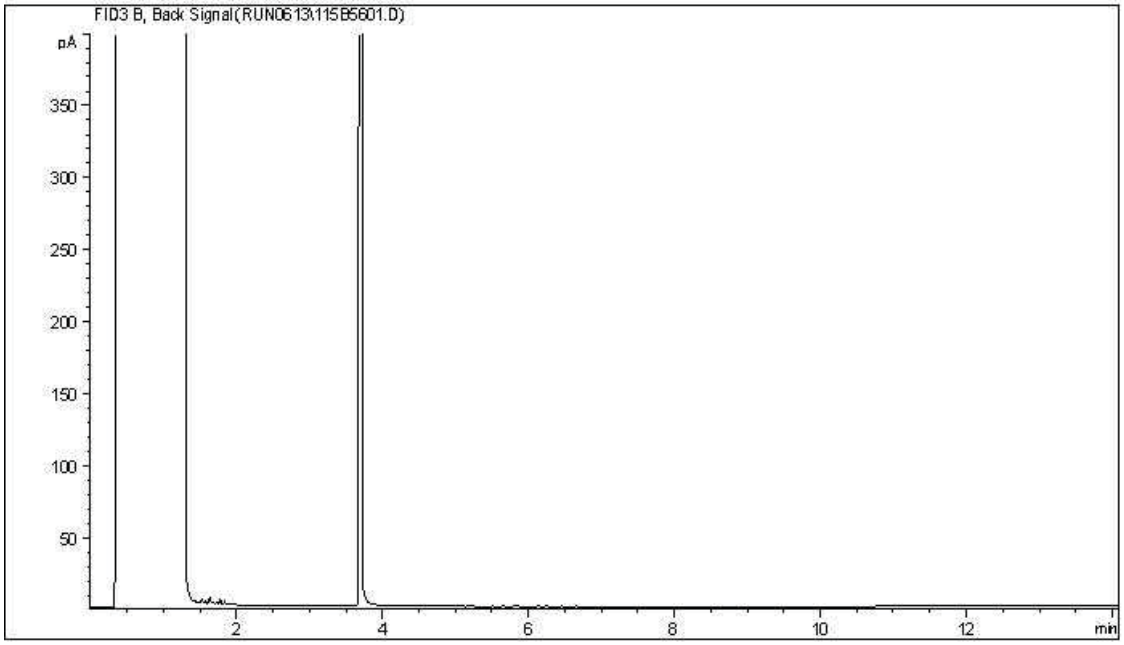
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Maxxam Job #: B746019
Report Date: 2017/06/16
Maxxam Sample: RG3777

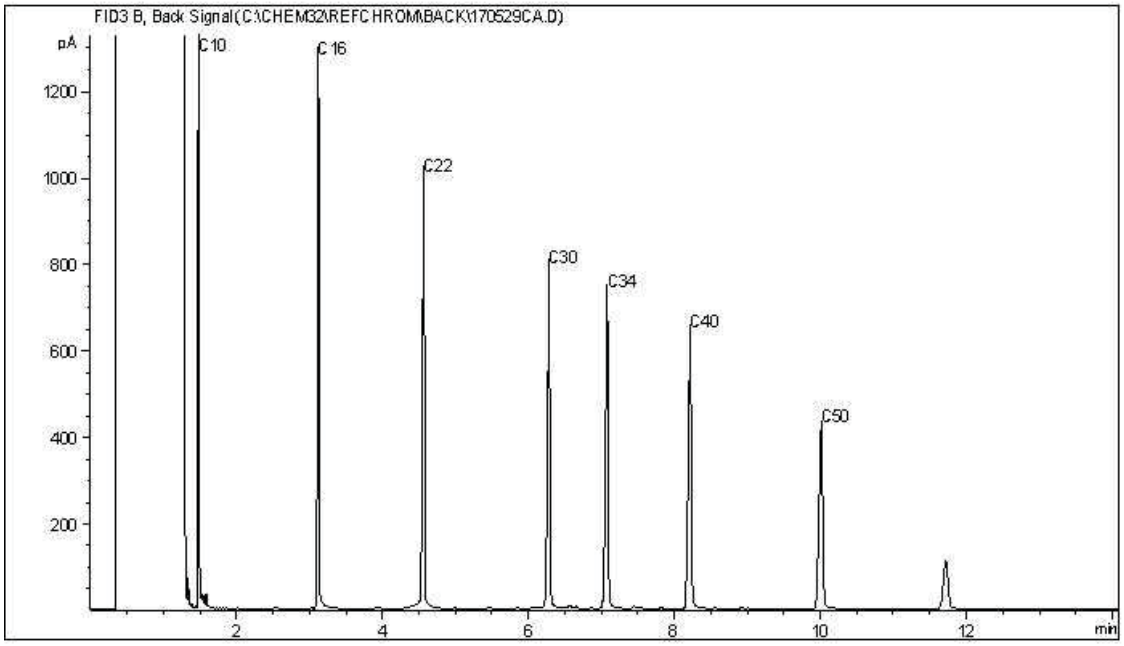
SNC-LAVALIN INC.
Client Project #: 644079
Site Reference: AVE D. N, SASKATOON, SK
Client ID: MW17-00A

CCME Hydrocarbons (F2-F4 in water) Chromatogram

Instrument: GC13



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

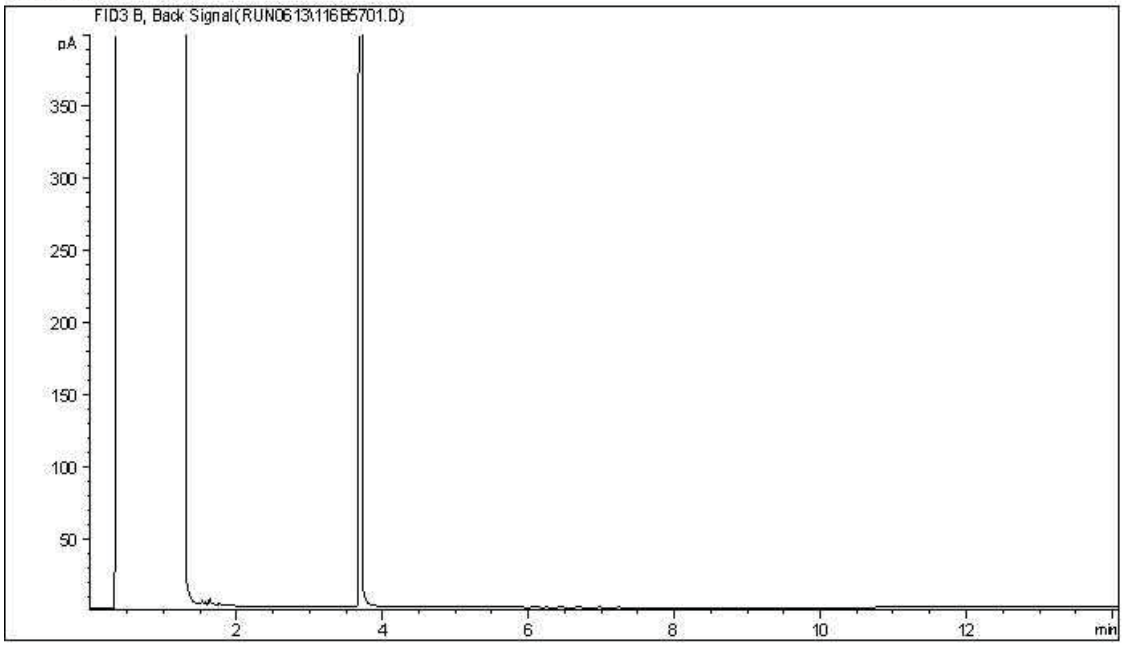
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Maxxam Job #: B746019
Report Date: 2017/06/16
Maxxam Sample: RG3778

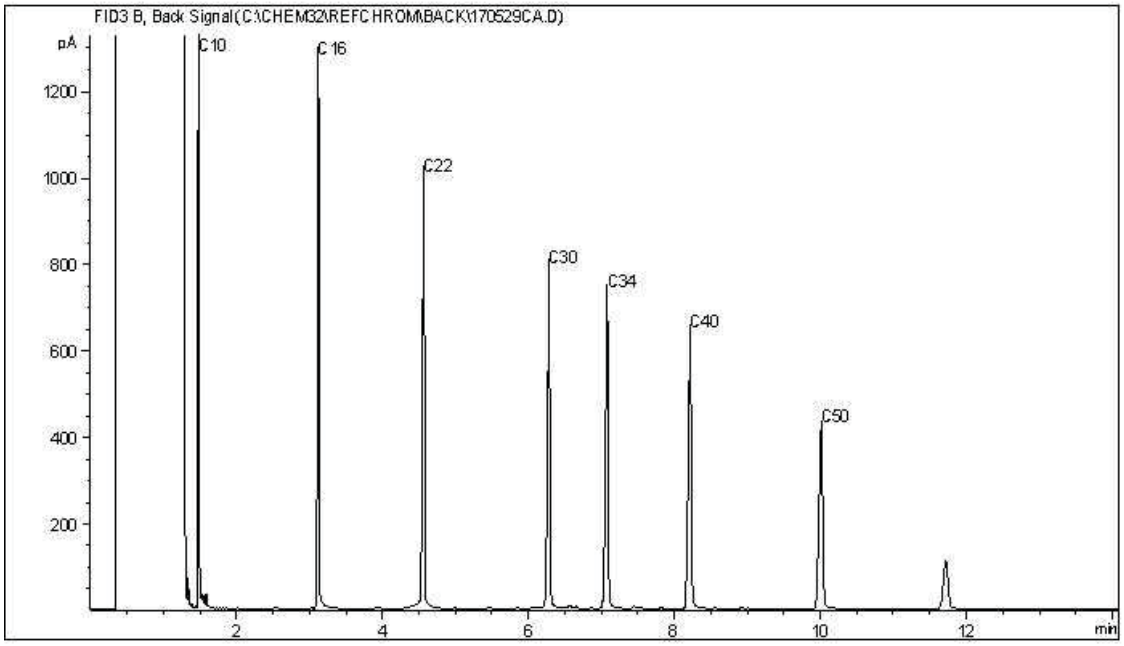
SNC-LAVALIN INC.
Client Project #: 644079
Site Reference: AVE D. N, SASKATOON, SK
Client ID: MW17-00B

CCME Hydrocarbons (F2-F4 in water) Chromatogram

Instrument: GC13



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

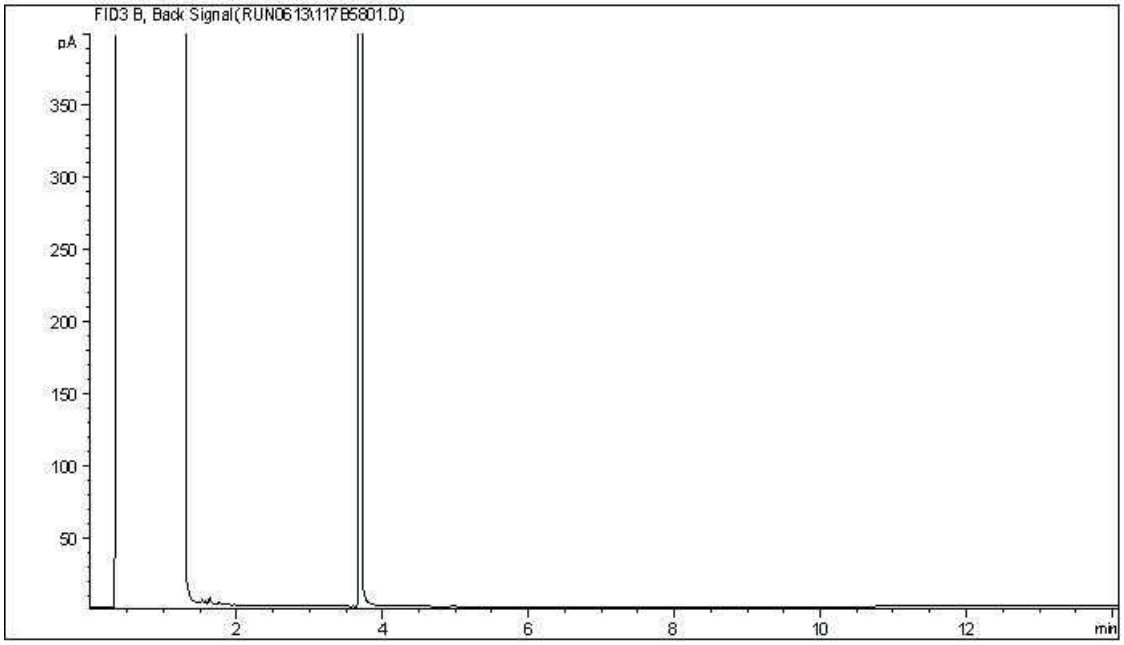
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Maxxam Job #: B746019
Report Date: 2017/06/16
Maxxam Sample: RG3779

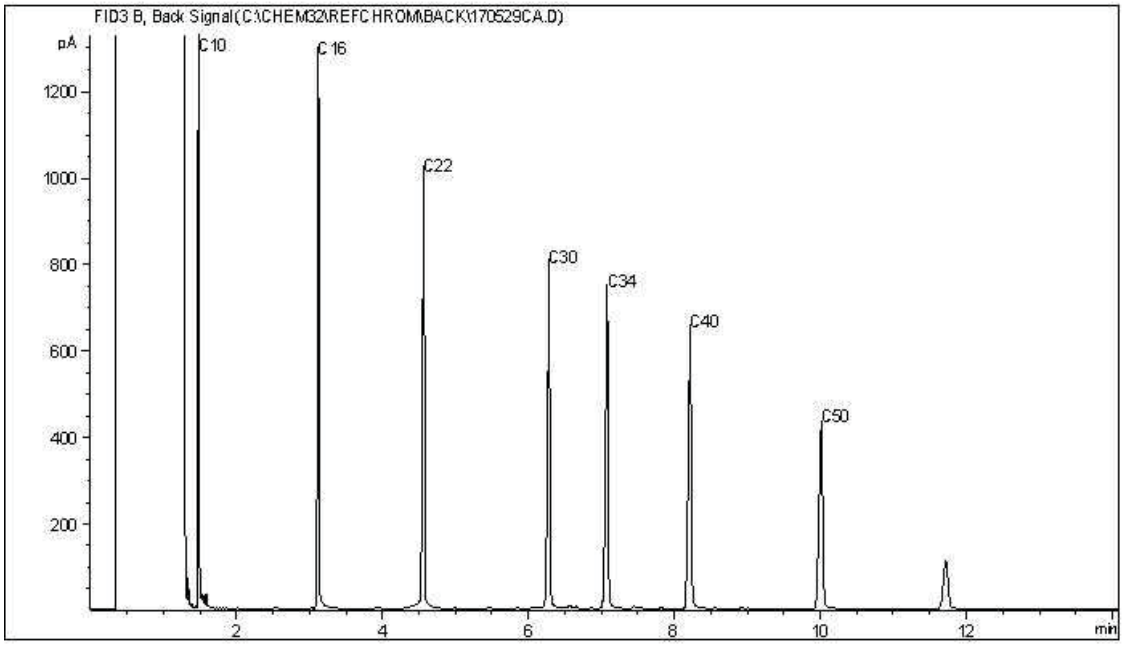
SNC-LAVALIN INC.
Client Project #: 644079
Site Reference: AVE D. N, SASKATOON, SK
Client ID: MW17-00C

CCME Hydrocarbons (F2-F4 in water) Chromatogram

Instrument: GC13



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

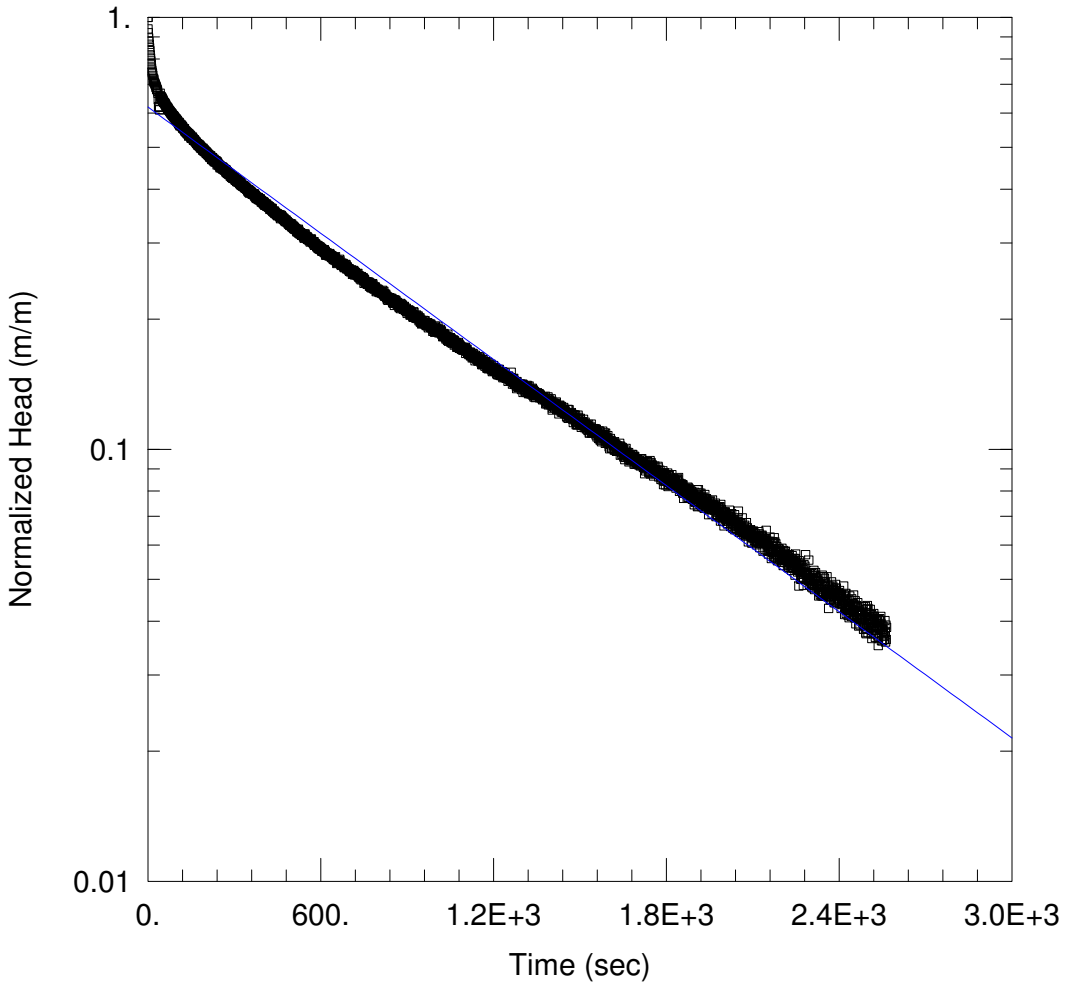
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Appendix V

Groundwater Response Test Results

644079 MW17-09 Rising Head Test

Prepared By:	Prepared For:
SNC-Lavalin Inc.	City of Saskatoon
Project:	**Location:**
644079	Former City Transit Facility



SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 1.521E-6 m/sec y0 = 0.275 m

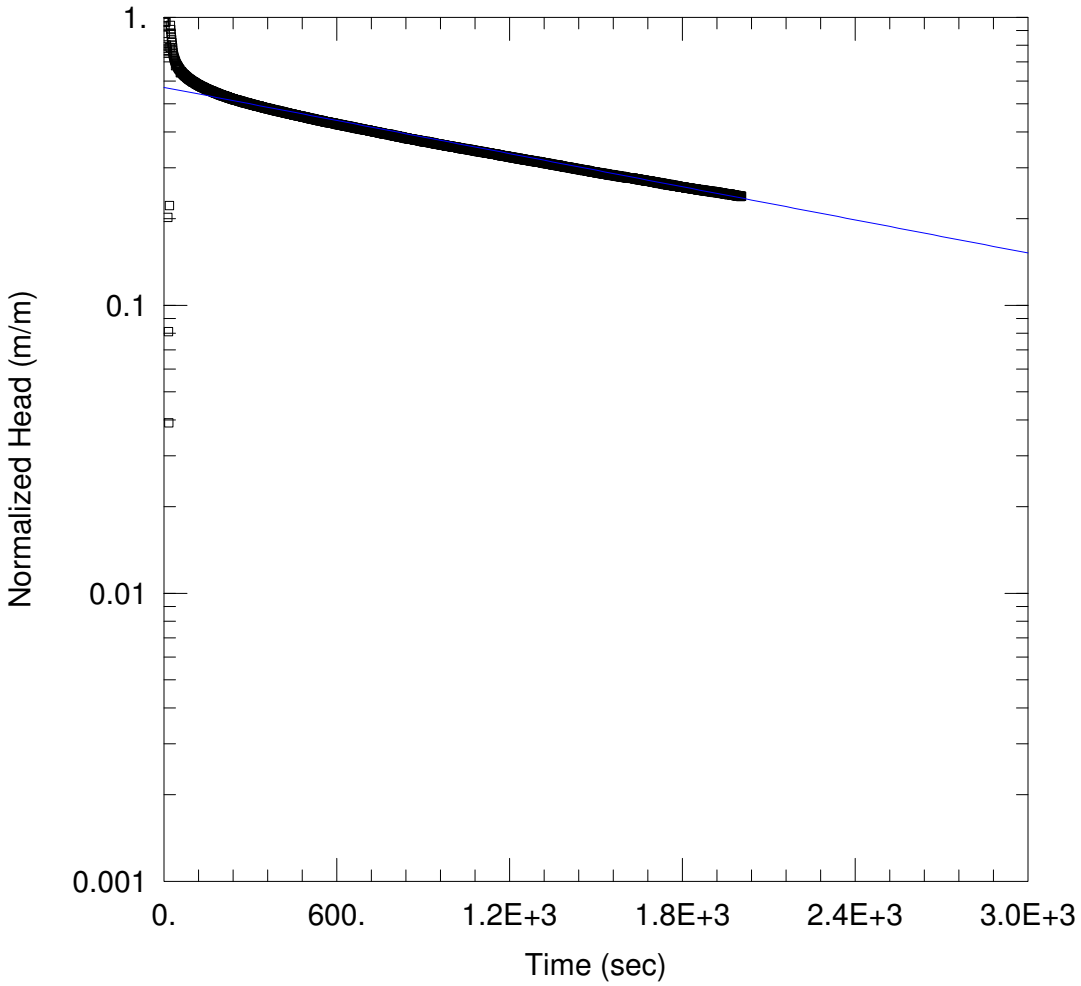
WELL DATA (BH17-09)

Initial Displacement: 0.444 m
Static Water Column Height: 0.995 m
Total Well Penetration Depth: 0.995 m
Screen Length: 0.995 m
Casing Radius: 0.0254 m
Well Radius: 0.0508 m
Gravel Pack Porosity: 0.3

SNC·LAVALIN

644079 MW17-12 Rising Head Test

Prepared By:	Prepared For:
SNC-Lavalin Inc.	City of Saskatoon
Project:	**Location:**
644079	Former City Transit Facility



SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 5.264E-7 m/sec y0 = 0.2997 m

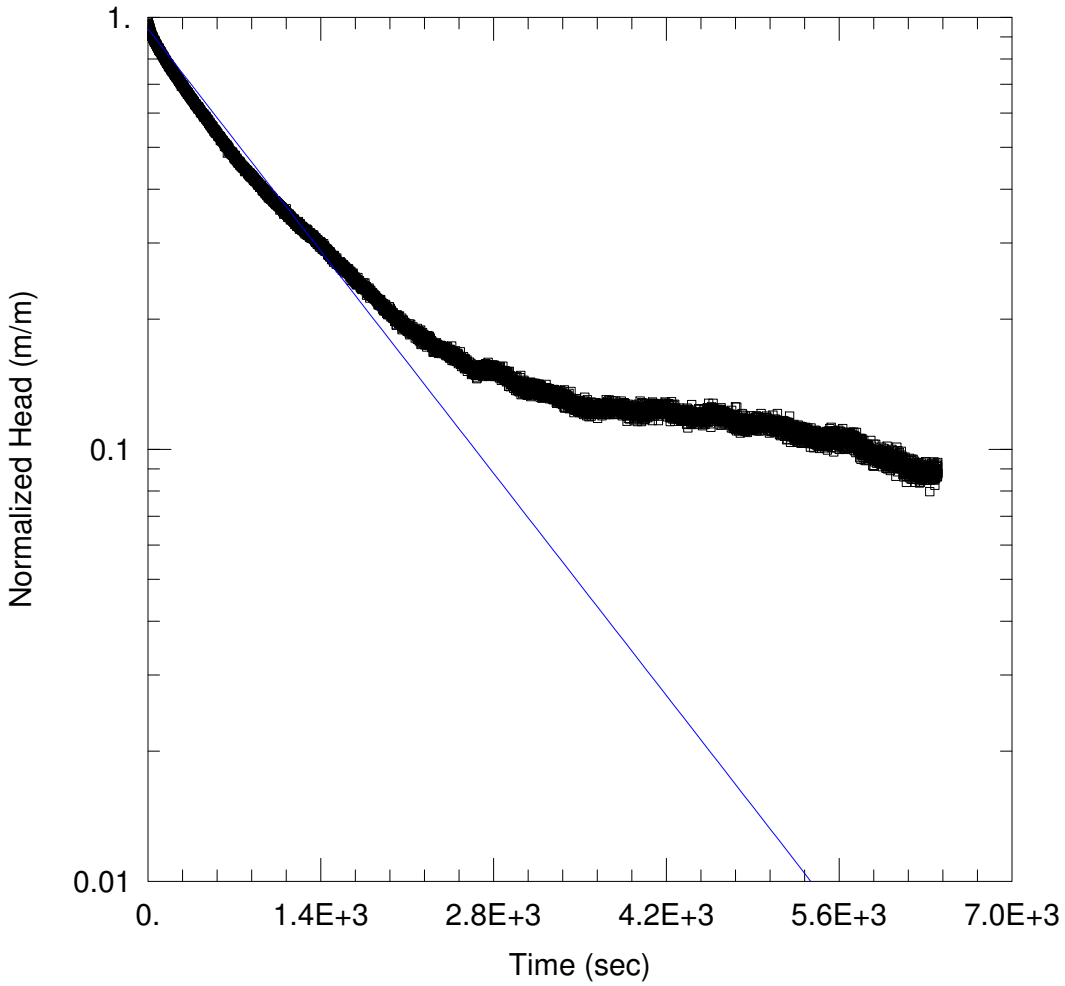
WELL DATA (BH17-12)

Initial Displacement: 0.525 m
Static Water Column Height: 1.225 m
Total Well Penetration Depth: 1.225 m
Screen Length: 1.225 m
Casing Radius: 0.0254 m
Well Radius: 0.0508 m
Gravel Pack Porosity: 0.3

SNC·LAVALIN

644079 MW17-13 Rising Head Test

Prepared By:	Prepared For:
SNC-Lavalin Inc.	City of Saskatoon
Project:	**Location:**
644079	Former City Transit Facility



SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 1.32E-6 m/sec y0 = 0.2735 m

WELL DATA (BH17-13)

Initial Displacement: 0.291 m
Static Water Column Height: 0.787 m
Total Well Penetration Depth: 0.787 m
Screen Length: 0.787 m
Casing Radius: 0.0254 m
Well Radius: 0.0508 m
Gravel Pack Porosity: 0.3

SNC·LAVALIN

Appendix VI

Data Quality Review Checklists

SNC·LAVALIN

DATA QUALITY REVIEW CHECKLIST

Consultant:	SNC-Lavalin Inc.	Sampling Date:	2017 01 31; 2017 02 01-02
Location:		Laboratory:	ALS
SNC-Lavalin Project #:	644079	Laboratory Job Number:	L1887184

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	N\A	Comments
Spike Recovery	☐	☐	☒	
Extraction Surrogate Recovery	☒	☐	☐	
Method Blank Concentration	☒	☐	☐	
Matrix Duplicate RPD	☒	☐	☐	
Matrix Spike Recovery	☒	☐	☐	
Lab Control Sample Recovery	☒	☐	☐	

This section is based on laboratory QA/QC values. These values do not reflect SNC-Lavalin Inc. criteria

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	N\A	Comments
Field Blank Concentration	☐	☐	☒	17-06-04 & 17-06-05
Trip Blank Concentration	☐	☐	☒	17-09-07 & 17-09-08
Field Duplicate RPD	☒	☐	☐	17-11-05 & 17-11-06

	Yes	No	N\A
Has CoA been signed off (Yes/No)?:	☒	☐	☐
Has lab warranted all tests were in statistical control in CoA (Yes/No)?:	☐	☐	☒
Has lab warranted all tests were analyzed following SOP's in CoA (Yes/No)?:	☒	☐	☐
Were all samples analyzed within hold times (Yes/No)?:	☐	☒	☐
Is Chain of Custody completed and signed (Yes/No)?:	☒	☐	☐
Were sample temperatures acceptable (< 10°C) when they reached lab ?:	☒	☐	☐
Were re-checks requested? (If yes, provide details below)	☒	☐	☐

Is data considered to be reliable (Yes/No)?: Yes

If answer is "No", describe and provide rationale:

NOTES:Samples 17-08-03 & 17-09-08 were analyzed past ALS recommended hold time (14 days).

Samples 17-02-01 and 17-08-02 were re-run for lead and BTEX parameters, respectively. The original results have been confirmed.

Sample 17-13-04 was analyzed past recommended holding time for F2-F4 parameters; possible low bias F2-F4 results for this sample.

Data Reviewed by(Print): Svetlana Silveira Data Reviewed by (Signature): Silveira

Date: 2017 03 09

SNC·LAVALIN

DATA QUALITY REVIEW CHECKLIST

Consultant:	SNC-Lavalin Inc.	Sampling Date:	2017 02 02
Location:		Laboratory:	ALS
SNC-Lavalin Project #:	644079	Laboratory Job Number:	L1887196

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	N\A	Comments
Spike Recovery	☐	☐	☒	
Extraction Surrogate Recovery	☐	☐	☒	
Method Blank Concentration	☒	☐	☐	
Matrix Duplicate RPD	☒	☐	☐	
Matrix Spike Recovery	☐	☐	☒	
Lab Control Sample Recovery	☒	☐	☐	

This section is based on laboratory QA/QC values. These values do not reflect SNC-Lavalin Inc. criteria

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	N\A	Comments
Field Blank Concentration	☐	☐	☒	
Trip Blank Concentration	☐	☐	☒	
Field Duplicate RPD	☐	☐	☒	

	Yes	No	N\A
Has CoA been signed off (Yes/No)?:	☒	☐	☐
Has lab warranted all tests were in statistical control in CoA (Yes/No)?:	☐	☐	☒
Has lab warranted all tests were analyzed following SOP's in CoA (Yes/No)?:	☒	☐	☐
Were all samples analyzed within hold times (Yes/No)?:	☒	☐	☐
Is Chain of Custody completed and signed (Yes/No)?:	☒	☐	☐
Were sample temperatures acceptable (< 10°C) when they reached lab ?:	☒	☐	☐
Were re-checks requested? (If yes, provide details below)	☐	☒	☐

Is data considered to be reliable (Yes/No)?: Yes

If answer is "No", describe and provide rationale:

NOTES:

Data Reviewed by(Print): Svetlana Silveira Data Reviewed by (Signature): Silveira

Date: 2017 03 03

SNC·LAVALIN Environment

DATA QUALITY REVIEW CHECKLIST

Consultant:	SNC-Lavalin Inc.	Sampling Date:	2017 02 06
Location:		Laboratory:	ALS
SNC-Lavalin Project #:	644079	Laboratory Job Number:	L1887783

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	N\A	Comments
Spike Recovery	☐	☐	☒	
Extraction Surrogate Recovery	☒	☐	☐	
Method Blank Concentration	☒	☐	☐	
Matrix Duplicate RPD	☐	☐	☒	
Matrix Spike Recovery	☒	☐	☐	
Lab Control Sample Recovery	☒	☐	☐	

This section is based on laboratory QA/QC values. These values do not reflect SNC-Lavalin Inc. criteria

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	N\A	Comments
Field Blank Concentration	☒	☐	☐	MW17-00C-170206;MW17-00D-170206 (Equip. Blank)
Trip Blank Concentration	☒	☐	☐	MW17-00B-170206
Field Duplicate RPD	☐	☐	☐	

	Yes	No	N\A
Has CoA been signed off (Yes/No)?:	☒	☐	☐
Has lab warranted all tests were in statistical control in CoA (Yes/No)?:	☐	☐	☒
Has lab warranted all tests were analyzed following SOP's in CoA (Yes/No)?:	☒	☐	☐
Were all samples analyzed within hold times (Yes/No)?:	☒	☐	☐
Is Chain of Custody completed and signed (Yes/No)?:	☒	☐	☐
Were sample temperatures acceptable (< 10°C) when they reached lab ?:	☒	☐	☐
Were re-checks requested? (If yes, provide details below)	☐	☒	☐

Is data considered to be reliable (Yes/No)?: Yes

If answer is "No", describe and provide rationale:

NOTES:

Data Reviewed by(Print): Svetlana Silveira Data Reviewed by (Signature): Silveira

Date: 2017 02 15

SNC·LAVALIN Environment

DATA QUALITY REVIEW CHECKLIST

Consultant:	SNC-Lavalin Inc.	Sampling Date:	2017 02 06
Location:		Laboratory:	ALS
SNC-Lavalin Project #:	644079	Laboratory Job Number:	L1887819

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	N\A	Comments
Spike Recovery	☐	☐	☒	
Extraction Surrogate Recovery	☒	☐	☐	
Method Blank Concentration	☒	☐	☐	
Matrix Duplicate RPD	☒	☐	☐	
Matrix Spike Recovery	☐	☐	☒	
Lab Control Sample Recovery	☒	☐	☐	

This section is based on laboratory QA/QC values. These values do not reflect SNC-Lavalin Inc. criteria

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	N\A	Comments
Field Blank Concentration	☐	☐	☒	
Trip Blank Concentration	☐	☐	☒	
Field Duplicate RPD	☒	☐	☐	MW17-00A-170206 & 17-09-170206

	Yes	No	N\A
Has CoA been signed off (Yes/No)?:	☒	☐	☐
Has lab warranted all tests were in statistical control in CoA (Yes/No)?:	☐	☐	☒
Has lab warranted all tests were analyzed following SOP's in CoA (Yes/No)?:	☒	☐	☐
Were all samples analyzed within hold times (Yes/No)?:	☒	☐	☐
Is Chain of Custody completed and signed (Yes/No)?:	☒	☐	☐
Were sample temperatures acceptable (< 10°C) when they reached lab ?:	☒	☐	☐
Were re-checks requested? (If yes, provide details below)	☐	☒	☐

Is data considered to be reliable (Yes/No)?: Yes

If answer is "No", describe and provide rationale:

NOTES:

Data Reviewed by(Print): Svetlana Silveira Data Reviewed by (Signature): Silveira

Date: 2017 02 15

SNC·LAVALIN

DATA QUALITY REVIEW CHECKLIST

Consultant:	SNC-Lavalin Inc.	Sampling Date:	2017 06 07
Location:	AVE D NORTH, SASKATOON, SK	Laboratory:	Maxxam
SNC-Lavalin Project #:	644079	Laboratory Job Number:	B745843

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	N\A	Comments
Spike Recovery	☒	☐	☐	
Extraction Surrogate Recovery	☒	☐	☐	
Method Blank Concentration	☒	☐	☐	
Matrix Duplicate RPD	☒	☐	☐	
Matrix Spike Recovery	☒	☐	☐	
Lab Control Sample Recovery	☐	☐	☒	

This section is based on laboratory QA/QC values. These values do not reflect SNC-Lavalin Inc. criteria

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	N\A	Comments
Field Blank Concentration	☐	☐	☒	
Trip Blank Concentration	☐	☐	☒	
Field Duplicate RPD	☒	☐	☐	17-18-02 & -03

	Yes	No	N\A
Has CoA been signed off (Yes/No)?:	☒	☐	☐
Has lab warranted all tests were in statistical control in CoA (Yes/No)?:	☐	☐	☒
Has lab warranted all tests were analyzed following SOP's in CoA (Yes/No)?:	☒	☐	☐
Were all samples analyzed within hold times (Yes/No)?:	☒	☐	☐
Is Chain of Custody completed and signed (Yes/No)?:	☒	☐	☐
Were sample temperatures acceptable (< 10°C) when they reached lab ?:	☐	☐	☒
Were re-checks requested? (If yes, provide details below)	☐	☒	☐

Is data considered to be reliable (Yes/No)?: Yes

If answer is "No", describe and provide rationale:

NOTES:

Data Reviewed by(Print): Eileen Brown Data Reviewed by (Signature): Eileen Brown

Date: 2017 06 14

SNC·LAVALIN

DATA QUALITY REVIEW CHECKLIST

Consultant:	SNC-Lavalin Inc.	Sampling Date:	2017 06 08
Location:	AVE D NORTH, SASKATOON, SK	Laboratory:	Maxxam
SNC-Lavalin Project #:	644079	Laboratory Job Number:	B746019

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	N\A	Comments
Spike Recovery	☒	☐	☐	
Extraction Surrogate Recovery	☒	☐	☐	
Method Blank Concentration	☒	☐	☐	
Matrix Duplicate RPD	☒	☐	☐	
Matrix Spike Recovery	☒	☐	☐	
Lab Control Sample Recovery	☐	☐	☒	

This section is based on laboratory QA/QC values. These values do not reflect SNC-Lavalin Inc. criteria

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	N\A	Comments
Field Blank Concentration	☒	☐	☐	MW17-00B
Trip Blank Concentration	☒	☐	☐	MW17-00C
Field Duplicate RPD	☒	☐	☐	MW17-18 & MW17-00A

	Yes	No	N\A
Has CoA been signed off (Yes/No)?:	☒	☐	☐
Has lab warranted all tests were in statistical control in CoA (Yes/No)?:	☐	☐	☒
Has lab warranted all tests were analyzed following SOP's in CoA (Yes/No)?:	☒	☐	☐
Were all samples analyzed within hold times (Yes/No)?:	☒	☐	☐
Is Chain of Custody completed and signed (Yes/No)?:	☒	☐	☐
Were sample temperatures acceptable (< 10°C) when they reached lab ?:	☐	☐	☒
Were re-checks requested? (If yes, provide details below)	☐	☒	☐

Is data considered to be reliable (Yes/No)?: Yes

If answer is "No", describe and provide rationale:

NOTES:

Data Reviewed by(Print): Eileen Brown Data Reviewed by (Signature): Eileen Brown

Date: 2017 06 16

SNC·LAVALIN

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