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Annual Exploration Activities Report

Covering January 1 through December 31, 2018

Submitted to Yukon Energy, Mines and Resources

Mining Land Use Approval LQ00250

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Prepared by

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1.0 Introduction

This Annual Report has been prepared by Selwyn Chihong Mining Ltd. (SCML) for submission to Yukon Energy, Mines and Resources (EMR) in compliance with Section 8 of Mining Land Use Permit LQ00250g. It covers the reporting period from January 1, 2018 to December 31, 2018.

The Selwyn Project, owned and operated by SCML, is host to one of the largest undeveloped zinc/lead deposits in the world. The project straddles the Yukon Territory and Northwest Territories border, approximately 350 km northeast of Whitehorse.

Infrastructure at the project site includes two fully-permitted 50-person camps; XY Camp is located at the at the southeast end of the claim blocks at about 1,500m asl, Don Camp is located at the center of the claims at about 1,200 m asl. Each camp is currently equipped with about 20 Weatherhaven™ tents (sleepers, offices, kitchen, first aid, shower/dry room), water supply/treatment system, pit latrines, waste disposal area, gensets, fuel depot, core shack and a wood-framed maintenance shop. Each camp is serviced by a gravel airstrip. The camps are joined by a 24 km gravel-surfaced road.

Since the Chinese economic slowdown in 2016, SCML's primary concentration has been remediation and reclamation. Subsequently, focus was placed on remediation of drill pads, trails and waste removal since 2016. This work conducted in 2018 season as well as legacy reclamation from works of previous owners.

In addition to the reclamation work identified above, other activities undertaken at the site during the reporting period included camp operations, road maintenance and environmental monitoring work.

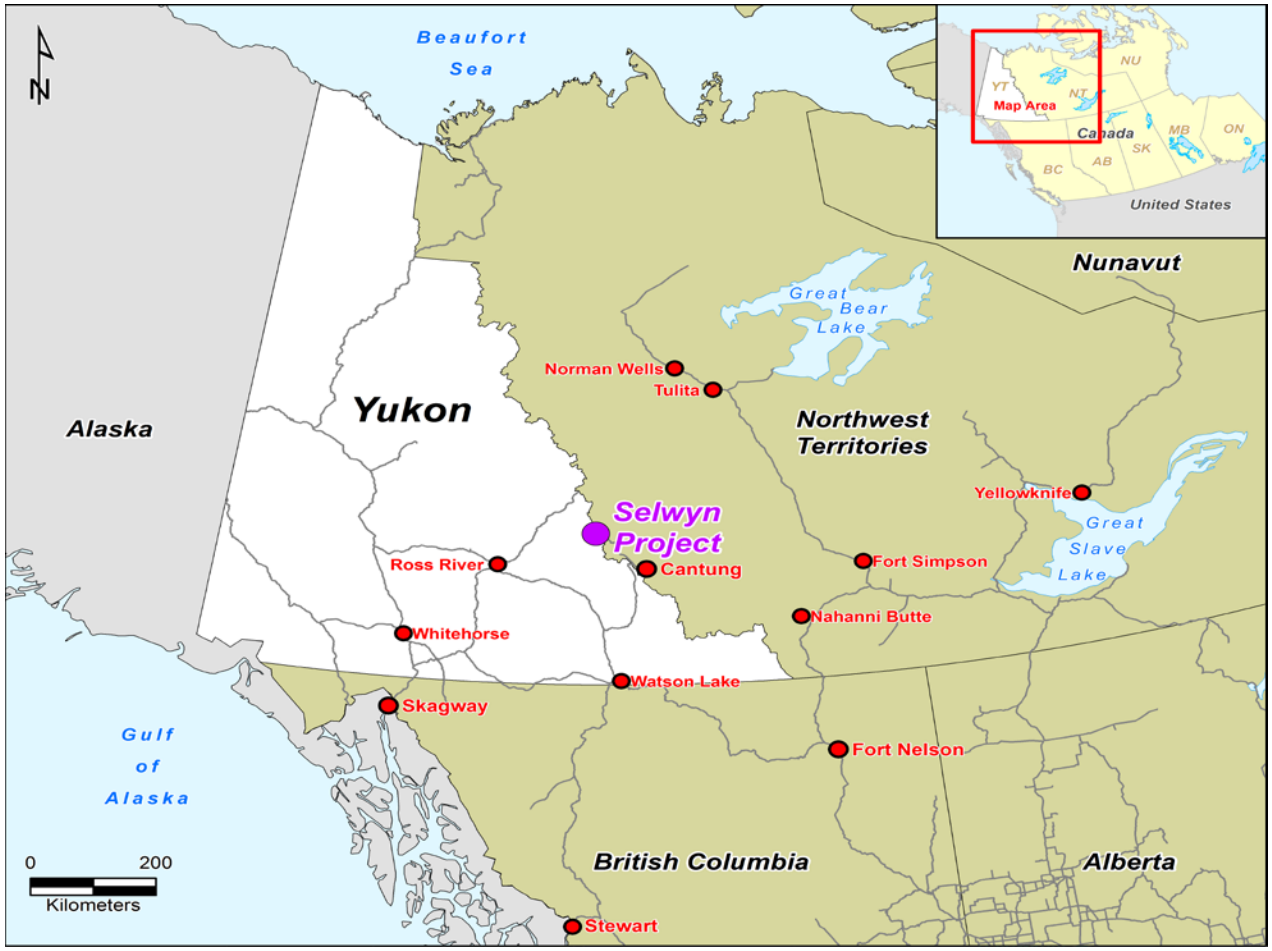


Figure 1 Project Location

2.0 Exploration Activities Completed During 2018

2.1 Camp Operations

On June 5th a skeleton crew arrived to prepare Don Camp. The camp was officially opened for the 2018 season on June 11th, 2018, with approximately 4 to 30 people on site. The majority of staff departed August 29th, and by August 30th, 2018 the camp had been secured for the winter. Site activities in 2018 consisted of road maintenance, environmental monitoring and reclamation works. After Don Camp was secured for the winter, `fly in` environmental and site monitoring occurred on a monthly basis.

2.2 Drilling Activities

No drilling was completed in 2018. DNE-073 and DNE-120 were two wells that were producing water identified in 2016 and 2017 respectively. These wells were repaired using a solution from *Yukon Mineral and Coal Exploration Best Management Practices and Regulatory Guide*; the description of this method can be found in **Appendix A.**

These two holes have been monitored since they were repaired to ensure water has not returned to surface. The pictures below illustrate one of the monitoring events of DNE-120 and DNE-073 in 2018.

Drill Repairs Monitoring

DNE-120 on August 12, 2017 prior to repairs.

After - DNE- 120 on June 23, 2018.

Drill Repairs Monitoring

DNE-073 on July 25, 2017 almost a year after repairs.

DNE-073 on June 23, 2018 two years after repairs.

Figure 2 Monitoring of DNE-120 and DNE-073

2.3 Maintenance

During the reporting period, minor routine maintenance work to road(s), ditch(s) and bridge(s) were completed. Sloping, grading, seeding was performed to help prevent impact to watercourse(s). Works were completed to the XY Underground Area which can be found in *Section 3.1 – Engineering Inspection Report.*

2.3.1 Don Steaming

In 2018, a steaming initiative to thaw frozen culvert(s) was undertaken for the Don Road. Steaming commenced on May 15, 2018 and was completed on May 16, 2018. Areas where there was an avalanche risk were not entered for health and safety reasons. The water required for the steamer was gathered from water that had pooled above the frozen culverts. The pictures below illustrate the locations where steaming was completed.

Don Steaming

Don Core Yard Ditch on April 14th, 2018. Stacking can be observed on upstream side.

The Don Core Yard Ditch after the culvert was unplugged.

The Don Core Yard Ditch after the culvert was unplugged.

Don Steaming	
Upstream portion of KM 97.0 culvert on Don Road.	KM 93.0 upstream portion of the culvert can be observed. Prior to steaming the culver was engulfed in ice.

Figure 3 Steaming of plugged culverts

2.3.2 Don Road Washout

There was one washout in 2018, KM 89.0, which SCML steaming staff could not access due to avalanche risk(s) in the area. The washout was estimated to flow at 3.00 L/s, and sediments were deposited into the adjacent organics. The washout was repaired when it was safe to enter the area.

Washout	
KM 89.0 Don Road washout.	Sediments deposited into organics prior to entering Don Creek.

Figure 4 Washout at KM 89.0

2.3.3 Routine Maintenance Work

During the reporting period, minor routine maintenance work to roads, ditches and bridges were completed. Sloping, grading and seeding was performed to help prevent impact to watercourse(s). The pictures below illustrate the maintenance work which occurred on the roads, bridges and ditches.

Maintenance	
Armoring and installation of culvert on side road of Don Air Strip.	Removal of Willow Creek Swamp mat and installation of culvert.
Installation of ditch to direct water(s) to a settling sump at lower portion of Don back slope.	Erosion on HC Road.

Maintenance

Cracking on HC road caused by frozen culvert.

Land Treatment Facility with contaminated soil deposited and covered by geotextile cover.

Installation of sprung structure to house waste and protect from environment.

Removal of Willow Creek swamp mat and installation of culvert.

Maintenance

Core shack dismantled after heavy snow collapsed the tent in winter of 2018.

Repair and seeding of Core Yard Ditch.

Repair to heritage management areas.

Maintenance	
Repairs to Don Road from general use	Contaminated soil located at XY facility from 2011. This material was sampled and upon review of results, relocated and spread on Yukon XY portion of airstrip.

Figure 5 Road, trail and bridge maintenance

2.3.4 Silt Fencing

Silt fencing was added and or repaired through the site as a proactive measure to ensure sedimentation is and was not deposited into any watercourse. The silt fencing locations can be found in Table 1 while the photographs below illustrate some of the locations where silt fencing was installed and or repaired in 2018.

Table 1 Silt Fencing Locations

Silt Fencing 2018
KM 82-Bridge left and right hand side of banks
KM 86-Bridge left and right hand side of banks
KM 94-Bridge left and right hand side of banks
Bridge to Anniv
Milky Creek Bridge
North end of Don Airstrip
No Limit Road – repaired silt fencing

Silt Fencing

New silt fencing installed at the end of the airstrip.

New silt fencing at the east end of the Don Air Strip. The new silt fencing was installed in front of the previous one

Repaired silt fencing on No Limit Road.

Repair of silt fencing at KM 82.0 bridge.

Figure 6 Silt fence installations and or repairs

2.3.5 Water Producing Hole(s)

In 2018, two further holes were identified as producing water. These holes will require repairs in 2019.

Water Producing Hole(s)	
ANE-223	HCE-030

3.0 Inspections

3.1 Engineering Inspection Report

The XY pad is located within the Selwyn Project in eastern Yukon. While the initial development of the XY Pad was undertaken July through October 2011, none of the main ponds/stockpiles/diversion ditches were constructed. SCML temporarily diverted, and then restored the flow of an ephemeral drainage as part of the development. Construction of the lower perimeter ditch and the settling/sediment pond was completed as well as other minor work to manage the XY pad drainage. Site drainage in disturbed areas was directed to the laydown settling/sediment pond at the northwest corner of the pad area near confluence of Don Creek and Acid Creek. The pad is currently partially completed, and no work has been done to finish the pad since 2013.

Boreal Engineering Ltd. (BE) was retained by Selwyn Chihong Mining Ltd. (SCML) to complete the annual inspection in accordance with SCML's Water Licence QZ10-042, Section 34. BE performed the inspection on July 15th, 2018. The annual inspection is required of the laydown area, settling ponds, storage ponds, rock stockpile area and diversion ditches to be carried out by a Professional Engineer licensed to practice in the Yukon. A copy of the report is available in **Appendix B**. The current status of the recommendations are identified below.

Don Road	
Recommendations Don Road	**Completed Works**
Clean ditches near the airstrip	Complete for the season, but works are ongoing and will occur every season as part of regular maintenance.
Ensure ditches are kept clean (free of material) to prevent erosion.	

Don Core Yard	
Recommendations Core Yard Ditch	**Completed Works**
Exposed geotextile should be either covered or removed	**Completed

Don Core Yard	
Recommendations Core Yard Ditch	**Completed Works**
Rip rap should be removed from the bank, placed in the bottom of the ditch and smaller rocks should be used to infill between the large rocks. Ensure the rip rap covers the exposed geotextile at the bottom of the ditch.	**Completed
The top portions of the bank should be seeded.	**Completed
Long Term Recommendation	
Assessment of culvert size and ditch capacity for expected volumes based on 100 year flood return event required.	

Don Maintenance Yard	
Recommendations Maintenance Yard	**Completed Works**
Clean out silt fencing at north toe	**Completed
A settling pond should be created near each of the silt fence to reduce maintenance of silt fence.	**Completed
Long Term Recommendation	
Willow and/or buck brush shoots should be placed along slope to increase vegetative root mass.	Plans have been implmented to harvest native willow and buck brush in May and plant them at this time.

Don Air Strip Area	
Recommendations Don Air Strip Area	**Completed Works**
Clean out silt fencing at the south end and extend to ensure all sediments are captured.	 **Completed
Clean out ditches where soil has been deposited.	Complete for the season, but the works are ongoing and will occur every season as part of regular maintenance.

Don Waste Facility	
Recommendations Don Waste Facility	**Completed Works**
Install weir ditch across the access road to direct to the offtake ditch.	 **Completed

Don Waste Facility	
Recommendations Don Waste Facility	**Completed Works**
Cleanout silt fencing and or install new silt fencing.	**Completed
Long Term Recommendation	
Monitor runoff water(s) in ditch for hydrocarbons.	

XY Pad	
Recommendations XY Pad	**Completed Works**
Clean ditches where the soils have fill them and maintain drainage.	**Completed

XY Pad	
Recommendations XY Pad	**Completed Works**
West Infield	
The area should be seeded.	 **Completed
Access Road to Truck Laydown Area	
The road be graded and ditch road to portal to direct water to the ditch on main road.	 **Completed
Place ditch blocks and maintain ditch	Complete for the season, but the works are ongoing and will occur every season as part of regular maintenance.
Seed all disturbed areas to help prevent erosions.	The remaining area(s) to be seeded, will be completed in 2019.

Adit	
Recommendations Adit	**Completed Works**
Closure plan to be submitted to obtain a reclaimed status.	

4.0 Exploration Activities Planned for 2019

SCML has now completed all the required definition drilling for Phase I of its proposed project. Since the Chinese economic slowdown in 2016, SCML's primary concentration has been remediation and reclamation including reclamation from works of previous owners. Prior to the slowdown, a number of areas had been identified for Phase II drilling activity. However, the decision to undertake this drilling program is still outstanding. At the present time, no drilling is planned for 2019.

5.0 Reclamation Activities Completed in 2018

Throughout all stages of exploration and development, SCML is committed to minimizing the impact of its operations on the local receiving environment. An important part of this commitment has been SCML's ongoing efforts to facilitate progressive reclamation and promote natural regeneration of all disturbed sites within the project area.

SCML has been using a native seed mix for reclamation purposes, purchased from PickSeed Canada, with an office in Abbotsford, BC. Another batch of native seed mix was purchased this year with the same seed mix as approved in the email in **Appendix C.** Also included in appendix C, is the certificates for the native seed mix to confirm there were no invasive species present. Table 2 presents the seed mix and application rate for seed mix.

Table 2 Seed Mix for Reclamation

Grass Species	Common Name	Application density (kg of seed / ha)
Agropyron trachycaulum	Slender wheat grass	10
Agropyron trachycaulum var. unilaterale	Awned wheat grass	5
Festuca ovina	Sheep fescue	5
Festuca saximontana	Rocky Mountain Fescue	2.5
Agrostis scabra	Tickle grass	2
Puccinellia nuttalliana	Fults Alkaligrass	0.5
Total		**25**

Previously reclaimed drills sites, trails, existing trails and roads were monitored throughout the 2018 season. Measures were taken to prevent soil erosion and or instability across the property including, but not limited to stream bank stabilization, riprap installation, ditching and the utilization of silt fence(s) where necessary.

In 2018, 12 drill pads were reclaimed. Heavy equipment was used to contour the drill pads to promote growth and appear as native environment, removing any wooden debris and or scrap metal. These 12 drill pads and 2017 drill pads were seeded using a heli-seeder. Figure 7 and 8 illustrate the location of the reclaimed pads.

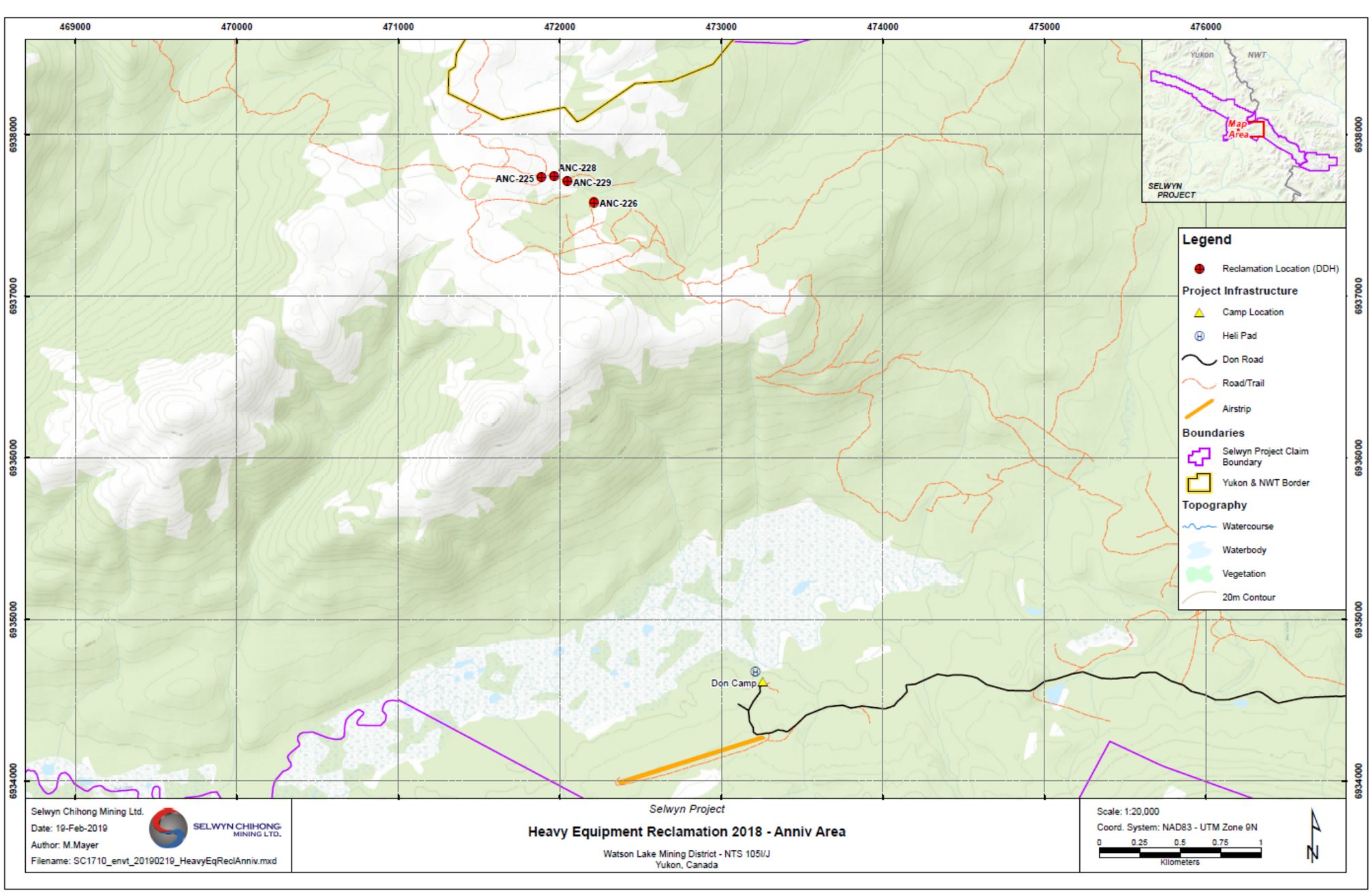


Figure 7 Reclaimed Pads – Anniversary

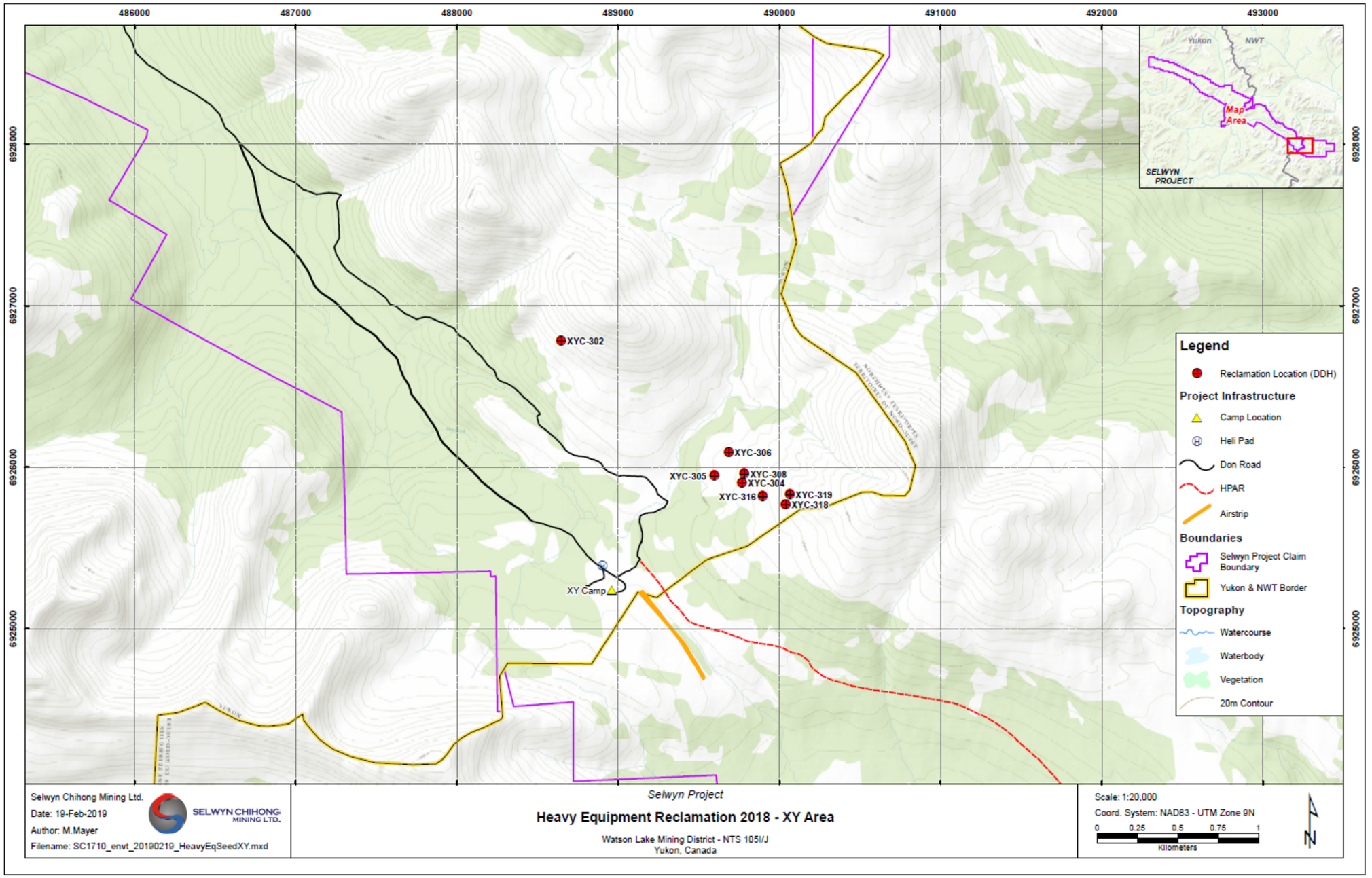


Figure 8 Reclaimed Pads – XY

5.1 Drilling Reclamation

Pad Reclamation continued from previous year(s) drilling activities. As mentioned above, approximately 12 drill pads were reclaimed this season in the Anniversary and XY area. Since 2016, approximately 280 drill pads have been reclaimed. Figure 7 and 8 above illustrate the location of reclaimed drill pads. Table of 2018 reclaimed drill pads in is located in **Appendix D**. Pictures of some of the pad reclamation are presented below.

Pad Reclamation

Anniversary Drill Pads

XY Drill Pads

Figure 9 Pad Reclamation

5.2 Seeding

In order to help facilitate reclamation and decrease the potential of erosion, reclaimed areas were seeded. Approximately 25,000 m^2 was seeded by heli-seeder and by hand this season with applicable maps located in **Appendix D.** Pictures of seeded areas are presented below.

Seeding

Seeding of reclaimed pad XYC 305.

XY Laydown.

XY Dump.

Slope behind Don Arrival Shed at Air Strip.

Seeding

Willow Creek ditch, seeded.

Seeding of recalimaed pad XYC 308.

Figure 10 Areas seeded in 2018

5.3 2016, 2017, 2018 Seed Monitoring

In 2016, 389,709.47 m^2 of trails and reclaimed drill pads were seeded, while in 2017, 8,809.47 m^2. These areas were monitored for growth, erosion or if seed reapplication was required. The Don Core Yard Ditch required seed reapplication due to erosion and subsequent work(s) around the area. Picture(s) of some of the seeded area(s) monitored, are presented below.

Seed Monitoring

Result of a reclaimed trail in Anniversary area.

Result of 2017 seeding of Don Borrow Pit.

Seed Monitoring

Growth in Don Maintenance Yard.

Don Camp Road – 2017 seeding result.

North end of Don Air Strip. Seeding which occurred in 2016/ 2017.

Seeding occurred in 2016 of HC Area- monitoring current result.

Seed Monitoring

2016 reclaimed trail in HC Area.

Monitoring Brodel- seeding and reclamation in 2016.

Aerial view of No Limit reclmation and seeding

Seeding result of Anniversary - 1 month prior.

Figure 11 2016, 2017, 2018 seeding results

5.4 Borrow Pit

The borrow pit adjacent to the Don Air Strip provided approximately 1,620 tons of material that was used to construct the Don Land Treatment Facility, repairs to the Don Air Strip and the Don Core Yard Ditch. The borrow pit, similar to previous season(s), was contoured at the end of the season to control water shedding and to decrease slipping and sloughing events.

In 2015, investigations were taking place to identify a borrow pit near XY Camp. During this investigation, old crushed barrels circa 1980's were found. Some of the barrels were removed while others remained in the soil pile. In 2018, the soil around the soil covered barrels was sampled to determine if any hydrocarbon contaminates were present in the soil. The results which are located in

Appendix E were negative. The remaining barrels were excavated, the area contoured to reduce slumping and sloughing events and then seeded. The crushed barrels were deposited into a roll off bin and hauled to a waste facility in Whitehorse. The photographs below illustrate the barrel excavation, removal and seeding.

XY Buried Barrels

Excavated barrels from XY soil pile.

Pile where barrels were buried.

Roll off bin with buried barrels.

Former pile where barrels were buried. The area has been contoured and seeded to decrease slumping and sloughing.

Figure 12 Removal of buried barrels from XY

5.5 Waste Removal

Since the inception of Don Camp there has been an accumulation of various contaminated and general waste. These materials have been housed at the Don Waste Facility (DWF) and XY Waste Facility under commercial dump permit **81-011.** Previously, the generated waste could not be removed from site because the Howard's Pass Access Road (HPAR), the only road that provides access to the site, was not safe for travel. In 2013/2014, the road and bridges were upgraded. Since 2016, contaminated materials and stored waste (metals, plastics, mixed flammable liquid etc.) have been removed from site. 2018, the primary focus was on removing any residual contaminated waste and removing all materials from the XY dump. Upon removal of the waste at the XY dump, the soil was sampled to ensure there were no contaminates. Upon the return of negative lab results located in **Appendix E**, the area was contoured and seeded. Table 3 presents all the waste material(s) removed from site, in 2018. The bill of landing from General Waste is located in **Appendix F.**

Table 3 Waste materials removed from site in 2018

Quantity	Description
696	Pails (20 L) of drill mud, oils and drill rod grease
4	Pails (20 L) with oil
1	Drum (208 L) of waste oil filters
10	Drums (208 L) of waste oil rags and filters
3	Pails (20 L) of alkaline/ household batteries
15.79	Tonnes of mixed plastics/metals
1	Tote bags with miscellaneous waste materials
1/2	Lift of hydrocarbon contaminated wood.

The Don Waste Facility housed a large pile of wood in various states. Wood which was still functional was gathered and relocated, while any hydrocarbon contaminated wood was segregated, tarped and hauled to Whitehorse. Following the conditions set out in the burn permit located in **Appendix G** and best practices, the remaining wood was batched into small piles and burned.

In 2018, SCML completed the installation of a Sprung Structure to store waste at the Don Waste Facility. The floor of the structure was lined with poly, then absorbent pads were placed on the poly. Following the application of the pads, pallets were laid down and signs were erected indicating where waste was to be placed.

Photographs below illustrate some of the waste materials removed from site and the exterior and interior of the sprung structure.

Waste Materials Removed

XY Dump with various metal and plastic waste.

Roll off bin filled with mixed waste from XY Dump.

Seeding of XY dump after waste removal.

Pails stored at XY.

Waste Materials Removed

Roll off bin filled with cleaned out pails.

Wood pile lcoated at Don Waste Facility.

Berm created to burn small batches of wood.

Wood pile location after wood burned and contaminated wood hauled away.

Waste Materials Removed	
Sprung structure to house waste materials.	Interior of sprung structure.

Figure 13 Waste Removal from Howard's Pass

5.6 Land Treatment Facility

Over the years, there has been an accumulation of hydrocarbon contaminated soil at the site. This soil has been stored in an insta-berm and tarped at the Don Air Strip to isolate it from the environment and to prevent further contamination of surrounding soils. In addition, some of the contaminated soil was placed in tote bags at the Don Waste Facility.

In 2017, SCML applied for and was granted a Land Treatment Facility (LTF) permit. Construction commenced in late August of 2017 and was completed in July 2018. After the completion of the construction, the LTF was inspected Eric Nyland from Boreal Engineering. Mr. Nyland submitted a letter **Appendix H,** to SCML approving the LTF. This letter, with a memorandum of works completed, was submitted to Environment Yukon who approved the LTF. The LTF was commissioned on July 31st, 2018.

The contaminated soil that had been stored unsystematically in tote bags around the Don Waste Facility (38.7 m^2) was sampled. Lab results revealed that the contamination in some of the tote bags was above the standards for contaminated industrial sites. Those were deposited into the LTF (8.10m^2 of soil). The other bags housing non-contaminated soil were removed from the Don Waste Facility and the soil was distributed onto the Don Airstrip. The lab reports from this sampling are located in **Appendix E.**

The contaminated soil in the insta-berm, located at the Don Air Strip was also sampled. The returned results yielded values which were below the contaminated industrial sites regulation standard. Approximately 3 dump truck loads of soil was relocated onto the airstrip where it was graded to help smooth out the runway. The lower portions of the berm could not be accessed and therefore were not sampled. In 2019, the remaining soil in the insta-berm will be sampled.

The pictures below illustrate the contaminated soil that was housed in totes and in the insta-berm, pictures of contaminated soil being deposited into the LTF and the LTF cover.

Contaminated Soil

Contaminated soil which was housed at Don Waste Facility.

Location after contamianted soil was removed.

Insta-berm at Don Air Strip (red arrow).

Insta berm with suspected contaminated soil.

Contaminated Soil

Contaminated soil which was housed at Don Waste Facility.

Location after contamianted soil was removed.

LTF construction.

Contaminated soil placed into LTF.

Figure 14 Contaminated soil at Don Waste Facility and Construction of LTF

6.0 Environmental Monitoring Completed in 2018

6.1 Environmental Monitoring

Environmental monitoring on site included checking ongoing reclamation activities, water sampling and gathering of geotechnical and hydrology data.

Two environmental staff were on site throughout reclamation activities. Staff conducted ongoing checks of earth moving activities including, fuel, hazardous material use and storage, potable water use, seeding and documentation of other reclamation activities occurring throughout the site. Environmental field notes for the 2018 season can be found in **Appendix I**.

6.1.1 Surface Water

Environmental staff also conducted watercourse flow and water quality (WQ) monitoring to collect data for the ongoing environmental baseline program. Flow data are summarized in Table 3; a few data gaps exist due to access/safety issues at some of the sites, as well as technical issues with respect to instruments during extreme cold temperatures. Cascading water with uneven terrain limits the possibilities of discharge measurements at stations W8 and W56. Water quality results are included in **Appendix J**. Benthic, periphyton, and sediment sampling was completed in August 2018, and the results are included in **Appendix K.**

The manual watercourse flow data that was collected is available in Table 5 with site discerption locations in Table 4, and is also available in graphical form in **Appendix L**.

Table 4 Stream Flow and Water Quality Stations

Station	Location
W3	Don u/s of Pelly confluence
W5	Don Ck, u/s of Anniv Ck
W8	Placer Adit (historical)
W10	Near XY Camp
W56	Near XY Camp
W58	Rock Stockpile Seepage
W62	Don Creek d/s of Acid Creek

Table 5 Manual Discharge Measurements

	Discharge (m^3/s)					
Month\Station	**W3**	**W5**	**W8**	**W10**	**W56**	**W62**
January	1.26[X]	0.42	-	0.05	-	0.11
February	58.24[X]	0.74	-	0.07	-	0.03
March	*	0.44	-	0.06	-	0.03
April	*	0.25	-	0.09	-	0.03
May	**	2.15***	-	0.61***	-	0.37***
June	**	3.56***	-	**	-	0.69***
July	3.31	1.35	-	0.33	-	0.17
August	6.47	2.60	-	0.60	-	0.46
September	3.15	1.54***	-	0.57***	-	0.19***
October	****	****	-	0.08***	-	0.13***
November	0.32	0.88	-	0.19	-	0.13
December		0.85	-	0.29	-	0.11
X – The flow measurement is suspect.						
* The flow could not be completed as the primary channel could not be identified.						
** Due to the debris, depth and velocity of the creek, flows were not conducted.						
*** Due to the debris, depth and velocity of the creek, instream flows could not be conducted. Flow values have been determined from staff gauge calibration curve.						
**** Due to the cold, ice instability and ice jamming, flows could not be conducted in a safe manner.						

6.1.2 Groundwater Monitoring

Groundwater monitoring occurs at MW07-01, MW07-02, MW10-09, MW10-08 and MW07-03. The analytical results are submitted to the Yukon Water Board after each quarterly sampling event(s). The water quality issues were not identified in the analytical results from the monitored sites; exceedances that exist are attributed to naturally high background level concentrations.

The peristaltic pump for groundwater was damaged in 2015. Attempts have been made to purchase a battery for the pump, however, attempts have failed. Since 2015, bailers have been utilized for sampling and have worked immensely well during winter groundwater sampling events due to low flow. Water levels, depth to bottom and bailer volumes of water removed prior to sampling can be found in **Appendix L** as well as the water quality from 2018. Depth to water measurements for each quarterly monitored wells are located in Table 6.

Table 6 – Depth to Water (DTW) Measurements.

Month/Well ID	MW07-01 DTW (m)	MW07-02 DTW (m)	MW07-03 DTW (m)	MW10-08 DTW (m)	MW10-09 DTW (m)
January	3.045	-	3.739	2.701	1.529
April	3.519	4.240	3.870	2.078	1.565
July	1.936	4.040	3.986	2.664	1.211
October	3.015	4.190	4.049	2.663	1.284

In 2018, all groundwater samples for the sites were collected quarterly. In January, the YSI multiparameter unit froze and field parameters could not be gathered for station MW10-09. As well, MW07-02 was frozen in January therefore, no depth to water measurement was obtained.

6.1.3 Weather Stations

The project has three climate stations located across the property.

- Don Climate Station
- KM 90 Climate Station
- XY Climate Station

These stations operate in the same manner and are downloaded monthly; data is recorded every 15 minutes for the following parameters:

- Temperature
- Precipitation
- Wind Speed
- Gust Speed
- Solar Radiation
- Relative Humidity
- Wind Direction
- Snow Depth

Appendix M provides each climate stations graphical data. XY climate station was damaged in 2018; the wind gust and speed instrument was removed by an animal and the temperature sensor was damaged. All temperatures are positive and do not correlate the data gathered by the two other climate stations. Any missing data has been attributed to battery loss and or download issues caused by cold weather. Table 7 below illustrates the measured snow depths in cm from the three climate stations while table 8 provides the average sensor values of the gathered data.

Table 7 Snow Depths at Climate Stations

Month/Station	XY	90	Don
January	35.8	58.3	Not recorded
Feb	37	71.5	62
March	Not recorded	Not recorded	Not recorded
April	50	77.5	64
May	Not recorded	Not recorded	Not recorded

Table 8 Parameter Data from Climate Stations

Parameter	KM 90	DON	Average
Temperature Maximum (^{0}C)	27.112	27.847	27.48
Temperature Minimum (^{0}C)	-34.593	-37.75	-36.17
Wind Gust (m/s)	9.52	22.41	15.97
Gust Speed (m/s)	17.13	42.32	29.73
Solar Radiation (W/m^2)	1203.1	1180.6	1191.85
Relative Humidity %	99.9	97.2	98.55

6.1.4 Drinking Water

Both Don and XY camps are equipped with in-line UV systems and sand filtration to eliminate bacteria and viruses from the water source. In 2018, potable water samples were collected only from Don Camp. XY camp was not operated during the 2018 season. Samples were also collected from the holding tanks prior to the commencement of the season to ensure the potable water met the *Canadian Drinking Water Guidelines*. The analytical results are presented in **Appendix N.** The result bacteriological sampling of drinking water samples are presented in Table 9.

Table 9 Results of Bacteriological Sampling at Don Camp

Location	Date	Results	Action
Don Camp – Holding Tank	June 11, 2018	EC= 0 TC= 0	-
Don Camp - treated (kitchen tap)	June 11, 2018	EC=0 TC=0	-
Don Camp - treated (kitchen tap)	July 7, 2018	EC=0 TC=0	-
Don Camp - treated (kitchen tap)	August 8, 2018	EC=0 TC=0	-

EC= *E. coli; TC= Total Coliforms*

Samples were analyzed for bacteria in Whitehorse at the Yukon Government Environmental Health Services laboratory. All potable water samples yielded negative results for total coliforms and *E. coli* in 2018. A copy of the results is included in **Appendix N.**

7.0 Health and Safety

Previously, 1984 Group of Companies provided first aid staff as primary responders, 24/7 first aid radio monitoring, inventory of first aid equipment, and reporting to SCML. The company ceased operating in the later portion of 2016. In 2017, SCML hired qualified primary responders. They are on duty 24/7 and are reachable by radio. Their responsibilities include maintaining an inventory of first aid equipment and supplies. They report to the camp manager and provide all necessary reporting to governing bodies. This approach continued in 2018.

On June 5th a skeleton crew arrived to prepare Don Camp. The camp was officially opened for the 2018 season on June 11th, 2018, with approximately 4 to 30 people on site, for a total of 79 days. The majority of staff departed August 29th, and by August 30th, 2018 camp was secured. During that time, there were 4 work related injuries occurring at Don Camp; all of which were non-lost time injuries. Table 10 summarizes the health and safety statistics for 2018.

Table 10 Health and Safety Statistics for SCML and On- Site Contractors 2018

	June 11th to August 29th, 2018
Man-hours worked	12,648
Number of lost time injuries	0
Hours lost due to lost time injuries	0
Number of fatalities	0
Number of permanently disabling injuries	0
Number of non-lost time injuries	4

8.0 Wildlife

Wildlife is present throughout the area. It is the job of all employees to report observed wildlife and to ensure they are not spooked or bothered. Observations are recorded in the Wildlife Log that is included in **Appendix O** of this report. As well, maps are provided in **Appendix O** showing the locations where the animals were observed. A summary of observed wildlife and quantity is presented in Table 11.

Table 11 Wildlife Summary

Wildlife	2017 Wildlife Observations	2018 Wildlife Observations
Caribou	18	41
Swan	-	1
Ducks	-	20
Ptarmigan	-	1
Moose	40	59
Wolverine	-	1
Porcupine	2	1
Grizzly Bear	-	13
Black Bear	-	1
Woodpecker	-	1
Cougar	-	1
Wolf	1	1
Martin	-	1
Bear	21	-
Owl	1	-
Total number of Wildlife Observations	**83**	**142**

9.0 Summary of Spills

The spill log and investigation reports from the 2018 season is located in **Appendix P**. Table 12 summarizes the types of spills and total approximant volume(s) spilled in 2018.

Table 12 Spills and Approximant Volumes

Type	Volume (L)
Diesel	4.25 L
Oil	1.0 L
Mixed Flammable Waste	10.0 L

10.0 References

Canadian Council of Ministers of the Environment. http://www.ccme.ca/ . Accessed January 2016.

Environment Canada. 2012. 2012 Metal Mining Environmental Effects Monitoring (EEM) Technical Guidance Document. Government of Canada, Environment Canada. Ottawa, Ontario.

Plafkin, J. L., M. T. Barbour, K. D. Porter, S. K. Gross, and R. M. Hughes. 1989. Rapid bioassessment protocols for use in streams and rivers: benthic macroinvertebrates and fish. EPA U.S. Environmental Protection Agency, Washington, D.C., USA.

APPENDICIES

Appendix A

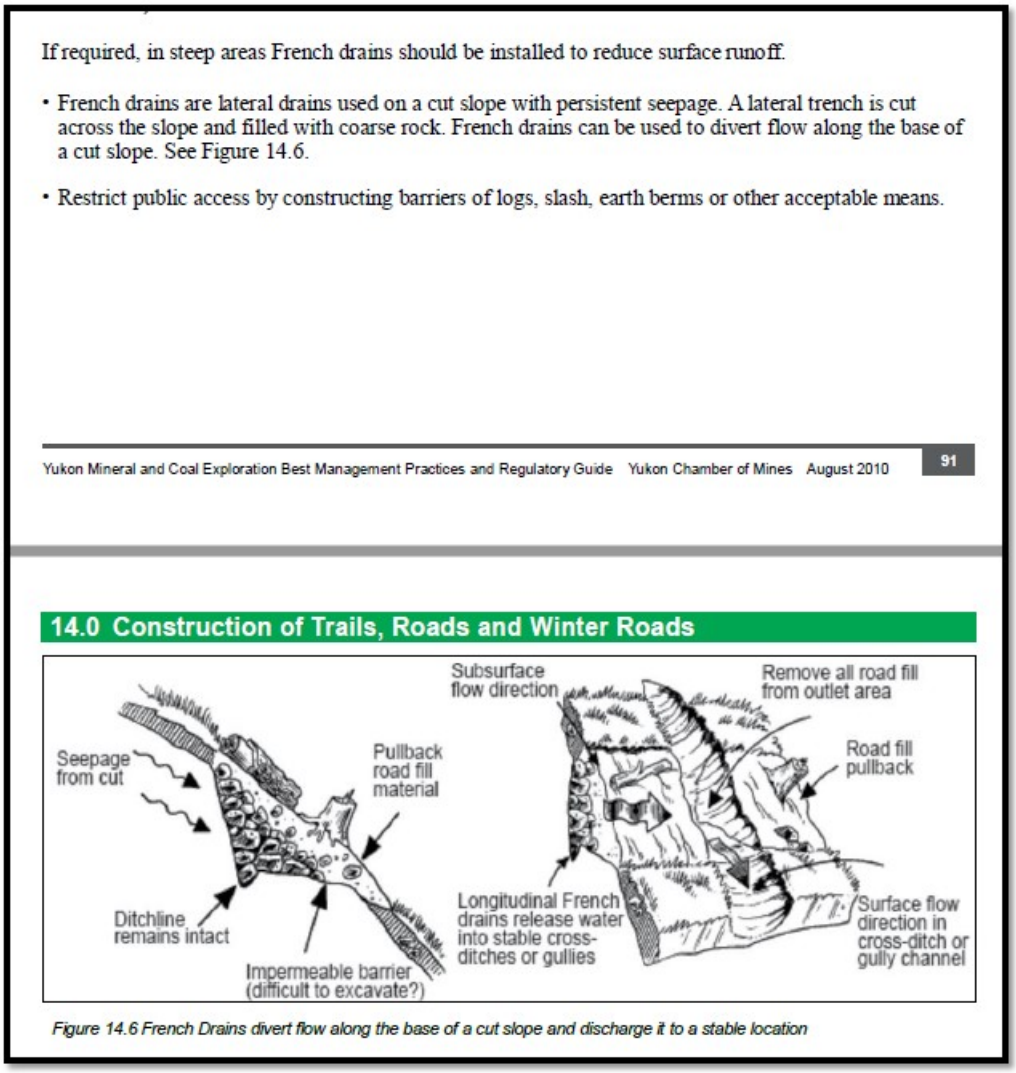
Water Producing Hole Repair Reference Information

SELWYN CHIHONG MINING LTD.

Repair Reference

The figure below is the repair which was utilized for DNE-073 and DNE-120. The repair information was located from *Yukon Mineral and Coal Exploration Best Management Practices and Regulatory Guide.* The link below will allow access to the 198 page document.

http://yukonminers.org/wp-content/uploads/2017/06/BMP_RG_Aug29_FINAL_WebFile.pdf



If required, in steep areas French drains should be installed to reduce surface runoff.

- French drains are lateral drains used on a cut slope with persistent seepage. A lateral trench is cut across the slope and filled with coarse rock. French drains can be used to divert flow along the base of a cut slope. See Figure 14.6.
- Restrict public access by constructing barriers of logs, slash, earth berms or other acceptable means.

14.0 Construction of Trails, Roads and Winter Roads

Figure 14.6 French Drains divert flow along the base of a cut slope and discharge it to a stable location

Figure 1– Reference for repair to DNE-073 and DNE-120

Appendix B

2018

Annual Inspection

By Boreal Engineering

PO BOX 21364
WHITEHORSE, YUKON
Y1A 6R7
(867) 335-0211
WWW.BOREALENGINEERING.CA

July 30, 2018
Selwyn Chihong Mining Ltd.
Sukie Sidhu, Senior Environmental Scientist
205-2237 2nd Avenue
Whitehorse, Yukon Y1A 0K7

Re: 2018 Inspection of Laydown Area, Settling Pond(s) and Diversion Ditches

Dear Ms. Sidhu:

Boreal Engineering (BE) was contracted by Selwyn Chihong Mining Ltd. (SCML) to complete the annual inspection as required by Section 34 of SCML's water licence QZ10-042.

Water Licence Clause 34 requires an a*nnual inspection of the laydown area, settling ponds, storage ponds, rock stockpile area and diversion ditches to be carried out by a Professional Engineer licenced to practice in Yukon.*

The annual inspection (conducted July 15th, 2018) is necessary to gauge the current conditions of the XY Pad and diversion ditches and to identify any current, recurring and future structural weaknesses as well as suggest methods to rectify and identified issues.

The Selwyn Project owned and operated by SCML, is reported to be host to one of the largest undeveloped zinc/lead deposits in the world. Infrastructure at the project side currently includes two fully-permitted 50 person camps; XY is located at the southeast end of the claim blocks approximately 1,500 m above sea level, Don Camp is located at the center of the claims at approximately 1,200 m above sea level. The camps are joined by a 24 Km dirt road. The XY pas is located within the Selwyn Project in eastern Yukon. The pad is currently partially completed and no work has been completed in the area since 2013.

Significant improvement can be seen on site from previous inspection reports. Drainage along roads has been directed and armoured, the shops and equipment lay down areas have had water direction managed and armoured offtake ditches have been installed. Silt fencing is in place however as a general rule could benefit from more regular maintenance. The unused ditch and settling pond have been decommissioned appropriately and work is progressing at the XY Pad.

Please review and implement the following items.

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1. Don Road

The Don Road is a 24 km long gravel surface that joins Don Camp with XY camp. There are four (4) bridges located on the road and numerous culverts to direct and control water flow.

The off takes for water from the road have been armoured and appear to be working. The ditches near the airstrip appear to be filling with material from slough events and should be cleaned. The culvert that had washed out, has been repaired.

Don Road

Off takes have been armoured.

Recommendations for Don Road

- Clean ditches near the airstrip.
- Ensure ditches are kept clean (free of material) to prevent erosion.

2. Core Yard Ditch

The Core Yard ditch which directs the waters from Unnamed Creek though the Don Core Yard has had extensive works completed since the previous inspection. Work is continuing. There is exposed geotextile and armouring extends vertically up the banks which is unnecessary. However, the armouring does not extend to the bottom of the ditch where water is primarily running.

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Core Yard Ditch

Exposed geotextile liner. Rip rap extends far up the banks where creek flow will never reach.

Recommendations for Core Yard Ditch

Short Term:

- Exposed geotextile should be either covered or removed.
- Rip rap should be removed from the banks.
- Rip rap should be placed in the bottom of the ditch.
- Ensure the rip rap covers the exposed geotextile at the bottom of the ditch.
- Use smaller rocks to infill between the large rocks.
- The willows should be left in place.
- The top portions of the bank should be seeded.

Long Term:

- Assessment of culvert size and ditch capacity for expected volume based on the 100 year flood return event.

3. Don Maintenance Yard

In 2016 a large erosional slough occurred behind the Don Maintenance Shop. Repairs were completed in 2016 with the construction of a drainage ditch to direct water(s) from the Maintenance Yard to Unnamed Creek.

The yard has been graded to direct water into the armoured drainage channel. The drainage channel appears to be operating as designed. Some sloughing and rill erosion was observed on the lower benches caused by water retention and poor water direction. The silt fencing located at the toe on the north side requires maintenance.

The seeding completed in previous years is growing. However, further vegetative support to minimize erosion is required.

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Don Maintenance Yard

Silt fencing has buildup of sediments

View from Core Yard ditch.

Recommendations for Don Maintenance Yard

Short Term:

- Clean out silt fencing at north toe
- A settling pond should be created near each of the silt fence to reduce maintenance of silt fence.

Long Term

- Willow and/or buck brush shoots should be placed along slope to increase vegetative root mass.

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4. **Don Air Strip**

The Don Air strip has numerous pieces of silt fencing which requires maintenance. A culvert has been installed and armoured at the south end of the air strip to help direct waters from the air strip surface. This culvert has reduced the erosion considerably.

Don Air Strip

Silt fencing located near air strip ditches requires maintenance

Erosion gully caused by poor water directing.

Install of culvert with armouring. Silt fencing requires maintenance.

Recommendations for Don Air Strip

Short Term:

- Clean out silt fencing at south end.
- Silt fencing should be extended to ensure all sediments are captured.
- Clean out ditches where soil has been deposited.

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5. Don Waste Facility

The Don Waste Facility is the primary location for the storage of waste at the Selwyn Project. A berm was constructed around the facility to prevent contaminants from entering the surrounding environment. The offtake ditch has been armoured and directed water to the vegetated areas while the lower portion of the berm directs water as designed to the offtake area. No hydrocarbon contamination was observed during the inspection. The facility would benefit from direction of runoff to the offtake ditch rather than down the side of the road.

Don Waste Facility

Erosion along the access road to Don Waste facility.

Armoured offtake ditch.

Recommendations for Don Waste Facility

Short Term:

- Install weir ditch across the access road to direct water to the offtake ditch.
- Cleanout silt fencing and/or install new silt fencing.

- Monitor waste to ensure that no materials containing hydrocarbons are deposited here.

Long Term:

- Monitor runoff water(s) in ditch for hydrocarbons.

6. XY Pad

The **West Ditch** and **West Ditch Settling Pond** have been successfully decommissioned with an armoured offtake ditch.

The **Access Road to Truck Laydown Area** has experienced some tension cracks. There is still no land movement and/or tree movement from the previous tension cracks. The ditch adjacent to the Access Road appear to have sediments in it.

The **Truck Laydown Area** appears to have had some minor sloughing and slumping events. Rill erosion was observed at the upper portion of the laydown area. The ditch(es) appear to be free of soils.

XY Pad

The former West Infield Ditch and Settling Pond.

Recommendations for XY Pad

Short Term:

- Clean ditches where the soils have filled them and maintain drainage.
- The **West Infield** area should be seeded.
- **Access Road to Truck Laydown Area** grade and ditch road to portal to direct water to the ditch on main road. Place ditch blocks and maintain ditch. As well, seed all disturbed areas to help prevent erosion.

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7. Adit

The portal, reminisce of underground activities from pervious operations appears to have been cleaned up. Previously, wood debris scattered the front portion of the area. It is our understanding that a closure plan will be submitted at the end of September to obtain a reclaimed status on this location.

Adit

Debris littered the exterior of the adit in 2017.

BOREAL ENGINEERING LTD.
PO BOX 21364
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(867) 335-0211
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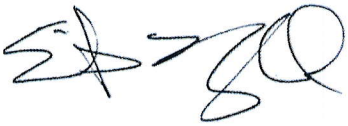
9. Final Remarks

Closure plans for the Adit will be submitted to SCML by the end of September 2018. The Core Yard Ditch capacity and culvert tributary analysis must be completed before 2019.

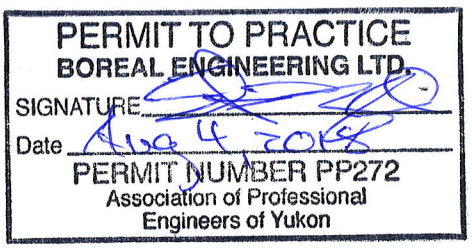
Proactive repairs and maintenance should occur at all locations on the property to prevent erosion and other land movements. Steaming culverts has proven successful as there was only a minor washout this season.

10. Closure

I hope this satisfies concerns and look forward to reviewing the implementation of the remediation actions. If there are any questions associated with this report please contact the undersigned.



Erik Nyland, P.Eng.
Boreal Engineering Ltd.
enyland@borealengineering.ca



Appendix C

Seed Mix

Seed Mix Approval

Sukie Kaur Sidhu

From: Ryan Trigg
Sent: August-25-15 9:57 AM
To: Steve.Colp@gov.yk.ca
Cc: Jenifer Hill
Subject: RE: Authorization for Seed Mix - SCML Project Site

Great, thanks Steve.

Ryan

From: Steve.Colp@gov.yk.ca [mailto:Steve.Colp@gov.yk.ca]
Sent: Monday, August 24, 2015 10:49 AM
To: Ryan Trigg
Subject: RE: Authorization for Seed Mix - SCML Project Site

Good morning Ryan!

You're good to go with this mix! Thank you for your patients.

Regards,

Steve

From: Steve.Colp
Sent: Wednesday, August 19, 2015 2:23 PM
To: 'Ryan Trigg'
Subject: RE: Authorization for Seed Mix - SCML Project Site

Hi Ryan,

I just got back to my office today and slowly battling through my e-mails…lol. I'm checking with Yukon Environment to see if this is an acceptable mix, unfortunately the person I need to speak to is away until the 24th. Can I get back to you then on this if there isn't a time crunch?

Thanks,

Steve

From: Ryan Trigg [mailto:rtrigg@chihongmining.com]
Sent: Thursday, August 06, 2015 12:35 PM
To: Steve.Colp
Cc: Jenifer Hill
Subject: Authorization for Seed Mix - SCML Project Site

Hi Steve,

I'm an environmental coordinator with SCML and we're in the process of re-stocking seed mix for the purpose of re-vegetation at the Selwyn Project Site. Here is a list of the species available in our current option for seed mix:

40% Slender Wheatgrass
20% Awned Wheatgrass
20% Sheep Fescue
10% Rocky Mountain Fescue
08% Ticklegrass
02% Fults Alkaligrass

All of these species are listed in the *Yukon Revegetation Manual (2012)* and offer a wide range of optimal growing conditions. Attached are the seed analysis reports from the sources of the different seeds. You'll notice that some additional species showed up in the analysis reports (for Awned Wheatgrass, Rocky Mtn Fescue and Ticklegrass) at very low concentrations.

Are you able to authorize the use of this seed mix for the site?

Regards,

Ryan

RYAN TRIGG
Selwyn Chihong Mining Limited
#2701-1055 West Georgia Street
Vancouver, BC, V6E 0B6
Canada

Office: 604-681-8344 ext. 816
Cell: 604-722-4445

Seed Certificates

NST LABS
340 N. Main Ave
PO Box 100
Bridgewater, SD 57319

Phone: (605) 729-2000
Fax: (605) 729-2001

Sender Information
LANDMARK
PO BOX 307
Hoople, ND 58243

Date Received: 02/18/2016
Date Completed: 07/05/2017
Date of Report: 07/05/2017
Sample Number: 66945

Kind of Seed: Slender wheatgrass
Variety: Firststrike
Lot Number: LMND-15-RFS 504410

Purity Results in	
Slender wheatgrass (Elymus trachycaulus)	99.34 %
Other Crops:	0.00 %
Inert Material:	0.66 %
Weed Seeds:	0.00 %
	100.00 %

7.20 grams tested

Other Crops	**# Found**	**Per Pound**
* *NONE FOUND*		

Weed Seeds	**# Found**	**Per Pound**
* *NONE FOUND*		

	Germ%	Hard%	Dorm%	Viable%	# Tested	Test Days	Temp	%PLS	TZ%
Slender wheatgrass (Elymus trachycaulus)									91

Noxious Weeds (All States Noxious)	**# Found***	**Per Pound**
* *NONE FOUND*		

72.80 grams tested

Additional Comments
6/20/17 TZ UPDATE: 90%
7/5/17 GERM UPDATE: Germ 94%, Dorm 0%, Viable 90%

Special Noxious Weeds	**# Found**	**Per Pound**
Not Requested		

UGS	**# Found**	**Per Pound**
Not Requested		

Dormancy determination was not conducted in accordance with the AOSA rules for testing seeds.Viability of un-germinated seed is to be determined at the end of the prescribed test period.Dormancy on this report was determined as the difference between the Viable Tetrazolium percentage and the Normal germination percentage.

Kevin Stahl

Kevin Stahl, RST
NST LABS

AUTHORIZED REGISTERED SEED TECHNOLOGIST 069

NST LABS
340 N. Main Ave
PO Box 100
Bridgewater, SD 57319

Phone: (605) 729-2000
Fax: (605) 729-2001

Sender Information
LANDMARK
PO BOX 307
Hoople, ND 58243

Date Received: 09/15/2017
Date Completed: 09/19/2017
Date of Report: 09/19/2017
Sample Number: 86036

Kind of Seed: Slender wheatgrass
Variety: First Strike
Lot Number: LMND-15-RFS 504410

Purity Results in

Slender wheatgrass (Elymus trachycaulus)	99.85 %
Other Crops:	0.00 %
Inert Material:	0.15 %
Weed Seeds:	0.00 %
	100.00 %

8.10 grams tested

Other Crops **# Found Per Pound**
** NONE FOUND*

Weed Seeds **# Found Per Pound**
** NONE FOUND*

Germ%	Hard%	Dorm%	Viable%	# Tested	Test Days	Temp	%PLS	TZ%

Noxious Weeds (All States Noxious) **# Found* Per Pound**
** NONE FOUND*

82.30 grams tested

Additional Comments
CANADA STANDARDS: Canadian Standards: (82.3g search. Listed as per 25g)
No (0) Brassica crops including S. Alba in 25g.
No (0) Sweetclover in 25g.
Found (1) Ergot (.006g) in 25g.
Found (1) Soil (.006g) in 25g.
No (0) Canadian Prohibited Noxious in 25g.
No (0) Canadian Primary Noxious in 25g.
No (0) Canadian Secondary Noxious in 25g.
No (0) Other crop in 25g.
No (0) Other weed in 25g.

Origin= WA. .
Seed Count: 143,091 seed(s) per pound

Special Noxious Weeds **# Found Per Pound**
Not Requested

UGS **# Found Per Pound**
Not Requested

Dormancy determination was not conducted in accordance with the AOSA rules for testing seeds.Viability of un-germinated seed is to be determined at the end of the prescribed test period.Dormancy on this report was determined as the difference between the Viable Tetrazolium percentage and the Normal germination percentage.

Kevin Stahl
Kevin Stahl, RST
NST LABS

AUTHORIZED REGISTERED SEED TECHNOLOGIST 069

SEEDCHECK TECHNOLOGIES INC.

Report of Seed Analysis
CFIA Accredited Laboratory No. 1215

101, 5906-50 Street
Leduc, Alberta T9E 0R6
Phone: (780) 980-8324
Fax: (780) 980-8375
www.seedcheck.net

LAB#: 18-87152

Customer: DLF Pickseed Canada Inc. (Alta.)
11239-186 Street NW
Edmonton, AB T5S 0A9

Sender Information:	
SeedType:	Sheep fescue
Scientific Name:	(Festuca ovina)
Lot#:	887-504595
Reference#:	Unc Azure

Analyzed According to Canadian Methods & Procedures for Testing Seed

Tests: Germination , Canadian Purity,

	Per		Per
Total Grams Analyzed: 25.06	25	Date Received: Jun 28, 2018 Purity Date: Jun 28, 2018	25
Prohibited Noxious:	0	**Other Crop Seeds:**	
Primary Noxious:			
Total Primary	0		
Secondary Noxious:		**Total Other Crop Seeds**	0%
		Sweet Clover (Melilotus sp.)	0
		Brassica spp.	0
		Ergot Bodies	0%
Total Primary & Secondary Noxious	0		
Other Weed Seeds:		**Percentage Test:**	1.033g
		Pure seed %	98.4
		Other crop %	0.0
		Weed Seed %	0.0
		Inert matter%	1.6
		Ergot (included in inert)%	0.0
		Date of Germination	7/19/18
		% GERMINATION	83
		Abnormal Seedlings%	4
		Dead Seed%	13
		Fresh Seed%	0
Total Noxious & Other Weed Seeds	0	Pure Living Seed%	82

Advisory Tests & Remarks:

SENIOR MEMBER
OF

SEED COMMERCIAL ANALYSTS ASSOCIATION CANADA INC.

124
Lisa Greenan

Accredited by CFIA to conduct Purity and Germination for all crop kind in Grade Tables 1 to 20 and True loose smut for Barley tests according to the Canadian Methods and Procedures for Testing Seed. Tests for kinds not listed in the Seeds Regulations, Grade Tables and percent purity tests for kinds listed in Grade Tables 1 to 7 and 15 to 20 are not accredited by CFIA.
Test results are a representation of the sample provided at the time of testing. Seed Check Technologies makes no warranties expressed or implied due to marketability or suitability concerning this product. Liability for damages for any results is limited to the fee charged for testing. It is not always possible to tell seed type to species based on seed characteristics alone. Seed type and variety supplied by sender.

BioVision SEED LABS

Submitted By:

Work Order 4009017-01

Received 5/4/2018 Completed 5/9/2018

Tested By: BioVision Seed Labs
12803 100 Street
Grande Prairie, Alberta T8V 4H3
P (780) 532-8890
CFIA Acc #1213

SENIOR MEMBER OF

164 MICHELLE KRAWETZ

Sample of: Awned Wheatgrass
Sample ID: AWG-AB-0217

504463

Report of Analysis

Tetrazolium	Completed: 5/8/2018	Method	OTH

TZ Viable 92 %

TZ Non-Viable 8 %

BioVision SEED LABS

Work Order 4002847-01
Received 1/19/2017 Completed

Tested By: BioVision Seed Labs
12803 100 Street
Grande Prairie, Alberta T8V 4H3
P (780) 532-8890
CFIA Acc #1213

Submitted By:

Sample of: Awned Wheatgrass
Sample ID: AWG-AB-0217

504463

Expanded Quality Report

Purity - Native Species - Large	Completed: 1/19/2017	Results Per: 25 grams	Grams Analyzed: 90	Method	CDN

Noxious Weed Seeds		Other Weed Seeds		Other Crops		Total Primary + Secondary	0
Prohibited Noxious Total	0	Other Weed Seeds Total	0.5	Other Crops Total	0.0%	**Total Weeds**	0.5
Primary Noxious Total	0	Foxtail (Wild) Barley	0.5	Brassica/Sweet Clover/Ergot/Sclerotia		Analyst Remarks	
Secondary Noxious Total	0			Brassica spp.	0	APPROXIMATE NUMBER OF SEEDS PER GRAM IS 290.	
				Ergot	<1%		
				Sweet Clover	0		

Purity - PS Nativegrass	Completed: 1/19/2017	Grams Analyzed: 9.0527	Method	CDN

Awned Wheatgrass	**98.5**
Other Crop Seed	0.0
Weed Seed	0.0
Inert	1.5

Tetrazolium	Completed: 1/20/2017		Method	OTH

TZ Viable 89 %

TZ Non-Viable 11 %

REPORT OF ANALYSIS

BVGP 0049400-01

Received 03/28/2014
Completed 04/11/2014

BioVision
SEED LABS

This sample of: Rocky Mountain Fescue
Designated: Lot # 425

504361

BioVision Seed Labs
12803 100 Street
Grande Prairie, Alberta, Canada. T8V 4H3
Phone (780) 532-8890 Fax (780) 513-0115

CDN PURITY Number per: 25 grams - unless otherwise specified. Grams Analysed: 29

Noxious Weed Seeds		Other Weed Seeds		Other Crop Seeds	
Prohibited Noxious		Sedge	0.9	Total Other Crop Seeds	0.0%
		Total Other Weeds	0.9	Brassica spp.	0
				Sweet Clover	0
Total Prohibited	0			Ergot	0.0%
Primary Noxious					
Total Primary	0				
Secondary Noxious					
Total Primary + Secondary	0	Total Weed Seeds	0.9		

	PURE SEED COMPONENTS (%)						VIABILITY ANALYSIS (%)							Dormancy Breaking	
Seed Name	PS g	PS	Weeds	Other Crops	Inert	PLS	Germ	Hard	Germ +Hard	Fresh	Abs	Dead	Completed	PreChill Days	Additional
Rocky Mountain Fescue	2.90	99.9	0.0	0.0	1.0	-	97	-	-	-	0	3	4/11/2014	-	

Remarks

"Appoximate number of seeds per gram is 842"

Other Determinations

SENIOR MEMBER
OF

COMMERCIAL SEED ANALYSTS ASSOCIATION CANADA INC.

82
MICHELE KULBA

Accredited by CFIA to conduct tests in accordance with the laboratory's scope of accreditation and the Canadian Methods and Procedures for Testing Seed.

CFIA Accreditation Number 1213

*Advisory test - - Method not CFIA M&P prescribed.
1. Method(s) used for promoting germination of dormant seed.
Variety information supplied by the Sender.

Test(s) herein reported were/were conducted on a sample provided by the requesting party. Test results are representative of the condition of the sample only on the day the tests were performed. BioVision Seed Research Ltd. MAKES NO WARRANTIES, EXPRESS OR IMPLIED, including WARRANTY OF MERCHANTABILITY FITNESS FOR A PARTICULAR PURPOSE OR OTHERWISE CONCERNING ITS TEST RESULTS OR THIS SAMPLE. LIABILITY for damages for any cause, including breach of contract, breach of warranty and negligence, with respect to the test results or this test report is LIMITED TO A REFUND OF THE FEE CHARGED FOR TESTING. THIS REMEDY IS EXCLUSIVE. IN NO EVENT SHALL BioVision Seed Research Ltd. OR ANY OTHER AFFILIATE OF BioVision Seed Research Ltd. OR ANY OF THEIR EMPLOYEES, OFFICERS, DIRECTORS OR CONTRACTORS BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES, INCLUDING LOSS OF PROFITS.

BioVision SEED LABS

Work Order 4003607-01
Received 3/6/2017 Completed 3/20/2017

Tested By: BioVision Seed Labs
12803 100 Street
Grande Prairie, Alberta T8V 4H3
P (780) 532-8890
CFIA Acc #1213

SENIOR MEMBER OF
SEED COMMERCE CANADA INC. ASSOCIATION

Submitted By:
164 MICHELLE KRAWETZ

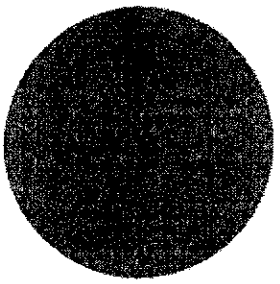
Sample of: Rocky Mountain Fescue
Sample ID: 425

504361

Report of Analysis

Germination - Fescue | Completed 3/20/2017 | Method: CDN

Germination %	97
Hard Seed %	0
Germ & Hard Seed %	-
Fresh %	0
Abnormal %	0
Dead %	3



Procedure	
Temperature °C	15-25
Substrate	TP
Pre-Chill Days	0
Additional	-

ted by CFIA to conduct tests in accordance with the laboratory's scope of accreditation and the Canadian Methods and Procedures for Testing Seed.
n Seed Research Ltd. expressly disclaims all express or implied warranties of merchantability and fitness for a particular purpose, with respect to the product or information provided herein, and shall retain no circumstances be liable for incidental or consequential damages.

*Advisory test - Method not CFIA MAP prescribed. Method(s) used for generating germination of dormant seed.

SEEDCHECK TECHNOLOGIES INC.

Report of Seed Analysis
CFIA Accredited Laboratory No. 1215

101, 5906-50 Street
Leduc, Alberta T9E 0R6
Phone: (780) 980-8324
Fax: (780) 980-8375
www.seedcheck.net

LAB#: 18-85712

Customer: DLF Pickseed Canada Inc.(Man.) PO Box 4, Group 200, R.R.#2 1884 Brookside BLVD Winnipeg, Manitoba R3C 2E6	**Sender Information:** SeedType: Ticklegrass Scientific Name: (Agrostis scabra) Lot#: TG-14-20

Tests: Germination , (Non-Tabled), Tetrazolium,

Test Results According to Canadian Methods & Procedures

Date Received	Mar 19, 2018
Date of Germination	Apr 02, 2018
% GERMINATION	
Abnormal Seedlings%	
Dead Seed%	
Fresh Seed%	

Advisory Test / Remarks

Tetrazolium % Viable: 90 Mar 20, 2018

SENIOR MEMBER
OF

SEED ANALYSTS ASSOCIATION OF CANADA INC.

124
Lisa Greenan

Accredited by CFIA to conduct Purity and Germination for all crop kind in Grade Tables 1 to 20 and True loose smut for Barley tests according to the Canadian Methods and Procedures for Testing Seed. Tests for kinds not listed in the Seeds Regulations, Grade Tables and percent purity tests for kinds listed in Grade Tables 1 to 7 and 18 to 20 are not accredited by CFIA.
Test results are a representation of the sample provided at the time of testing. Seed Check Technologies makes no warranties express or implied due to marketability or suitability concerning this product. Liability for damages for any results is limited to the fee charged for testing. It is not always possible to tell seed type to species based on seed characteristics alone. Seed type and variety supplied by sender.

SEEDCHECK TECHNOLOGIES INC.

Report of Seed Analysis
CFIA Accredited Laboratory No. 1215

101, 5906-50 Street
Leduc, Alberta T9E 0R6
Phone: (780) 980-8324
Fax: (780) 980-8375
www.seedcheck.net

LAB#: 16-73102

Ticklegrass

Customer: DLF Pickseed Canada Inc.(Man.)
PO Box 4, Group 200, R.R.#2
1884 Brookside BLVD
Winnipeg, Manitoba R3C 2E6

Sender Information:

SeedType:	Agrostis
Scientific Name:	(Agrostis spp.)
Lot#:	TG-14-20

Analyzed According to Canadian Methods & Procedures for Testing Seed

Tests: Canadian Purity, Tetrazolium,

	Per 25		Per 25
Total Grams Analyzed: 6.271		Date Received: Jul 14, 2016 Purity Date: Jul 14, 2016	
Prohibited Noxious:	0	**Other Crop Seeds:**	
Primary Noxious:			
Total Primary	**0**	**Total Other Crop Seeds**	**0%**
Secondary Noxious:		Ergot Bodies	0%
Total Primary & Secondary Noxious	**0**	**Percentage Test:**	0.5202g
Other Weed Seeds:		Pure seed %	98.4
		Other crop %	0.0
		Weed Seed %	0.0
		Inert matter%	1.6
		Ergot (included in inert)%	0.0
Total Noxious & Other Weed Seeds	**0%**		

Advisory Tests & Remarks:

Tetrazolium % Viable: 98 /
In 200 seeds tested Jul 15, 2016

SENIOR MEMBER OF

SEED ANALYSTS ASSOCIATION CANADA INC.

124
Lisa Greenan

Accredited by CFIA to conduct Purity and Germination for all crop kind in grade tables 1 to 20 and True loose smut for Barley tests according to the Canadian Methods and Procedures for Testing Seed.
Test results are a representation of the sample provided at the time of testing. Seed Check Technologies makes no warranties expressed or implied due to marketability or suitability concerning this product. Liability for damages for any results is limited to the fee charged for testing. It is not always possible to tell seed type to species based on seed characteristics alone. Seed type and variety supplied by sender.

NST LABS
340 N. Main Ave
PO Box 100
Bridgewater, SD 57319

Phone: (605) 729-2000
Fax: (605) 729-2001

Sender Information

Date Received: 09/04/2017
Date Completed: 03/12/2018
Date of Report: 03/12/2018
Sample Number: 85552

Kind of Seed: Alkaligrass
Variety: WEEPING
Lot Number: B-2117-2

Purity Results in

Alkaligrass (Puccinellia spp.)	91.65 %
Other Crops:	0.00 %
Inert Material:	8.35 %
Weed Seeds:	0.00 %
	100.00 %

1.30 grams tested

Other Crops — # Found Per Pound
* NONE FOUND

Weed Seeds — # Found Per Pound
* NONE FOUND

	Germ%	Hard%	Dorm%	Viable%	# Tested	Test Days	Temp	%PLS	TZ%
Alkaligrass (Puccinellia spp.)	94	0	1	95	400	20	15-25 KNO3	87.07	95

Noxious Weeds (All States Noxious) — # Found* Per Pound
NONE FOUND

6.20 grams tested

Additional Comments
BAR-PD06N17
Canada : Canadian Standards: (6.2g search. Listed as per 25g)

No (0) Brassica crops including S. Alba in 25g.
No (0) Sweetclover in 25g.
No (0) Ergot in 25g.
Found (444) Soil in 25g. (.012g)
No (0) Canadian Prohibited Noxious in 25g.
No (0) Canadian Primary Noxious in 25g.
No (0) Canadian Secondary Noxious in 25g.
No (0) Other crop in 25g.
No (0) Other weed in 25g.

Origin= ND. .
Seed Count: 4,123,636 seed(s) per pound

Special Noxious Weeds — # Found Per Pound
Not Requested

UGS — # Found Per Pound
Not Requested

Dormancy determination was not conducted in accordance with the AOSA rules for testing seeds.Viability of un-germinated seed is to be determined at the end of the prescribed test period.Dormancy on this report was determined as the difference between the Viable Tetrazolium percentage and the Normal germination percentage.

Kevin Stahl

Kevin Stahl, RST
NST LABS

Appendix D

2018

Pad Reclamation

and

Site Seeding

SELWYN CHIHONG MINING LTD.

Appendix D

2018
Reclaimed Drill Pads
and
Seeding Tables

SELWYN CHIHONG MINING LTD.

Heavy Equipment Reclaimed Drill Pads 2018

Anniversary Heavy Equipment Reclaimed Drill Pads
ANC 225
ANC 226
ANC *
ANC *
XYC Heavy Equipment Reclaimed Drill Pads
XYC 318
XYC 319
XYC 316
XYC 305
XYC 302
XYC 304
XYC 306
* Unknown pad

SELWYN CHIHONG MINING LTD.

Hand Seeding
2018

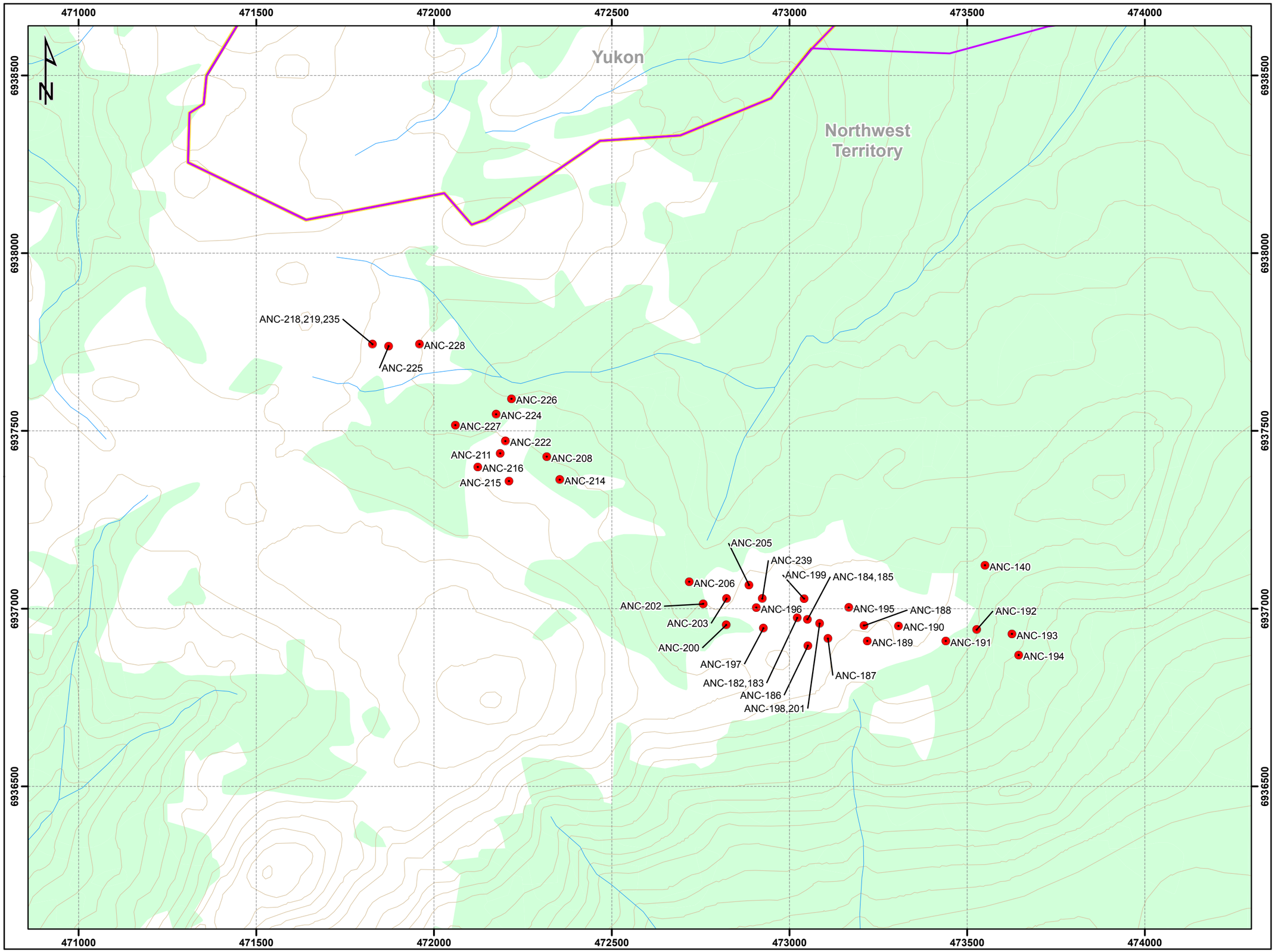
Date	Location	Easting 09V 0	Northing
16-Aug-18	XYC - 305		
17-Aug-18	Don Maintenance Shop Back Slope	473083	6934441
17-Aug-18	Don Core Yard Ditch	473229	6934631
18-Aug-18	XYC - 308	489782	6925961
18-Aug-18	XYC - 304	489769	6925905
18-Aug-18	Willow Creek Bridge		
18-Aug-18	Arrival Shed Back Slope	473190	6934220
18-Aug-18	Across from Arrival Shed		
19-Aug-18	Old barrel location		
19-Aug-18	XY Dump		

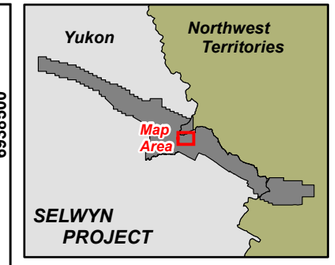
SELWYN CHIHONG MINING LTD.

Heli Seeding 2018

Location	Easting 09 V 0	Northing
ANC-194	473645	6936869
ANC-193	473626	6936928
ANC-192	473527	6936941
ANC-191	473440	6936908
ANC-190	473307	6936951
ANC-189	473219	6936908
ANC-188	473210	6936952
ANC-187	473108	6936916
ANC-186	473052	6936895
ANC-198	473085	6936958
ANC-201	473085	6936958
ANC-184	473051	6936969
ANC-185	473051	6936969
ANC-182	473022	6936974
ANC-183	473022	6936974
ANC-199	473041	6937027
ANC-197	472927	6936945
ANC-196	472907	6937002
ANC-239	472924	6937028
ANC-205	472886	6937066
ANC-203	472823	6937028
ANC-202	472757	6937013
ANC-206	472718	6937075
ANC-214	472354	6937363
ANC-208	472317	6937427
ANC-222	472201	6937471
ANC-211	472186	6937436
ANC-216	472123	6937398
ANC-224	472175	6937547
ANC-226	472218	6937590
ANC-227	472060	6937516
ANC-228	471959	6937744
ANC-225	471872	6937738
ANC-218	471827	6937744
ANC-219	471827	6937744
ANC-235	471827	6937744
XY Underground Pad	487483	6926503
ANC-195	473167	6937003
ANC-200	472822	6936954
ANC-140	473550	6937121
ANC-215	472211	6937358

2018
Seeding Maps





Legend

- Seeding Location (DDH)

Boundaries

- Selwyn Project Outline
- Yukon & NWT Border

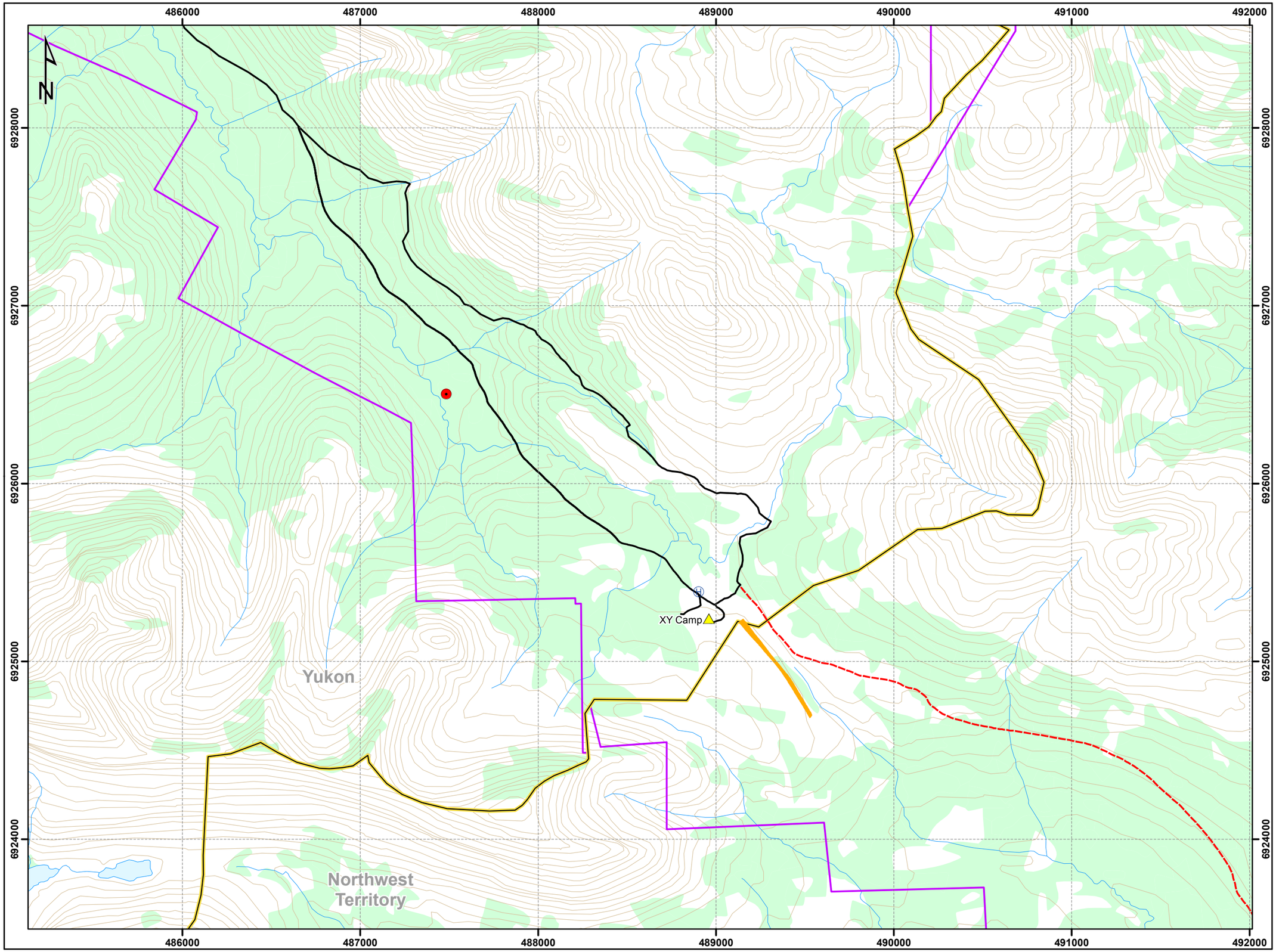
Topography

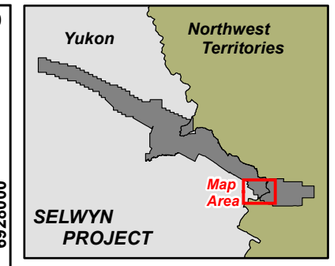
- Watercourse
- Waterbody
- Vegetation
- 20m Contour

SELWYN CHIHONG MINING LTD.

Date: 2018/10/09	*Selwyn Project*
Author: M.Mayer	**Heli Seeding 2018 Anniv Area**
Office: Vancouver	
Figure:	
Scale: 1:10,000	
Filename: SC1710_envt_20181009_HeliSeedingAnniv.mxd	
Project Location: Watson Lake Mining District - NTS 105I/J	
Projection: NAD83 - UTM Zone 9	

0 100 200 300 400
Meters





Legend

- Heli Seeding XY
- Underground Pad

Project Roads/Camps

- Camp Location
- Heli Pad
- Don Road
- HPAR
- Airstrip

Boundaries

- Selwyn Project Outline
- Yukon & NWT Border

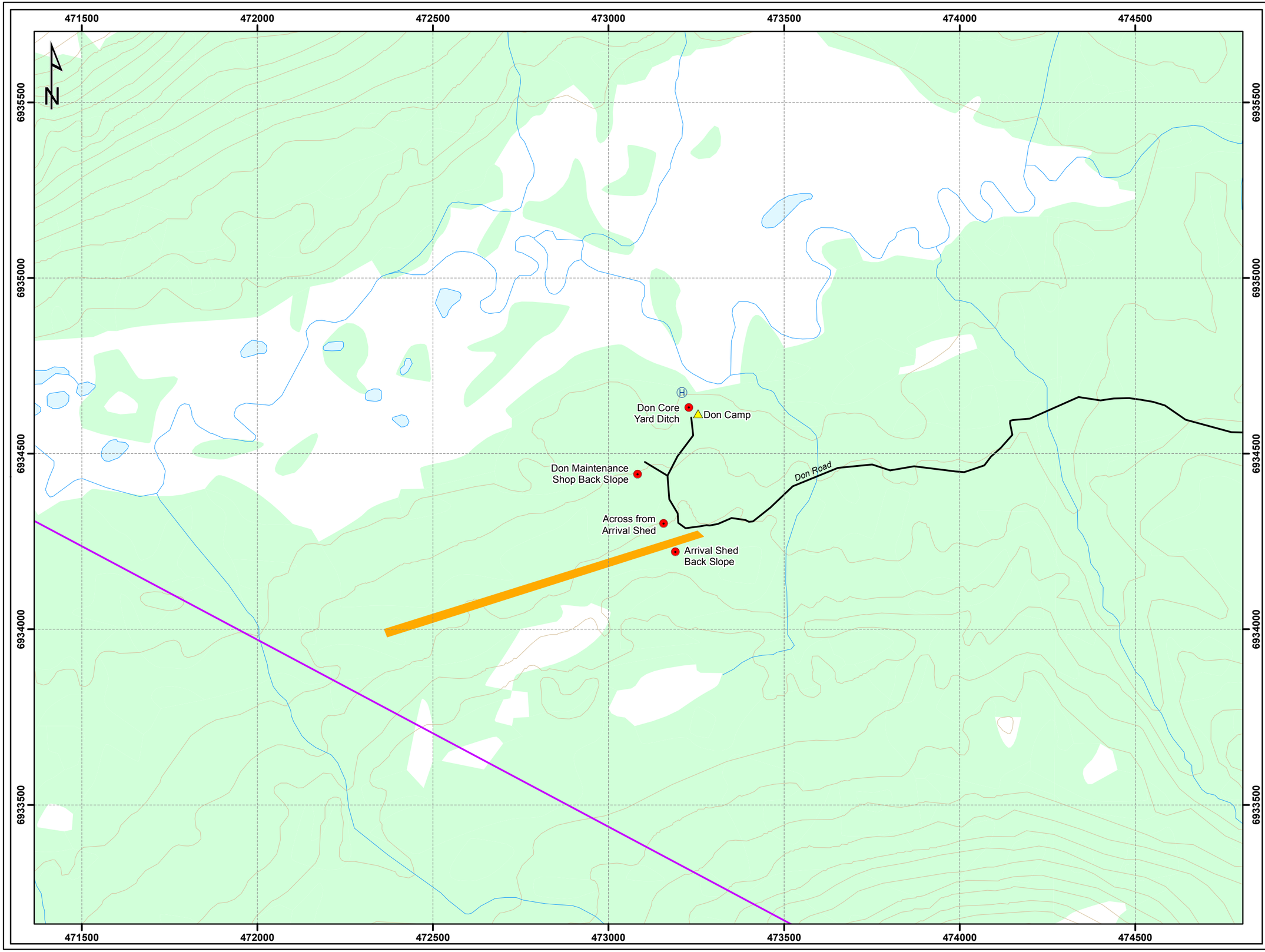
Topography

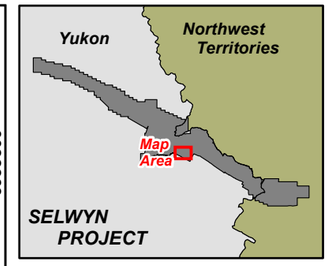
- Watercourse
- Waterbody
- Vegetation
- 20m Contour

SELWYN CHIHONG MINING LTD.

Date: 2018/10/09	*Selwyn Project*
Author: M.Mayer	**Heli Seeding 2018**
Office: Vancouver	**XY Area**
Figure:	
Scale: 1:20,000	
Filename: SC1710_envt_20181009_HeliSeedingAnniv.mxd	
Project Location: Watson Lake Mining District - NTS 105I/J	
Projection: NAD83 - UTM Zone 9	

0 200 400 600 800
Meters





Legend

- Hand Seeding Locations

Project Infrastructure

- Camp Location
- Heli Pad
- Don Road
- Airstrip

Boundaries

- Selwyn Project Outline
- Yukon & NWT Border

Topography

- Watercourse
- Waterbody
- Vegetation
- 20m Contour

SELWYN CHIHONG MINING LTD.

Date: 2018/10/16	*Selwyn Project*
Author: M.Mayer	**Hand Seeding 2018 Don Area**
Office: Vancouver	
Figure:	
Scale: 1:10,000	
Filename: SC1710_envt_20181016_HandSeedingDon.mxd	
Project Location: Watson Lake Mining District - NTS 105I/J	
Projection: NAD83 - UTM Zone 9	

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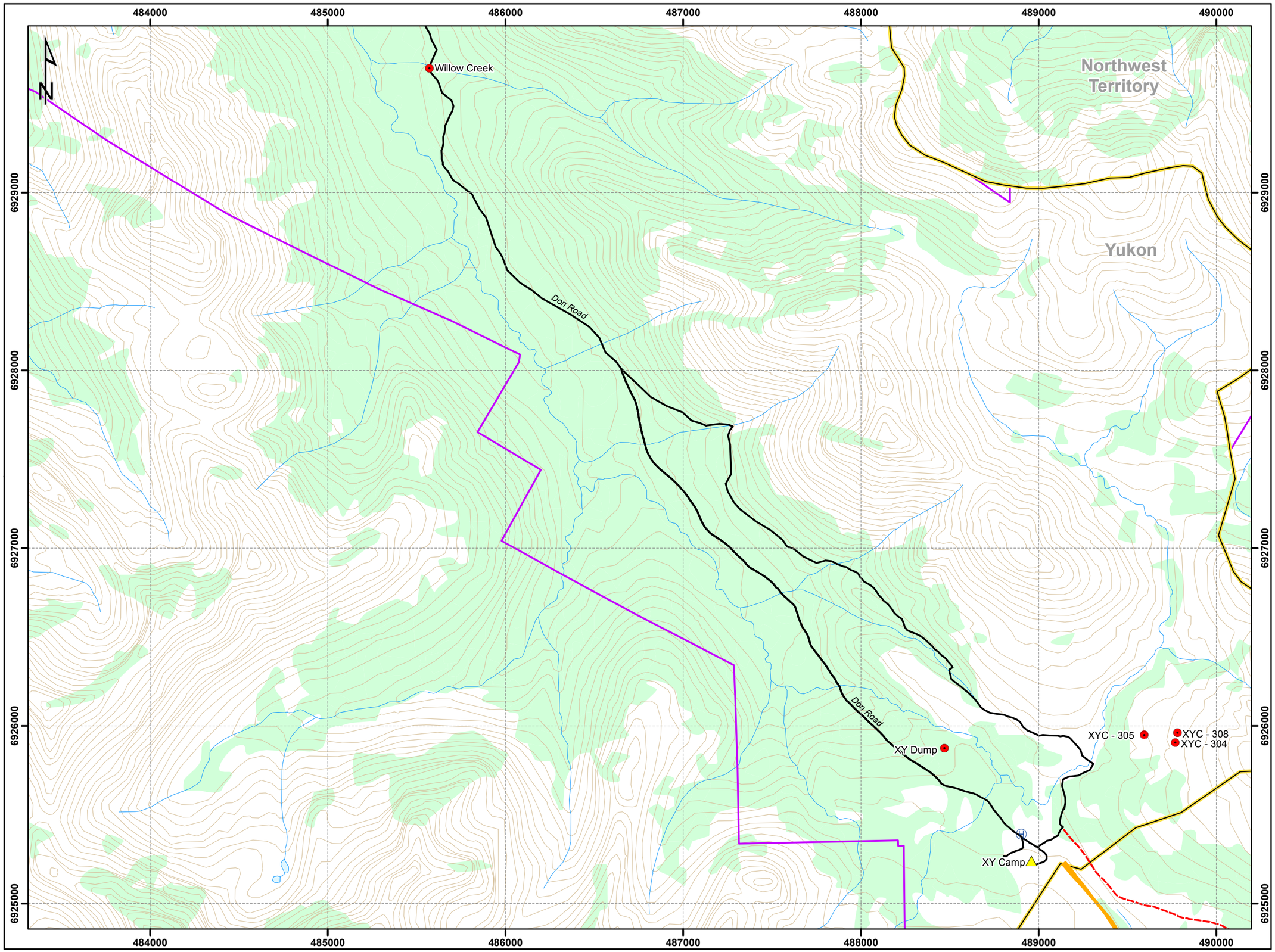
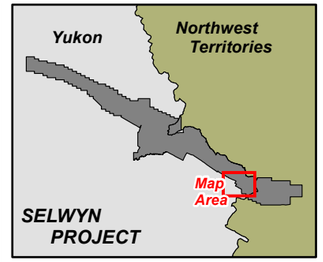
Meters





Legend

- Hand Seeding Locations

Project Roads/Camps

- Camp Location
- Heli Pad
- Don Road
- HPAR
- Airstrip

Boundaries

- Selwyn Project Outline
- Yukon & NWT Border

Topography

- Watercourse
- Waterbody
- Vegetation
- 20m Contour

SELWYN CHIHONG MINING LTD.

Date: 2018/10/16	*Selwyn Project*
Author: M.Mayer	**Hand Seeding 2018 XY Area**
Office: Vancouver	
Figure:	
Scale: 1:20,000	
Filename: SC1710_envt_20181016_HandSeedingXY.mxd	
Project Location: Watson Lake Mining District - NTS 105I/J	
Projection: NAD83 - UTM Zone 9	

0 200 400 600 800
Meters

Appendix E

Contaminated Soil

Appendix E

XY Barrel Pile
Analytical Results

SELWYN CHIHONG MINING LTD.
ATTN: Sukie Sidhu
2701 - 1055 W. Georgia St
Vancouver BC V6C 1G8

Date Received: 17-JUL-18
Report Date: 25-JUL-18 13:26 (MT)
Version: FINAL

Client Phone: 778-847-0880

Certificate of Analysis

Lab Work Order #: L2130645

Project P.O. #: NOT SUBMITTED
Job Reference:
C of C Numbers: 17-653142, 17-653143, 17-653144
Legal Site Desc:

Amber Springer, B.Sc
Account Manager

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID	L2130645-26	L2130645-27	L2130645-28	L2130645-29	L2130645-30
Description	Soil	Soil	Soil	Soil	Soil
Sampled Date	13-JUL-18	13-JUL-18	13-JUL-18	13-JUL-18	13-JUL-18
Sampled Time	13:20	15:11	15:15	15:24	15:26
Client ID	CASB 16	BPX Y1	BPX Y2	AXY 1	AXY 2
Grouping / **Analyte**					
SOIL					
Physical Tests Moisture (%)	13.1	22.5	15.5	11.7	11.7
Volatile Organic Compounds VOC Sample Container	Field MeOH	Field MeOH	Field MeOH	Field MeOH	Field MeOH
Benzene (mg/kg)	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Ethylbenzene (mg/kg)	<0.015	<0.015	<0.015	<0.015	<0.015
Methyl t-butyl ether (MTBE) (mg/kg)	<0.20	<0.20	<0.20	<0.20	<0.20
Styrene (mg/kg)	<0.050	<0.050	<0.050	<0.050	<0.050
Toluene (mg/kg)	<0.050	<0.050	<0.050	<0.050	<0.050
ortho-Xylene (mg/kg)	<0.050	<0.050	<0.050	<0.050	<0.050
meta- & para-Xylene (mg/kg)	<0.050	<0.050	<0.050	<0.050	<0.050
Xylenes (mg/kg)	<0.075	<0.075	<0.075	<0.075	<0.075
Surrogate: 4-Bromofluorobenzene (SS) (%)	89.1	91.7	81.1	91.8	91.8
Surrogate: 1,4-Difluorobenzene (SS) (%)	96.1	99.7	94.1	103.0	101.9
Hydrocarbons EPH10-19 (mg/kg)	<200	<200	<200	<200	250
EPH19-32 (mg/kg)	<200	<200	<200	<200	<200
LEPH (mg/kg)	<200	<200	<200	<200	250
HEPH (mg/kg)	<200	<200	<200	<200	<200
Volatile Hydrocarbons (VH6-10) (mg/kg)	<100	<100	<100	<100	<100
VPH (C6-C10) (mg/kg)	<100	<100	<100	<100	<100
Surrogate: 2-Bromobenzotrifluoride (%)	81.2	82.7	81.6	83.4	83.6
Surrogate: 3,4-Dichlorotoluene (SS) (%)	89.3	89.8	58.0 SURR-ND	86.3	64.7 SURR-ND
Polycyclic Aromatic Hydrocarbons Acenaphthene (mg/kg)	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Acenaphthylene (mg/kg)	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Anthracene (mg/kg)	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040
Benz(a)anthracene (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
Benzo(a)pyrene (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
Benzo(b&j)fluoranthene (mg/kg)	<0.010	<0.010	0.011	<0.010	<0.010
Benzo(b+j+k)fluoranthene (mg/kg)	<0.015	<0.015	<0.015	<0.015	<0.015
Benzo(g,h,i)perylene (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
Benzo(k)fluoranthene (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
Chrysene (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
Dibenz(a,h)anthracene (mg/kg)	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Fluoranthene (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
Fluorene (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
Indeno(1,2,3-c,d)pyrene (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
1-Methylnaphthalene (mg/kg)	<0.050	<0.050	<0.050	<0.050	<0.050

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

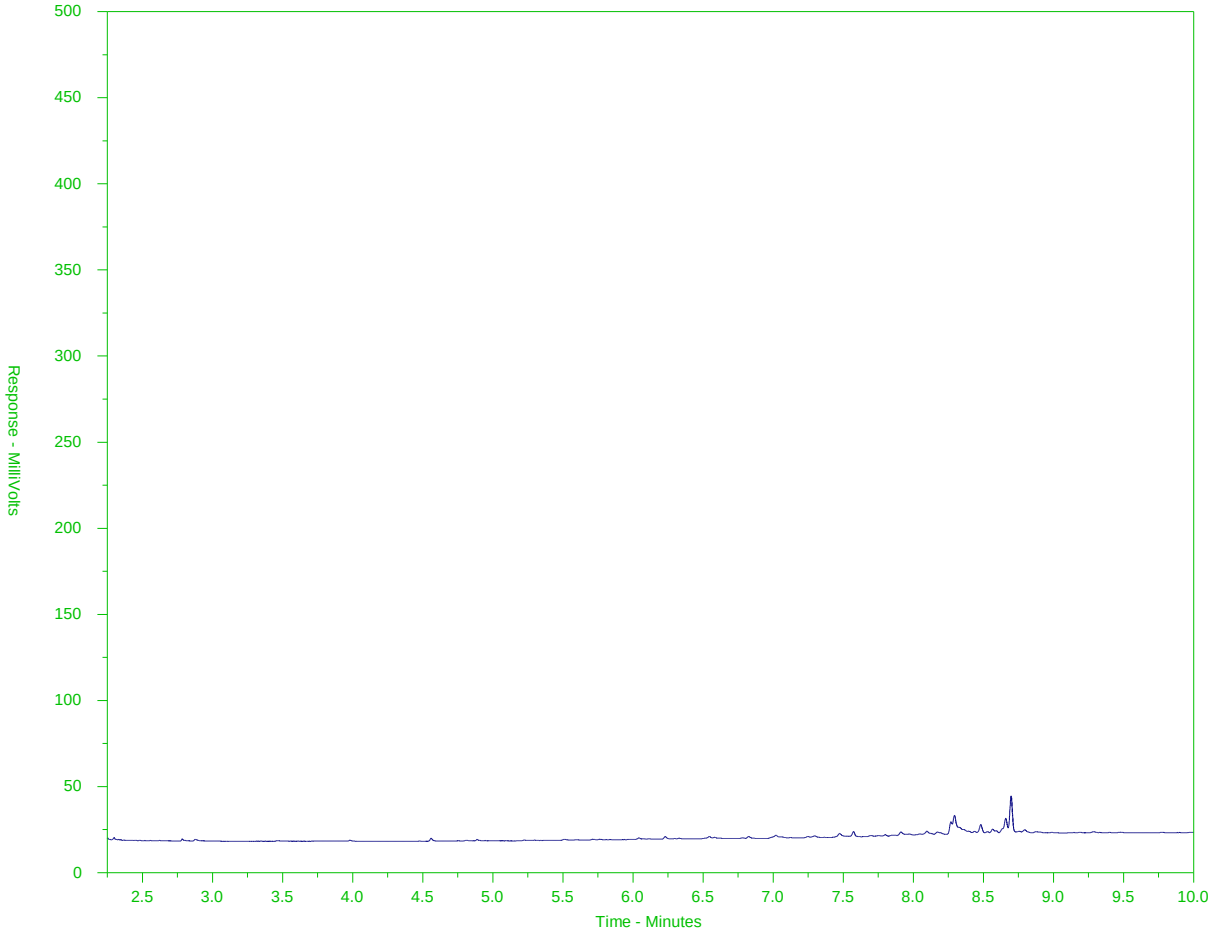
ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L2130645-26	L2130645-27	L2130645-28	L2130645-29	L2130645-30
	Description	Soil	Soil	Soil	Soil	Soil
	Sampled Date	13-JUL-18	13-JUL-18	13-JUL-18	13-JUL-18	13-JUL-18
	Sampled Time	13:20	15:11	15:15	15:24	15:26
	Client ID	CASB 16	BPX Y1	BPX Y2	AXY 1	AXY 2
Grouping	**Analyte**					
SOIL						
Polycyclic Aromatic Hydrocarbons	2-Methylnaphthalene (mg/kg)	<0.010	<0.010	<0.010	0.017	0.018
	Naphthalene (mg/kg)	<0.010	<0.010	<0.010	0.012	0.011
	Phenanthrene (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
	Pyrene (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
	Quinoline (mg/kg)	<0.050	<0.050	<0.050	<0.050	<0.050
	Surrogate: Acenaphthene d10 (%)	82.7	83.4	97.0	84.0	81.1
	Surrogate: Chrysene d12 (%)	96.4	94.8	105.5	97.4	91.6
	Surrogate: Naphthalene d8 (%)	83.6	81.6	94.4	86.4	86.3
	Surrogate: Phenanthrene d10 (%)	88.5	91.7	105.9	89.6	89.9
	B(a)P Total Potency Equivalent (mg/kg)	<0.020	<0.020	<0.020	<0.020	<0.020
	IACR (CCME) (mg/kg)	<0.15	<0.15	<0.15	<0.15	<0.15

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

BC EPH HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2130645-27
Client Sample ID: BPX Y1



← EPH10-19 →		← EPH19-32 →
nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →	← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →		

The BC EPH 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 three n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

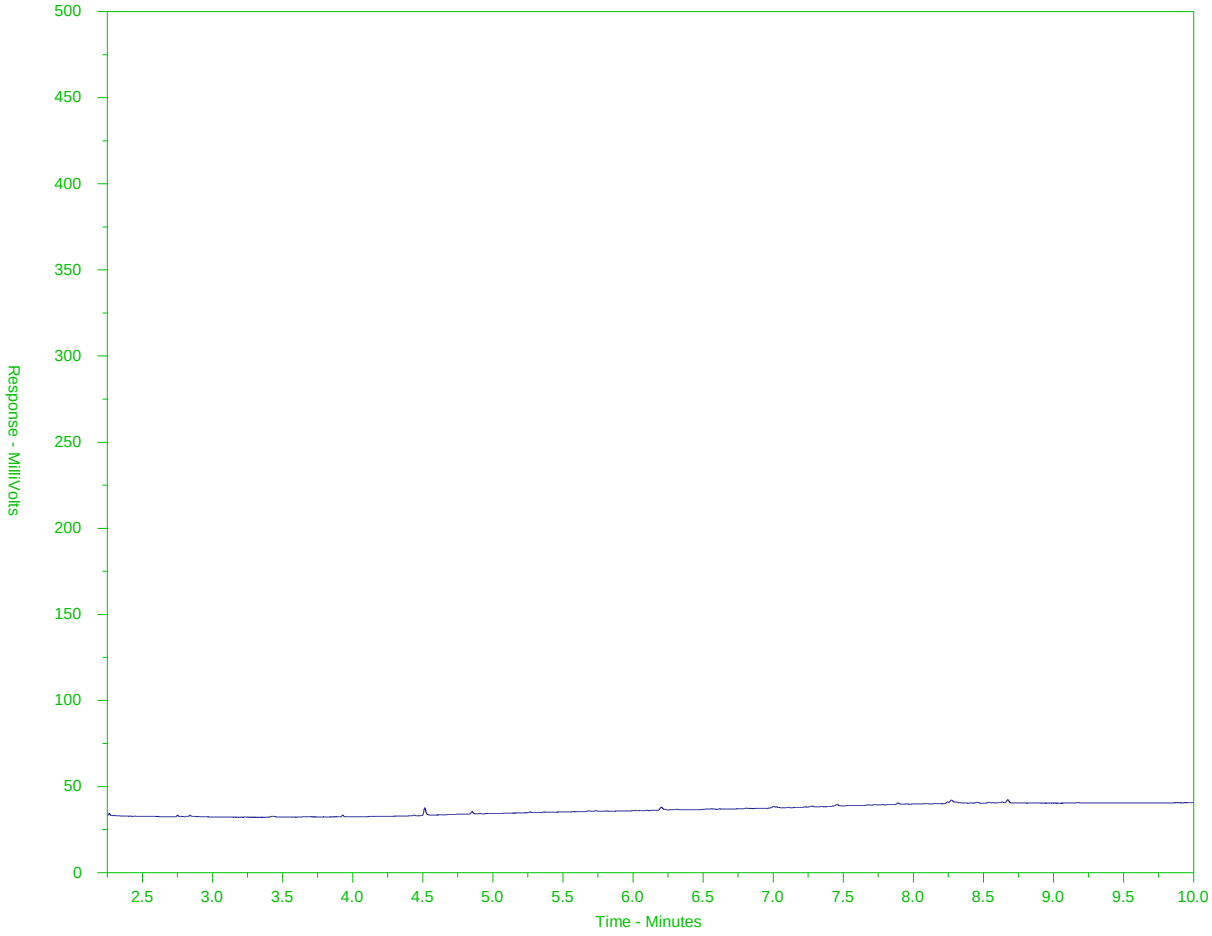
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

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

BC EPH HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2130645-28
Client Sample ID: BPX Y2



← EPH10-19 →		← EPH19-32 →
nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →	← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →		

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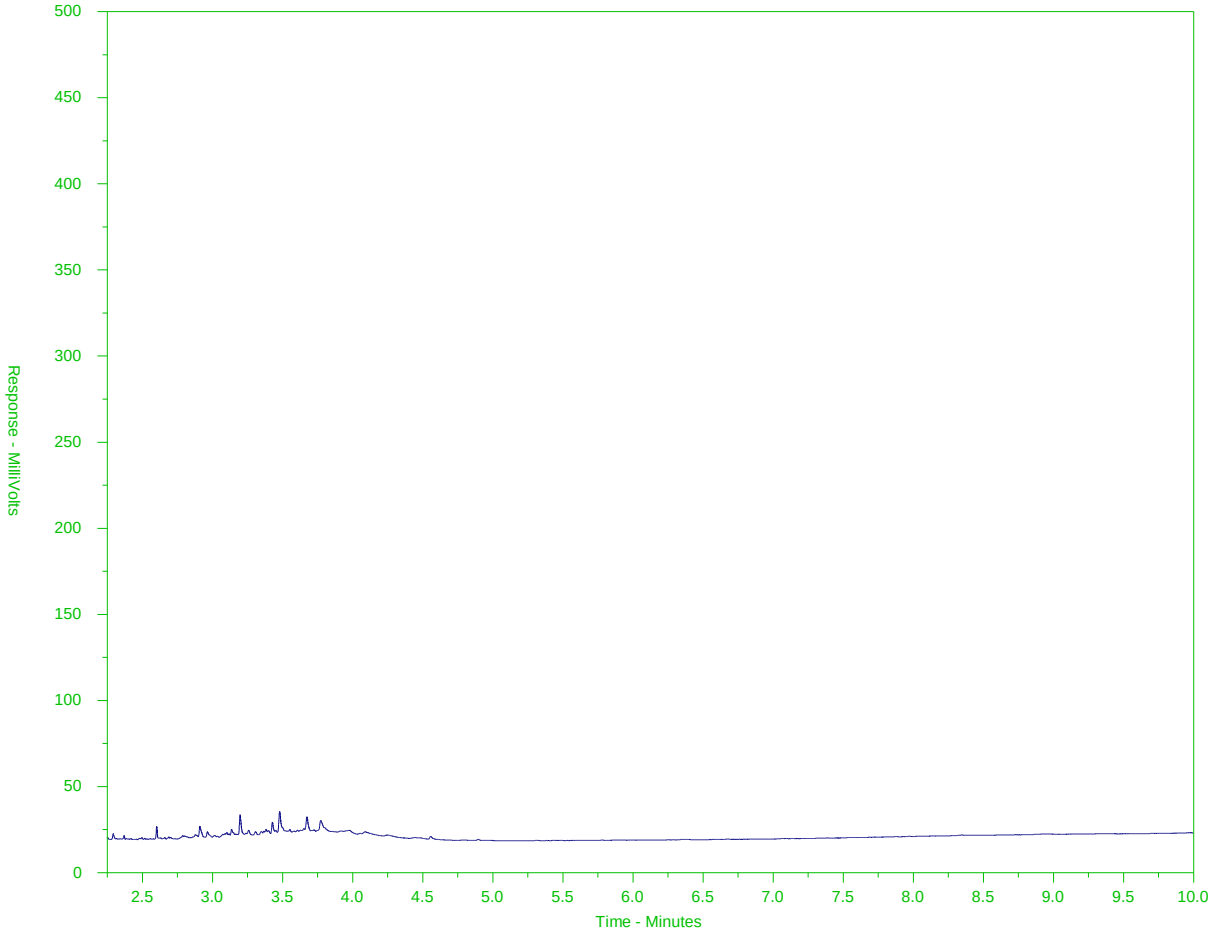
A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

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

BC EPH HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2130645-29
Client Sample ID: AXY 1



← EPH10-19 →		← EPH19-32 →
nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →	← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →		

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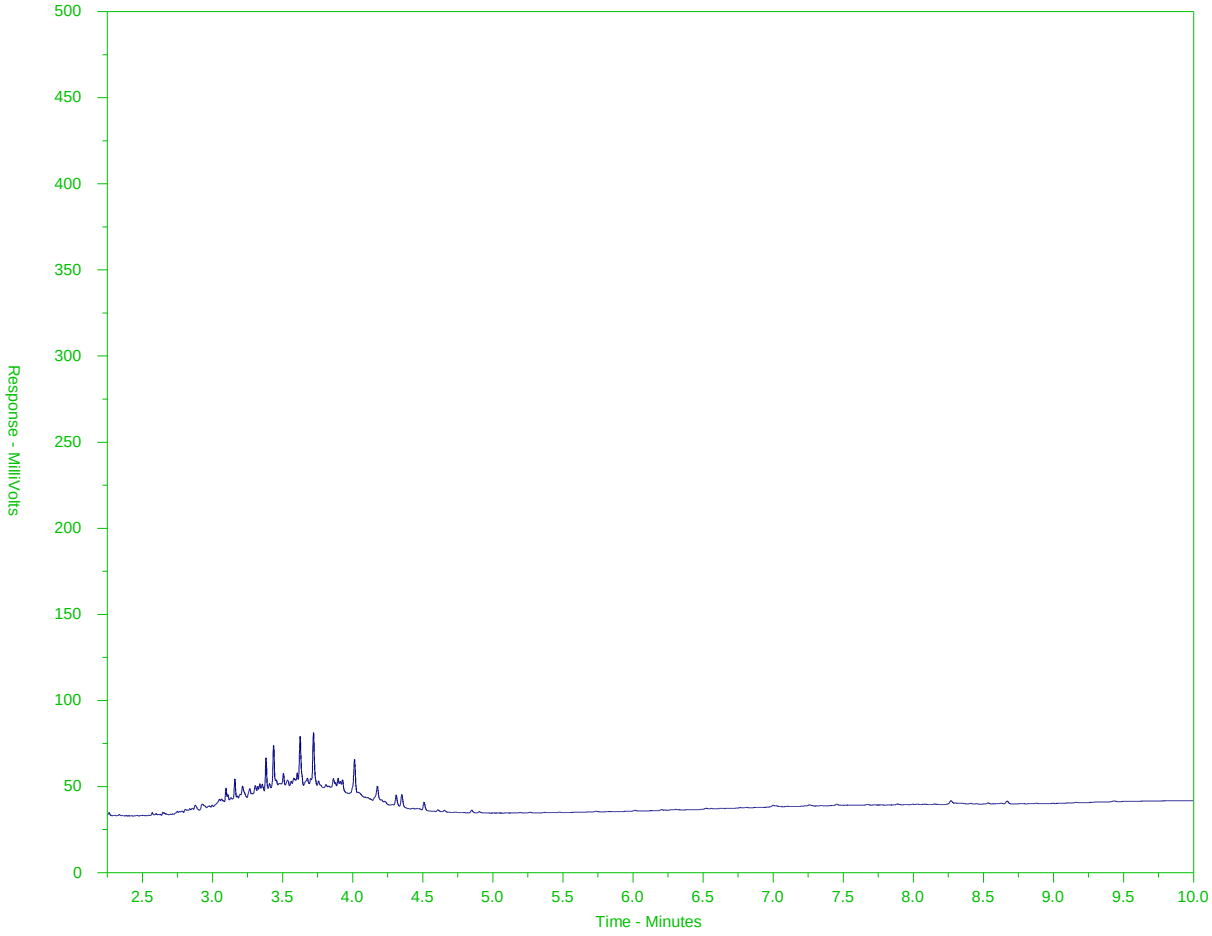
Note: This chromatogram was produced using GC conditions that are specific to the ALS Canada EPH method. Refer to the ALS Canada EPH Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

BC EPH HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2130645-30
Client Sample ID: AXY 2



← EPH10-19 →		← EPH19-32 →
nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →	← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →		

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ALS Environmental
www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

L2130645-COFC

COC Number: 17 - 653144

Report To	Contact and company name below will appear on the final report	Report Format / Distribution	Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)
Company:	SCML	Select Report Format: ☒ PDF ☐ EXCEL ☐ EDD (DIGITAL)	Regular [R] ☒ Standard TAT if received by 3 pm - business days - no surcharges apply
Contact:	Sukie Sidhu	Quality Control (QC) Report with Report ☐ YES ☐ NO	PRIORITY (Business Days): 4 day [P4-20%] ☐ / 3 day [P3-25%] ☐ / 2 day [P2-50%] ☐ — EMERGENCY: 1 Business day [E-100%] ☐ / Same Day, Weekend or Statutory holiday [E2-200%] (Laboratory opening fees may apply)] ☐
Phone:	867.332.0841	☐ Compare Results to Criteria on Report - provide details below if box checked	
	Company address below will appear on the final report	Select Distribution: ☒ EMAIL ☐ MAIL ☐ FAX	Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm
Street:		Email 1 or Fax: SSidhu@chibougamining.com	For tests that can not be performed according to the service level selected, you will be contacted.
City/Province:		Email 2	
Postal Code:		Email 3	

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: ayu@chibougamining.com	
Company:	SCML	Email 2	
Contact:	Sukie Sidhu		

Project Information		Oil and Gas Required Fields (client use)	
ALS Account # / Quote #:		AFE/Cost Center:	PO#
Job #:		Major/Minor Code:	Routing Code:
PO / AFE:		Requisitioner:	
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	BTEX	Styrene	VPH	LEPH	HEPH	PAH	SAMPLES ON HOLD	Sample is hazardous (please provide further details)	NUMBER OF CONTAINERS
	CASB 13	13-Jul-18	13:14	Soil	✓	✓	✓	✓	✓	✓			4
	CASB 14		13:16										
	CASB 15		13:18										
	CASB 16		13:20										
	~~CAS~~ BPX Y1		15:11										
	BPX Y2		15:15										
	AXY 1		15:24										
	AXY 2		15:26										

Drinking Water (DW) Samples[1] (client use)	Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)
Are samples taken from a Regulated DW System? ☐ YES ☐ NO	
Are samples for human consumption/ use? ☐ YES ☐ NO	

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐		SIF Observations	Yes ☐	No ☐	
Ice Packs ☒	Ice Cubes ☐	Custody seal intact	Yes ☐	No ☐	
Cooling Initiated ☐					

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
9.5			6				

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by:	Date: 17-Jul-18	Time:	Received by: VD	Date: July 17 18	Time: 12:41	Received by: AA	Date: 7/18	Time: 1130

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

JULY 2017 FRONT

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**.

XY Dump
Analytical Results

SELWYN CHIHONG MINING LTD.
ATTN: Sukie Sidhu
2701 - 1055 W. Georgia St
Vancouver BC V6C 1G8

Date Received: 24-AUG-18
Report Date: 05-SEP-18 17:42 (MT)
Version: FINAL

Client Phone: 778-847-0880

Certificate of Analysis

Lab Work Order #: L2152731

Project P.O. #: NOT SUBMITTED
Job Reference:
C of C Numbers: 17-653146
Legal Site Desc:

Amber Springer, B.Sc
Account Manager

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L2152731-1	L2152731-2			
	Description	Soil	Soil			
	Sampled Date	19-AUG-18	19-AUG-18			
	Sampled Time	09:18	09:18			
	Client ID	XYD#1	XYD#2			
Grouping	**Analyte**					
SOIL						
Physical Tests	Moisture (%)	21.1	24.3			
Volatile Organic Compounds	VOC Sample Container	Field MeOH	Field MeOH			
	Benzene (mg/kg)	0.562	<0.0050			
	Ethylbenzene (mg/kg)	0.269	<0.015			
	Methyl t-butyl ether (MTBE) (mg/kg)	<0.20	<0.20			
	Styrene (mg/kg)	0.070	<0.050			
	Toluene (mg/kg)	0.604	<0.050			
	ortho-Xylene (mg/kg)	0.265	<0.050			
	meta- & para-Xylene (mg/kg)	0.830	<0.050			
	Xylenes (mg/kg)	1.09	<0.075			
	Surrogate: 4-Bromofluorobenzene (SS) (%)	87.7	91.9			
	Surrogate: 1,4-Difluorobenzene (SS) (%)	86.1	87.2			
Hydrocarbons	EPH10-19 (mg/kg)	200	<200			
	EPH19-32 (mg/kg)	<200	<200			
	LEPH (mg/kg)	200	<200			
	HEPH (mg/kg)	<200	<200			
	Volatile Hydrocarbons (VH6-10) (mg/kg)	<100	<100			
	VPH (C6-C10) (mg/kg)	<100	<100			
	Surrogate: 2-Bromobenzotrifluoride (%)	91.2	93.5			
	Surrogate: 3,4-Dichlorotoluene (SS) (%)	68.7 SURR-ND	132.5 SURR-ND			
Polycyclic Aromatic Hydrocarbons	Acenaphthene (mg/kg)	<0.010 DLCI	<0.0050			
	Acenaphthylene (mg/kg)	<0.0070 DLCI	<0.0050			
	Anthracene (mg/kg)	<0.0050 DLQ	<0.0040			
	Benz(a)anthracene (mg/kg)	<0.010	<0.010			
	Benzo(a)pyrene (mg/kg)	<0.010	<0.010			
	Benzo(b&j)fluoranthene (mg/kg)	<0.010	0.014			
	Benzo(b+j+k)fluoranthene (mg/kg)	<0.015	<0.015			
	Benzo(g,h,i)perylene (mg/kg)	<0.010	<0.010			
	Benzo(k)fluoranthene (mg/kg)	<0.010	<0.010			
	Chrysene (mg/kg)	<0.010	<0.010			
	Dibenz(a,h)anthracene (mg/kg)	<0.0050	<0.0050			
	Fluoranthene (mg/kg)	<0.010	<0.010			
	Fluorene (mg/kg)	0.011 ABL	<0.010			
	Indeno(1,2,3-c,d)pyrene (mg/kg)	<0.010	<0.010			
	1-Methylnaphthalene (mg/kg)	<0.050	<0.050			

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L2152731-1	L2152731-2			
	Description	Soil	Soil			
	Sampled Date	19-AUG-18	19-AUG-18			
	Sampled Time	09:18	09:18			
	Client ID	XYD#1	XYD#2			
Grouping	**Analyte**					
SOIL						
Polycyclic Aromatic Hydrocarbons	2-Methylnaphthalene (mg/kg)	0.074	0.013			
	Naphthalene (mg/kg)	<0.040 DLCI	<0.010			
	Phenanthrene (mg/kg)	0.024 ABL	<0.010			
	Pyrene (mg/kg)	0.020 ABL	<0.010			
	Quinoline (mg/kg)	<0.050	<0.050			
	Surrogate: Acenaphthene d10 (%)	84.6	87.0			
	Surrogate: Chrysene d12 (%)	3.1 LSRA	85.7			
	Surrogate: Naphthalene d8 (%)	97.4	90.7			
	Surrogate: Phenanthrene d10 (%)	58.0 LSRA	94.9			
	B(a)P Total Potency Equivalent (mg/kg)	<0.020	<0.020			
	IACR (CCME) (mg/kg)	<0.15	0.16			

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

Reference Information

QC Samples with Qualifiers & Comments:

QC Type Description	Parameter	Qualifier	Applies to Sample Number(s)
Matrix Spike	1-Methylnaphthalene	MS-B	L2152731-1, -2
Matrix Spike	2-Methylnaphthalene	MS-B	L2152731-1, -2
Matrix Spike	Acenaphthene	MS-B	L2152731-1, -2
Matrix Spike	Chrysene	MS-B	L2152731-1, -2
Matrix Spike	Fluorene	MS-B	L2152731-1, -2
Matrix Spike	Naphthalene	MS-B	L2152731-1, -2
Matrix Spike	Phenanthrene	MS-B	L2152731-1, -2
Matrix Spike	Pyrene	MS-B	L2152731-1, -2

Qualifiers for Individual Parameters Listed:

Qualifier	Description
ABL	Approximate Result: May Be Biased Low
DLCI	Detection Limit Raised: Chromatographic Interference due to co-elution.
DLQ	Detection Limit raised due to co-eluting interference. GCMS qualifier ion ratio did not meet acceptance criteria.
LSRA	Low surrogate recovery observed due to adsorptive material in sample (e.g. charcoal). Associated results represent solvent extractable concentrations.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
SURR-ND	Surrogate recovery marginally exceeded ALS DQO. Reported non-detect results for associated samples were deemed to be unaffected.

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
EPH-TUMB-FID-VA	Soil	EPH in Solids by Tumbler and GCFID	BC MOE EPH GCFID

Analysis is in accordance with BC MOE Lab Manual method "Extractable Petroleum Hydrocarbons in Solids by GC/FID", v2.1, July 1999. Soil samples are extracted with a 1:1 mixture of hexane and acetone using a rotary extraction technique modified from EPA 3570 prior to gas chromatography with flame ionization detection (GC-FID). EPH results include Polycyclic Aromatic Hydrocarbons (PAH) and are therefore not equivalent to Light and Heavy Extractable Petroleum Hydrocarbons (LEPH/HEPH).

LEPH/HEPH-CALC-VA	Soil	LEPHs and HEPHs	BC MOE LEPH/HEPH

LEPHs and HEPHs are measures of Light and Heavy Extractable Petroleum Hydrocarbons in soil. Results are calculated by subtraction of applicable PAH concentrations from EPH10-19 and EPH19-32, as per the BC Lab Manual LEPH/HEPH calculation procedure.
LEPHs = EPH10-19 minus Acenaphthene, Acridine, Anthracene, Fluorene, Naphthalene and Phenanthrene.
HEPHs = EPH19-32 minus Benz(a)anthracene, Benzo(a)pyrene, Fluoranthene, and Pyrene.

MOISTURE-VA	Soil	Moisture content	CWS for PHC in Soil - Tier 1

This analysis is carried out gravimetrically by drying the sample at 105 C for a minimum of six hours.

PAH-TMB-H/A-MS-VA	Soil	PAH - Rotary Extraction (Hexane/Acetone)	EPA 3570/8270

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 hexane and acetone. 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. Because the two isomers cannot be readily chromatographically separated, benzo(j)fluoranthene is reported as part of the benzo(b)fluoranthene parameter.

Benzo(a)pyrene Total Potency Equivalents [B(a)P TPE] represents the sum of estimated cancer potency relative to B(a)P for all potentially carcinogenic unsubstituted PAHs, and is calculated as per the CCME PAH Soil Quality Guidelines reference document (2010).

VH-HSFID-VA	Soil	VH in soil by Headspace GCFID	BC Env. Lab Manual (VH in Solids)

This analysis involves the extraction of a subsample of the sediment/soil with methanol. Aliquots of the methanol extract are then added to water and reagents, then heated in a sealed vial to equilibrium. The headspace from the vial is analyzed for Volatile Hydrocarbons (VH) by capillary column gas chromatography with flame-ionization detection (GC/FID). The methanol extraction and VH analysis are carried out in accordance with the British Columbia Ministry of Environment, Lands and Parks (BCMELP) Analytical Method for Contaminated Sites "Volatile Hydrocarbons in Solids by GC/FID" (Version 2.1 July 1999).

VH-SURR-FID-VA	Soil	VH Surrogates for Soils	BC Env. Lab Manual (VH in Solids)
VOC7-L-HSMS-VA	Soil	VOCs in soil by Headspace GCMS	EPA 5035A/5021A/8260C

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.

VOC7/VOC-SURR-MS-VA	Soil	VOC7 and/or VOC Surrogates for Soils	EPA 5035A/5021A/8260C
VPH-CALC-VA	Soil	VPH is VH minus select aromatics	BC MOE VPH

Reference Information

VPHs measures Volatile Petroleum Hydrocarbons in soil. Results are calculated by subtraction of specific Monocyclic Aromatic Hydrocarbons from VH6-10, as per the BC Lab Manual VPH calculation procedure.
VPHs = VH6-10 minus Benzene, Toluene, Ethylbenzene, Xylenes, and Styrene

XYLENES-CALC-VA	Soil	Sum of Xylene Isomer Concentrations	EPA 8260B & 524.2

Calculation of Total Xylenes

Total Xylenes is the sum of the concentrations of the ortho, meta, and para Xylene isomers. Results below detection limit (DL) are treated as zero. The DL for Total Xylenes is set to a value no less than the square root of the sum of the squares of the DLs of the individual Xylenes.

** 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
VA	ALS ENVIRONMENTAL - VANCOUVER, BRITISH COLUMBIA, CANADA

Chain of Custody Numbers:

17-653146

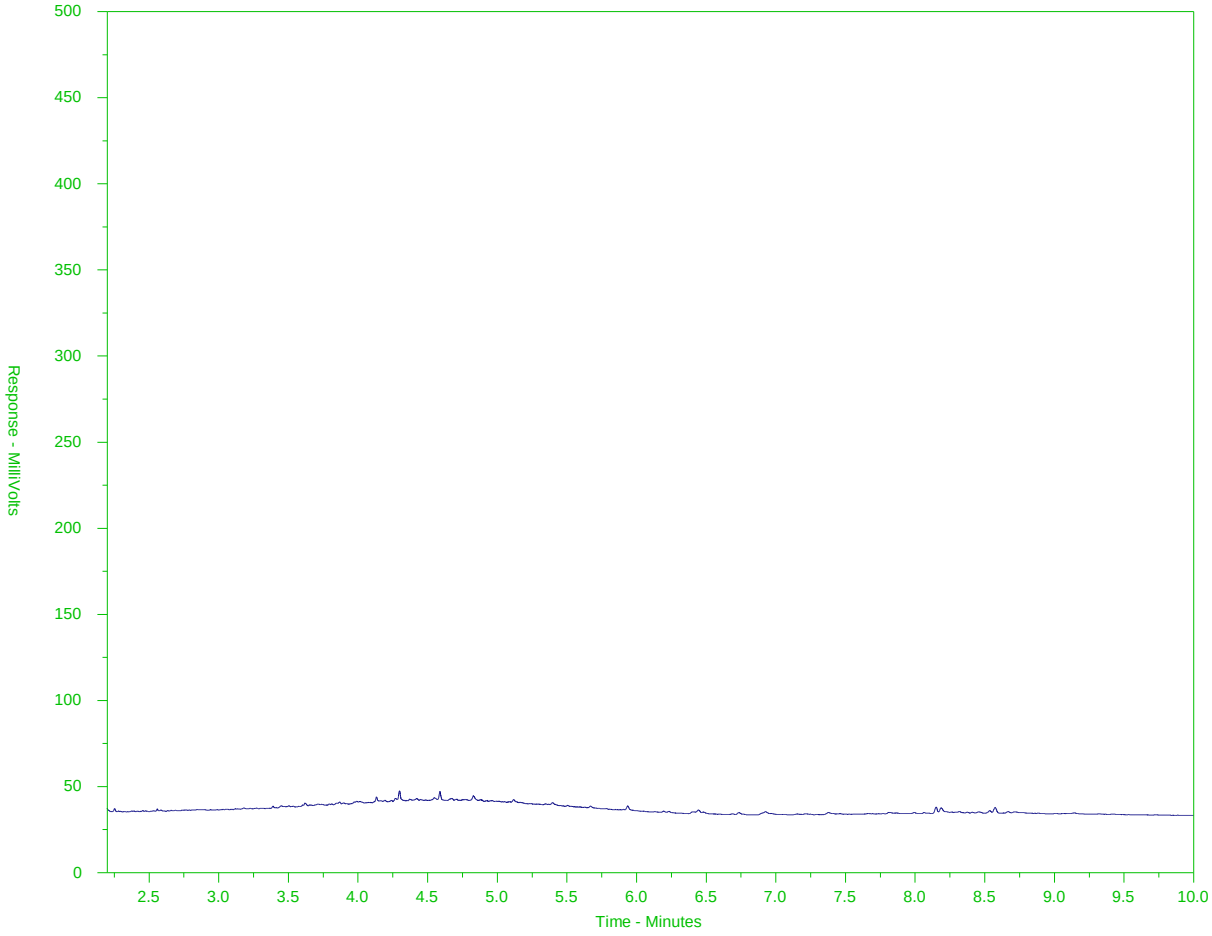
GLOSSARY OF REPORT TERMS

Surrogate - A compound that is similar in behaviour to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.
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 of sample.
mg/L - milligrams per litre.
< - Less than.
D.L. - The reported Detection Limit, also known as the Limit of Reporting (LOR).
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.

BC EPH HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2152731-1
Client Sample ID: XYD#1



← EPH10-19 →		← EPH19-32 →
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346°F	626°F	873°F
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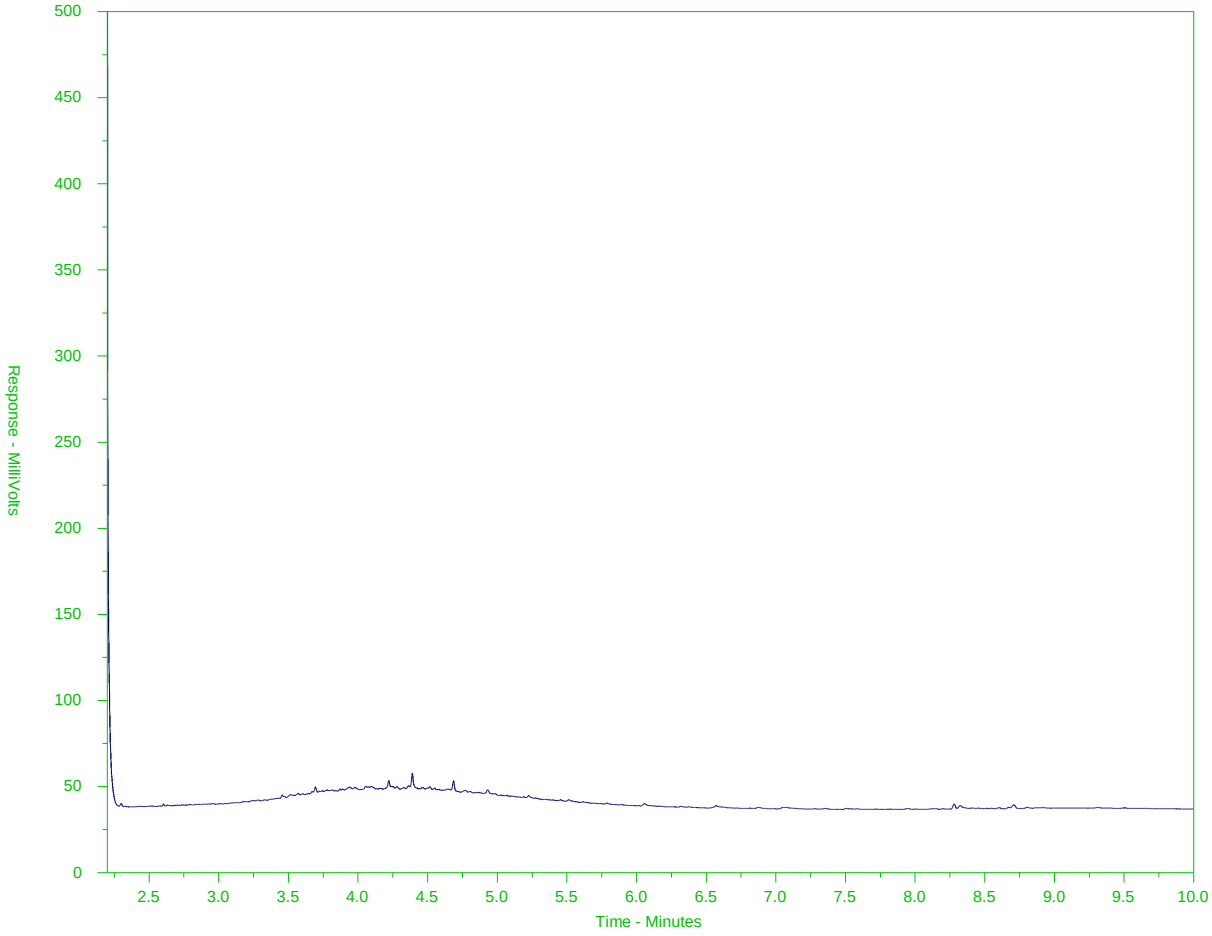
Note: This chromatogram was produced using GC conditions that are specific to the ALS Canada EPH method. Refer to the ALS Canada EPH Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

BC EPH HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: WG2862468-3#L2152731-1
Client Sample ID: XYD#1



← EPH10-19 →		← EPH19-32 →
nC10	nC19	nC32
174°C	330°C	467°C
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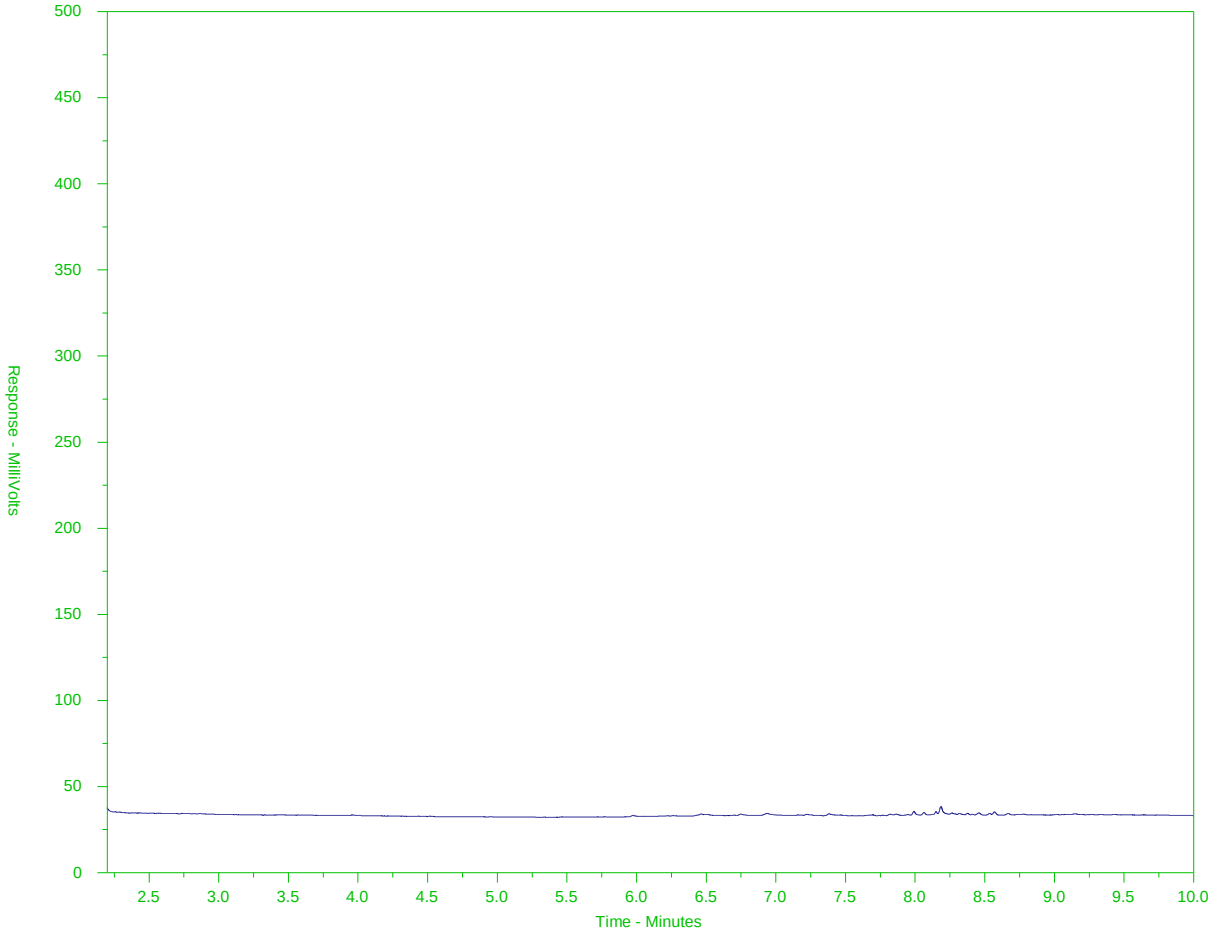
BC EPH HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2152731-2
Client Sample ID: XYD#2



← EPH10-19 →		← EPH19-32 →
nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →	← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →		

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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.

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

Chain of Custody (COC) / Analytical Request Form

ALS Environmental
www.alsglobal.com

Canada Toll Free: 1 800 668 9878

L2152731-COFC

COC Number: 17 - 653146

Page of

Report To	Contact and company name below will appear on the final report	Report Format / Distribution	Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)
Company:	SCML	Select Report Format: ☒ PDF ☒ EXCEL ☐ EDD (DIGITAL)	Regular [R] ☐ Standard TAT if received by 3 pm - business days - no surcharges apply
Contact:	Sukie Sidhu	Quality Control (QC) Report with Report ☐ YES ☐ NO	PRIORITY (Business Days): 4 day [P4-20%] ☐ / 3 day [P3-25%] ☐ / 2 day [P2-50%] ☐
Phone:	867-332-0841	☐ Compare Results to Criteria on Report - provide details below if box checked	EMERGENCY: 1 Business day [E-100%] ☐ / Same Day, Weekend or Statutory holiday [E2-200%] (Laboratory opening fees may apply)] ☐
	Company address below will appear on the final report	Select Distribution: ☒ EMAIL ☐ MAIL ☐ FAX	
Street:	205-2237 2nd Avenue	Email 1 or Fax SSidhu@chihongmining.com	Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm
City/Province:		Email 2	For tests that can not be performed according to the service level selected, you will be contacted.
Postal Code:	Y1A 0K7	Email 3	

Invoice To		Invoice Distribution	Analysis Request
	Same as Report To ☐ YES ☐ NO		Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below
	Copy of Invoice with Report ☐ YES ☐ NO	Select Invoice Distribution: ☒ EMAIL ☐ MAIL ☐ FAX	
Company:		Email 1 or Fax ayu@chihongmining.com	
Contact:	ayu@chihongmining.com	Email 2	

Project Information		Oil and Gas Required Fields (client use)	
ALS Account # / Quote #:		AFE/Cost Center:	PO#:
Job #:		Major/Minor Code:	Routing Code:
PO / AFE:		Requisitioner:	
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	BTEX	Styrene	VPH	LEPH	HEPH	PAH	SAMPLES ON HOLD	Sample is hazardous (please provide further details)	NUMBER OF CONTAINERS
	XYD#1	19/08/18	09:18	Soil	1	1	1	1	1	1			4
	XYD#2	19/08/18	09:28	Soil	✓	✓	✓	✓	✓	✓			4

Drinking Water (DW) Samples[1] (client use)	Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)
Are samples taken from a Regulated DW System? ☐ YES ☐ NO	
Are samples for human consumption/ use? ☐ YES ☐ NO	

SAMPLE CONDITION AS RECEIVED (lab use only)

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

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
8°					3	6	

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: Sheila Caecen	Date: Aug 22/18	Time: 07:27	Received by:	Date: Aug 24/18	Time: 08:55	Received by: JC	Date: AUG 25 2018	Time: 1pm

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

JULY 2017 FRONT

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**

Contaminated Soil Results for Land Treatment Facility Memorandum

SELWYN CHIHONG MINING LTD.

Memorandum

Tote Bag Soil Sampling Summary for Contaminated Soil Deposition into Land Treatment Facility.

Hydrocarbon contaminated soils have been sequestered at Howard's Pass and stored in lined tote bags to protect them from external environmental factors. These soils have been accumulated from non-reportable threshold spills since 2012. In 2014, a large spill was identified at the Don Waste Facility from damaged barrels. This report is located at the end of this memorandum *2014 Don Waste Facility Barrel Spill.* The contaminated soil at that time was sampled and stored in large tote bags prior to receiving the results of the soil analysis conducted at that time. Unfortunately, the tote bags were not labelled therefore the initial characterization values cannot be applied.

Contaminated Soil

Contaminated soil located at Don Waste Facility amalgamated into tote bags.

In-Situ Characterization

In- situ sampling could not be carried out with biased sampling, as the soil was amalgamated into tote bags. Therefore *Ex situ (Stockpile) Characterization* was undertaken.

Ex- situ (Stockpile) Characterization

Stockpile characterization was utilized to sample the tote bags. The tote bags were measured to determine the approximant cubic meters of soil present in the bag. An auger was used to drill half way into the bag. The auger was cleaned off to ensure any residual soil was not placed into the newly constructed sample hole. Any residual soil which may have been deposited in the hole was removed using latex gloves and the soil was then sampled. The bags were then closed and labelled with a unique sample identifier. The table below provides the lab number fo the soil that has returned results that indicate contamination is present. The complete analytical results of all samples taken are located in the *Analytical Results* at the end of this

memorandum. The total volume of soil sampled from the tote bags was 38.7027 m^3. The total volume of contaminated soil requested to be relocated is 14.3073m^3.

Table 1- Contaminated Soil Results

Lab number	Sample Date	Sample Time	SCML Sample Identification Label	Quantity of Contaminated material (m^3)
L2129348-15	11-July-18	10:58	11-July-18 16:55 5A/5B	0.3731
L2129348-4	11-July-18	15:42	11-July-18 15:42 16	0.2178
L2129348-6	11-July-18	16:04	11-July-18 16:04 18	0.3915
L2129348-9	11-July-18	16:40	11-July-18 16:40 21	0.9240
L2129348-10	11-July-18	16:55	11-July-18 16:55 22	0.9240
L2129348-33	12-July-18	13:30	12-July-18 13:30 34	6.8189
L2129348-37	12-July-18	14:20	12-July-18 14:40 38-1	0.2400
L2129348-38	12-July-18	15:00	12-July-18 15:00 38-2	0.2600
L2130645-1	13-July-18	09:04	LTF-39	0.5400
L2130645-2	13-July-18	09:06	LTF-40	0.5850
L2130645-3	13-July-18	09:10	LTF-41	0.6930
L2130645-5	13-July-18	09:17	LTF-43	0.7560
L2130645-7	13-July-18	09:23	LTF-45	0.3960
L2130645-9	13-July-18	09:30	LTF-47	0.3960
L2130645-10	13-July-18	09:34	LTF-48	0.7920

Permission

Selwyn Chihong Mining Ltd (SCML) is requesting permission to deposit the sampled contaminated material (table above) into their Land Treatment Facility (LTF), permit 24-043.

Analytical Results

SELWYN CHIHONG MINING LTD.
ATTN: Sukie Sidhu
2701 - 1055 W. Georgia St
Vancouver BC V6C 1G8

Date Received: 13-JUL-18
Report Date: 24-JUL-18 16:17 (MT)
Version: FINAL

Client Phone: 778-847-0880

Certificate of Analysis

Lab Work Order #: L2129348

Project P.O. #: NOT SUBMITTED
Job Reference:
C of C Numbers: 17-653138, 17-653139, 17-653140, 17-653141
Legal Site Desc:

Amber Springer, B.Sc
Account Manager

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ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L2129348-1	L2129348-2	L2129348-3	L2129348-4	L2129348-5
	Description	Soil	Soil	Soil	Soil	Soil
	Sampled Date	11-JUL-18	11-JUL-18	11-JUL-18	11-JUL-18	11-JUL-18
	Sampled Time	14:57	15:11	15:26	15:42	15:46
	Client ID	11-JULY-18 14:57 13	11-JULY-18 15:11 14	11-JULY-18 15:26 15	11-JULY-18 15:42 16	11-JULY-18 15:46 17
Grouping	**Analyte**					
SOIL						
Physical Tests	Moisture (%)	15.9	15.7	16.4	15.5	11.9
Volatile Organic Compounds	VOC Sample Container	Field MeOH	Field MeOH	Field MeOH	Field MeOH	Field MeOH
	Benzene (mg/kg)	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
	Ethylbenzene (mg/kg)	<0.015	<0.015	<0.015	<0.015	<0.015
	Methyl t-butyl ether (MTBE) (mg/kg)	<0.20	<0.20	<0.20	<0.20	<0.20
	Styrene (mg/kg)	<0.050	<0.050	<0.050	<0.050	<0.050
	Toluene (mg/kg)	<0.050	<0.050	<0.050	<0.050	<0.050
	ortho-Xylene (mg/kg)	<0.050	<0.050	<0.050	<0.050	<0.050
	meta- & para-Xylene (mg/kg)	<0.050	<0.050	<0.050	<0.050	<0.050
	Xylenes (mg/kg)	<0.075	<0.075	<0.075	<0.075	<0.075
	Surrogate: 4-Bromofluorobenzene (SS) (%)	96.7	85.3	77.4	89.1	92.1
	Surrogate: 1,4-Difluorobenzene (SS) (%)	92.6	93.4	90.7	89.8	99.6
Hydrocarbons	EPH10-19 (mg/kg)	<200	<200	<200	1150	250
	EPH19-32 (mg/kg)	<200	<200	<200	5440	420
	LEPH (mg/kg)	<200	<200	<200	1150	250
	HEPH (mg/kg)	<200	<200	<200	5440	420
	Volatile Hydrocarbons (VH6-10) (mg/kg)	<100	<100	<100	<100	<100
	VPH (C6-C10) (mg/kg)	<100	<100	<100	<100	<100
	Surrogate: 2-Bromobenzotrifluoride (%)	89.5	90.8	88.0	90.8	86.2
	Surrogate: 3,4-Dichlorotoluene (SS) (%)	93.4	97.1	80.4	85.1	75.4
Polycyclic Aromatic Hydrocarbons	Acenaphthene (mg/kg)	<0.0050	<0.0050	<0.0050	<0.020 DLCI	<0.010 DLCI
	Acenaphthylene (mg/kg)	<0.0050	<0.0050	<0.0050	<0.014 DLCI	<0.0050
	Anthracene (mg/kg)	<0.0040	<0.0040	<0.0040	<0.020 DLCI	<0.0040
	Benz(a)anthracene (mg/kg)	<0.010	<0.010	<0.010	<0.014 DLCI	<0.010
	Benzo(a)pyrene (mg/kg)	<0.010	<0.010	<0.010	<0.014 DLCI	<0.010
	Benzo(b&j)fluoranthene (mg/kg)	<0.010	<0.010	<0.010	<0.014 DLCI	<0.010
	Benzo(b+j+k)fluoranthene (mg/kg)	<0.015	<0.015	<0.015	<0.020	<0.015
	Benzo(g,h,i)perylene (mg/kg)	<0.010	<0.010	<0.010	0.018	<0.010
	Benzo(k)fluoranthene (mg/kg)	<0.010	<0.010	<0.010	<0.014 DLCI	<0.010
	Chrysene (mg/kg)	<0.010	<0.010	<0.010	<0.020 DLQ	<0.010
	Dibenz(a,h)anthracene (mg/kg)	<0.0050	<0.0050	<0.0050	<0.014 DLCI	<0.0050
	Fluoranthene (mg/kg)	<0.010	<0.010	<0.010	0.022	<0.010
	Fluorene (mg/kg)	<0.010	<0.010	<0.010	<0.014 DLCI	<0.020 DLCI
	Indeno(1,2,3-c,d)pyrene (mg/kg)	<0.010	<0.010	<0.010	<0.014 DLCI	<0.010

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L2129348-6	L2129348-7	L2129348-8	L2129348-9	L2129348-10
	Description	Soil	Soil	Soil	Soil	Soil
	Sampled Date	11-JUL-18	11-JUL-18	11-JUL-18	11-JUL-18	11-JUL-18
	Sampled Time	16:04	16:18	16:28	16:40	16:55
	Client ID	11-JULY-18 16:04 18	11-JULY-18 16:18 19	11-JULY-18 16:28 20	11-JULY-18 16:40 21	11-JULY-18 16:55 22
Grouping	**Analyte**					
SOIL						
Physical Tests	Moisture (%)	11.9	10.7	9.77	9.15	9.77
Volatile Organic Compounds	VOC Sample Container	Field MeOH	Field MeOH	Field MeOH	Field MeOH	Field MeOH
	Benzene (mg/kg)	<0.0050	<0.0050	<0.0050	<0.0050	<0.0090 DLIS
	Ethylbenzene (mg/kg)	<0.015	<0.015	<0.015	<0.015	<0.015
	Methyl t-butyl ether (MTBE) (mg/kg)	<0.20	<0.20	<0.20	<0.20	<0.20
	Styrene (mg/kg)	<0.050	<0.050	<0.050	<0.050	<0.050
	Toluene (mg/kg)	<0.050	<0.050	<0.050	<0.050	<0.050
	ortho-Xylene (mg/kg)	<0.050	<0.050	<0.050	<0.050	<0.050
	meta- & para-Xylene (mg/kg)	<0.050	<0.050	<0.050	<0.050	<0.050
	Xylenes (mg/kg)	<0.075	<0.075	<0.075	<0.075	<0.075
	Surrogate: 4-Bromofluorobenzene (SS) (%)	85.6	76.2	82.2	82.5	90.3
	Surrogate: 1,4-Difluorobenzene (SS) (%)	94.2	96.4	106.5	98.6	98.6
Hydrocarbons	EPH10-19 (mg/kg)	780	<200	<200	<200	<200
	EPH19-32 (mg/kg)	6920	<200	<200	1360	1670
	LEPH (mg/kg)	780	<200	<200	<200	<200
	HEPH (mg/kg)	6920	<200	<200	1360	1670
	Volatile Hydrocarbons (VH6-10) (mg/kg)	<100	<100	<100	<100	<100
	VPH (C6-C10) (mg/kg)	<100	<100	<100	<100	<100
	Surrogate: 2-Bromobenzotrifluoride (%)	84.2	84.8	89.0	83.0	84.8
	Surrogate: 3,4-Dichlorotoluene (SS) (%)	75.9	90.9	88.6	91.6	76.3
Polycyclic Aromatic Hydrocarbons	Acenaphthene (mg/kg)	<0.014 DLCI	<0.0050	<0.0050	<0.0050	<0.0050
	Acenaphthylene (mg/kg)	<0.014 DLCI	<0.0050	<0.0050	<0.0050	<0.0050
	Anthracene (mg/kg)	<0.014 DLCI	<0.0040	<0.0040	<0.0040	<0.0040
	Benz(a)anthracene (mg/kg)	<0.014 DLCI	<0.010	<0.010	<0.010	<0.010
	Benzo(a)pyrene (mg/kg)	<0.014 DLCI	<0.010	<0.010	<0.010	<0.010
	Benzo(b&j)fluoranthene (mg/kg)	<0.030 DLQ	<0.010	<0.010	<0.010	<0.010
	Benzo(b+j+k)fluoranthene (mg/kg)	<0.033	<0.015	<0.015	<0.015	<0.015
	Benzo(g,h,i)perylene (mg/kg)	<0.014 DLCI	<0.010	<0.010	<0.010	<0.010
	Benzo(k)fluoranthene (mg/kg)	<0.014 DLCI	<0.010	<0.010	<0.010	<0.010
	Chrysene (mg/kg)	<0.014 DLCI	<0.010	<0.010	<0.010	<0.010
	Dibenz(a,h)anthracene (mg/kg)	<0.014 DLCI	<0.0050	<0.0050	<0.0050	<0.0050
	Fluoranthene (mg/kg)	0.018	<0.010	<0.010	<0.010	<0.010
	Fluorene (mg/kg)	<0.014 DLCI	<0.010	<0.010	<0.010	<0.010
	Indeno(1,2,3-c,d)pyrene (mg/kg)	<0.014 DLCI	<0.010	<0.010	<0.010	<0.010

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Grouping	Analyte	L2129348-11 Soil 11-JUL-18 09:44 11-JULY-18 09:44 1A/1B	L2129348-12 Soil 11-JUL-18 10:15 11-JULY-18 10:15 2A/2B	L2129348-13 Soil 11-JUL-18 10:26 11-JULY-18 10:26 3A/3B	L2129348-14 Soil 11-JUL-18 10:42 11-JULY-18 10:42 4A/4B	L2129348-15 Soil 11-JUL-18 10:58 11-JULY-18 10:58 5A/5B
Sample ID **Description** **Sampled Date** **Sampled Time** **Client ID**						
SOIL						
Physical Tests	Moisture (%)	13.5	12.4	13.7	13.8	11.6
Volatile Organic Compounds	VOC Sample Container	Field MeOH	Field MeOH	Field MeOH	Field MeOH	Field MeOH
	Benzene (mg/kg)	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
	Ethylbenzene (mg/kg)	<0.015	<0.015	<0.015	<0.015	<0.015
	Methyl t-butyl ether (MTBE) (mg/kg)	<0.20	<0.20	<0.20	<0.20	<0.20
	Styrene (mg/kg)	<0.050	<0.050	<0.050	<0.050	<0.050
	Toluene (mg/kg)	<0.050	<0.050	<0.050	<0.050	<0.050
	ortho-Xylene (mg/kg)	<0.050	<0.050	<0.050	<0.050	<0.050
	meta- & para-Xylene (mg/kg)	<0.050	<0.050	<0.050	<0.050	<0.050
	Xylenes (mg/kg)	<0.075	<0.075	<0.075	<0.075	<0.075
	Surrogate: 4-Bromofluorobenzene (SS) (%)	78.5	82.0	92.4	81.2	71.7
	Surrogate: 1,4-Difluorobenzene (SS) (%)	94.5	94.6	89.6	95.4	86.6
Hydrocarbons	EPH10-19 (mg/kg)	<200	310	<200	<200	<200
	EPH19-32 (mg/kg)	<200	<200	<200	<200	4910
	LEPH (mg/kg)	<200	310	<200	<200	<200
	HEPH (mg/kg)	<200	<200	<200	<200	4910
	Volatile Hydrocarbons (VH6-10) (mg/kg)	<100	<100	<100	<100	<100
	VPH (C6-C10) (mg/kg)	<100	<100	<100	<100	<100
	Surrogate: 2-Bromobenzotrifluoride (%)	85.2	87.3	84.5	81.5	80.8
	Surrogate: 3,4-Dichlorotoluene (SS) (%)	91.9	78.7	79.3	91.5	73.4
Polycyclic Aromatic Hydrocarbons	Acenaphthene (mg/kg)	<0.0050	<0.0090 DLCI	<0.0050	<0.0050	<0.0050
	Acenaphthylene (mg/kg)	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
	Anthracene (mg/kg)	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040
	Benz(a)anthracene (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
	Benzo(a)pyrene (mg/kg)	<0.010	<0.010	0.023	0.011	<0.050 DLQ
	Benzo(b&j)fluoranthene (mg/kg)	<0.010	<0.010	0.026	0.020	<0.060 DLCI
	Benzo(b+j+k)fluoranthene (mg/kg)	<0.015	<0.015	0.026	0.020	<0.078
	Benzo(g,h,i)perylene (mg/kg)	<0.010	<0.010	0.030	0.014	<0.020 DLCI
	Benzo(k)fluoranthene (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.050 DLCI
	Chrysene (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
	Dibenz(a,h)anthracene (mg/kg)	<0.0050	<0.0050	0.0063	<0.0050	<0.0070 DLCI
	Fluoranthene (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
	Fluorene (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
	Indeno(1,2,3-c,d)pyrene (mg/kg)	<0.010	<0.010	0.028	0.012	<0.010

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L2129348-16	L2129348-17	L2129348-18	L2129348-19	L2129348-20
	Description	Soil	Soil	Soil	Soil	Soil
	Sampled Date	11-JUL-18	11-JUL-18	11-JUL-18	11-JUL-18	11-JUL-18
	Sampled Time	11:19	11:34	13:58	14:09	14:20
	Client ID	11-JULY-18 11:19 6A/6B	11-JULY-18 11:34 7A/7B	11-JULY-18 13:58 8	11-JULY-18 14:09 9	11-JULY-18 14:20 10
Grouping	**Analyte**					
SOIL						
Physical Tests	Moisture (%)	12.6	16.7	11.5	10.3	11.3
Volatile Organic Compounds	VOC Sample Container	Field MeOH	Field MeOH	Field MeOH	Field MeOH	Field MeOH
	Benzene (mg/kg)	<0.0070 DLIS	<0.0050	<0.0050	<0.0050	<0.0050
	Ethylbenzene (mg/kg)	<0.015	<0.015	<0.015	<0.015	<0.015
	Methyl t-butyl ether (MTBE) (mg/kg)	<0.20	<0.20	<0.20	<0.20	<0.20
	Styrene (mg/kg)	<0.050	<0.050	<0.050	<0.050	<0.050
	Toluene (mg/kg)	<0.050	<0.050	<0.050	<0.050	<0.050
	ortho-Xylene (mg/kg)	<0.050	<0.050	<0.050	<0.050	<0.050
	meta- & para-Xylene (mg/kg)	<0.050	<0.050	<0.050	<0.050	<0.050
	Xylenes (mg/kg)	<0.075	<0.075	<0.075	<0.075	<0.075
	Surrogate: 4-Bromofluorobenzene (SS) (%)	78.9	69.2 SURR-ND	80.4	84.2	75.8
	Surrogate: 1,4-Difluorobenzene (SS) (%)	98.1	89.8	89.7	87.8	96.5
Hydrocarbons	EPH10-19 (mg/kg)	<200	<200	<200	<200	<200
	EPH19-32 (mg/kg)	<200	<200	<200	<200	<200
	LEPH (mg/kg)	<200	<200	<200	<200	<200
	HEPH (mg/kg)	<200	<200	<200	<200	<200
	Volatile Hydrocarbons (VH6-10) (mg/kg)	<100	<100	<100	<100	<100
	VPH (C6-C10) (mg/kg)	<100	<100	<100	<100	<100
	Surrogate: 2-Bromobenzotrifluoride (%)	80.1	85.1	86.7	85.6	78.9
	Surrogate: 3,4-Dichlorotoluene (SS) (%)	78.0	72.7	78.3	83.8	79.0
Polycyclic Aromatic Hydrocarbons	Acenaphthene (mg/kg)	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
	Acenaphthylene (mg/kg)	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
	Anthracene (mg/kg)	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040
	Benz(a)anthracene (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
	Benzo(a)pyrene (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
	Benzo(b&j)fluoranthene (mg/kg)	<0.010	0.012	<0.010	<0.010	<0.010
	Benzo(b+j+k)fluoranthene (mg/kg)	<0.015	<0.015	<0.015	<0.015	<0.015
	Benzo(g,h,i)perylene (mg/kg)	<0.010	<0.010	<0.010	0.011	<0.010
	Benzo(k)fluoranthene (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
	Chrysene (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
	Dibenz(a,h)anthracene (mg/kg)	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
	Fluoranthene (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
	Fluorene (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
	Indeno(1,2,3-c,d)pyrene (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Grouping	Analyte	Sample ID Description Sampled Date Sampled Time Client ID	L2129348-21 Soil 11-JUL-18 14:30 11-JULY-18 14:30 11	L2129348-22 Soil 11-JUL-18 14:44 11-JULY-18 14:44 12	L2129348-23 Soil 12-JUL-18 09:33 12-JULY-18 09:33 23	L2129348-24 Soil 12-JUL-18 09:44 12-JULY-18 09:44 24	L2129348-25 Soil 12-JUL-18 10:10 12-JULY-18 10:10 25
SOIL							
Physical Tests	Moisture (%)		10.9	10.8	11.6	10.9	12.4
Volatile Organic Compounds	VOC Sample Container		Field MeOH	Field MeOH	Field MeOH	Field MeOH	Field MeOH
	Benzene (mg/kg)		<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
	Ethylbenzene (mg/kg)		<0.015	<0.015	<0.015	<0.015	0.017
	Methyl t-butyl ether (MTBE) (mg/kg)		<0.20	<0.20	<0.20	<0.20	<0.20
	Styrene (mg/kg)		<0.050	<0.050	<0.050	<0.050	<0.050
	Toluene (mg/kg)		<0.050	<0.050	<0.050	<0.050	<0.050
	ortho-Xylene (mg/kg)		<0.050	<0.050	<0.050	<0.050	0.055
	meta- & para-Xylene (mg/kg)		<0.050	<0.050	0.109	0.050	0.092
	Xylenes (mg/kg)		<0.075	<0.075	0.109	<0.075	0.147
	Surrogate: 4-Bromofluorobenzene (SS) (%)		79.1	80.1	99.7	85.8	98.3
	Surrogate: 1,4-Difluorobenzene (SS) (%)		88.8	90.0	91.2	101.3	102.1
Hydrocarbons	EPH10-19 (mg/kg)		<200	<200	480	280	210
	EPH19-32 (mg/kg)		<200	<200	<200	<200	<200
	LEPH (mg/kg)		<200	<200	480	280	210
	HEPH (mg/kg)		<200	<200	<200	<200	<200
	Volatile Hydrocarbons (VH6-10) (mg/kg)		<100	<100	<100	<100	<100
	VPH (C6-C10) (mg/kg)		<100	<100	<100	<100	<100
	Surrogate: 2-Bromobenzotrifluoride (%)		86.4	79.1	80.2	93.8	76.4
	Surrogate: 3,4-Dichlorotoluene (SS) (%)		76.9	66.0 SURR-ND	64.5 SURR-ND	78.4	78.1
Polycyclic Aromatic Hydrocarbons	Acenaphthene (mg/kg)		<0.0050	<0.0050	<0.0080 DLCI	<0.0050	<0.0050
	Acenaphthylene (mg/kg)		<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
	Anthracene (mg/kg)		<0.0040	<0.0040	<0.0060 DLCI	<0.0040	<0.0040
	Benz(a)anthracene (mg/kg)		<0.010	<0.010	<0.010	<0.010	<0.010
	Benzo(a)pyrene (mg/kg)		<0.010	<0.010	<0.010	<0.010	<0.010
	Benzo(b&j)fluoranthene (mg/kg)		<0.010	<0.010	<0.010	<0.010	<0.010
	Benzo(b+j+k)fluoranthene (mg/kg)		<0.015	<0.015	<0.015	<0.015	<0.015
	Benzo(g,h,i)perylene (mg/kg)		<0.010	<0.010	<0.010	<0.010	<0.010
	Benzo(k)fluoranthene (mg/kg)		<0.010	<0.010	<0.010	<0.010	<0.010
	Chrysene (mg/kg)		<0.010	<0.010	<0.010	<0.010	<0.010
	Dibenz(a,h)anthracene (mg/kg)		<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
	Fluoranthene (mg/kg)		<0.010	<0.010	<0.010	<0.010	<0.010
	Fluorene (mg/kg)		<0.010	<0.010	<0.010	<0.010	<0.010
	Indeno(1,2,3-c,d)pyrene (mg/kg)		<0.010	<0.010	<0.010	<0.010	<0.010

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L2129348-26	L2129348-27	L2129348-28	L2129348-29	L2129348-30
	Description	Soil	Soil	Soil	Soil	Soil
	Sampled Date	12-JUL-18	12-JUL-18	12-JUL-18	12-JUL-18	12-JUL-18
	Sampled Time	09:57	10:23	10:38	10:46	10:56
	Client ID	12-JULY-18 09:57 26	12-JULY-18 10:23 27	12-JULY-18 10:38 28	12-JULY-18 10:46 29	12-JULY-18 10:56 30
Grouping	**Analyte**					
SOIL						
Physical Tests	Moisture (%)	12.2	14.0	12.9	12.6	11.8
Volatile Organic Compounds	VOC Sample Container	Field MeOH	Field MeOH	Field MeOH	Field MeOH	Field MeOH
	Benzene (mg/kg)	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
	Ethylbenzene (mg/kg)	<0.015	<0.015	<0.015	<0.015	<0.015
	Methyl t-butyl ether (MTBE) (mg/kg)	<0.20	<0.20	<0.20	<0.20	<0.20
	Styrene (mg/kg)	<0.050	<0.050	<0.050	<0.050	<0.050
	Toluene (mg/kg)	<0.050	<0.050	<0.050	<0.050	<0.050
	ortho-Xylene (mg/kg)	<0.050	<0.050	<0.050	<0.050	<0.050
	meta- & para-Xylene (mg/kg)	<0.050	<0.050	0.062	<0.050	0.081
	Xylenes (mg/kg)	<0.075	<0.075	<0.075	<0.075	0.081
	Surrogate: 4-Bromofluorobenzene (SS) (%)	87.2	76.3	77.4	80.4	104.3
	Surrogate: 1,4-Difluorobenzene (SS) (%)	89.9	89.0	91.1	90.1	111.4
Hydrocarbons	EPH10-19 (mg/kg)	270	<200	<200	<200	<200
	EPH19-32 (mg/kg)	<200	<200	<200	<200	<200
	LEPH (mg/kg)	270	<200	<200	<200	<200
	HEPH (mg/kg)	<200	<200	<200	<200	<200
	Volatile Hydrocarbons (VH6-10) (mg/kg)	<100	<100	<100	<100	<100
	VPH (C6-C10) (mg/kg)	<100	<100	<100	<100	<100
	Surrogate: 2-Bromobenzotrifluoride (%)	90.9	86.5	87.1	86.1	86.8
	Surrogate: 3,4-Dichlorotoluene (SS) (%)	63.7 SURR-ND	77.5	69.0 SURR-ND	82.3	90.5
Polycyclic Aromatic Hydrocarbons	Acenaphthene (mg/kg)	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
	Acenaphthylene (mg/kg)	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
	Anthracene (mg/kg)	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040
	Benz(a)anthracene (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
	Benzo(a)pyrene (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
	Benzo(b&j)fluoranthene (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
	Benzo(b+j+k)fluoranthene (mg/kg)	<0.015	<0.015	<0.015	<0.015	<0.015
	Benzo(g,h,i)perylene (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
	Benzo(k)fluoranthene (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
	Chrysene (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
	Dibenz(a,h)anthracene (mg/kg)	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
	Fluoranthene (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
	Fluorene (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
	Indeno(1,2,3-c,d)pyrene (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L2129348-31	L2129348-32	L2129348-33	L2129348-34	L2129348-35
	Description	Soil	Soil	Soil	Soil	Soil
	Sampled Date	12-JUL-18	12-JUL-18	12-JUL-18	12-JUL-18	12-JUL-18
	Sampled Time	11:04	11:13	13:30	13:35	13:40
	Client ID	12-JULY-18 11:04 31	12-JULY-18 11:13 32	12-JULY-18 13:30 34	12-JULY-18 13:35 35	12-JULY-18 13:40 36
Grouping	**Analyte**					
SOIL						
Physical Tests	Moisture (%)	12.3	12.3	12.9	11.9	13.7
Volatile Organic Compounds	VOC Sample Container	Field MeOH	Field MeOH	Field MeOH	Field MeOH	Field MeOH
	Benzene (mg/kg)	<0.0050	<0.0050	0.0052	<0.0050	<0.0050
	Ethylbenzene (mg/kg)	<0.015	<0.015	<0.015	<0.015	<0.015
	Methyl t-butyl ether (MTBE) (mg/kg)	<0.20	<0.20	<0.20	<0.20	<0.20
	Styrene (mg/kg)	<0.050	<0.050	<0.050	<0.050	<0.050
	Toluene (mg/kg)	<0.050	<0.050	<0.050	<0.050	<0.050
	ortho-Xylene (mg/kg)	<0.050	<0.050	<0.050	<0.050	<0.050
	meta- & para-Xylene (mg/kg)	0.094	<0.050	<0.050	<0.050	<0.050
	Xylenes (mg/kg)	0.094	<0.075	<0.075	<0.075	<0.075
	Surrogate: 4-Bromofluorobenzene (SS) (%)	77.1	78.6	92.4	90.1	88.5
	Surrogate: 1,4-Difluorobenzene (SS) (%)	98.2	92.8	94.2	89.1	93.1
Hydrocarbons	EPH10-19 (mg/kg)	<200	<200	370	<200	<200
	EPH19-32 (mg/kg)	<200	<200	2210	<200	<200
	LEPH (mg/kg)	<200	<200	370	<200	<200
	HEPH (mg/kg)	<200	<200	2210	<200	<200
	Volatile Hydrocarbons (VH6-10) (mg/kg)	<100	<100	<100	<100	<100
	VPH (C6-C10) (mg/kg)	<100	<100	<100	<100	<100
	Surrogate: 2-Bromobenzotrifluoride (%)	88.0	86.0	85.1	85.3	84.2
	Surrogate: 3,4-Dichlorotoluene (SS) (%)	83.2	58.2 SURR-ND	72.4	72.5	83.9
Polycyclic Aromatic Hydrocarbons	Acenaphthene (mg/kg)	<0.0050	<0.0050	<0.0060 DLCI	<0.0050	<0.0050
	Acenaphthylene (mg/kg)	<0.0050	<0.0050	<0.0060 DLCI	<0.0050	<0.0050
	Anthracene (mg/kg)	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040
	Benz(a)anthracene (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
	Benzo(a)pyrene (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
	Benzo(b&j)fluoranthene (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
	Benzo(b+j+k)fluoranthene (mg/kg)	<0.015	<0.015	<0.015	<0.015	<0.015
	Benzo(g,h,i)perylene (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
	Benzo(k)fluoranthene (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
	Chrysene (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
	Dibenz(a,h)anthracene (mg/kg)	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
	Fluoranthene (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
	Fluorene (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
	Indeno(1,2,3-c,d)pyrene (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L2129348-36	L2129348-37	L2129348-38		
	Description	Soil	Soil	Soil		
	Sampled Date	12-JUL-18	12-JUL-18	12-JUL-18		
	Sampled Time	13:45	14:20	15:00		
	Client ID	12-JULY-18 13:45 37	12-JULY-18 14:40 38-1	12-JULY-18 15:00 38-2		
Grouping	**Analyte**					
SOIL						
Physical Tests	Moisture (%)	14.3	8.59	11.1		
Volatile Organic Compounds	VOC Sample Container	Field MeOH	Field MeOH	Field MeOH		
	Benzene (mg/kg)	<0.0050	<0.0050	0.0099		
	Ethylbenzene (mg/kg)	<0.015	0.025	1.05		
	Methyl t-butyl ether (MTBE) (mg/kg)	<0.20	<0.20	<0.20		
	Styrene (mg/kg)	<0.050	<0.050	<0.050		
	Toluene (mg/kg)	<0.050	<0.050	0.581		
	ortho-Xylene (mg/kg)	<0.050	0.084	4.81		
	meta- & para-Xylene (mg/kg)	<0.050	0.100	9.03		
	Xylenes (mg/kg)	<0.075	0.184	13.8		
	Surrogate: 4-Bromofluorobenzene (SS) (%)	59.6 SURR-ND	107.9	88.9		
	Surrogate: 1,4-Difluorobenzene (SS) (%)	65.6 SURR-ND	92.4	99.9		
Hydrocarbons	EPH10-19 (mg/kg)	<200	290	2080		
	EPH19-32 (mg/kg)	<200	<200	220		
	LEPH (mg/kg)	<200	290	2080		
	HEPH (mg/kg)	<200	<200	220		
	Volatile Hydrocarbons (VH6-10) (mg/kg)	<100	<100	270		
	VPH (C6-C10) (mg/kg)	<100	<100	260		
	Surrogate: 2-Bromobenzotrifluoride (%)	90.6	88.6	101.5		
	Surrogate: 3,4-Dichlorotoluene (SS) (%)	70.3	71.4	80.2		
Polycyclic Aromatic Hydrocarbons	Acenaphthene (mg/kg)	<0.0050	<0.0090 DLCI	<0.090 DLCI		
	Acenaphthylene (mg/kg)	<0.0050	<0.0050	<0.040 DLCI		
	Anthracene (mg/kg)	<0.0040	<0.0040	<0.020 DLCI		
	Benz(a)anthracene (mg/kg)	0.010	<0.010	<0.010		
	Benzo(a)pyrene (mg/kg)	0.015	<0.010	<0.010		
	Benzo(b&j)fluoranthene (mg/kg)	0.026	<0.010	0.011		
	Benzo(b+j+k)fluoranthene (mg/kg)	0.026	<0.015	<0.015		
	Benzo(g,h,i)perylene (mg/kg)	0.015	<0.010	<0.010		
	Benzo(k)fluoranthene (mg/kg)	<0.010	<0.010	<0.010		
	Chrysene (mg/kg)	0.018	<0.010	<0.010		
	Dibenz(a,h)anthracene (mg/kg)	<0.0050	<0.0050	<0.0050		
	Fluoranthene (mg/kg)	<0.010	<0.010	<0.010		
	Fluorene (mg/kg)	<0.010	<0.020 DLCI	<0.20 DLCI		
	Indeno(1,2,3-c,d)pyrene (mg/kg)	0.013	<0.010	<0.010		

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L2129348-1	L2129348-2	L2129348-3	L2129348-4	L2129348-5
	Description	Soil	Soil	Soil	Soil	Soil
	Sampled Date	11-JUL-18	11-JUL-18	11-JUL-18	11-JUL-18	11-JUL-18
	Sampled Time	14:57	15:11	15:26	15:42	15:46
	Client ID	11-JULY-18 14:57 13	11-JULY-18 15:11 14	11-JULY-18 15:26 15	11-JULY-18 15:42 16	11-JULY-18 15:46 17
Grouping	**Analyte**					
SOIL						
Polycyclic Aromatic Hydrocarbons	1-Methylnaphthalene (mg/kg)	<0.050	<0.050	<0.050	0.086	<0.050
	2-Methylnaphthalene (mg/kg)	<0.010	<0.010	<0.010	<0.040 DLQ	<0.030 DLQ
	Naphthalene (mg/kg)	<0.010	<0.010	<0.010	<0.040 DLCI	<0.030 DLCI
	Phenanthrene (mg/kg)	<0.010	<0.010	<0.010	<0.014 DLCI	<0.010
	Pyrene (mg/kg)	<0.010	<0.010	0.012	0.068	<0.010
	Quinoline (mg/kg)	<0.050	<0.050	<0.050	<0.050	<0.050
	Surrogate: Acenaphthene d10 (%)	94.8	94.0	92.0	99.8	99.7
	Surrogate: Chrysene d12 (%)	109.1	111.5	110.6	64.5	102.3
	Surrogate: Naphthalene d8 (%)	90.2	91.3	86.9	87.3	92.0
	Surrogate: Phenanthrene d10 (%)	103.8	103.6	102.7	76.3	105.5
	B(a)P Total Potency Equivalent (mg/kg)	<0.020	<0.020	<0.020	<0.020	<0.020
	IACR (CCME) (mg/kg)	<0.15	<0.15	<0.15	<0.17	<0.15

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L2129348-6	L2129348-7	L2129348-8	L2129348-9	L2129348-10
	Description	Soil	Soil	Soil	Soil	Soil
	Sampled Date	11-JUL-18	11-JUL-18	11-JUL-18	11-JUL-18	11-JUL-18
	Sampled Time	16:04	16:18	16:28	16:40	16:55
	Client ID	11-JULY-18 16:04 18	11-JULY-18 16:18 19	11-JULY-18 16:28 20	11-JULY-18 16:40 21	11-JULY-18 16:55 22
Grouping	**Analyte**					
SOIL						
Polycyclic Aromatic Hydrocarbons	1-Methylnaphthalene (mg/kg)	<0.050	<0.050	<0.050	<0.050	<0.050
	2-Methylnaphthalene (mg/kg)	<0.014 DLCI	<0.010	<0.010	<0.010	<0.010
	Naphthalene (mg/kg)	<0.014 DLCI	<0.010	<0.010	<0.010	<0.010
	Phenanthrene (mg/kg)	<0.014 DLCI	<0.010	<0.010	<0.010	<0.010
	Pyrene (mg/kg)	0.024	<0.010	<0.010	<0.010	<0.010
	Quinoline (mg/kg)	<0.050	<0.050	<0.050	<0.050	<0.050
	Surrogate: Acenaphthene d10 (%)	91.4	93.6	84.7	91.1	86.0
	Surrogate: Chrysene d12 (%)	88.4	99.9	99.5	96.0	93.1
	Surrogate: Naphthalene d8 (%)	77.1	89.4	68.3	68.7	65.7
	Surrogate: Phenanthrene d10 (%)	87.9	100.4	96.5	91.8	91.5
	B(a)P Total Potency Equivalent (mg/kg)	<0.020	<0.020	<0.020	<0.020	<0.020
	IACR (CCME) (mg/kg)	<0.22	<0.15	<0.15	<0.15	<0.15

ALS ENVIRONMENTAL ANALYTICAL REPORT

Grouping	Analyte	Sample ID: L2129348-11 Description: Soil Sampled Date: 11-JUL-18 Sampled Time: 09:44 Client ID: 11-JULY-18 09:44 1A/1B	Sample ID: L2129348-12 Description: Soil Sampled Date: 11-JUL-18 Sampled Time: 10:15 Client ID: 11-JULY-18 10:15 2A/2B	Sample ID: L2129348-13 Description: Soil Sampled Date: 11-JUL-18 Sampled Time: 10:26 Client ID: 11-JULY-18 10:26 3A/3B	Sample ID: L2129348-14 Description: Soil Sampled Date: 11-JUL-18 Sampled Time: 10:42 Client ID: 11-JULY-18 10:42 4A/4B	Sample ID: L2129348-15 Description: Soil Sampled Date: 11-JUL-18 Sampled Time: 10:58 Client ID: 11-JULY-18 10:58 5A/5B
SOIL						
Polycyclic Aromatic Hydrocarbons	1-Methylnaphthalene (mg/kg)	<0.050	<0.050	<0.050	<0.050	<0.050
	2-Methylnaphthalene (mg/kg)	0.022	<0.030 DLQ	0.013	0.021	<0.010
	Naphthalene (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
	Phenanthrene (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
	Pyrene (mg/kg)	<0.010	0.016	<0.010	<0.010	0.040
	Quinoline (mg/kg)	<0.050	<0.050	<0.050	<0.050	<0.050
	Surrogate: Acenaphthene d10 (%)	83.7	87.3	85.0	81.4	90.9
	Surrogate: Chrysene d12 (%)	90.4	105.3	98.0	97.0	86.4
	Surrogate: Naphthalene d8 (%)	71.0	75.8	70.7	78.3	75.4
	Surrogate: Phenanthrene d10 (%)	91.6	96.0	95.7	93.4	82.3
	B(a)P Total Potency Equivalent (mg/kg)	<0.020	<0.020	0.036	<0.020	<0.035
	IACR (CCME) (mg/kg)	<0.15	<0.15	0.32	0.22	<0.45

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L2129348-16	L2129348-17	L2129348-18	L2129348-19	L2129348-20
	Description	Soil	Soil	Soil	Soil	Soil
	Sampled Date	11-JUL-18	11-JUL-18	11-JUL-18	11-JUL-18	11-JUL-18
	Sampled Time	11:19	11:34	13:58	14:09	14:20
	Client ID	11-JULY-18 11:19 6A/6B	11-JULY-18 11:34 7A/7B	11-JULY-18 13:58 8	11-JULY-18 14:09 9	11-JULY-18 14:20 10
Grouping	**Analyte**					
SOIL						
Polycyclic Aromatic Hydrocarbons	1-Methylnaphthalene (mg/kg)	<0.050	<0.050	<0.050	<0.050	<0.050
	2-Methylnaphthalene (mg/kg)	0.020	0.010	0.034	0.018	0.020
	Naphthalene (mg/kg)	<0.010	<0.010	0.012	<0.010	<0.010
	Phenanthrene (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
	Pyrene (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
	Quinoline (mg/kg)	<0.050	<0.050	<0.050	<0.050	<0.050
	Surrogate: Acenaphthene d10 (%)	84.1	84.6	83.7	84.9	79.3
	Surrogate: Chrysene d12 (%)	90.4	98.2	94.6	88.0	86.6
	Surrogate: Naphthalene d8 (%)	73.2	73.9	76.2	74.1	70.9
	Surrogate: Phenanthrene d10 (%)	86.7	93.4	83.8	95.5	84.1
	B(a)P Total Potency Equivalent (mg/kg)	<0.020	<0.020	<0.020	<0.020	<0.020
	IACR (CCME) (mg/kg)	<0.15	<0.15	<0.15	<0.15	<0.15

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Grouping	Analyte	Sample ID: L2129348-21 Description: Soil Sampled Date: 11-JUL-18 Sampled Time: 14:30 Client ID: 11-JULY-18 14:30 11	L2129348-22 Soil 11-JUL-18 14:44 11-JULY-18 14:44 12	L2129348-23 Soil 12-JUL-18 09:33 12-JULY-18 09:33 23	L2129348-24 Soil 12-JUL-18 09:44 12-JULY-18 09:44 24	L2129348-25 Soil 12-JUL-18 10:10 12-JULY-18 10:10 25
SOIL						
Polycyclic Aromatic Hydrocarbons	1-Methylnaphthalene (mg/kg)	<0.050	<0.050	<0.050	<0.050	<0.050
	2-Methylnaphthalene (mg/kg)	0.025	0.017	0.023	0.020	0.036
	Naphthalene (mg/kg)	<0.010	<0.010	0.021	<0.010	0.011
	Phenanthrene (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
	Pyrene (mg/kg)	<0.010	<0.010	0.045	0.016	<0.010
	Quinoline (mg/kg)	<0.050	<0.050	<0.050	<0.050	<0.050
	Surrogate: Acenaphthene d10 (%)	82.7	84.8	84.3	84.8	83.1
	Surrogate: Chrysene d12 (%)	93.9	87.5	94.1	118.9	93.1
	Surrogate: Naphthalene d8 (%)	76.2	71.2	84.4	75.0	82.6
	Surrogate: Phenanthrene d10 (%)	91.0	84.7	95.4	100.3	88.9
	B(a)P Total Potency Equivalent (mg/kg)	<0.020	<0.020	<0.020	<0.020	<0.020
	IACR (CCME) (mg/kg)	<0.15	<0.15	<0.15	<0.15	<0.15

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L2129348-26	L2129348-27	L2129348-28	L2129348-29	L2129348-30
	Description	Soil	Soil	Soil	Soil	Soil
	Sampled Date	12-JUL-18	12-JUL-18	12-JUL-18	12-JUL-18	12-JUL-18
	Sampled Time	09:57	10:23	10:38	10:46	10:56
	Client ID	12-JULY-18 09:57 26	12-JULY-18 10:23 27	12-JULY-18 10:38 28	12-JULY-18 10:46 29	12-JULY-18 10:56 30
Grouping	**Analyte**					
SOIL						
Polycyclic Aromatic Hydrocarbons	1-Methylnaphthalene (mg/kg)	<0.050	<0.050	<0.050	<0.050	<0.050
	2-Methylnaphthalene (mg/kg)	0.018	<0.010	0.015	<0.010	<0.010
	Naphthalene (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
	Phenanthrene (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
	Pyrene (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
	Quinoline (mg/kg)	<0.050	<0.050	<0.050	<0.050	<0.050
	Surrogate: Acenaphthene d10 (%)	86.7	88.9	82.7	79.8	84.9
	Surrogate: Chrysene d12 (%)	100.8	103.1	97.5	95.9	99.6
	Surrogate: Naphthalene d8 (%)	86.0	88.0	82.2	78.9	82.8
	Surrogate: Phenanthrene d10 (%)	94.6	93.8	91.1	88.9	90.7
	B(a)P Total Potency Equivalent (mg/kg)	<0.020	<0.020	<0.020	<0.020	<0.020
	IACR (CCME) (mg/kg)	<0.15	<0.15	<0.15	<0.15	<0.15

ALS ENVIRONMENTAL ANALYTICAL REPORT

Grouping	Analyte	L2129348-31 Soil 12-JUL-18 11:04 12-JULY-18 11:04 31	L2129348-32 Soil 12-JUL-18 11:13 12-JULY-18 11:13 32	L2129348-33 Soil 12-JUL-18 13:30 12-JULY-18 13:30 34	L2129348-34 Soil 12-JUL-18 13:35 12-JULY-18 13:35 35	L2129348-35 Soil 12-JUL-18 13:40 12-JULY-18 13:40 36
SOIL						
Polycyclic Aromatic Hydrocarbons	1-Methylnaphthalene (mg/kg)	<0.050	<0.050	<0.050	<0.050	<0.050
	2-Methylnaphthalene (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
	Naphthalene (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
	Phenanthrene (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
	Pyrene (mg/kg)	<0.010	<0.010	0.020	<0.010	<0.010
	Quinoline (mg/kg)	<0.050	<0.050	<0.050	<0.050	<0.050
	Surrogate: Acenaphthene d10 (%)	84.6	79.8	96.3	86.4	80.1
	Surrogate: Chrysene d12 (%)	98.0	95.4	102.0	100.1	98.2
	Surrogate: Naphthalene d8 (%)	83.3	82.1	83.6	84.5	79.6
	Surrogate: Phenanthrene d10 (%)	92.3	88.9	100.7	97.1	91.1
	B(a)P Total Potency Equivalent (mg/kg)	<0.020	<0.020	<0.020	<0.020	<0.020
	IACR (CCME) (mg/kg)	<0.15	<0.15	<0.15	<0.15	<0.15

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L2129348-36	L2129348-37	L2129348-38		
	Description	Soil	Soil	Soil		
	Sampled Date	12-JUL-18	12-JUL-18	12-JUL-18		
	Sampled Time	13:45	14:20	15:00		
	Client ID	12-JULY-18 13:45 37	12-JULY-18 14:40 38-1	12-JULY-18 15:00 38-2		
Grouping	**Analyte**					
SOIL						
Polycyclic Aromatic Hydrocarbons	1-Methylnaphthalene (mg/kg)	<0.050	0.108	1.03		
	2-Methylnaphthalene (mg/kg)	<0.010	0.116	1.11		
	Naphthalene (mg/kg)	<0.010	<0.060 DLQ	<0.50 DLQ		
	Phenanthrene (mg/kg)	<0.010	<0.020 DLQ	<0.090 DLQ		
	Pyrene (mg/kg)	<0.010	<0.010	0.033		
	Quinoline (mg/kg)	<0.050	<0.050	<0.090 DLCI		
	Surrogate: Acenaphthene d10 (%)	91.2	86.1	103.9		
	Surrogate: Chrysene d12 (%)	108.8	100.5	110.8		
	Surrogate: Naphthalene d8 (%)	85.0	83.4	101.2		
	Surrogate: Phenanthrene d10 (%)	100.4	98.5	115.5		
	B(a)P Total Potency Equivalent (mg/kg)	0.023	<0.020	<0.020		
	IACR (CCME) (mg/kg)	0.29	<0.15	<0.15		

Reference Information

QC Samples with Qualifiers & Comments:

QC Type Description	Parameter	Qualifier	Applies to Sample Number(s)
Laboratory Control Sample	Benzene	LCS-ND	L2129348-10, -11, -12, -13, -14, -3, -4, -5, -6, -7, -8, -9
Laboratory Control Sample	Ethylbenzene	LCS-ND	L2129348-10, -11, -12, -13, -14, -3, -4, -5, -6, -7, -8, -9
Laboratory Control Sample	Methyl t-butyl ether (MTBE)	LCS-ND	L2129348-10, -11, -12, -13, -14, -3, -4, -5, -6, -7, -8, -9
Laboratory Control Sample	Styrene	LCS-ND	L2129348-10, -11, -12, -13, -14, -3, -4, -5, -6, -7, -8, -9
Laboratory Control Sample	Toluene	LCS-ND	L2129348-10, -11, -12, -13, -14, -3, -4, -5, -6, -7, -8, -9
Laboratory Control Sample	meta- & para-Xylene	LCS-ND	L2129348-10, -11, -12, -13, -14, -3, -4, -5, -6, -7, -8, -9
Laboratory Control Sample	ortho-Xylene	LCS-ND	L2129348-10, -11, -12, -13, -14, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	EPH19-32	MS-B	L2129348-10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -20, -21, -22, -23, -24, -25, -8, -9

Qualifiers for Individual Parameters Listed:

Qualifier	Description
DLCI	Detection Limit Raised: Chromatographic Interference due to co-elution.
DLIS	Detection Limit Adjusted: Insufficient Sample
DLQ	Detection Limit raised due to co-eluting interference. GCMS qualifier ion ratio did not meet acceptance criteria.
LCS-ND	Lab Control Sample recovery was slightly outside ALS DQO. Reported non-detect results for associated samples were unaffected.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
SURR-ND	Surrogate recovery marginally exceeded ALS DQO. Reported non-detect results for associated samples were deemed to be unaffected.

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
EPH-TUMB-FID-VA	Soil	EPH in Solids by Tumbler and GCFID	BC MOE EPH GCFID

Analysis is in accordance with BC MOE Lab Manual method "Extractable Petroleum Hydrocarbons in Solids by GC/FID", v2.1, July 1999. Soil samples are extracted with a 1:1 mixture of hexane and acetone using a rotary extraction technique modified from EPA 3570 prior to gas chromatography with flame ionization detection (GC-FID). EPH results include Polycyclic Aromatic Hydrocarbons (PAH) and are therefore not equivalent to Light and Heavy Extractable Petroleum Hydrocarbons (LEPH/HEPH).

LEPH/HEPH-CALC-VA	Soil	LEPHs and HEPHs	BC MOE LEPH/HEPH

LEPHs and HEPHs are measures of Light and Heavy Extractable Petroleum Hydrocarbons in soil. Results are calculated by subtraction of applicable PAH concentrations from EPH10-19 and EPH19-32, as per the BC Lab Manual LEPH/HEPH calculation procedure.
LEPHs = EPH10-19 minus Acenaphthene, Acridine, Anthracene, Fluorene, Naphthalene and Phenanthrene.
HEPHs = EPH19-32 minus Benz(a)anthracene, Benzo(a)pyrene, Fluoranthene, and Pyrene.

MOISTURE-VA	Soil	Moisture content	CWS for PHC in Soil - Tier 1

This analysis is carried out gravimetrically by drying the sample at 105 C for a minimum of six hours.

PAH-TMB-H/A-MS-VA	Soil	PAH - Rotary Extraction (Hexane/Acetone)	EPA 3570/8270

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 hexane and acetone. 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. Because the two isomers cannot be readily chromatographically separated, benzo(j)fluoranthene is reported as part of the benzo(b)fluoranthene parameter.

Benzo(a)pyrene Total Potency Equivalents [B(a)P TPE] represents the sum of estimated cancer potency relative to B(a)P for all potentially carcinogenic unsubstituted PAHs, and is calculated as per the CCME PAH Soil Quality Guidelines reference document (2010).

VH-HSFID-VA	Soil	VH in soil by Headspace GCFID	BC Env. Lab Manual (VH in Solids)

This analysis involves the extraction of a subsample of the sediment/soil with methanol. Aliquots of the methanol extract are then added to water and reagents, then heated in a sealed vial to equilibrium. The headspace from the vial is analyzed for Volatile Hydrocarbons (VH) by capillary column gas chromatography with flame-ionization detection (GC/FID). The methanol extraction and VH analysis are carried out in accordance with the British Columbia Ministry of Environment, Lands and Parks (BCMELP) Analytical Method for Contaminated Sites "Volatile Hydrocarbons in Solids by GC/FID" (Version 2.1 July 1999).

VH-SURR-FID-VA	Soil	VH Surrogates for Soils	BC Env. Lab Manual (VH in Solids)
VOC7-L-HSMS-VA	Soil	VOCs in soil by Headspace GCMS	EPA 5035A/5021A/8260C

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.

VOC7/VOC-SURR-MS-VA	Soil	VOC7 and/or VOC Surrogates for Soils	EPA 5035A/5021A/8260C
VPH-CALC-VA	Soil	VPH is VH minus select aromatics	BC MOE VPH

Reference Information

VPHs measures Volatile Petroleum Hydrocarbons in soil. Results are calculated by subtraction of specific Monocyclic Aromatic Hydrocarbons from VH6-10, as per the BC Lab Manual VPH calculation procedure.
VPHs = VH6-10 minus Benzene, Toluene, Ethylbenzene, Xylenes, and Styrene

XYLENES-CALC-VA	Soil	Sum of Xylene Isomer Concentrations	EPA 8260B & 524.2

Calculation of Total Xylenes

Total Xylenes is the sum of the concentrations of the ortho, meta, and para Xylene isomers. Results below detection limit (DL) are treated as zero. The DL for Total Xylenes is set to a value no less than the square root of the sum of the squares of the DLs of the individual Xylenes.

** 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
VA	ALS ENVIRONMENTAL - VANCOUVER, BRITISH COLUMBIA, CANADA

Chain of Custody Numbers:

17-653138 17-653139 17-653140 17-653141

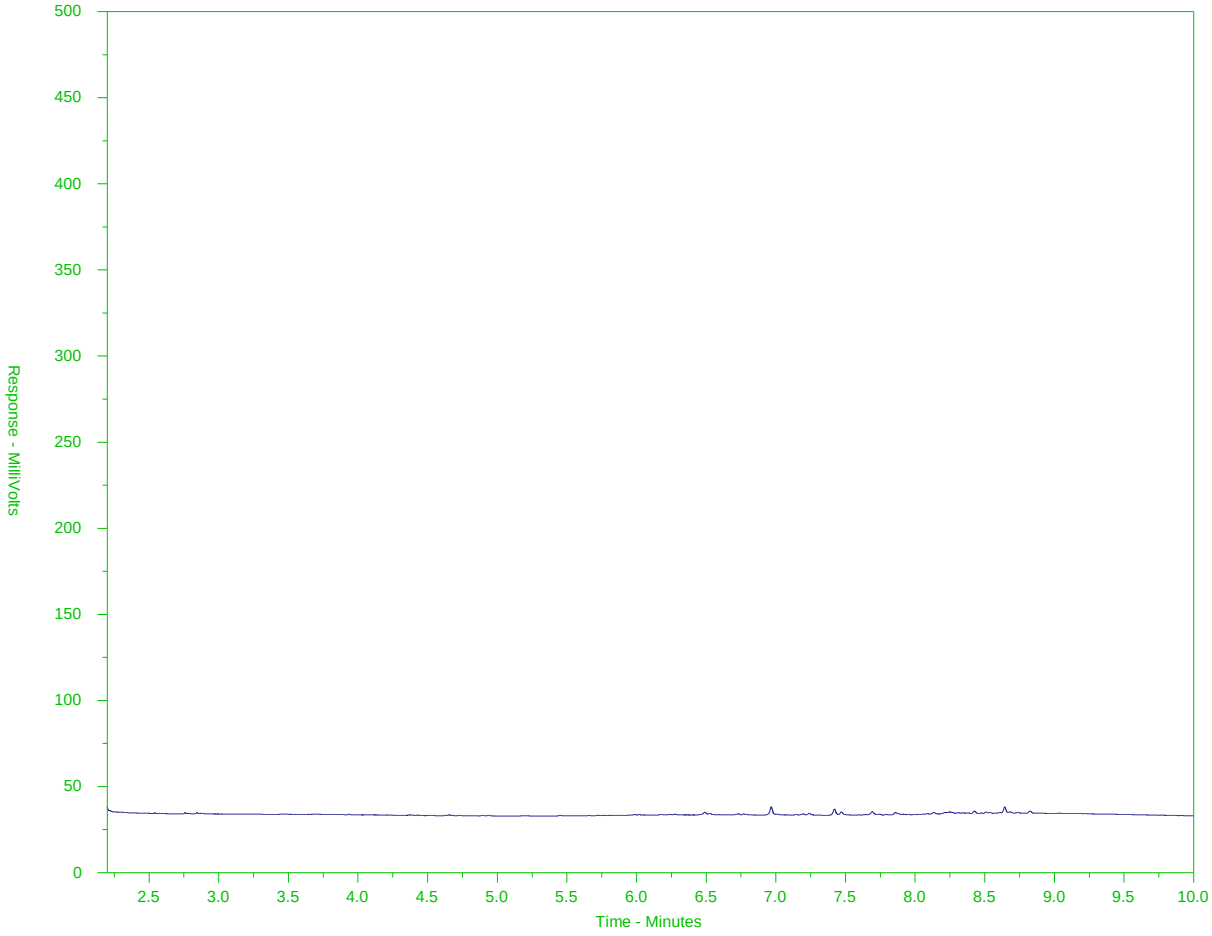
GLOSSARY OF REPORT TERMS

Surrogate - A compound that is similar in behaviour to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.
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 of sample.
mg/L - milligrams per litre.
< - Less than.
D.L. - The reported Detection Limit, also known as the Limit of Reporting (LOR).
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.

BC EPH HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2129348-1
Client Sample ID: 11-JULY-18 14:57 13



← EPH10-19 →		← EPH19-32 →
nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →	← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →		

The BC EPH 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 three n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

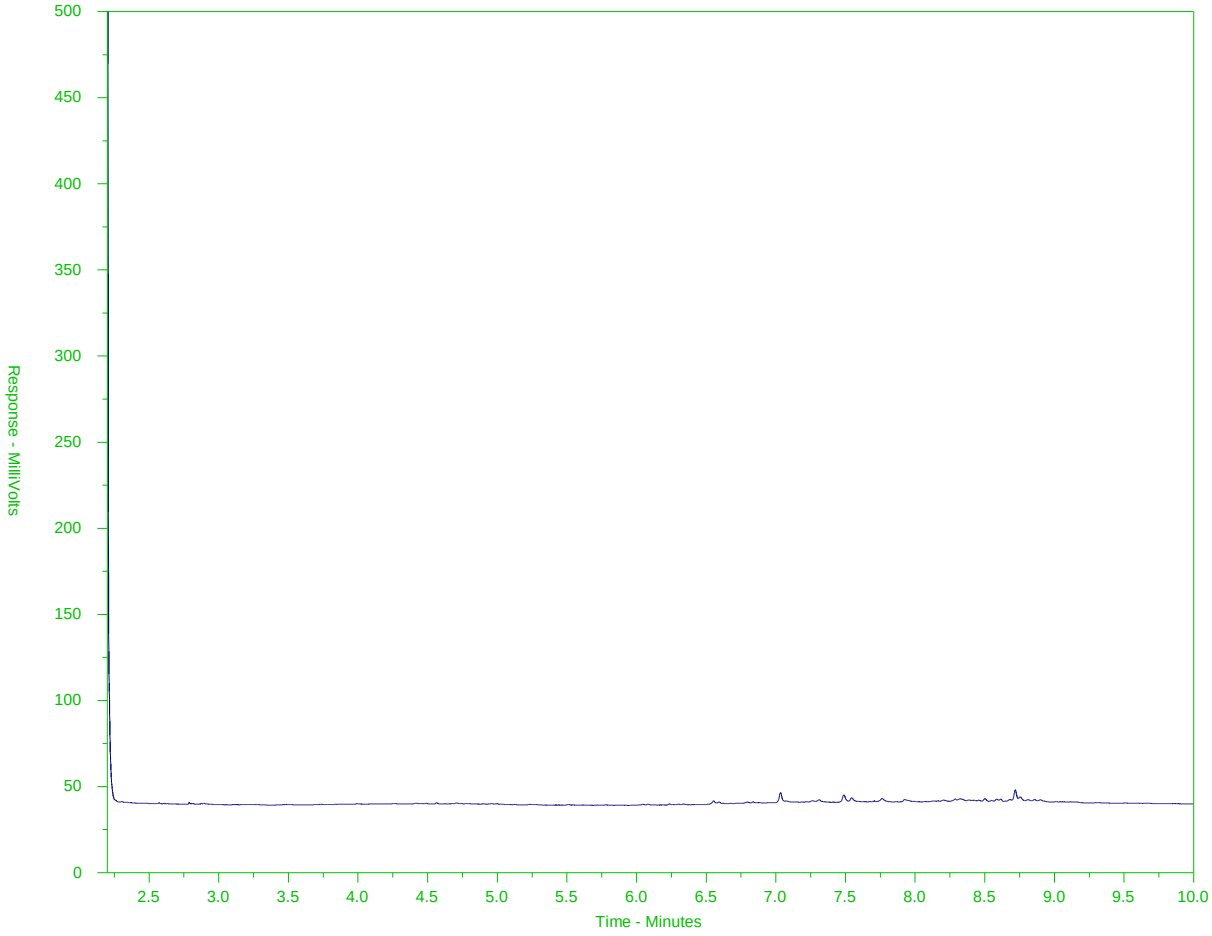
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

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

BC EPH HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2129348-2
Client Sample ID: 11-JULY-18 15:11 14



← EPH10-19 →		← EPH19-32 →
nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →	← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →		

The BC EPH 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 three n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

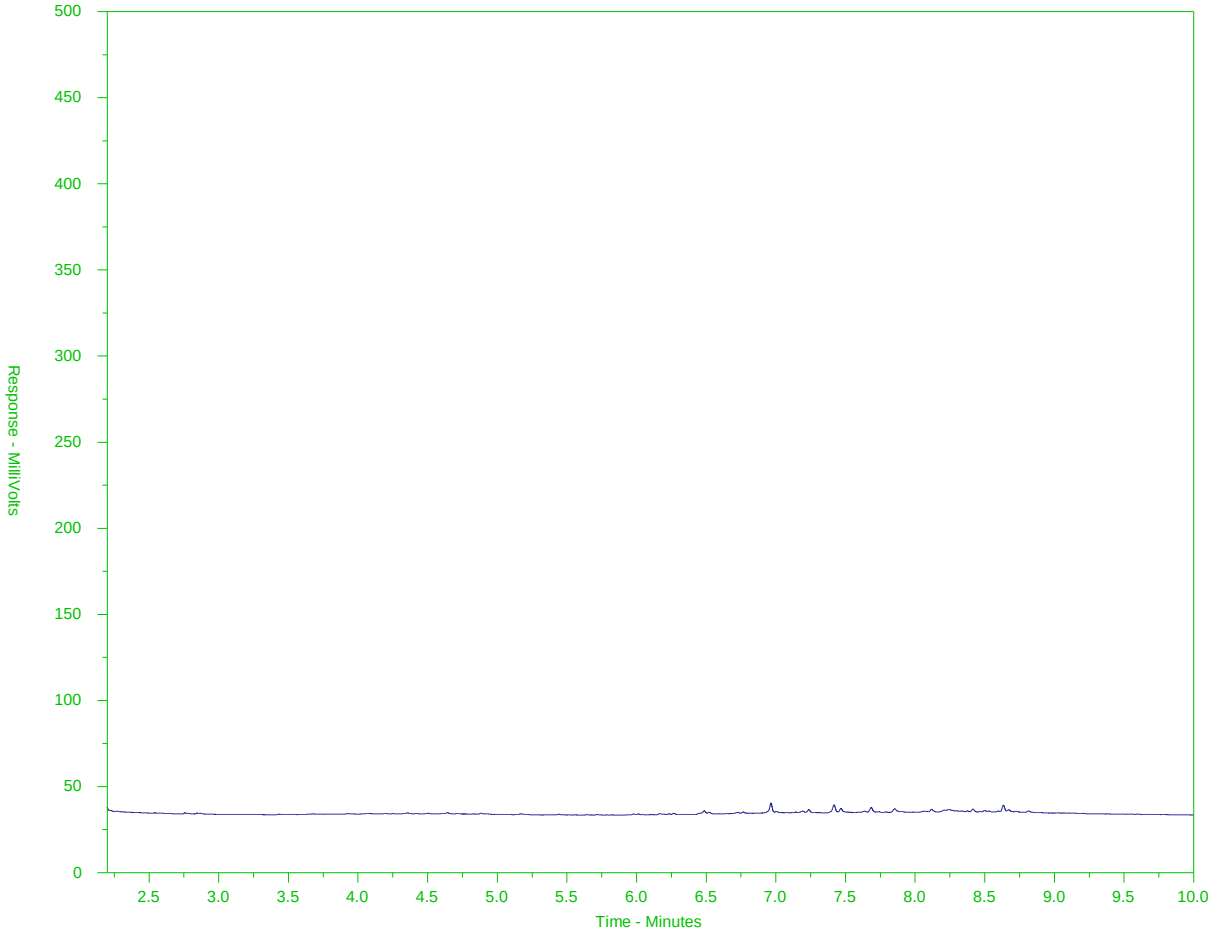
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

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

BC EPH HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: WG2825194-3#L2129348-2
Client Sample ID: 11-JULY-18 15:11 14



← EPH10-19 →		← EPH19-32 →
nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →	← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →		

The BC EPH 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 three n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

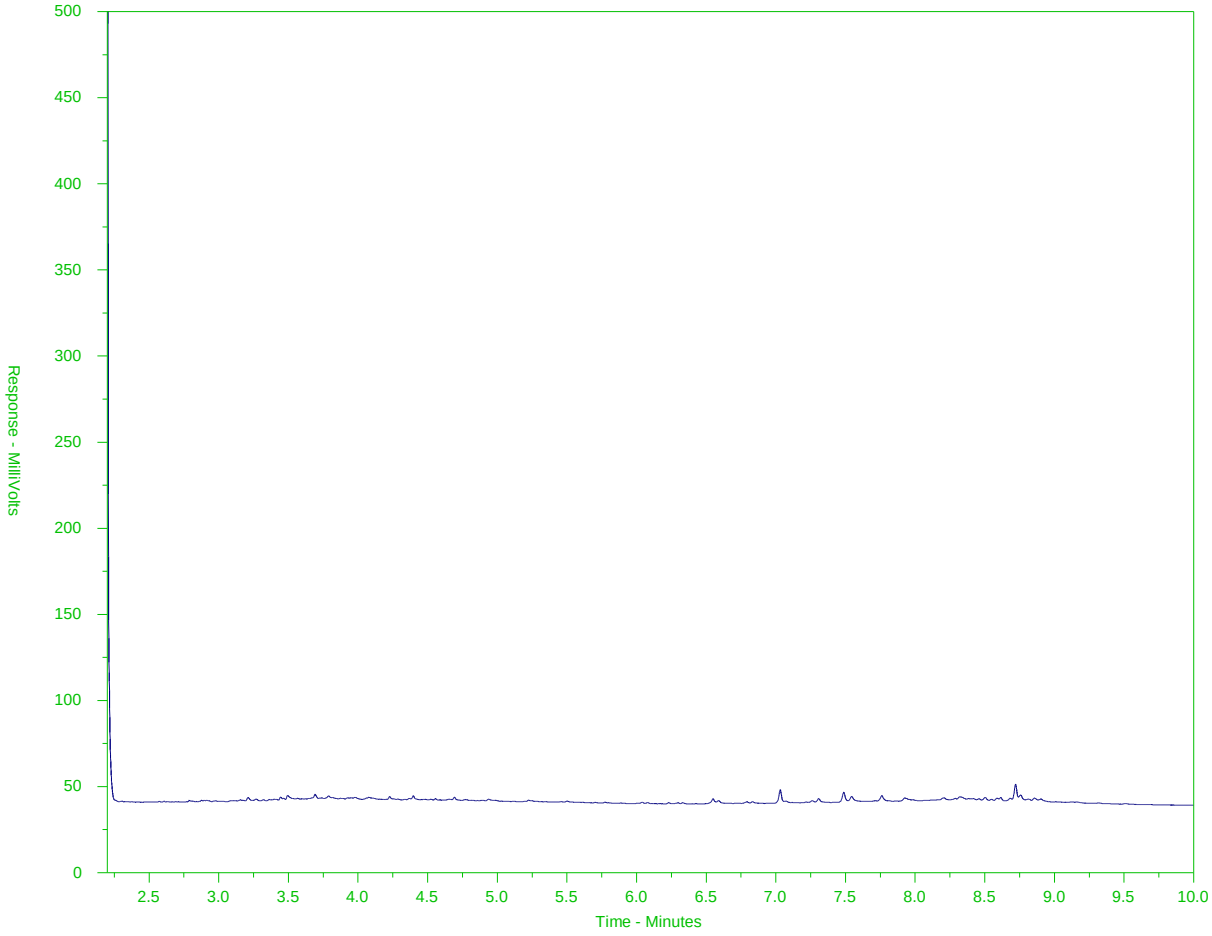
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

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

BC EPH HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2129348-3
Client Sample ID: 11-JULY-18 15:26 15



← EPH10-19 →		← EPH19-32 →
nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →	← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →		

The BC EPH 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 three n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

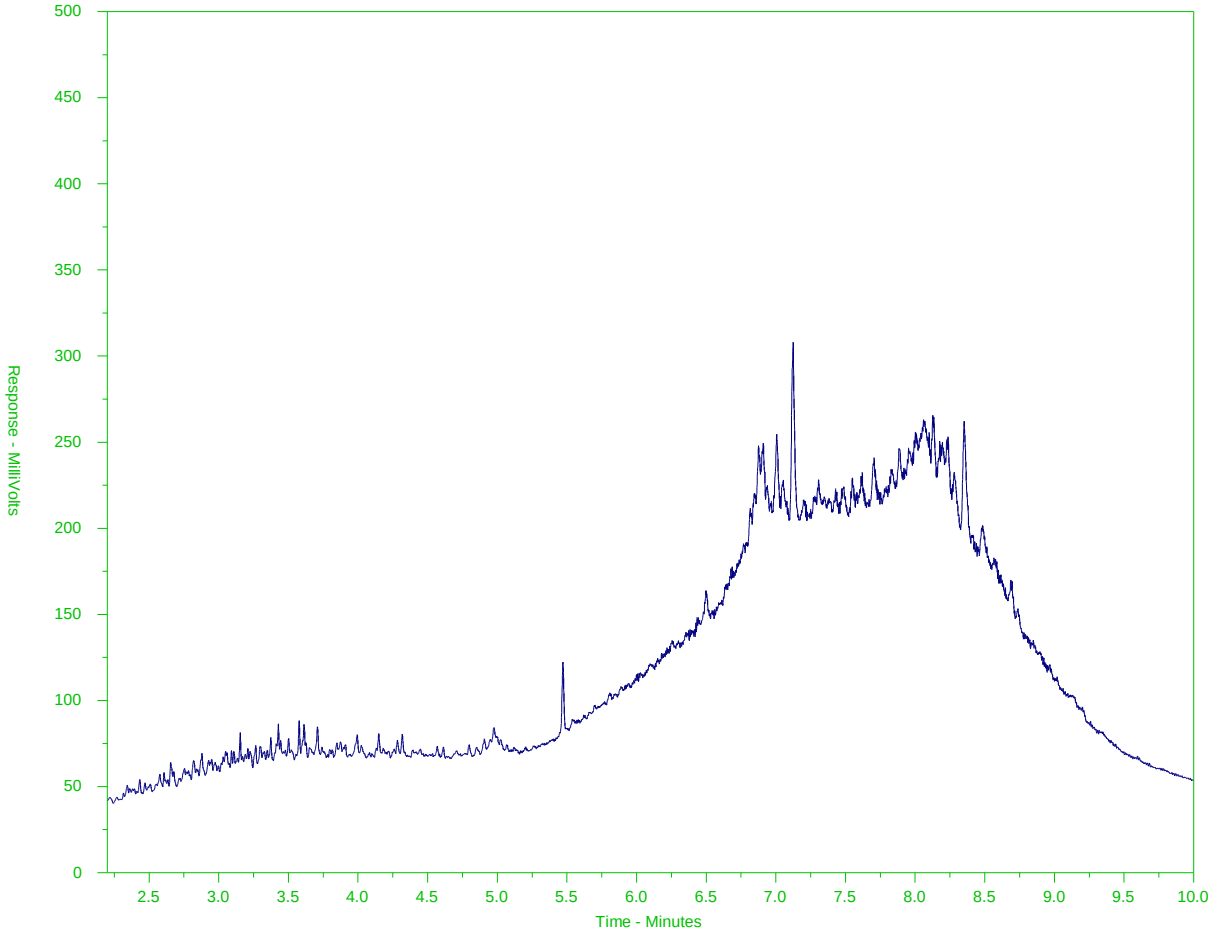
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

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

BC EPH HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2129348-4
Client Sample ID: 11-JULY-18 15:42 16



← EPH10-19 →		← EPH19-32 →
nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →	← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →		

The BC EPH 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 three n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

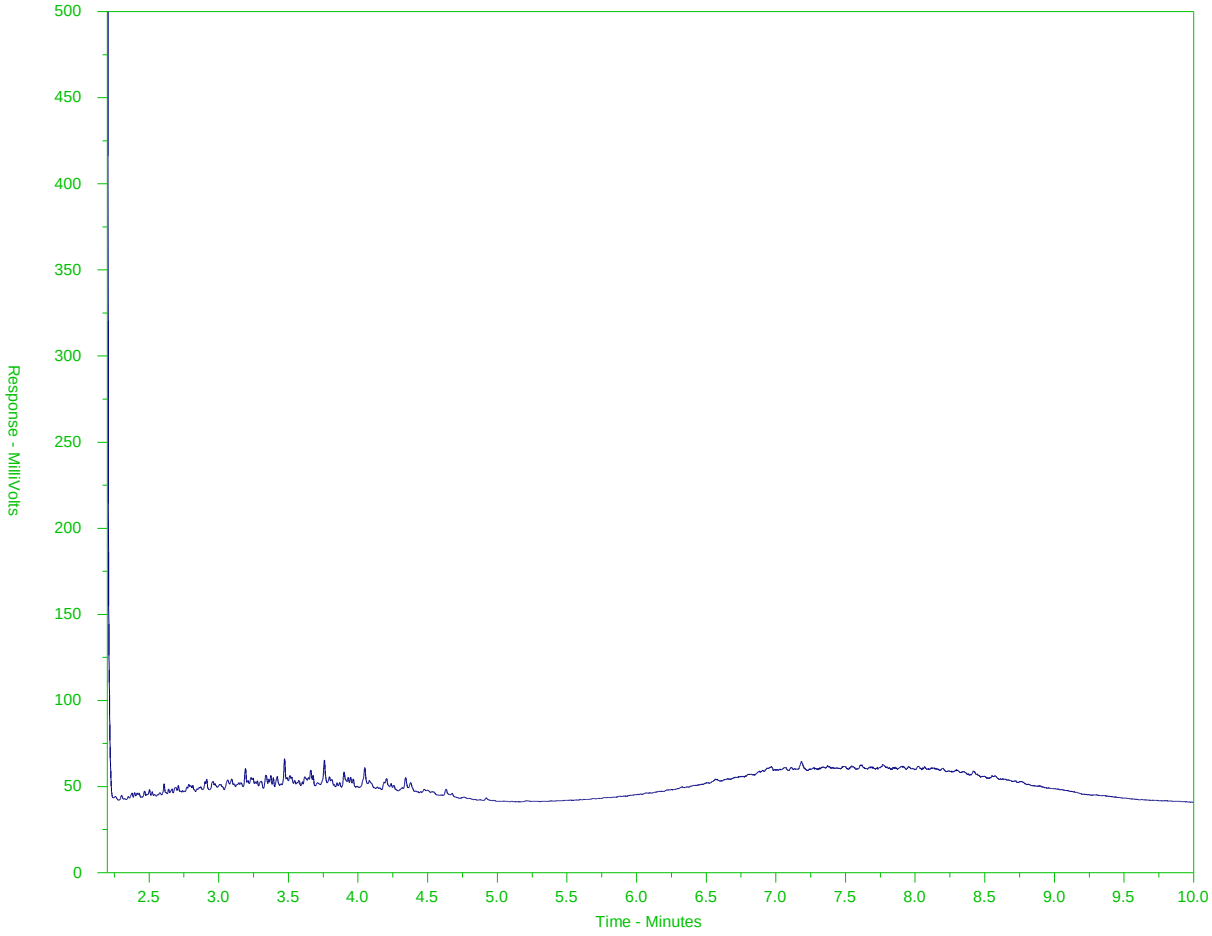
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

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

BC EPH HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2129348-5
Client Sample ID: 11-JULY-18 15:46 17



← EPH10-19 →	← EPH19-32 →	
nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →	← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →		

The BC EPH 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 three n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

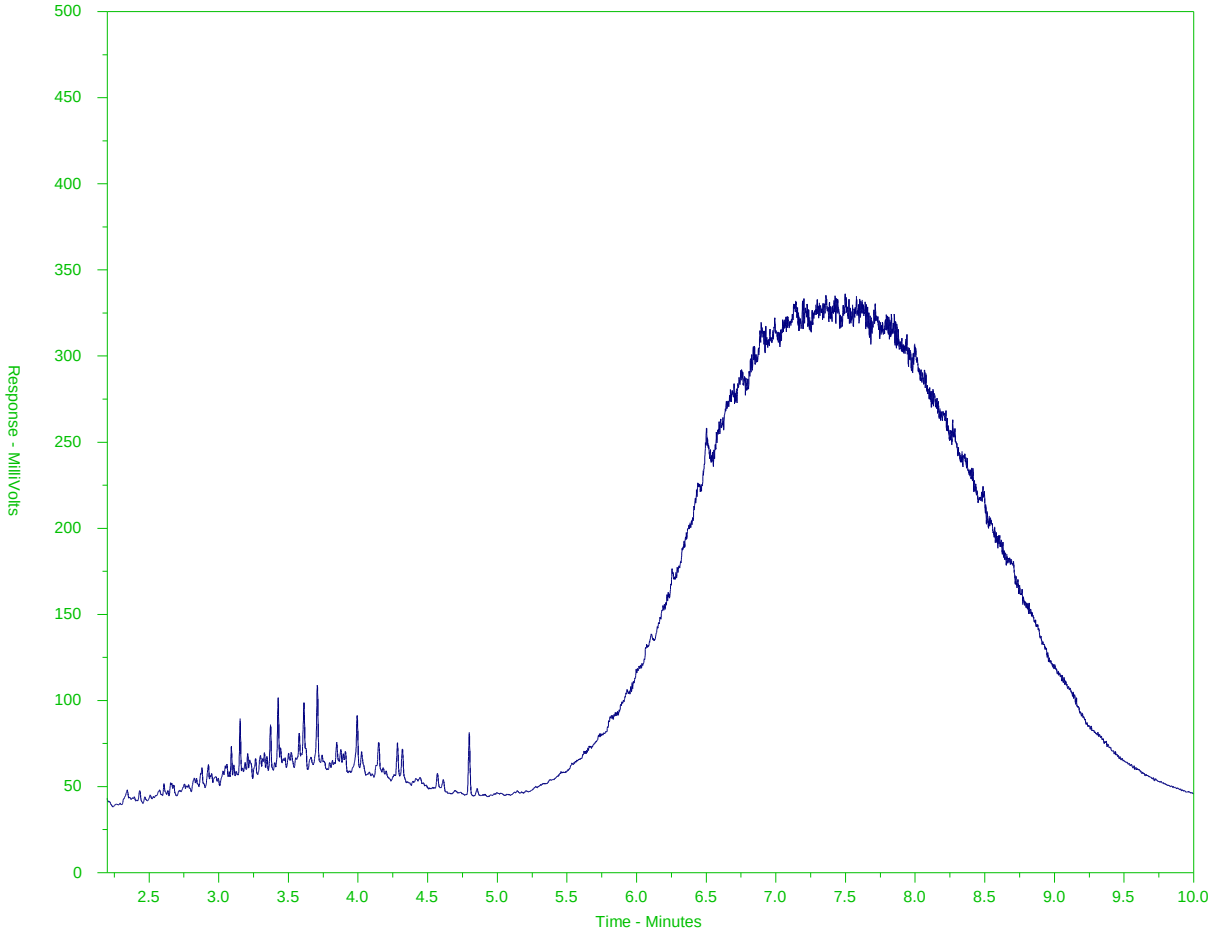
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

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

BC EPH HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2129348-6
Client Sample ID: 11-JULY-18 16:04 18



← EPH10-19 →		← EPH19-32 →
nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →	← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →		

The BC EPH 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 three n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

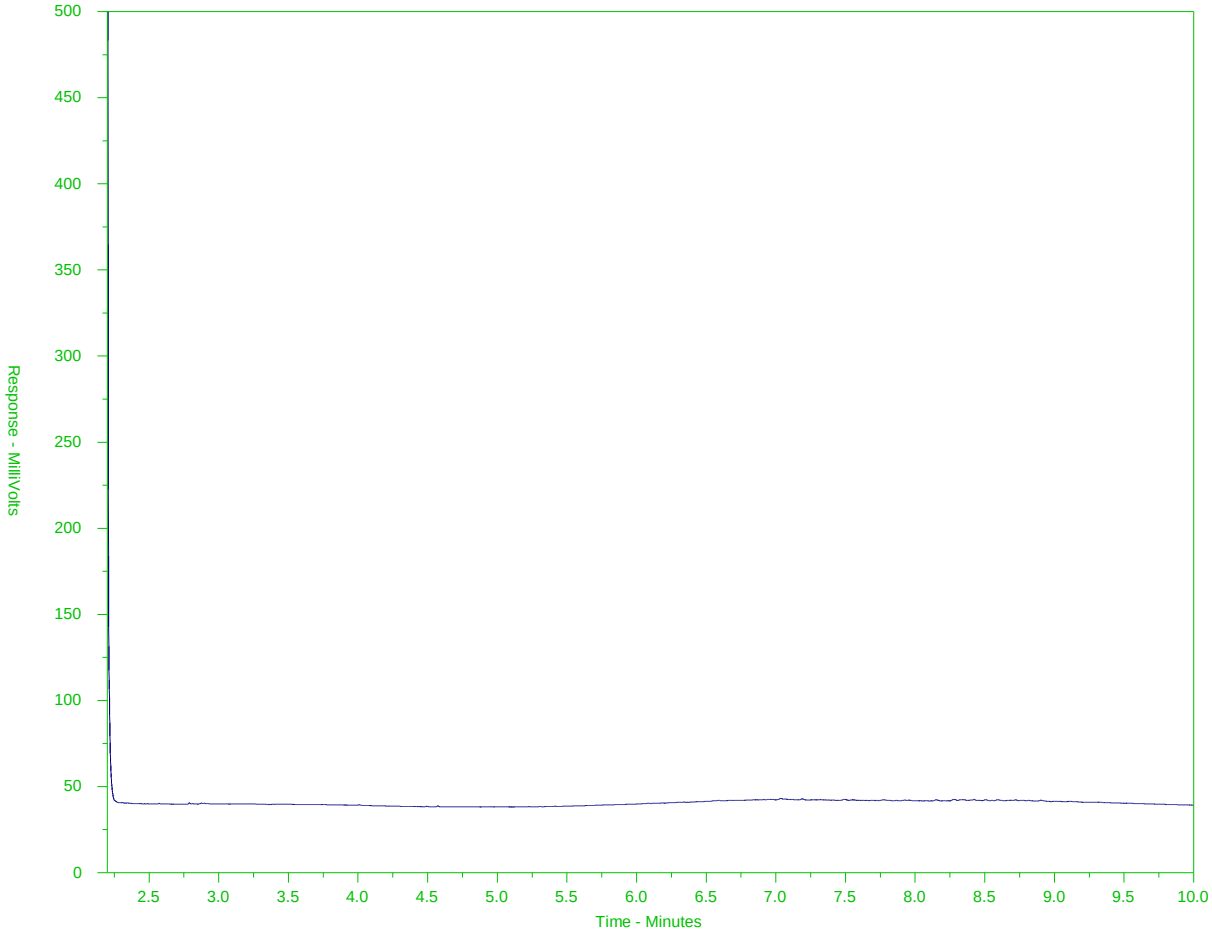
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

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

BC EPH HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2129348-7
Client Sample ID: 11-JULY-18 16:18 19



← EPH10-19 →		← EPH19-32 →
nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →	← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →		

The BC EPH 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 three n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

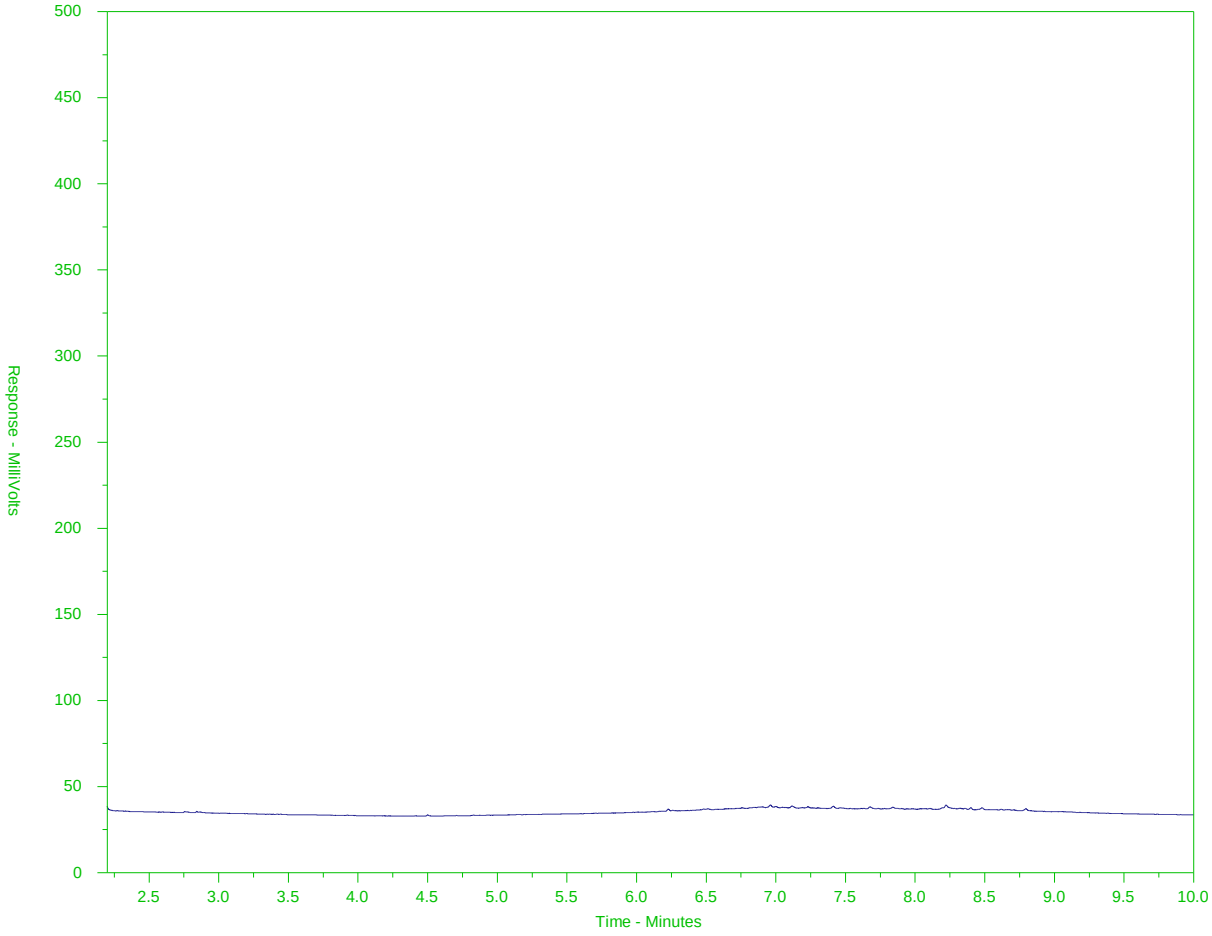
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

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

BC EPH HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2129348-8
Client Sample ID: 11-JULY-18 16:28 20



← EPH10-19 →		← EPH19-32 →
nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →	← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →		

The BC EPH 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 three n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

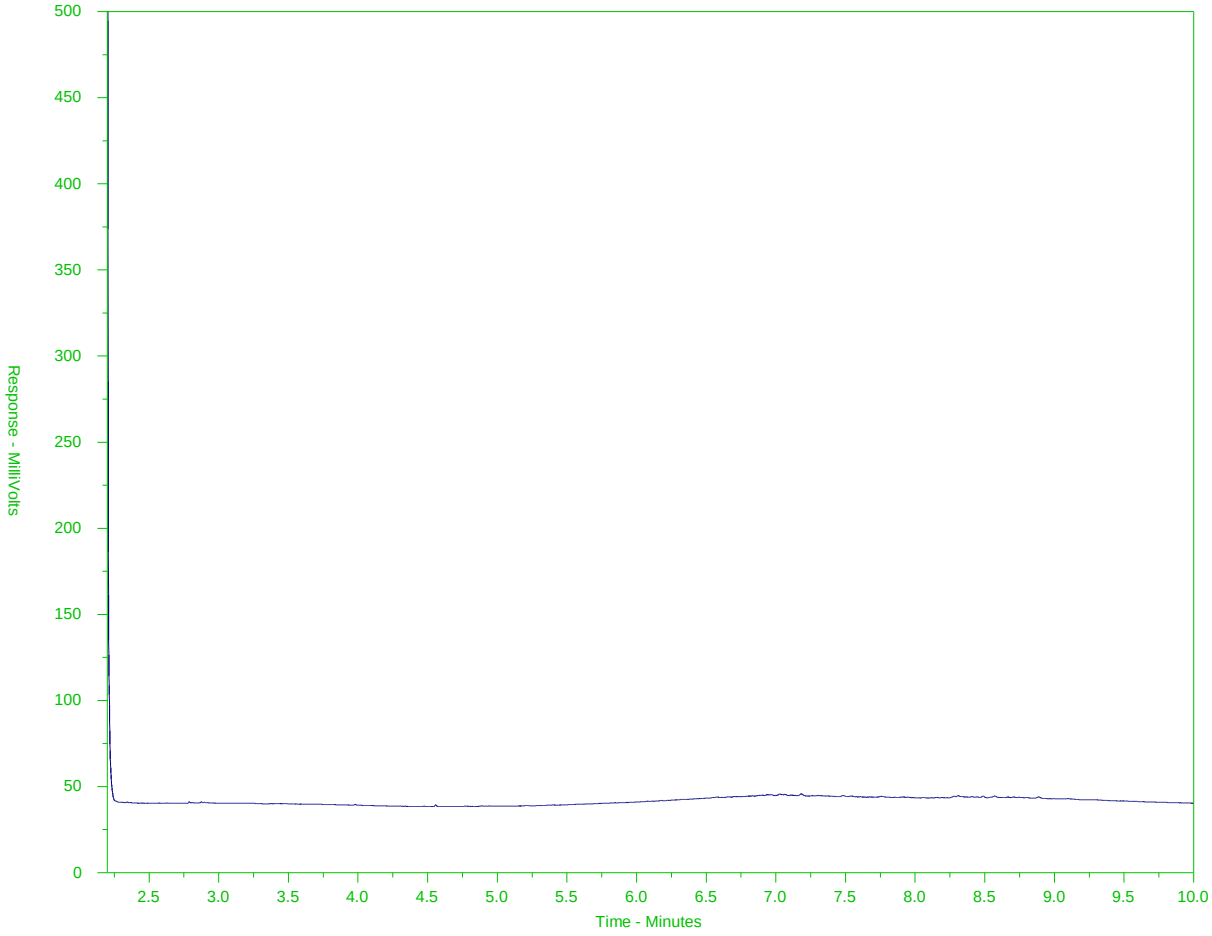
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

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

BC EPH HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: WG2826189-3#L2129348-8
Client Sample ID: 11-JULY-18 16:28 20



← EPH10-19 →		← EPH19-32 →
nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →	← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →		

The BC EPH 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 three n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

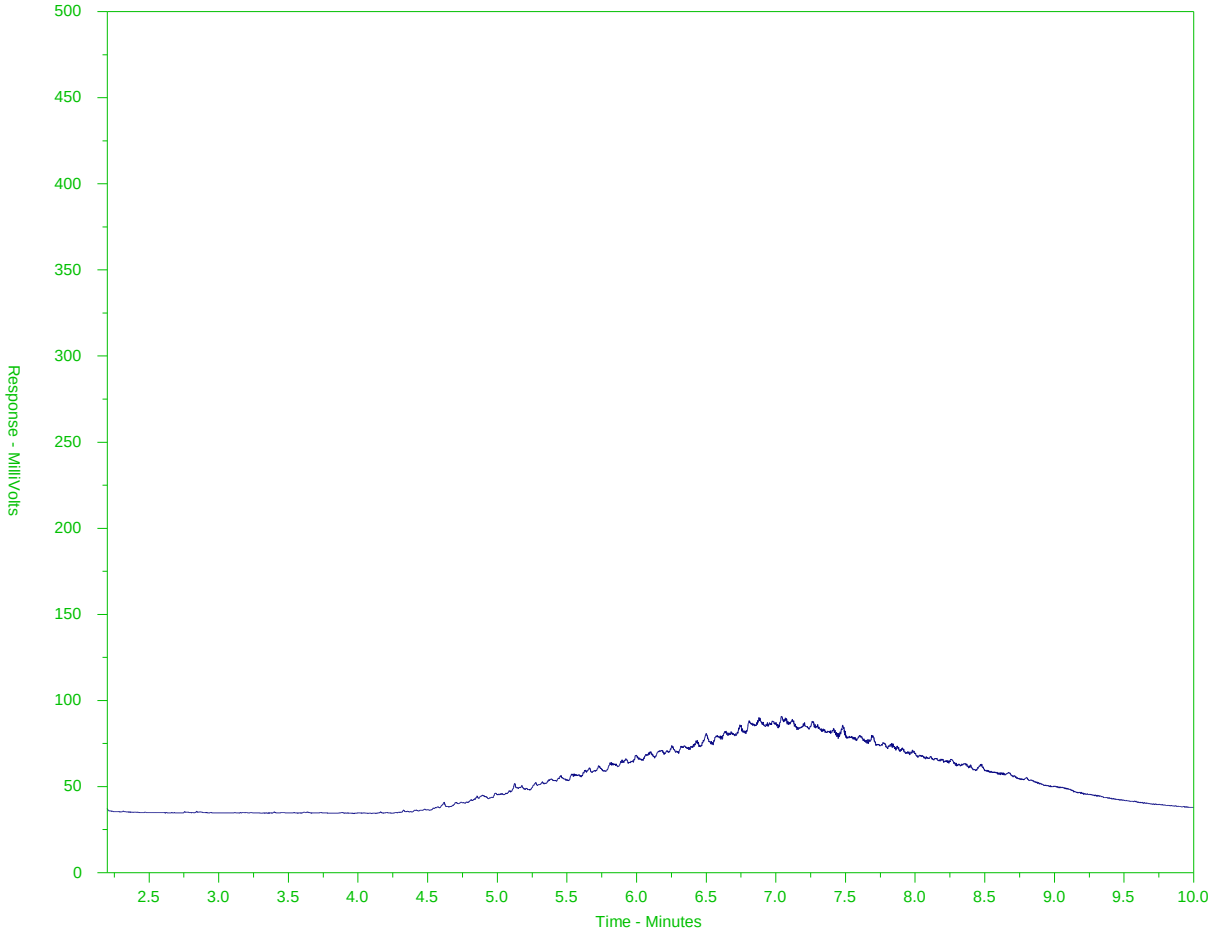
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

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

BC EPH HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2129348-9
Client Sample ID: 11-JULY-18 16:40 21



← EPH10-19 →		← EPH19-32 →
nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →	← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →		

The BC EPH 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 three n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

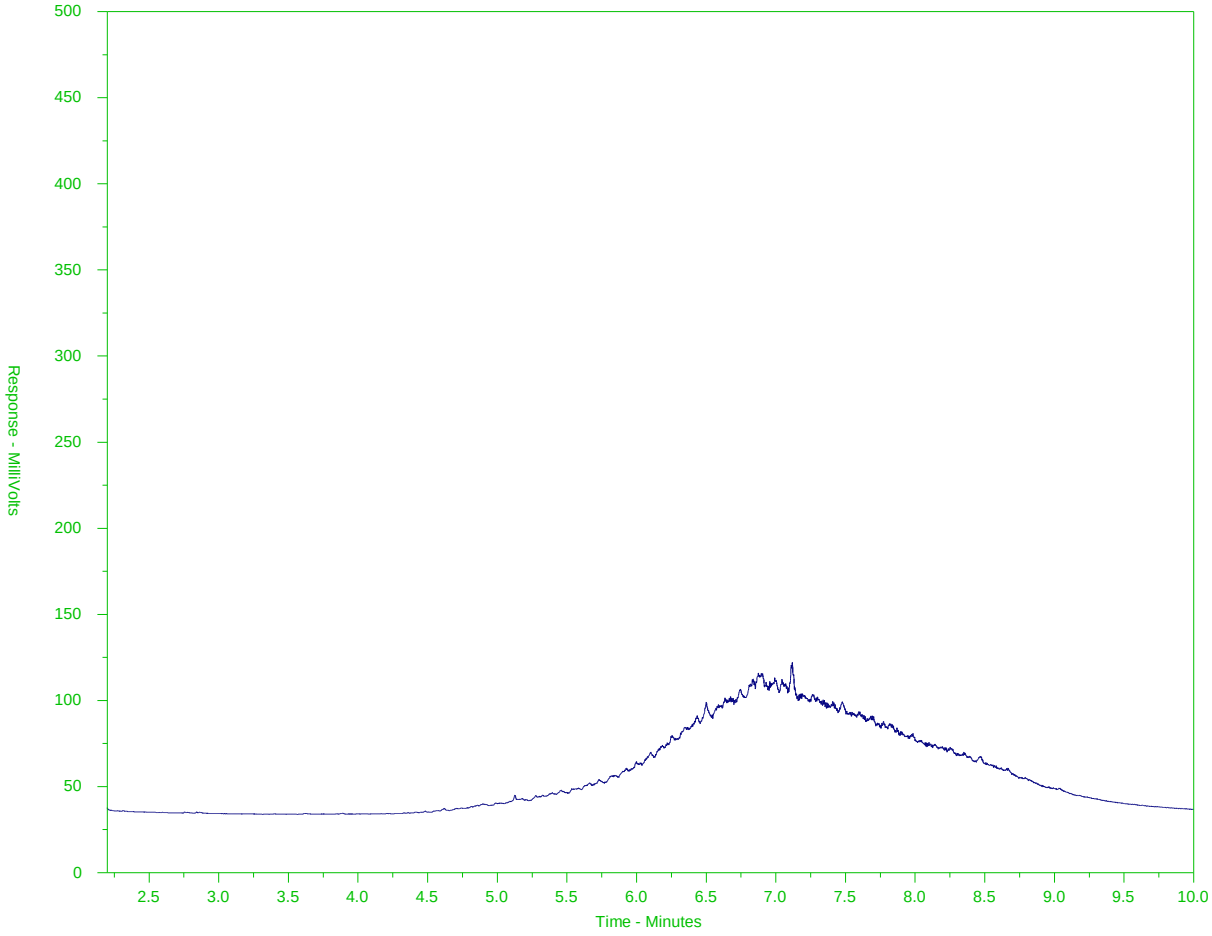
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

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

BC EPH HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2129348-10
Client Sample ID: 11-JULY-18 16:55 22



← EPH10-19 →		← EPH19-32 →
nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →	← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →		

The BC EPH 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 three n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

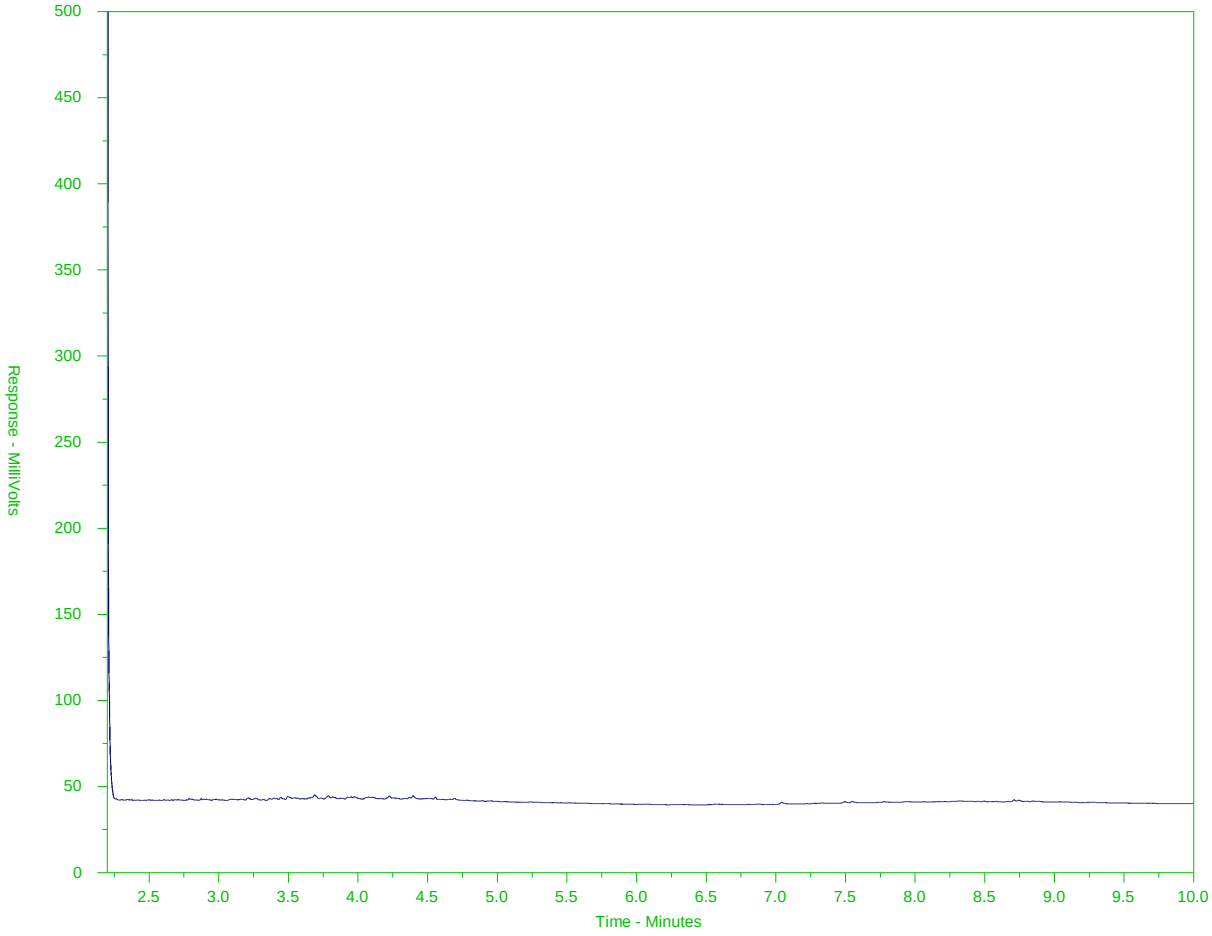
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

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

BC EPH HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2129348-11
Client Sample ID: 11-JULY-18 09:44 1A/1B



← EPH10-19 →		← EPH19-32 →
nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →	← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →		

The BC EPH 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 three n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

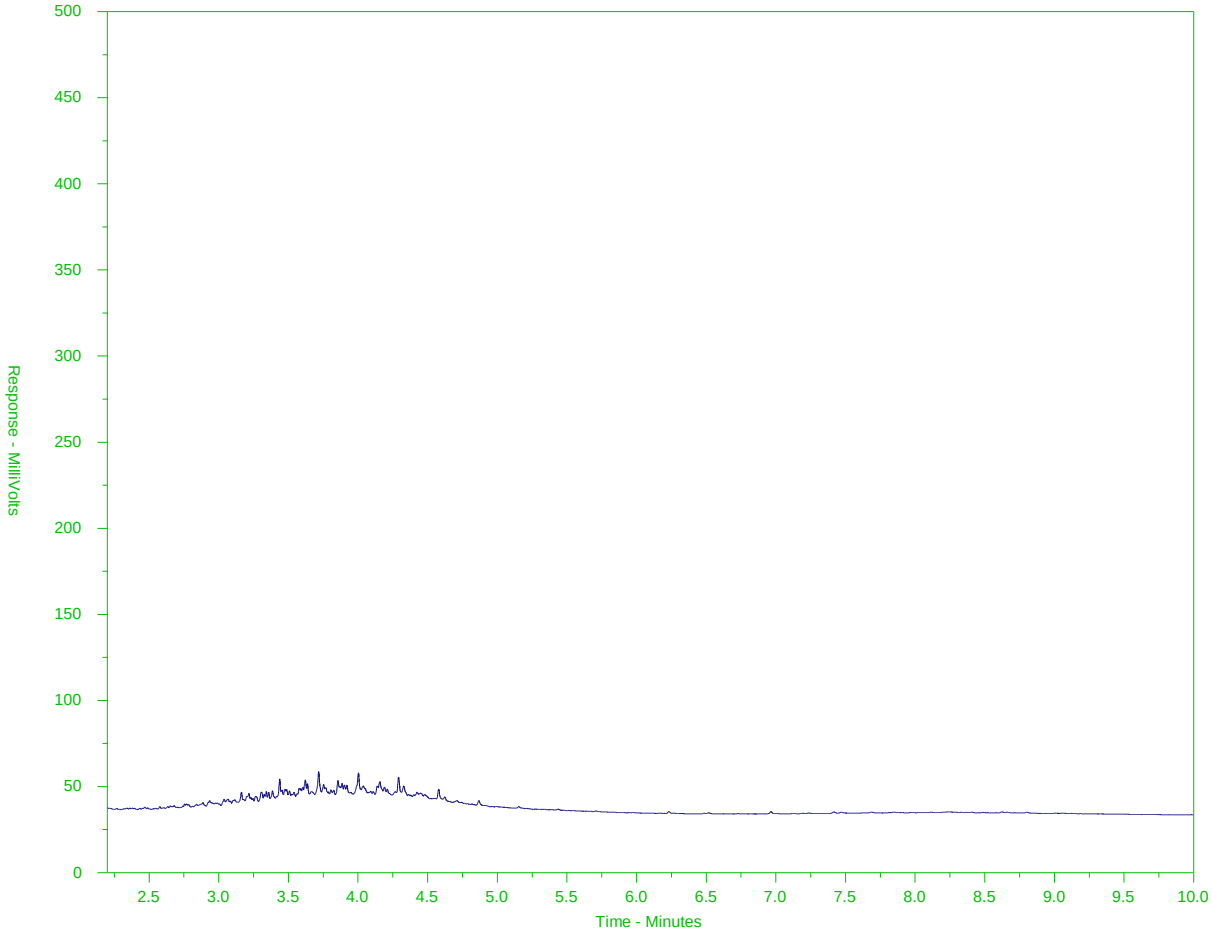
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

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

BC EPH HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2129348-12
Client Sample ID: 11-JULY-18 10:15 2A/2B



← EPH10-19 →		← EPH19-32 →
nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →	← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →		

The BC EPH 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 three n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

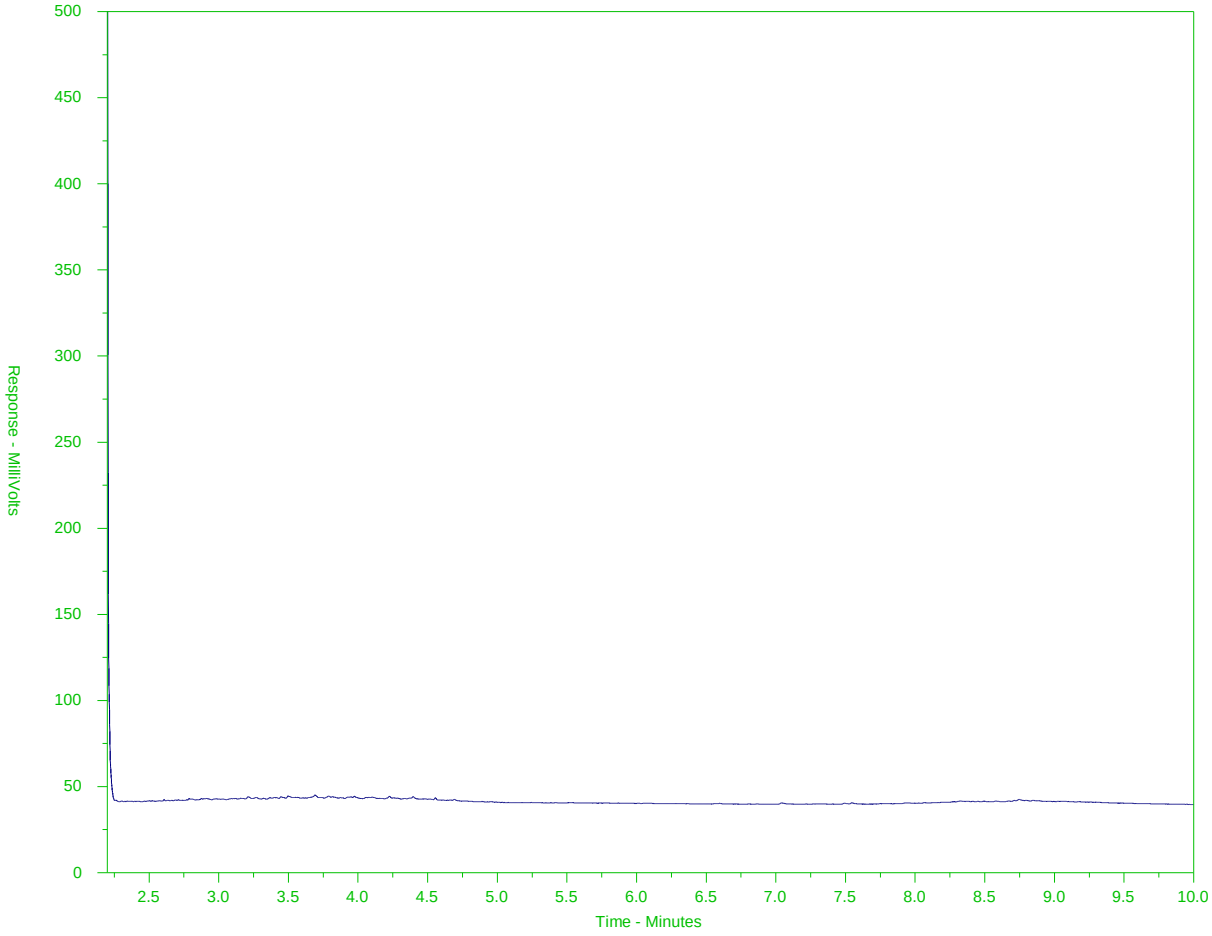
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

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

BC EPH HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2129348-13
Client Sample ID: 11-JULY-18 10:26 3A/3B



← EPH10-19 →		← EPH19-32 →
nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →	← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →		

The BC EPH 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 three n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

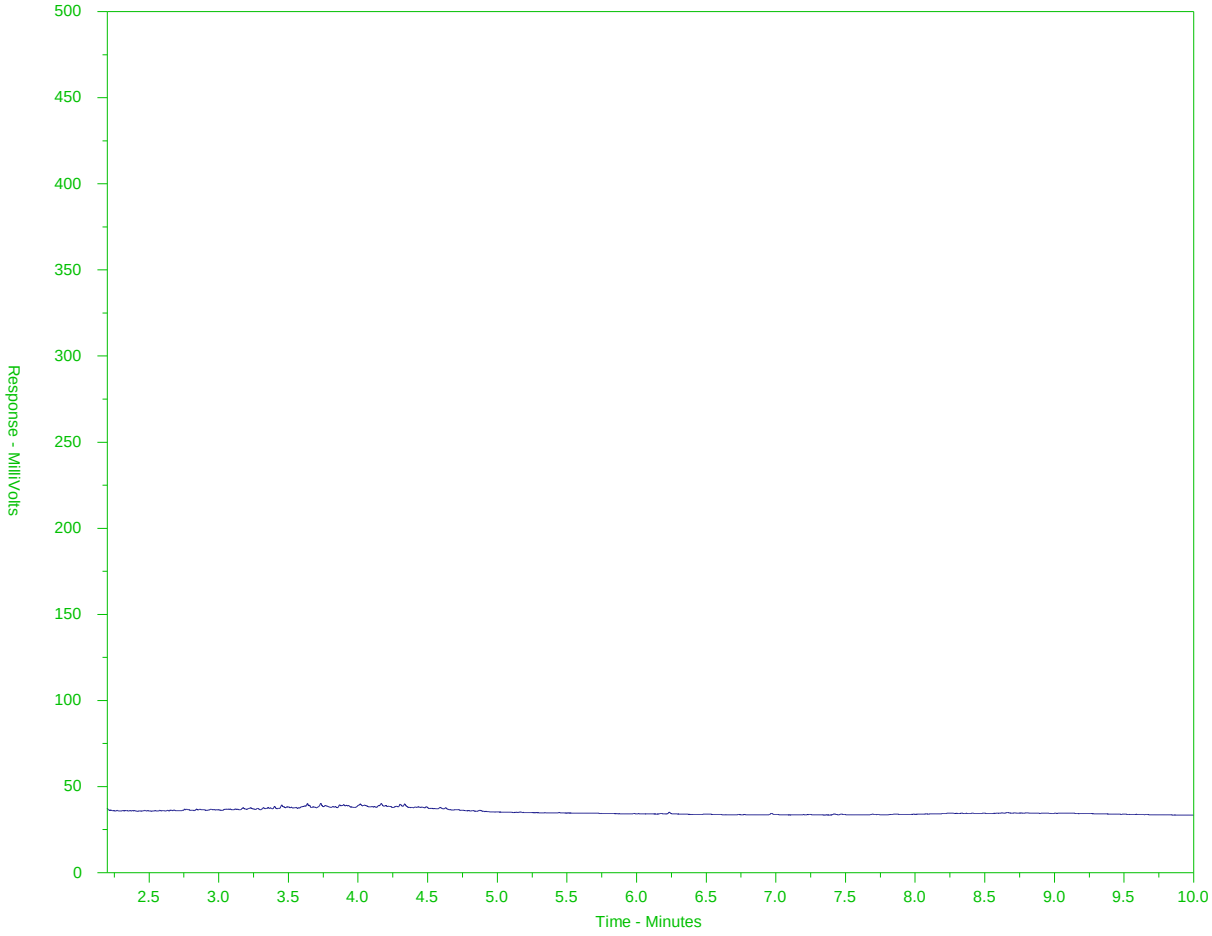
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

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

BC EPH HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2129348-14
Client Sample ID: 11-JULY-18 10:42 4A/4B



← EPH10-19 →		← EPH19-32 →
nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →	← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →		

The BC EPH 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 three n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

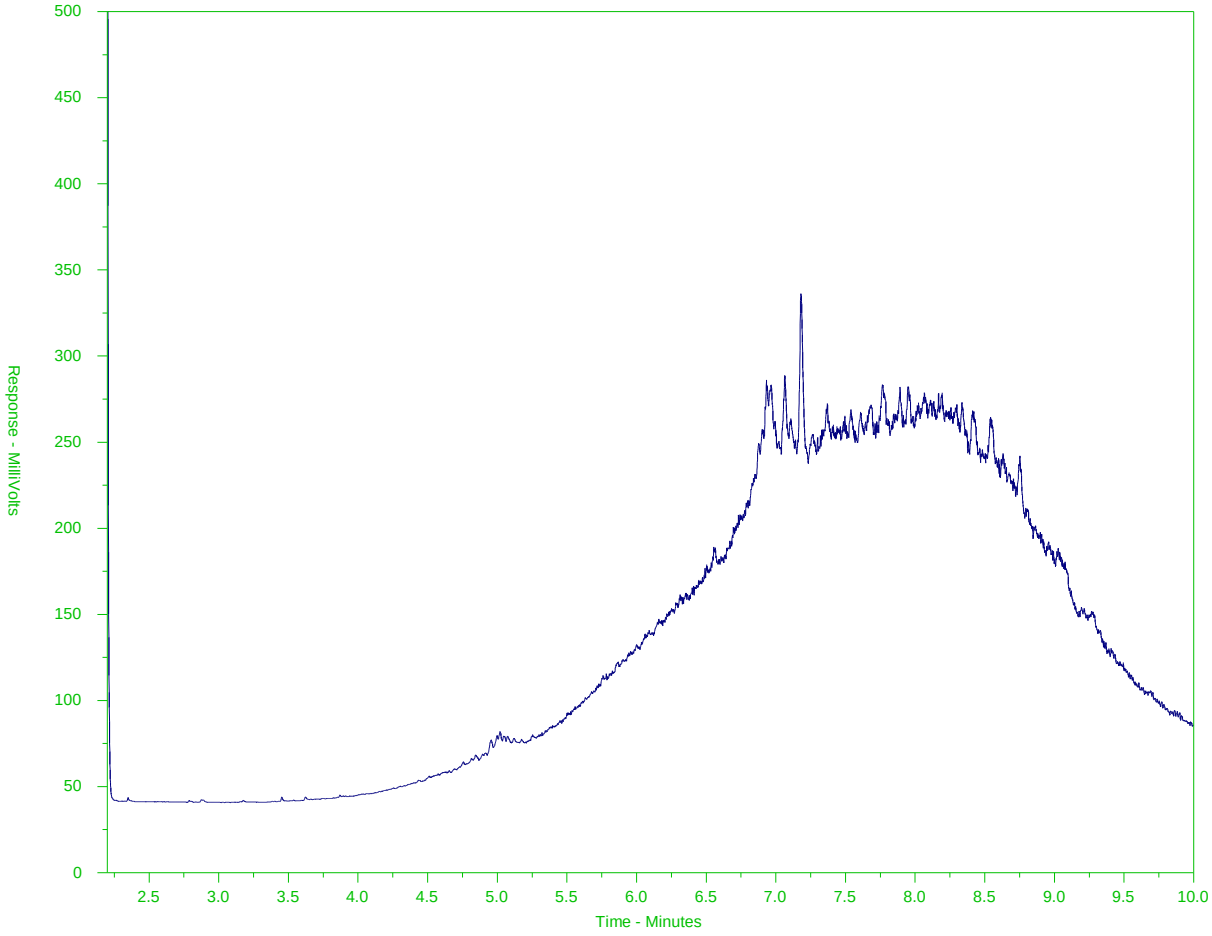
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

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

BC EPH HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2129348-15
Client Sample ID: 11-JULY-18 10:58 5A/5B



← EPH10-19 →		← EPH19-32 →
nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →	← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →		

The BC EPH 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 three n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

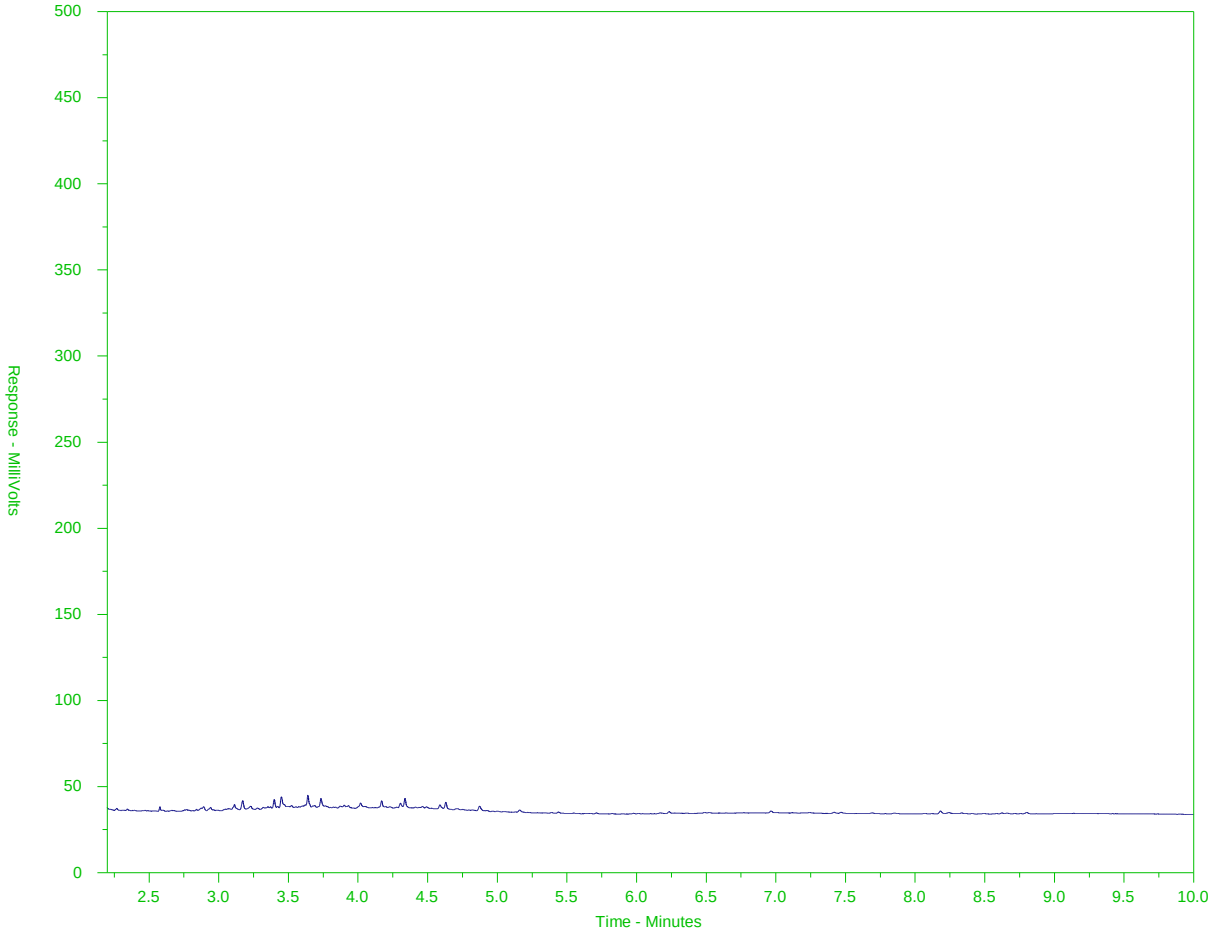
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

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

BC EPH HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2129348-16
Client Sample ID: 11-JULY-18 11:19 6A/6B



← EPH10-19 →		← EPH19-32 →
nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →	← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →		

The BC EPH 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 three n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

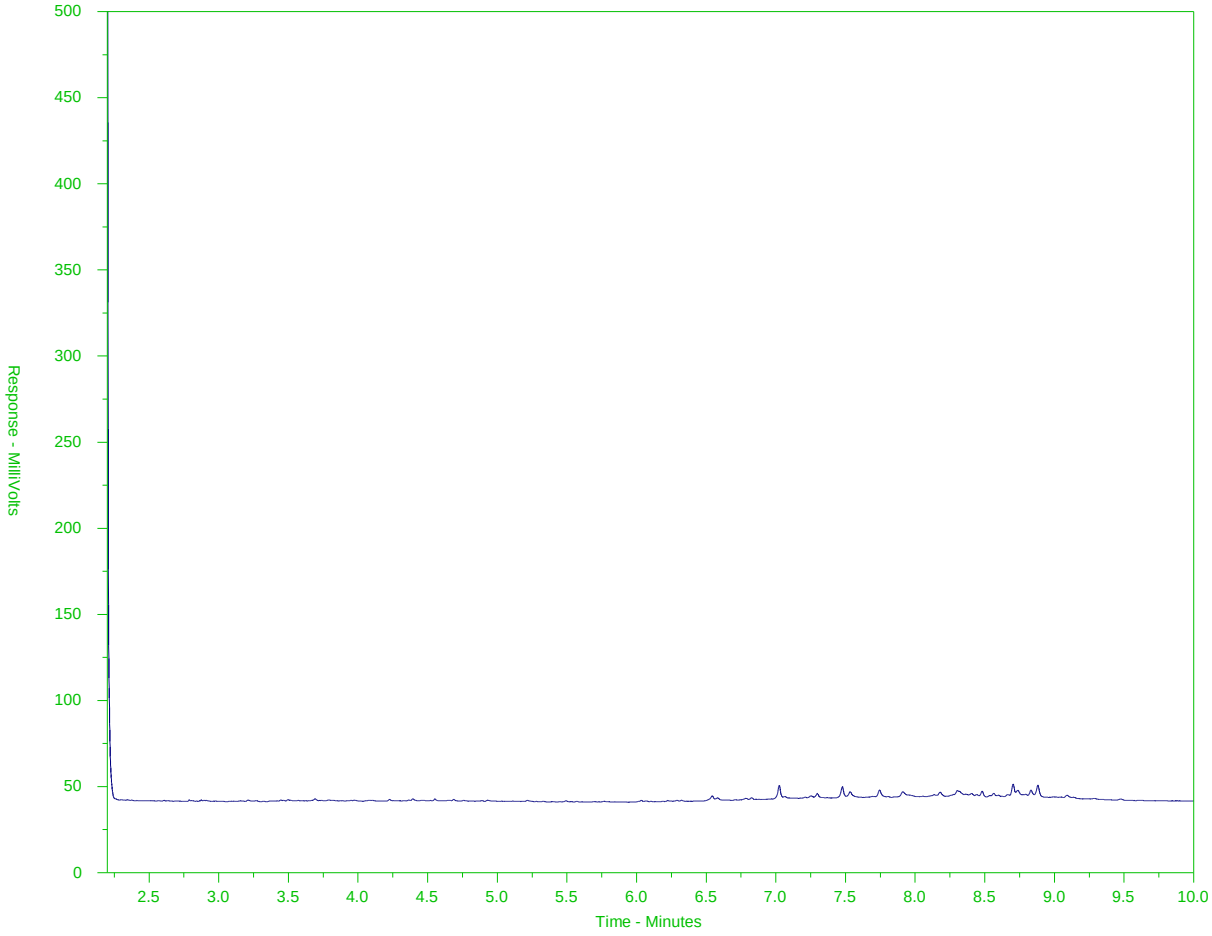
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

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

BC EPH HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2129348-17
Client Sample ID: 11-JULY-18 11:34 7A/7B



← EPH10-19 →		← EPH19-32 →
nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →	← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →		

The BC EPH 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 three n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

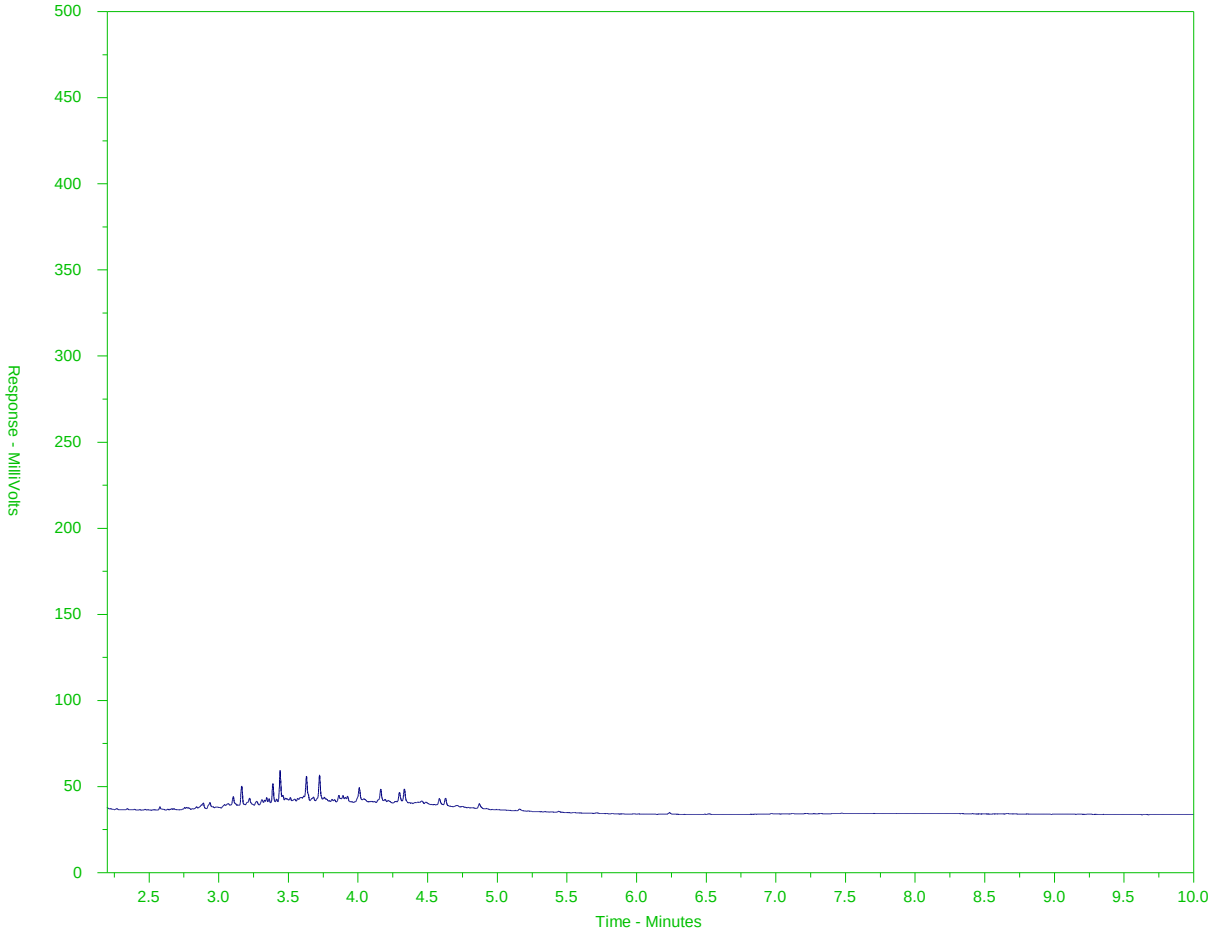
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

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

BC EPH HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2129348-18
Client Sample ID: 11-JULY-18 13:58 8



← EPH10-19 →		← EPH19-32 →
nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →	← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →		

The BC EPH 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 three n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

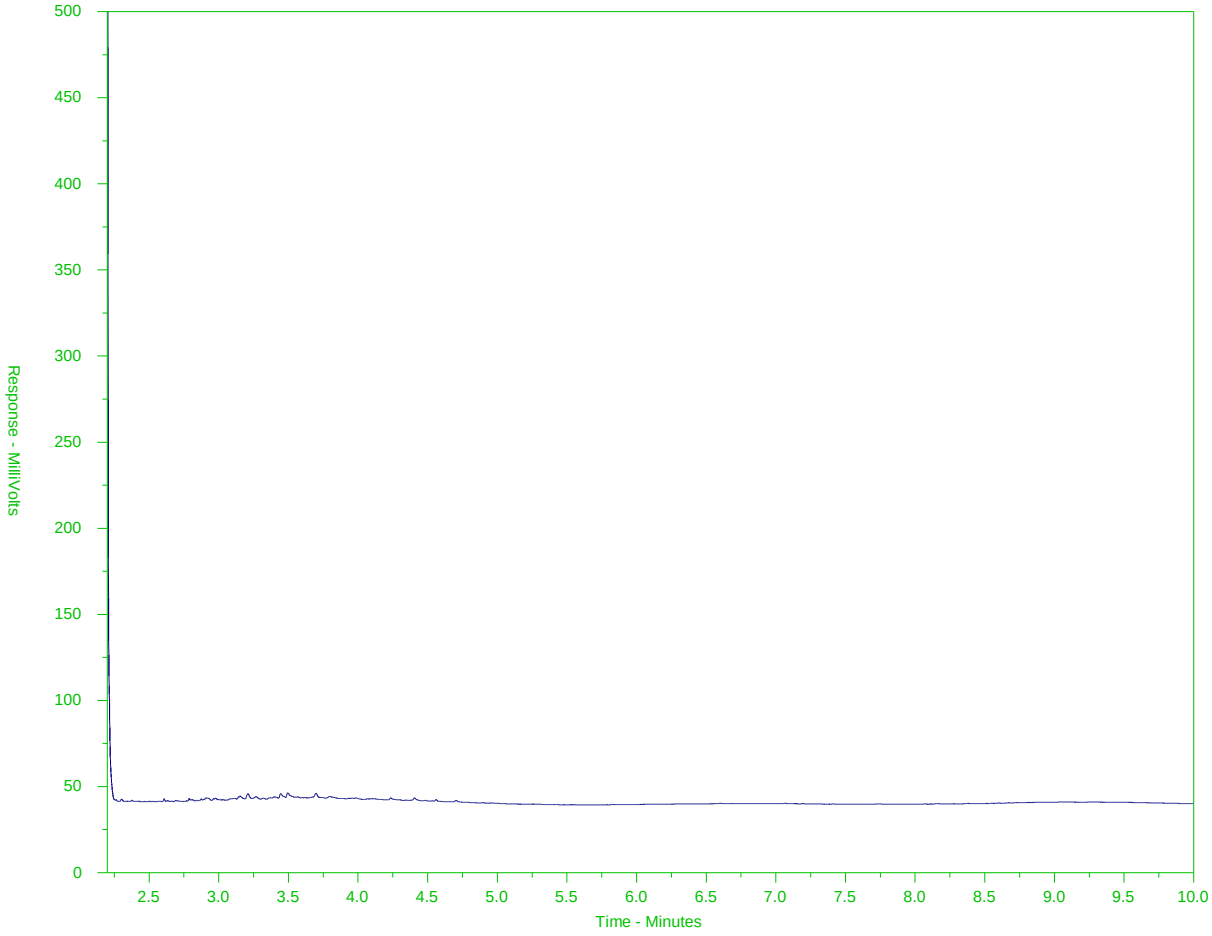
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

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

BC EPH HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2129348-19
Client Sample ID: 11-JULY-18 14:09 9



← EPH10-19 →		← EPH19-32 →
nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →	← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →		

The BC EPH 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 three n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

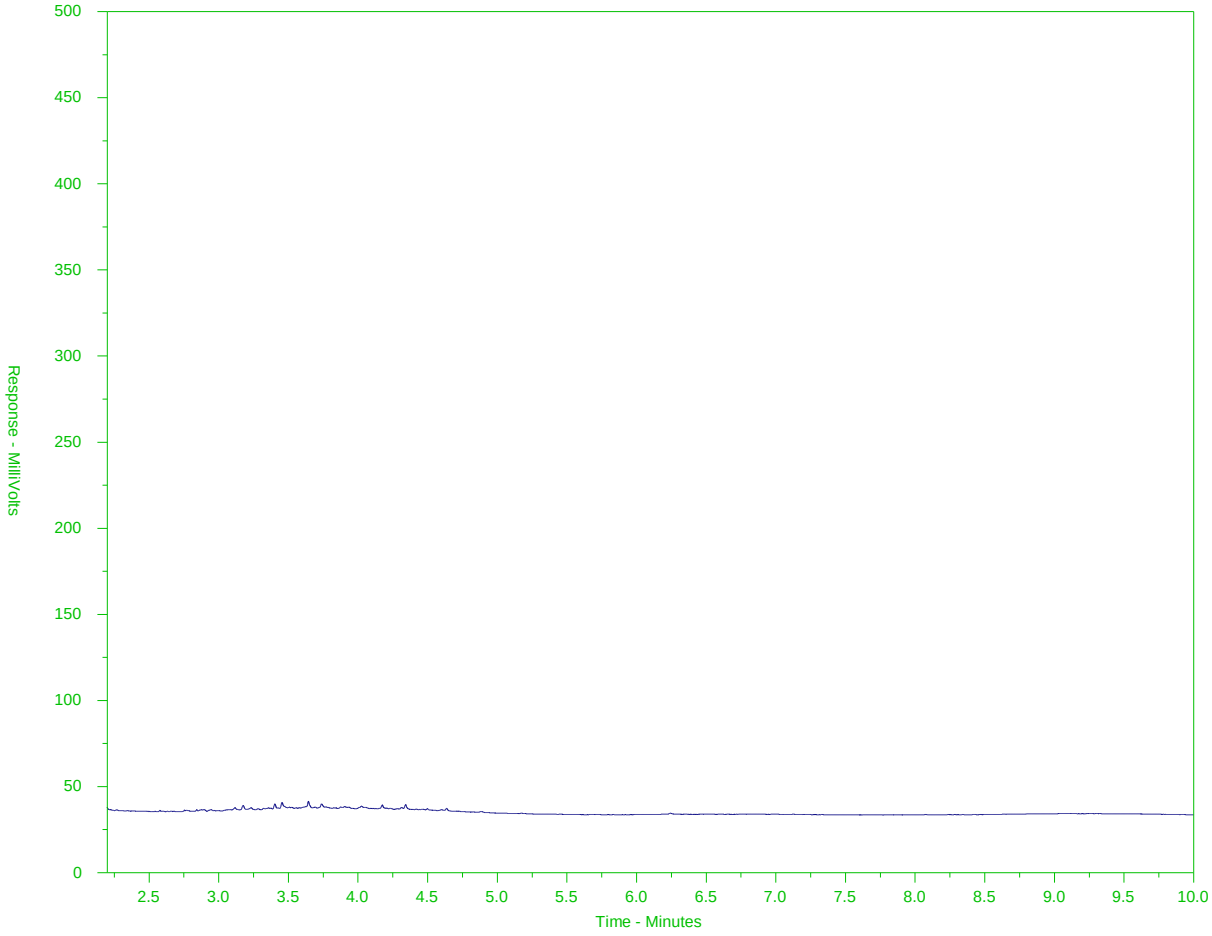
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

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

BC EPH HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2129348-20
Client Sample ID: 11-JULY-18 14:20 10



← EPH10-19 →		← EPH19-32 →
nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →	← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →		

The BC EPH 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 three n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

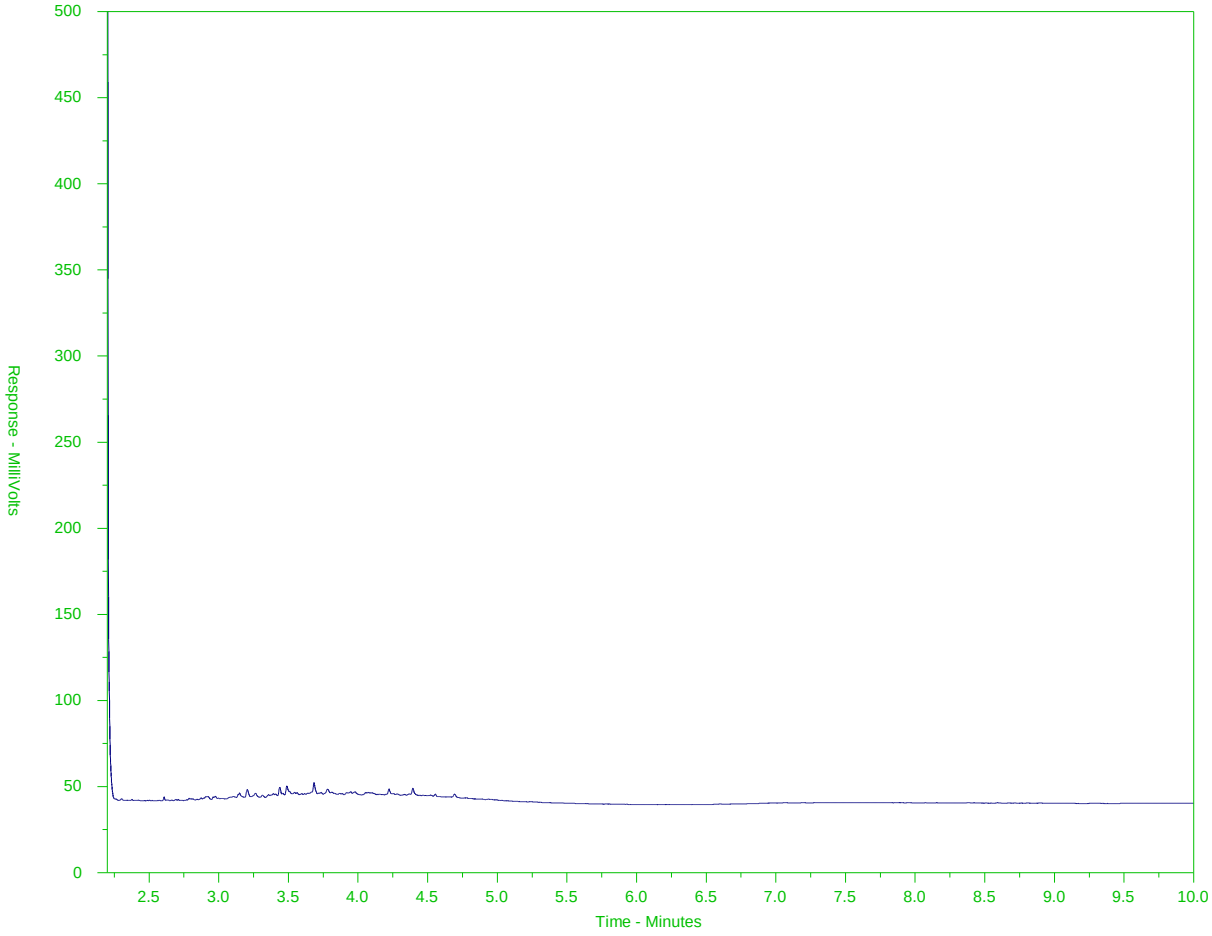
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

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

BC EPH HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2129348-21
Client Sample ID: 11-JULY-18 14:30 11



← EPH10-19 →		← EPH19-32 →
nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →	← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →		

The BC EPH 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 three n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

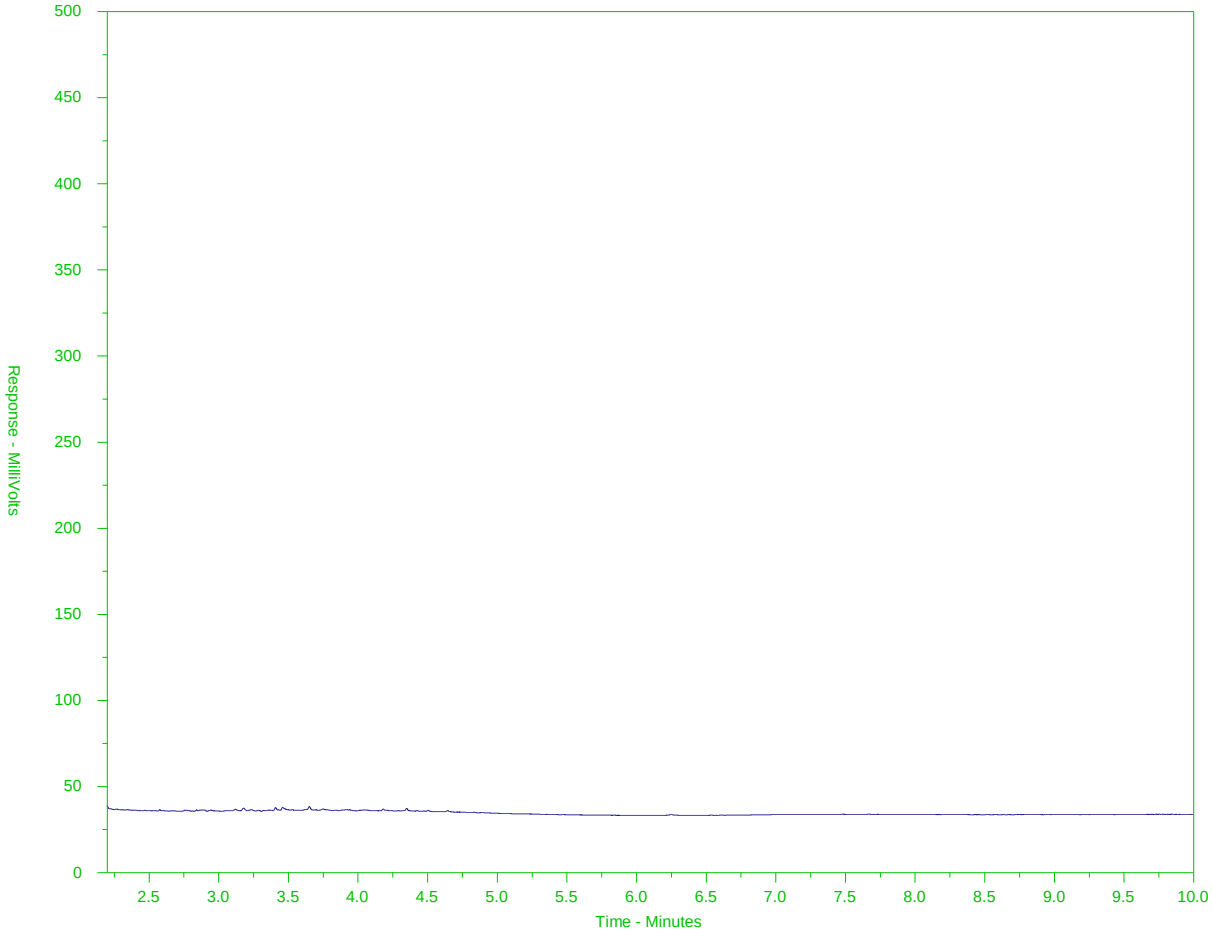
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

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

BC EPH HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2129348-22
Client Sample ID: 11-JULY-18 14:44 12



← EPH10-19 →		← EPH19-32 →
nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →	← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →		

The BC EPH 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 three n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

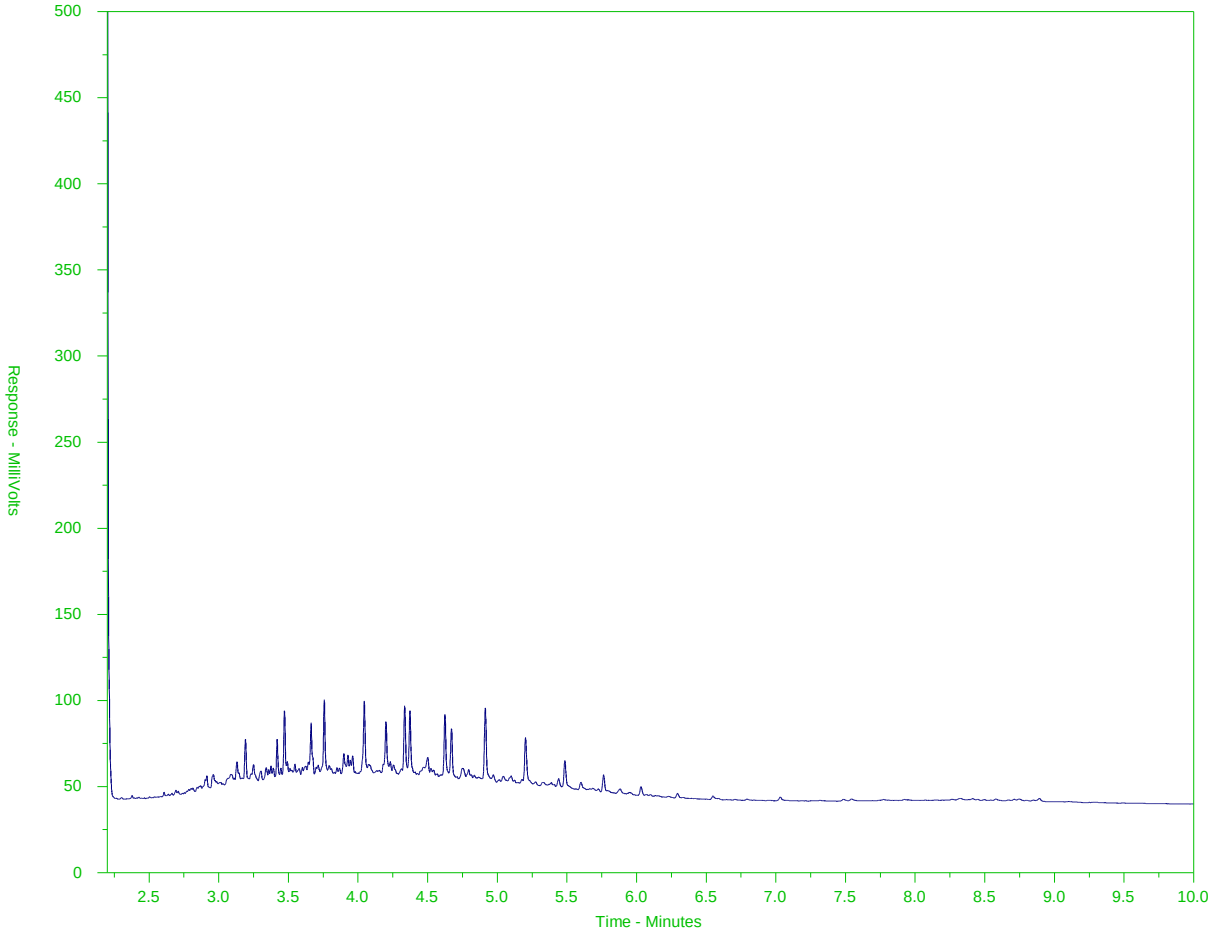
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

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

BC EPH HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2129348-23
Client Sample ID: 12-JULY-18 09:33 23



← EPH10-19 →		← EPH19-32 →
nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →	← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →		

The BC EPH 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 three n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

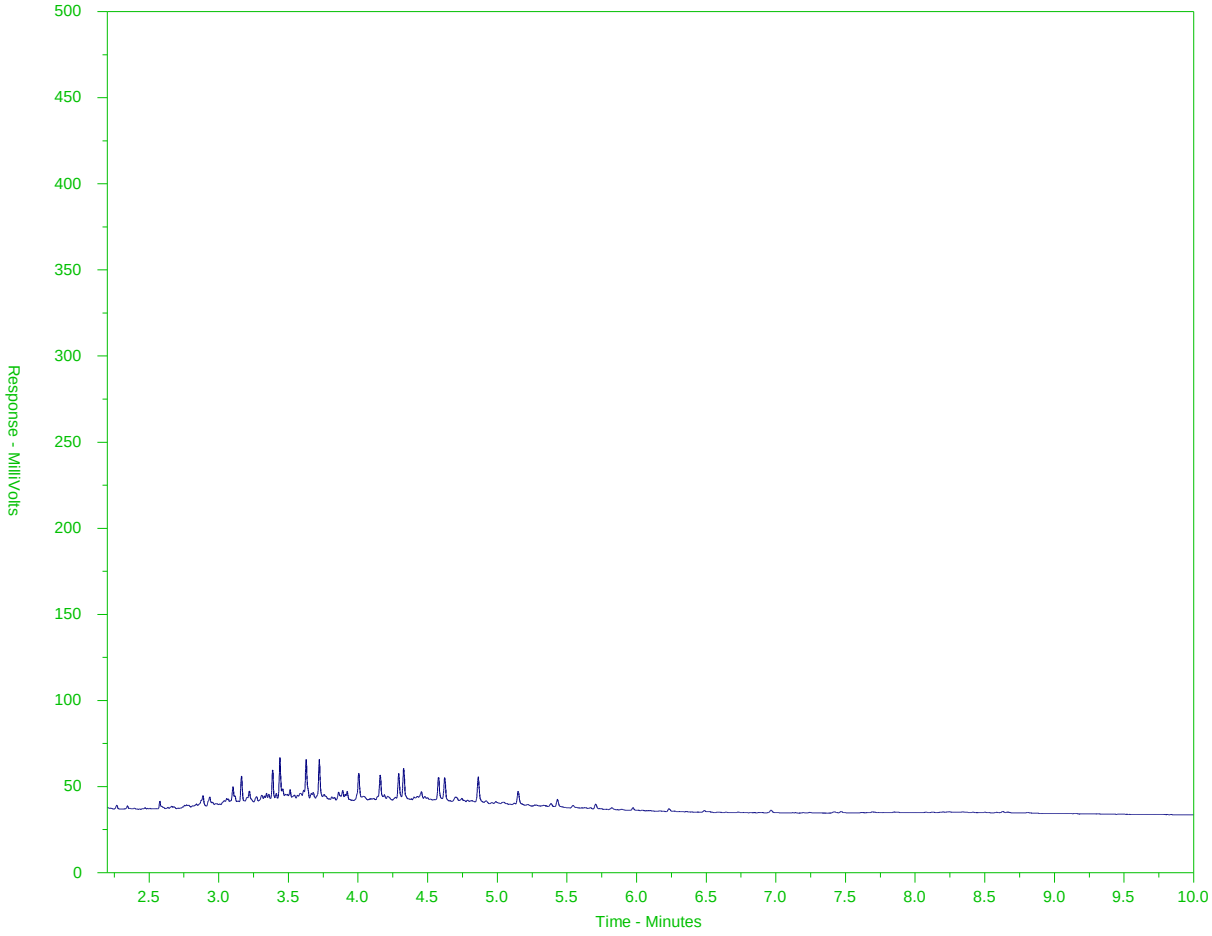
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

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

BC EPH HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2129348-24
Client Sample ID: 12-JULY-18 09:44 24



← EPH10-19 →		← EPH19-32 →
nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →	← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →		

The BC EPH 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 three n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

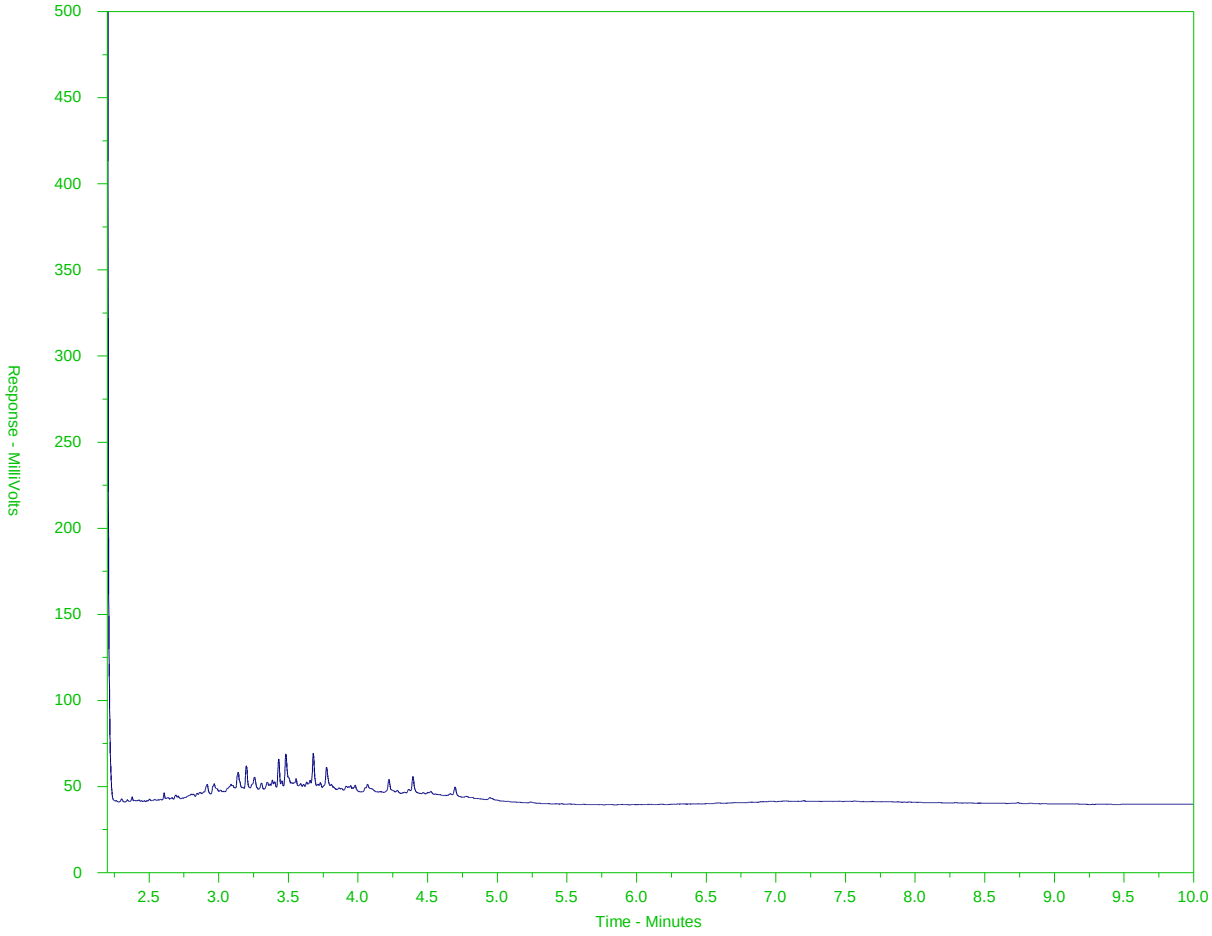
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

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

BC EPH HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2129348-25
Client Sample ID: 12-JULY-18 10:10 25



← EPH10-19 →		← EPH19-32 →
nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →	← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →		

The BC EPH 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 three n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

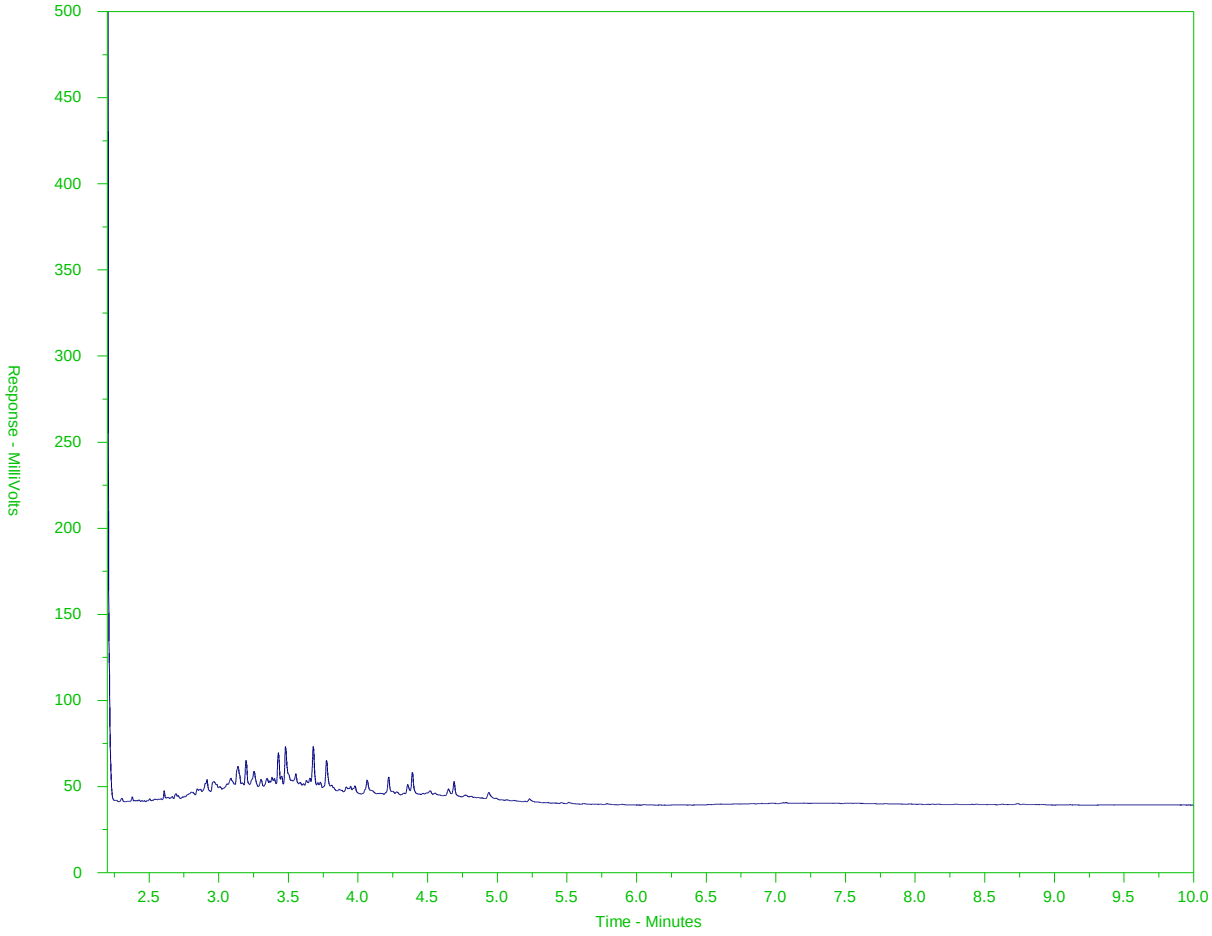
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

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

BC EPH HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2129348-26
Client Sample ID: 12-JULY-18 09:57 26



← EPH10-19 →		← EPH19-32 →
nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →	← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →		

The BC EPH 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 three n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

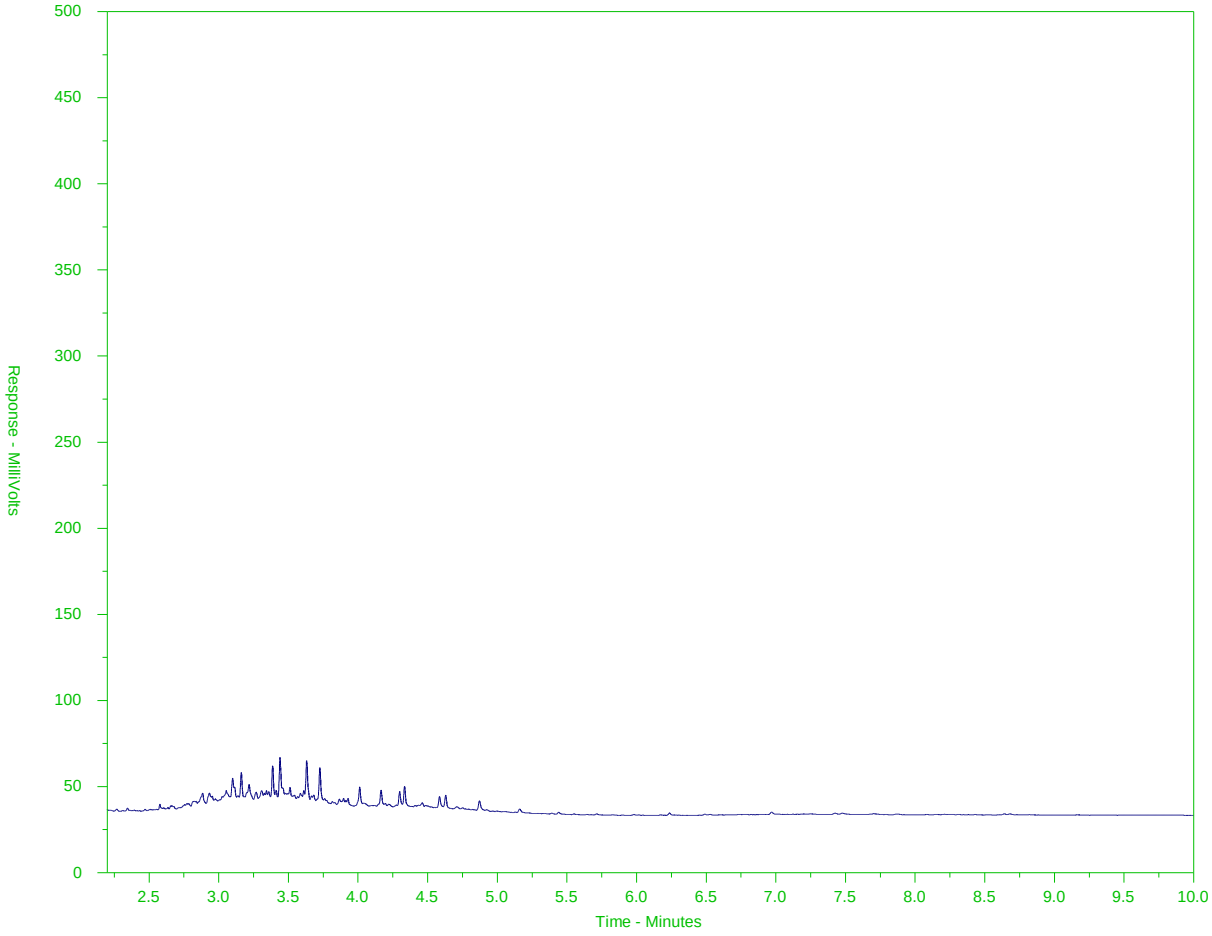
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

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

BC EPH HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: WG2826377-3#L2129348-26
Client Sample ID: 12-JULY-18 09:57 26



← EPH10-19 →		← EPH19-32 →
nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →	← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →		

The BC EPH 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 three n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

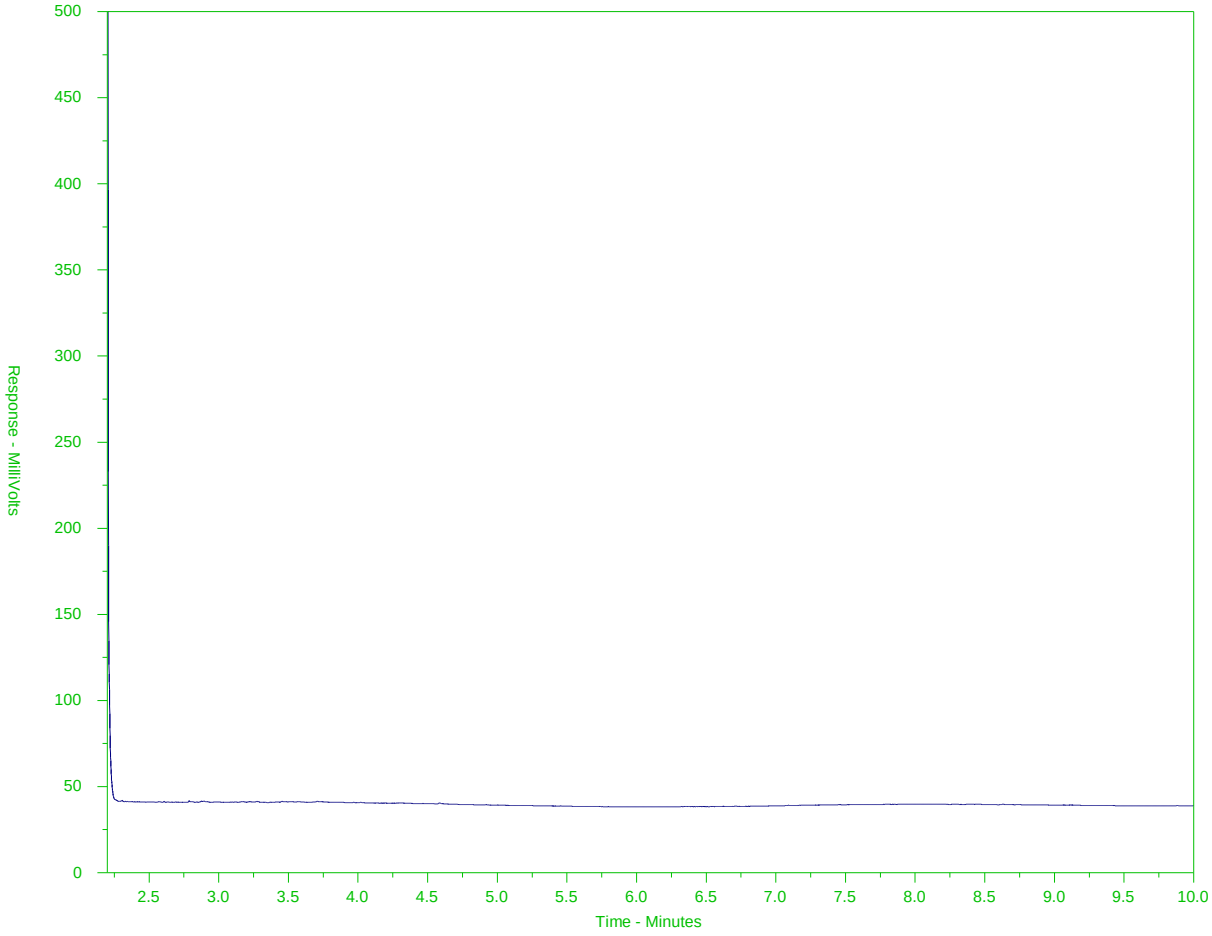
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

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

BC EPH HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2129348-27
Client Sample ID: 12-JULY-18 10:23 27



← EPH10-19 →		← EPH19-32 →
nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →	← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →		

The BC EPH 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 three n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

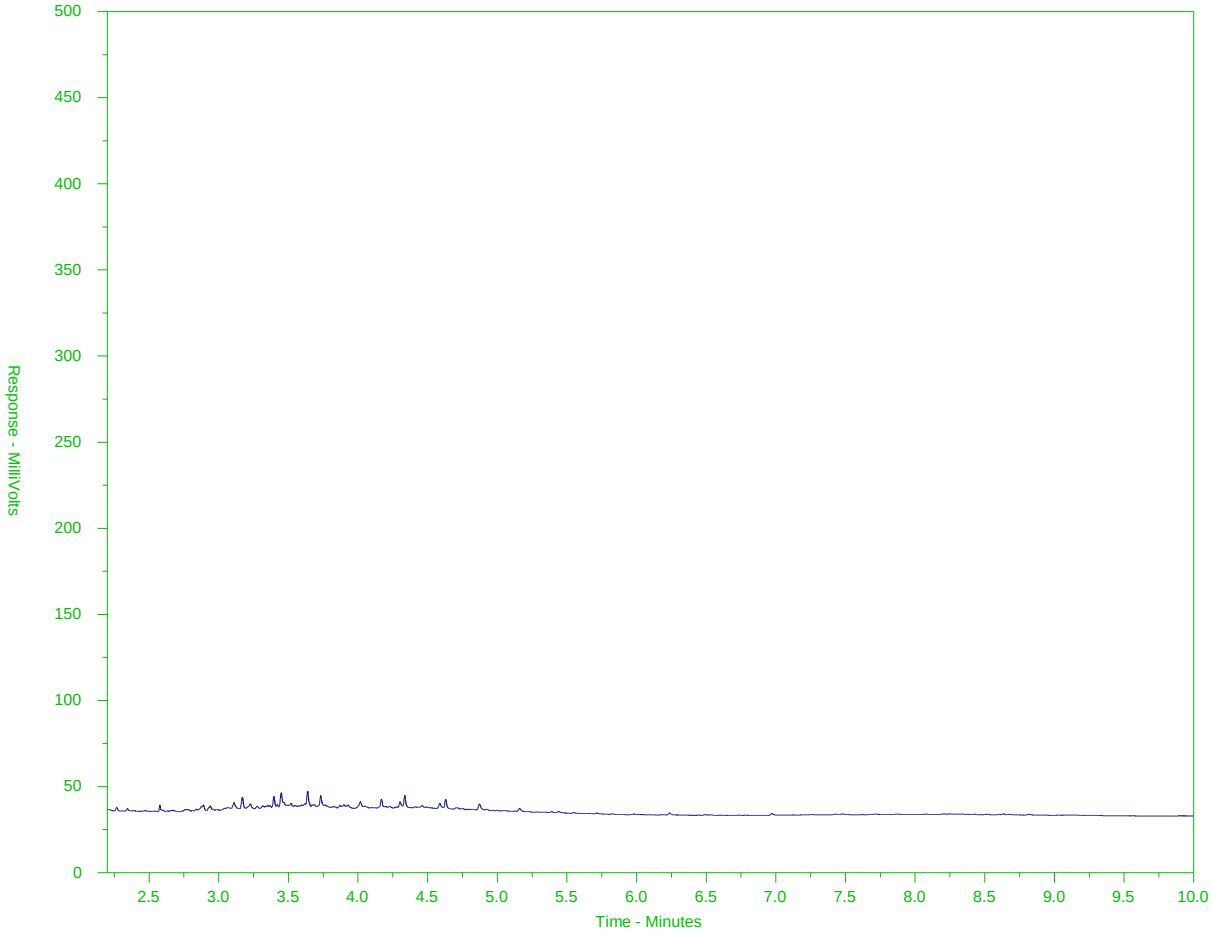
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

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

BC EPH HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2129348-28
Client Sample ID: 12-JULY-18 10:38 28



← EPH10-19 →		← EPH19-32 →
nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →	← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →		

The BC EPH 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 three n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

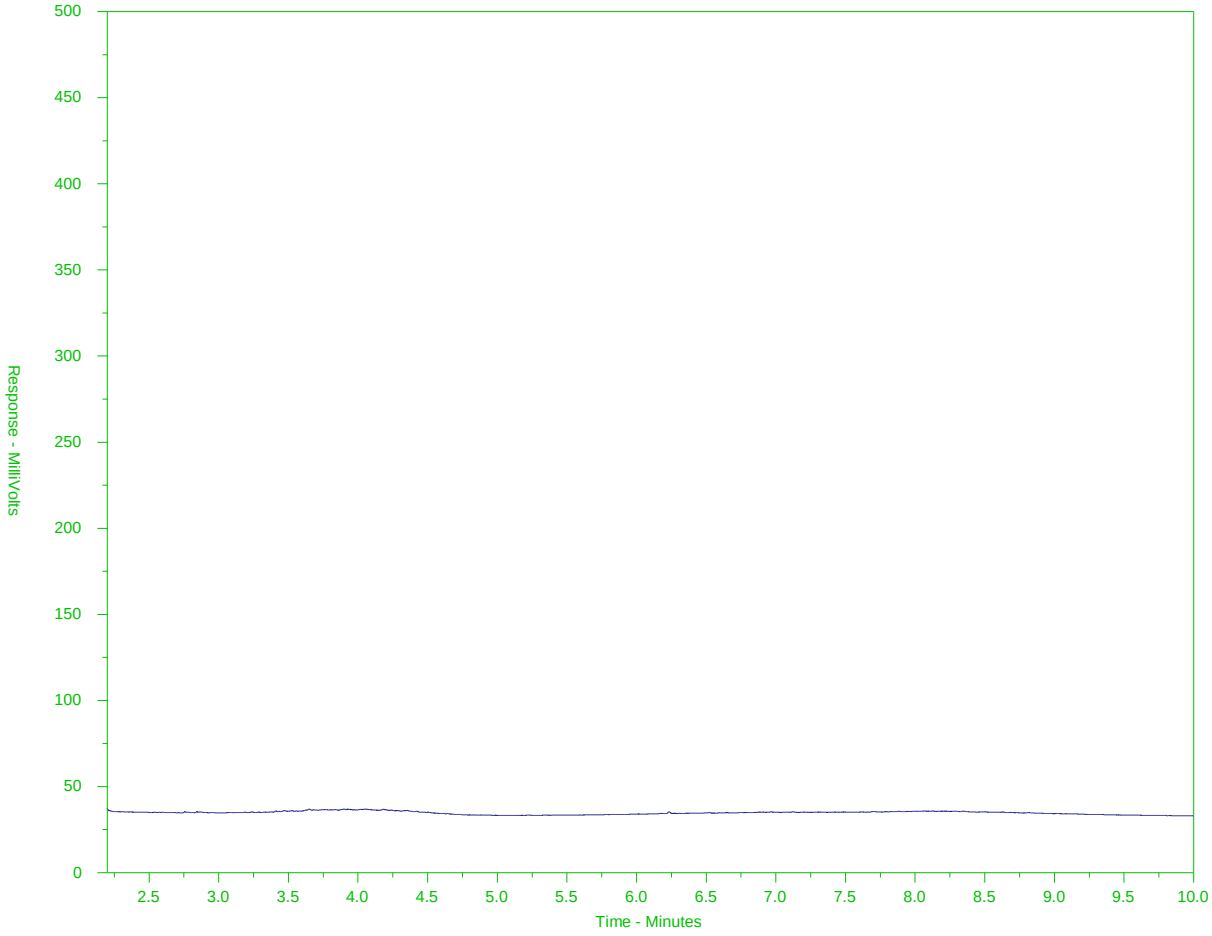
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

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

BC EPH HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2129348-29
Client Sample ID: 12-JULY-18 10:46 29



← EPH10-19 →		← EPH19-32 →
nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →	← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →		

The BC EPH 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 three n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

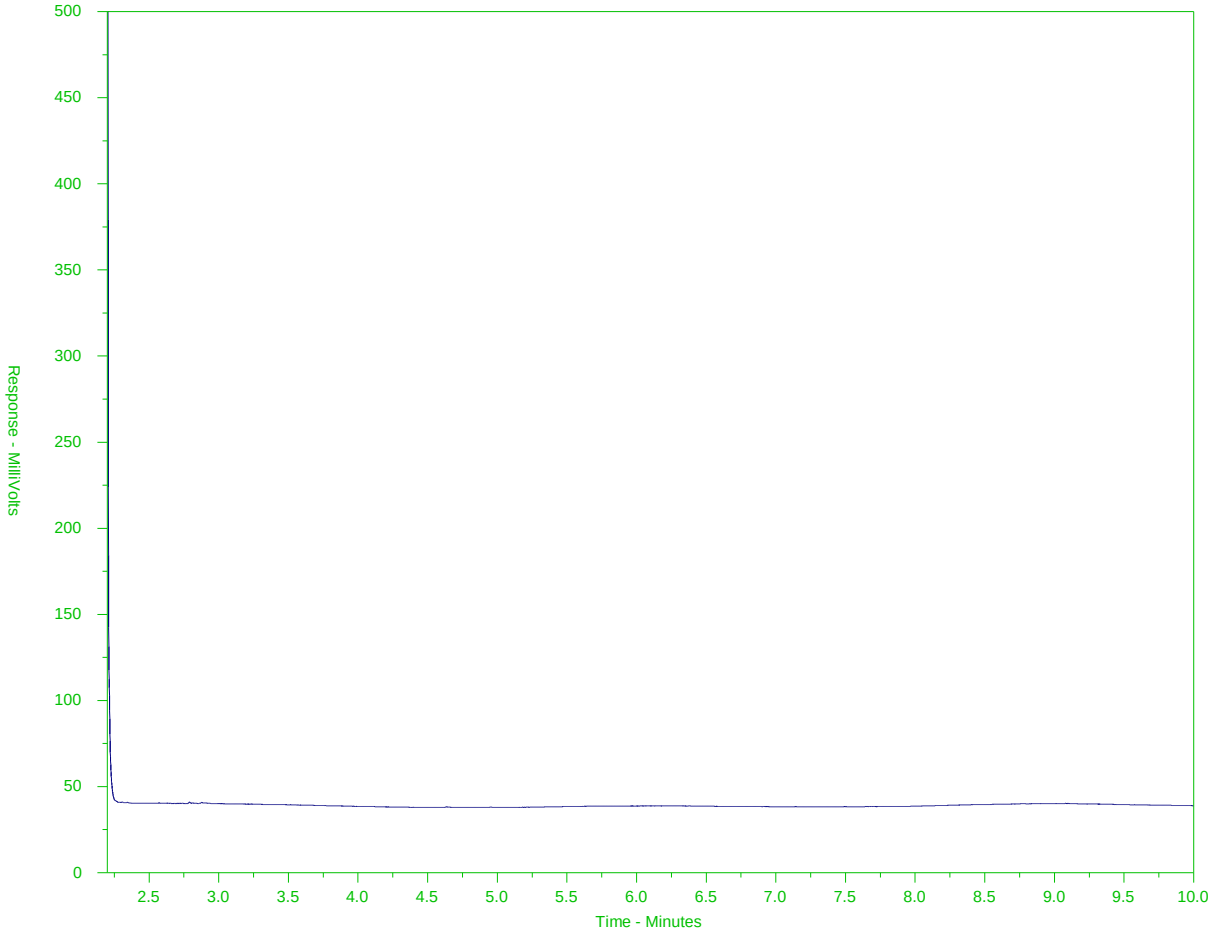
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

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

BC EPH HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2129348-30
Client Sample ID: 12-JULY-18 10:56 30



← EPH10-19 →		← EPH19-32 →
nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →	← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →		

The BC EPH 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 three n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

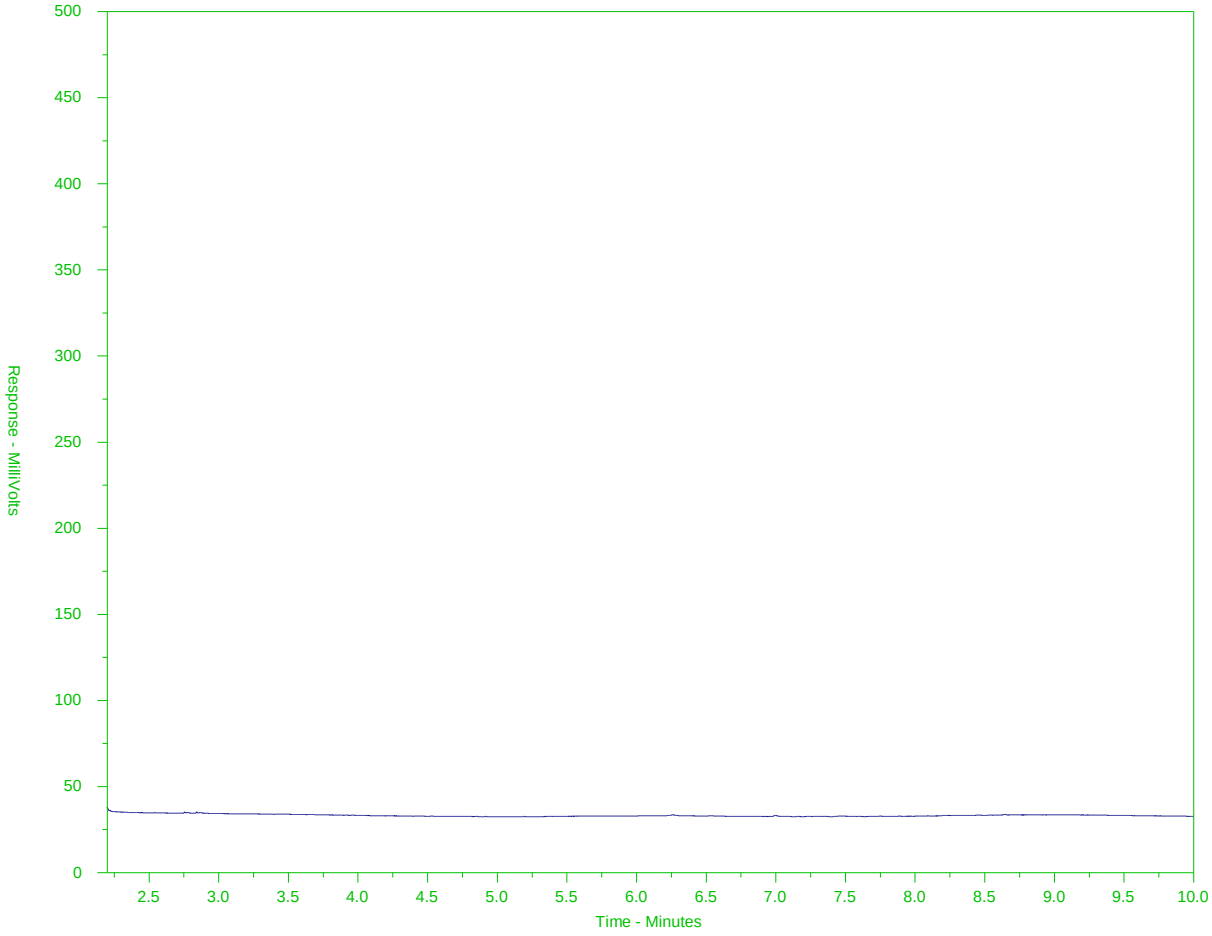
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

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

BC EPH HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2129348-31
Client Sample ID: 12-JULY-18 11:04 31



← EPH10-19 →		← EPH19-32 →
nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →	← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →		

The BC EPH 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 three n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

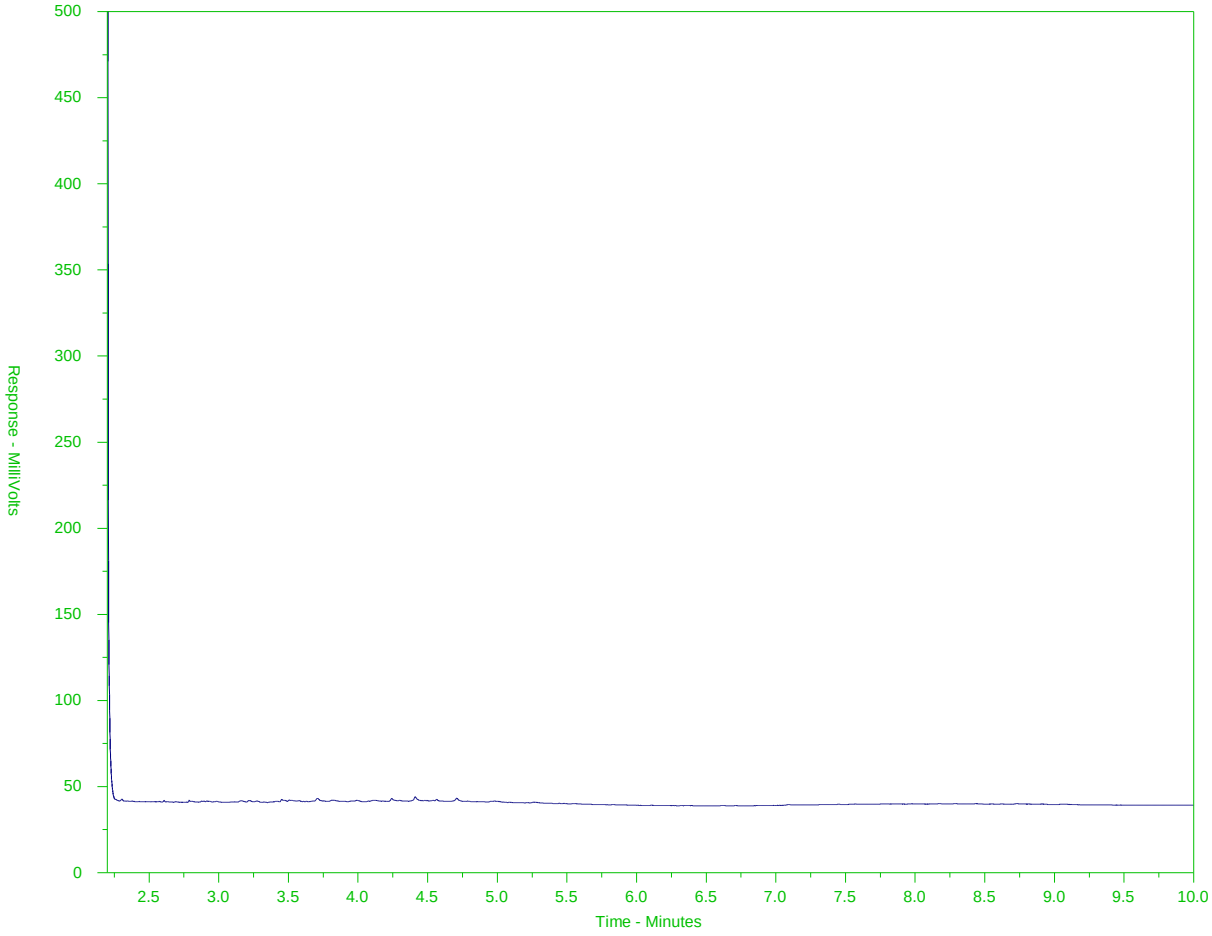
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

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

BC EPH HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2129348-32
Client Sample ID: 12-JULY-18 11:13 32



← EPH10-19 →		← EPH19-32 →
nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →	← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →		

The BC EPH 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 three n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

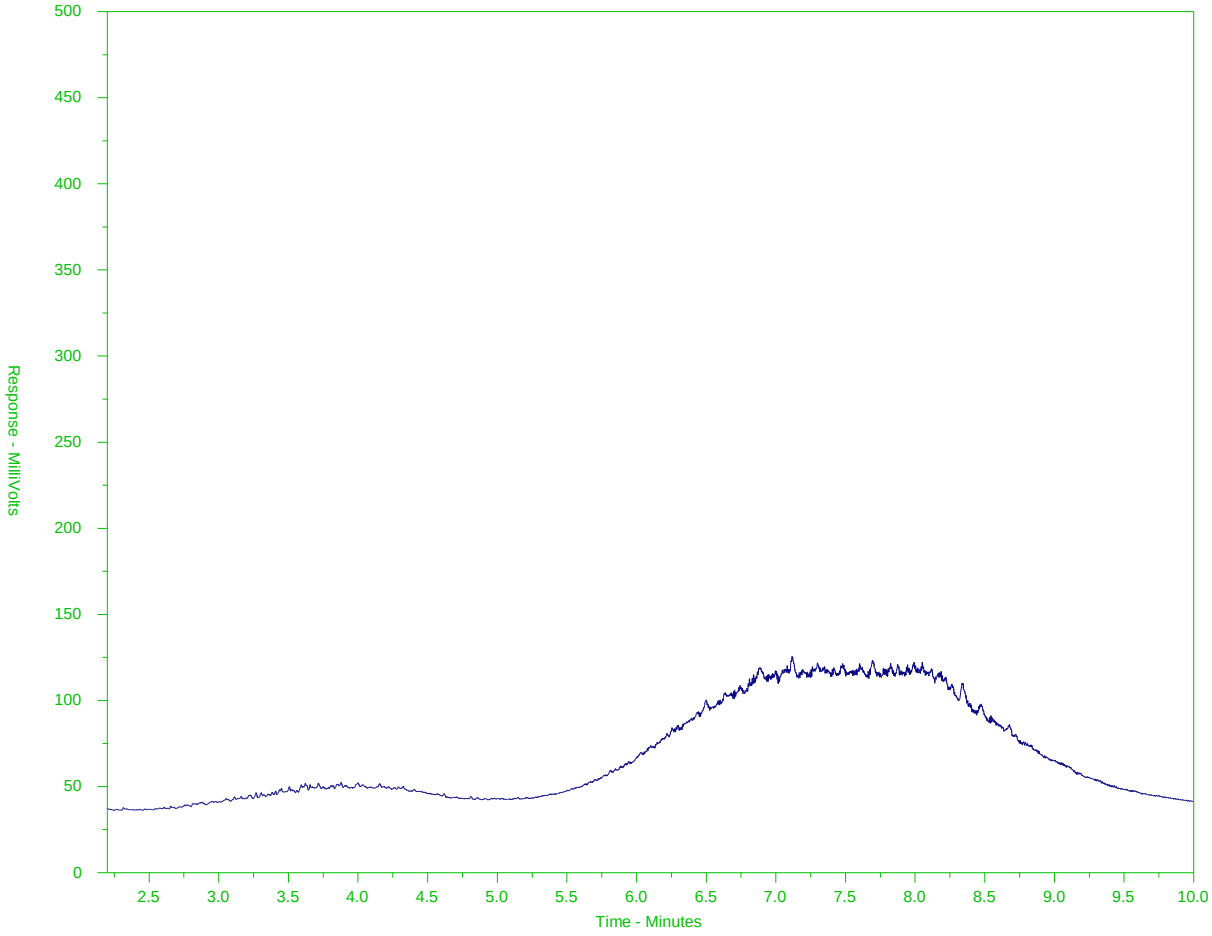
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

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

BC EPH HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2129348-33
Client Sample ID: 12-JULY-18 13:30 34



← EPH10-19 →		← EPH19-32 →
nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →	← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →		

The BC EPH 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 three n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

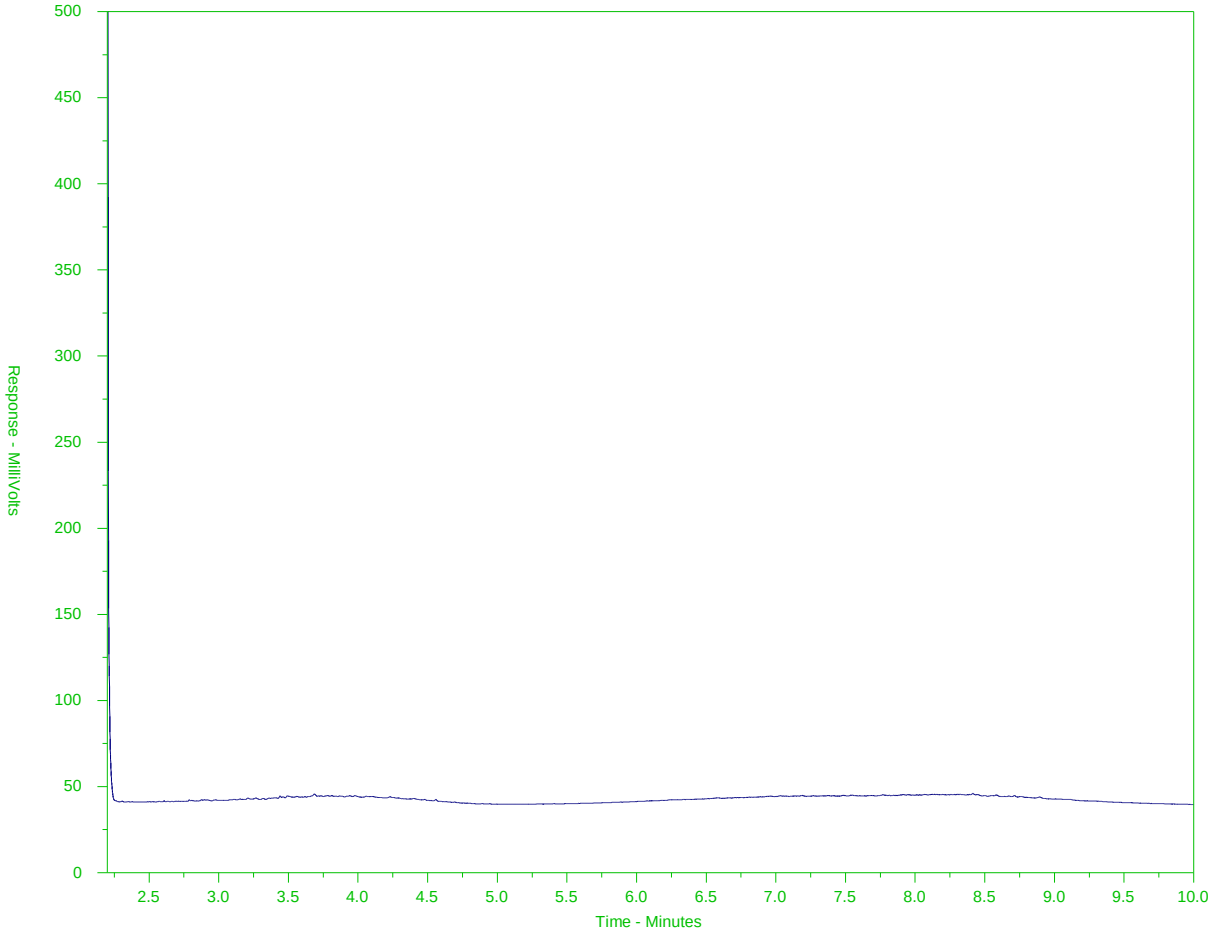
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

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

BC EPH HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2129348-34
Client Sample ID: 12-JULY-18 13:35 35



← EPH10-19 →		← EPH19-32 →
nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →	← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →		

The BC EPH 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 three n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

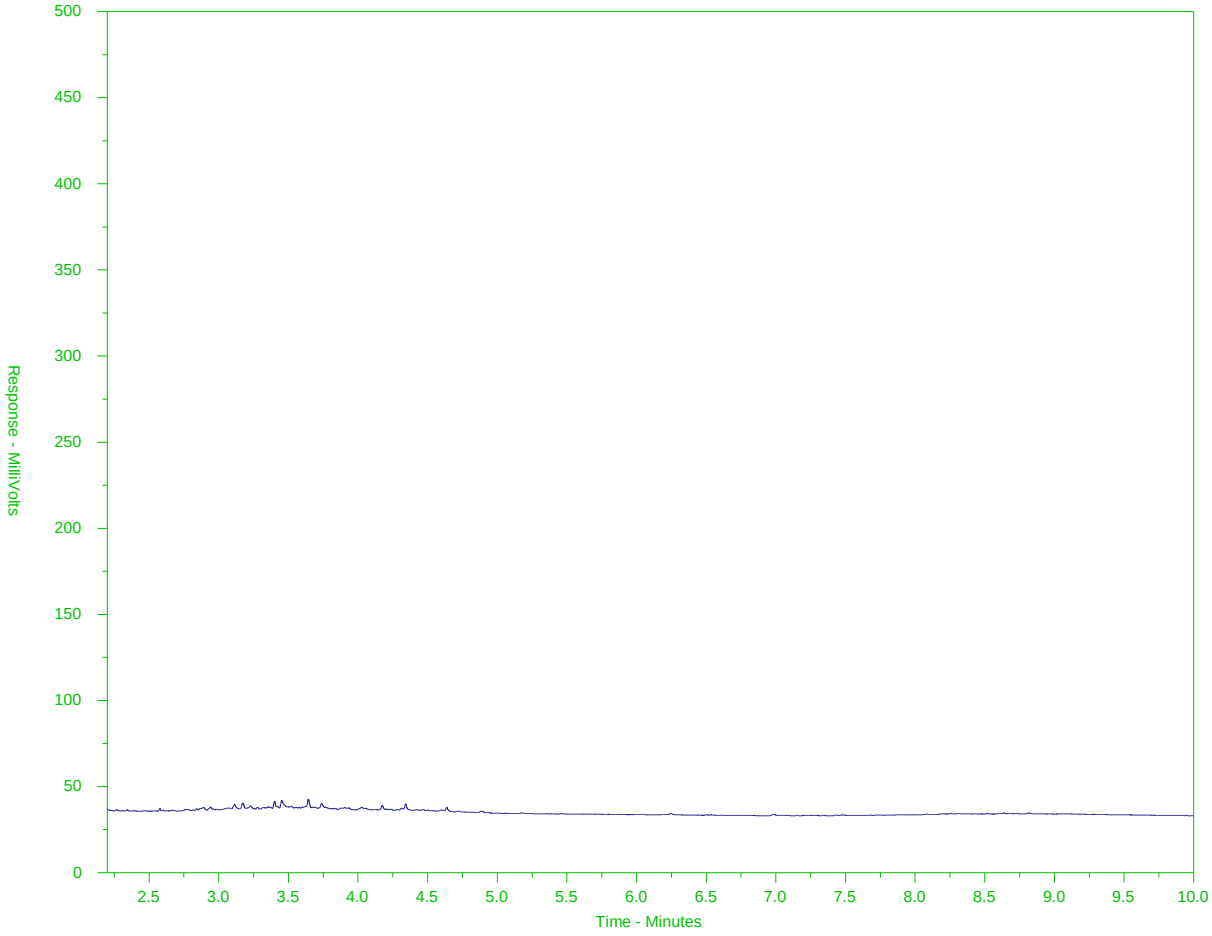
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

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

BC EPH HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2129348-35
Client Sample ID: 12-JULY-18 13:40 36



← EPH10-19 →		← EPH19-32 →
nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →	← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →		

The BC EPH 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 three n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

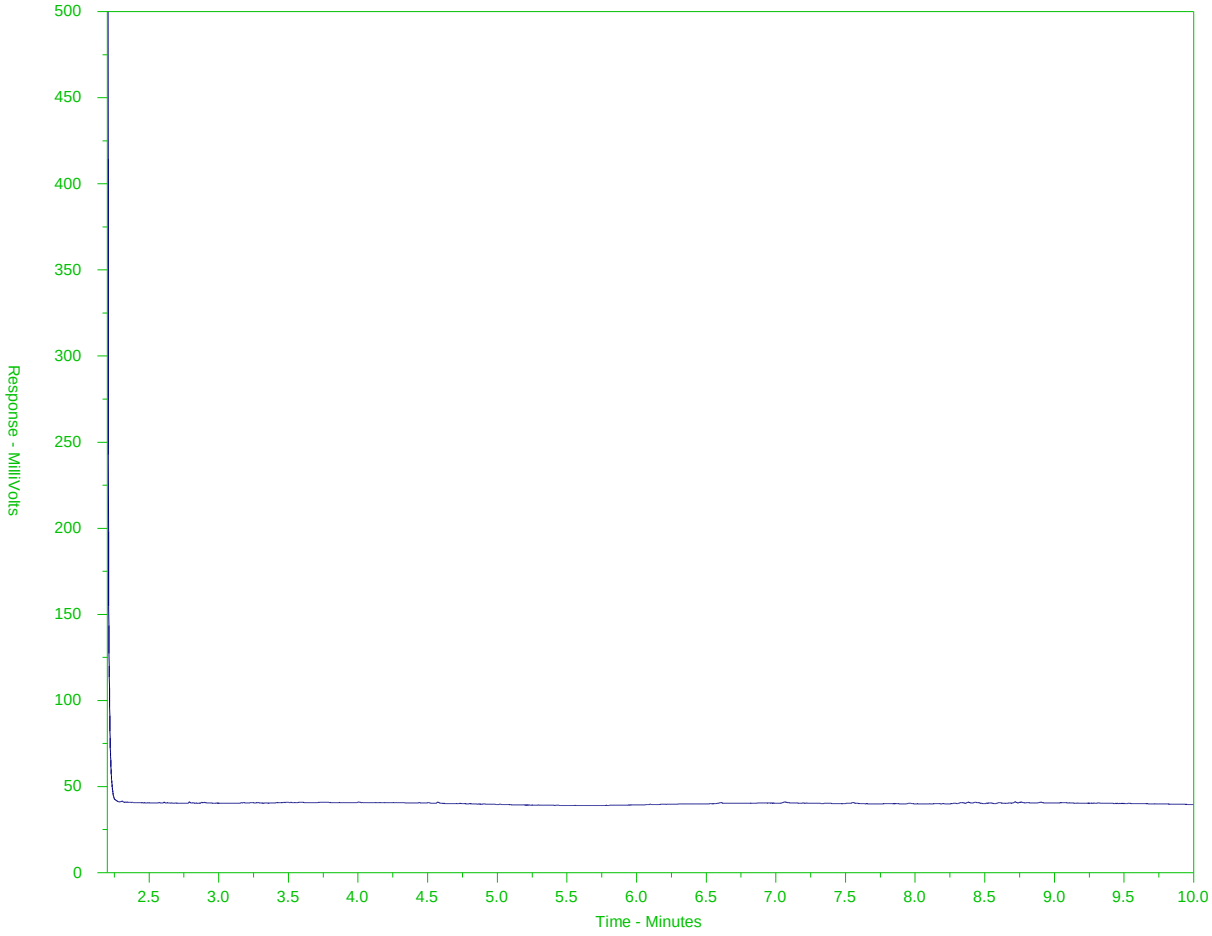
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

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

BC EPH HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2129348-36
Client Sample ID: 12-JULY-18 13:45 37



← EPH10-19 →		← EPH19-32 →
nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →	← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →		

The BC EPH 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 three n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

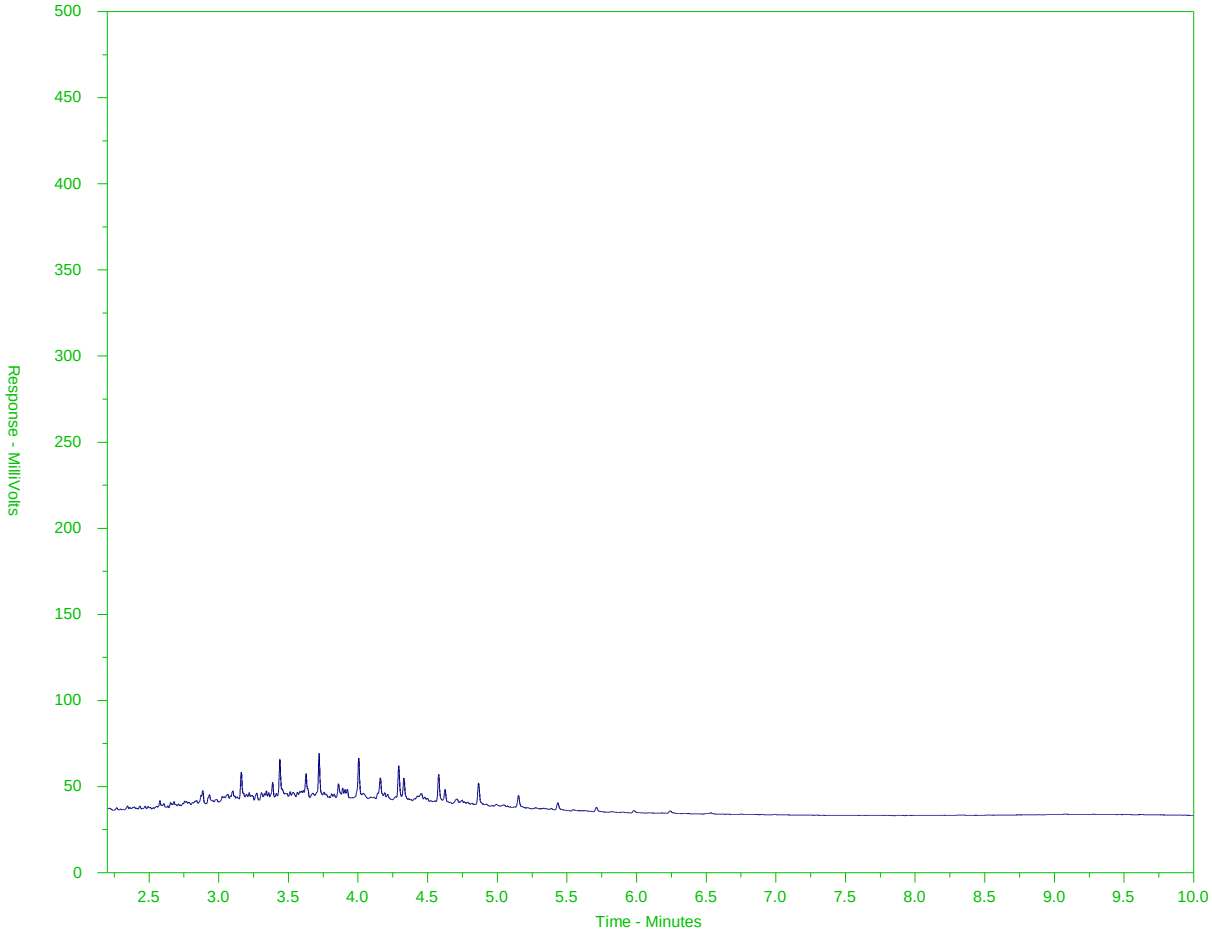
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

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

BC EPH HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2129348-37
Client Sample ID: 12-JULY-18 14:40 38-1



← EPH10-19 →		← EPH19-32 →
nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →	← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →		

The BC EPH 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 three n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

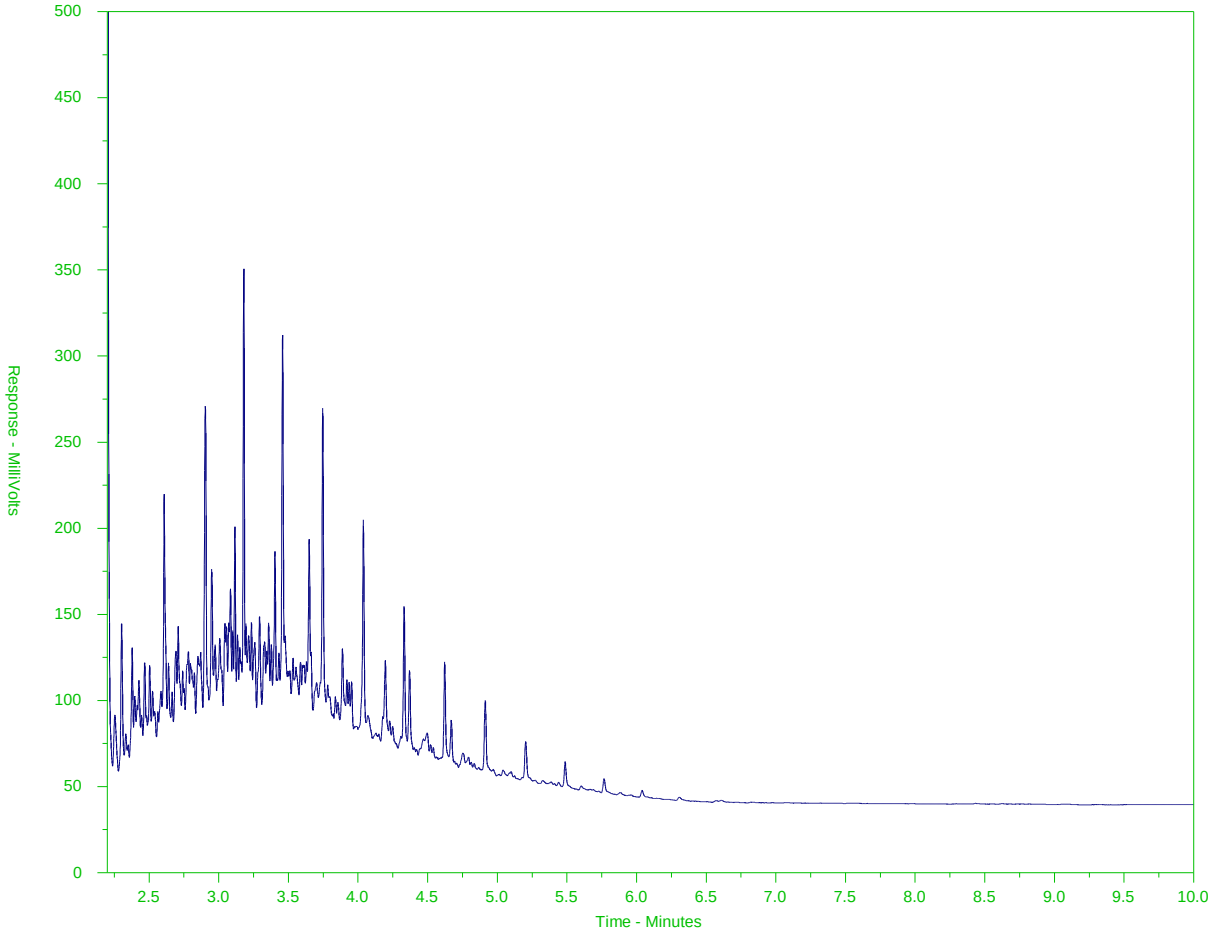
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

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

BC EPH HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2129348-38
Client Sample ID: 12-JULY-18 15:00 38-2



← EPH10-19 →		← EPH19-32 →
nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →	← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →		

The BC EPH 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 three 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.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

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

Chain of Custody (COC) / Analytical Request Form

ALS Environmental
www.alsglobal.com

Canada Toll Free: 1 800 668 9878

L2129348-COFC

COC Number: 17 - 653139

Page 1 of 4

Report To	Contact and company name below will appear on the final report	Report Format / Distribution	Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)
Company:	SCML	Select Report Format: [X] PDF [ ] EXCEL [ ] EDD (DIGITAL)	Regular [R] [X] Standard TAT if received by 3 pm - business days - no surcharges apply
Contact:	Sukie Sidhu	Quality Control (QC) Report with Report [ ] YES [ ] NO	PRIORITY (Business Days): 4 day [P4-20%] [ ]; 3 day [P3-25%] [ ]; 2 day [P2-50%] [ ]
Phone:	867.332.0841	[ ] Compare Results to Criteria on Report - provide details below if box checked	EMERGENCY: 1 Business day [E-100%] [ ]; Same Day, Weekend or Statutory holiday [E2-200% (Laboratory opening fees may apply)] [ ]
	Company address below will appear on the final report	Select Distribution: [X] EMAIL [ ] MAIL [ ] FAX	
Street:		Email 1 or Fax SSidhu@chihongmining.com	Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm
City/Province:		Email 2	For tests that can not be performed according to the service level selected, you will be contacted.
Postal Code:		Email 3	

Invoice To		Invoice Distribution	
	Same as Report To [X] YES [ ] NO	Select Invoice Distribution: [X] EMAIL [ ] MAIL [ ] FAX	
	Copy of Invoice with Report [X] YES [ ] NO		
Company:	SCML	Email 1 or Fax ayu@chihongmining.com	
Contact:		Email 2	

Project Information		Oil and Gas Required Fields (client use)	
ALS Account # / Quote #:		AFE/Cost Center:	PO#
Job #:		Major/Minor Code:	Routing Code:
PO / AFE:		Requisitioner:	
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	BTEX	Styrene	VPH	LEPH	HEPH	PAH	SAMPLES ON HOLD	Sample is hazardous (please provide further details)	NUMBER OF CONTAINERS
	11-July-18 14:57 13	11-Jul-18	14:57	Soil									4
	11-July-18 15:11 14		15:11										
	11-July-18 15:26 15		15:26										
	11-July-18 15:42 16		15:42										
	11-July-18 15:46 17		15:46										
	11-July-18 16:04 18		16:04										
	11-July-18 16:18 19		16:18										
	11-July-18 16:28 20		16:28										
	11-July-18 16:40 21		16:40										
	11-July-18 16:55 22		16:55										

Drinking Water (DW) Samples[1] (client use)	Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)
Are samples taken from a Regulated DW System? [ ] YES [ ] NO	
Are samples for human consumption/ use? [ ] YES [ ] NO	

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen [ ] SIF Observations Yes [ ] No [ ]
Ice Packs [1] Ice Cubes [ ] Custody seal intact Yes [ ] No [ ]
Cooling Initiated [2]

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
9.0			10				

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: S. Sidhu	Date: 13-July-18	Time: 14:00	Received by: EHT	Date: 13/07/2018	Time: 14:31	Received by: HA	Date: 7/17	Time: 12:40p

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

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JULY 2017 FRONT

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

L2129348-COFC

COC Number: 17 - 653138

Report To	Contact and company name below will appear on the final report
Company:	SCML
Contact:	Ssidhu@chihongmining.com
Phone:	867-338-0844
	Company address below will appear on the final report
Street:	
City/Province:	
Postal Code:	

Report Format / Distribution	
Select Report Format:	[X] PDF [ ] EXCEL | | EDD (DIGITAL)
Quality Control (QC) Report with Report	[X] YES [ ] NO
[ ] Compare Results to Criteria on Report - provide details below if box checked	
Select Distribution:	[X] EMAIL | | MAIL [ ] FAX
Email 1 or Fax	Ssidhu@chihongmining.com
Email 2	
Email 3	

Invoice To		
	Same as Report To	[X] YES [ ] NO
	Copy of Invoice with Report	[X] YES [ ] NO
Company:	ayue@chihongmining.com	
Contact:	Angela Yu	

Invoice Distribution	
Select Invoice Distribution:	[X] EMAIL [ ] MAIL [ ] FAX
Email 1 or Fax	ayue@chihongmining.com
Email 2	

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

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R]: [X] Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): [ ] 4 day [P4-20%] [ ] 3 day [P3-25%] [ ] 2 day [P2-50%]

EMERGENCY: [ ] 1 Business day [E-100%] [ ] Same Day, Weekend or Statutory holiday [E2-200% (Laboratory opening fees may apply)]

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

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	Styrene	VPH	LEPH	HEPH	PAH	SAMPLES ON HOLD	Sample is hazardous (please provide further details)	NUMBER OF CONTAINERS
	11 July 18 09:44 1A/1B	11-July-18	09:44	Soil	F	F							4
	11 July 18 10:15 2A/2B		10:15										1
	11 July 18 10:26 3A/3B		10:26										
	11 July 18 10:42 4A/4B		10:42										
	11 July 18 10:58 5A/5B		10:58										
	11 July 18 11:19 6A/6B		11:19										
	11 July 18 11:34 7A/7B		11:34										
	11 July 18 13:58 8		13:58										
	11 July 18 14:09 9		14:09										
	11 July 18 14:20 10		14:20										
	11 July 18 14:30 11		14:30										
	11 July 18 14:44 12		14:44										4

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

Are samples taken from a Regulated DW System? [ ] YES [ ] NO

Are samples for human consumption/ use? [ ] YES [ ] NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen [ ] SIF Observations Yes [ ] No [ ]

Ice Packs [X] Ice Cubes [ ] Custody seal intact Yes [ ] No [ ]

Cooling Initiated [ ]

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C		
9.0		10			

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: S. Sidhu	Date: 13-July-18	Time: 14:00	Received by: EHF	Date: 13 July 2018	Time: 14:30	Received by: MA	Date: 7/17	Time: 12:40p

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

L2129348-COFC

COC Number: 17 - 653140

Page 3 of 4

Report To	Contact and company name below will appear on the final report
Company:	SCML
Contact:	SSidhu@chihongmining.com
Phone:	
Company address below will appear on the final report	
Street:	
City/Province:	
Postal Code:	
Invoice To	Same as Report To [x] YES [ ] NO
	Copy of Invoice with Report [x] YES [ ] NO
Company:	SCML
Contact:	

Report Format / Distribution

Select Report Format: [X] PDF [ ] EXCEL | | EDD (DIGITAL)
Quality Control (QC) Report with Report [ ] YES [ ] NO
[ ] Compare Results to Criteria on Report - provide details below if box checked
Select Distribution: [X] EMAIL | | MAIL [ ] FAX
Email 1 or Fax: SSidhu@chihongmining.com
Email 2:
Email 3:

Invoice Distribution

Select Invoice Distribution: [X] EMAIL [ ] MAIL [ ] FAX
Email 1 or Fax: ayu@chihongmining.com
Email 2:

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R]: [X] Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4-20%] [ ] | 3 day [P3-25%] [ ] | 2 day [P2-50%] [ ]

EMERGENCY: 1 Business day [E-100%] [ ] | Same Day, Weekend or Statutory holiday [E2-200%] (Laboratory opening fees may apply)] [ ]

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Project Information		Oil and Gas Required Fields (client use)	
ALS Account # / Quote #:		AFE/Cost Center:	PO#:
Job #:		Major/Minor Code:	Routing Code:
PO / AFE:		Requisitioner:	
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	BTEX	Styrene	VPH	LEPH	HEPH	PAH	SAMPLES ON HOLD	Sample is hazardous (please provide further details)	NUMBER OF CONTAINERS
	12-July-18 09:33 23	12-July-18	09:33	Soil	P	P							4
	12-July-18 09:44 24		09:44										
	12-July-18 10:10 25		10:10										
	12-July-18 09:57 26		09:57										
	12-July-18 10:23 27		10:23										
	12-July-18 10:38 28		10:38										
	12-July-18 10:46 29		10:46										
	12-July-18 10:56 30		10:56										
	12-July-18 11:04 31		11:04										
	12-July-18 11:13 32		11:13										
	12-July-18 13:30 34		13:30										
	12-July-18 13:35 35		13:35										

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

Are samples taken from a Regulated DW System? [ ] YES [ ] NO

Are samples for human consumption/ use? | | YES | | NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen [ ] | SIF Observations Yes [ ] No [ ]
Ice Packs [x] Ice Cubes [ ] | Custody seal intact Yes [ ] No [ ]
Cooling Initiated [x]

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
9.0			10				

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: S. Sidhu	Date: 13-July-18	Time:	Received by: EHF	Date: 13 Jly 2018	Time: 1430	Received by: NA	Date: 7/17	Time: 12:40p

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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

L2129348-COFC

COC Number: 17 - 653141

Page 4 of 4

Report To	Contact and company name below will appear on the final report	Report Format / Distribution	Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)
Company:	SCML	Select Report Format: [X] PDF [ ] EXCEL [ ] EDD (DIGITAL)	Regular [R] [X] Standard TAT if received by 3 pm - business days - no surcharges apply
Contact:	Ssidhu@chihongmining.com	Quality Control (QC) Report with Report [ ] YES [ ] NO	PRIORITY (Business Days): 4 day [P4-20%] [ ]; 3 day [P3-25%] [ ]; 2 day [P2-50%] [ ]
Phone:		[ ] Compare Results to Criteria on Report - provide details below if box checked	EMERGENCY: 1 Business day [E-100%] [ ]; Same Day, Weekend or Statutory holiday [E2-200%] (Laboratory opening fees may apply)] [ ]
	Company address below will appear on the final report	Select Distribution: [X] EMAIL [ ] MAIL [ ] FAX	
Street:		Email 1 or Fax Ssidhu@chihongmining.com	Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm
City/Province:		Email 2	For tests that can not be performed according to the service level selected, you will be contacted.
Postal Code:		Email 3	

Invoice To		Invoice Distribution	Analysis Request
	Same as Report To [X] YES [ ] NO	Select Invoice Distribution: [X] EMAIL [ ] MAIL [ ] FAX	Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below
	Copy of Invoice with Report [X] YES [ ] NO		
Company:	SCML	Email 1 or Fax ayu@chihongmining.com	
Contact:		Email 2	

Project Information		Oil and Gas Required Fields (client use)	
ALS Account # / Quote #:		AFE/Cost Center:	PO#
Job #:		Major/Minor Code:	Routing Code:
PO / AFE:		Requisitioner:	
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	BTEX	Styrene	VPH	LEPH	HEPH	PAH	SAMPLES ON HOLD	Sample is hazardous (please provide further details)	NUMBER OF CONTAINERS
	12-July-18 13:40 36	12-Jul-18	13:40	Soil	↓	↓	↓	↓	↓	↓			5
	12-July-18 13:45 37	↓	13:45	↓									4
	12-July-18 14:40 38-1	↓	14:40	↓									4
	12-July-18 15:00 38-2	↓	15:00	↓									4

Drinking Water (DW) Samples[1] (client use)	Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)
Are samples taken from a Regulated DW System? [ ] YES [ ] NO	
Are samples for human consumption/ use? [ ] YES [ ] NO	

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen	[ ]	SIF Observations	Yes [ ]	No	[ ]
Ice Packs	[✓]	Ice Cubes [ ]	Custody seal intact	Yes [ ]	No [ ]
Cooling Initiated	[✓]				

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C		
9.0			10		

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: S. Sidhu	Date: 13-July-18	Time: 14:00	Received by: EHF	Date: 13 Jul 2018	Time: 14:30	Received by: MA	Date: 7/17	Time: 1744

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**.

SELWYN CHIHONG MINING LTD.
ATTN: Sukie Sidhu
2701 - 1055 W. Georgia St
Vancouver BC V6C 1G8

Date Received: 17-JUL-18
Report Date: 25-JUL-18 13:26 (MT)
Version: FINAL

Client Phone: 778-847-0880

Certificate of Analysis

Lab Work Order #: L2130645

Project P.O. #: NOT SUBMITTED
Job Reference:
C of C Numbers: 17-653142, 17-653143, 17-653144
Legal Site Desc:

Amber Springer, B.Sc
Account Manager

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID	L2130645-1	L2130645-2	L2130645-3	L2130645-4	L2130645-5
Description	Soil	Soil	Soil	Soil	Soil
Sampled Date	13-JUL-18	13-JUL-18	13-JUL-18	13-JUL-18	13-JUL-18
Sampled Time	09:04	09:06	09:10	09:14	09:17
Client ID	LTF-39	LTF-40	LTF-41	LTF-42	LTF-43
Grouping / **Analyte**					
SOIL					
Physical Tests Moisture (%)	17.5	43.5	48.2	12.8	25.2
Volatile Organic Compounds VOC Sample Container	Field MeOH	Field MeOH	Field MeOH	Field MeOH	Field MeOH
Benzene (mg/kg)	<0.0050	<0.0050	0.120	<0.0050	0.0388
Ethylbenzene (mg/kg)	<0.015	<0.015	0.229	<0.015	0.037
Methyl t-butyl ether (MTBE) (mg/kg)	<0.20	<0.20	<0.20	<0.20	<0.20
Styrene (mg/kg)	<0.050	<0.050	<0.060 DLQ	<0.050	<0.050
Toluene (mg/kg)	<0.050	<0.050	0.406	<0.050	0.120
ortho-Xylene (mg/kg)	<0.050	0.060	1.14	<0.050	<0.050
meta- & para-Xylene (mg/kg)	<0.050	0.064	0.447	0.056	0.184
Xylenes (mg/kg)	<0.075	0.124	1.58	<0.075	0.184
Surrogate: 4-Bromofluorobenzene (SS) (%)	98.0	86.6	72.8	94.9	84.0
Surrogate: 1,4-Difluorobenzene (SS) (%)	103.5	105.8	89.3	102.3	94.0
Hydrocarbons EPH10-19 (mg/kg)	1040	21300	35800	<200	7020
EPH19-32 (mg/kg)	1780	1930	5140	<200	710
LEPH (mg/kg)	1040	21300	35800	<200	7020
HEPH (mg/kg)	1780	1930	5130	<200	710
Volatile Hydrocarbons (VH6-10) (mg/kg)	<100	<100	340	<100	<100
VPH (C6-C10) (mg/kg)	<100	<100	340	<100	<100
Surrogate: 2-Bromobenzotrifluoride (%)	90.7	114.5	119.6	93.6	96.9
Surrogate: 3,4-Dichlorotoluene (SS) (%)	84.1	70.0	129.4	88.8	92.6
Polycyclic Aromatic Hydrocarbons Acenaphthene (mg/kg)	<0.030 DLCI	<0.30 DLCI	<0.60 DLCI	<0.0050	<0.10 DLCI
Acenaphthylene (mg/kg)	<0.020 DLCI	<0.080 DLCI	<0.40 DLCI	<0.0050	<0.040 DLCI
Anthracene (mg/kg)	<0.020 DLCI	<0.20 DLCI	<0.20 DLCI	<0.0040	<0.040 DLCI
Benz(a)anthracene (mg/kg)	<0.010	<0.030 DLQ	<0.040 DLCI	<0.010	<0.010
Benzo(a)pyrene (mg/kg)	0.035	<0.022 DLQ	<0.030 DLQ	<0.010	<0.010
Benzo(b&j)fluoranthene (mg/kg)	<0.040 DLCI	<0.050 DLQ	<0.050 DLQ	<0.010	<0.010
Benzo(b+j+k)fluoranthene (mg/kg)	<0.041	<0.055	<0.056	<0.015	<0.015
Benzo(g,h,i)perylene (mg/kg)	0.038	0.092	0.180	<0.010	<0.010
Benzo(k)fluoranthene (mg/kg)	<0.010	<0.022 DLQ	<0.025 DLQ	<0.010	<0.010
Chrysene (mg/kg)	<0.020 DLCI	<0.030 DLCI	<0.050 DLCI	<0.010	<0.010
Dibenz(a,h)anthracene (mg/kg)	<0.0050	<0.022 DLCI	<0.025 DLCI	<0.0050	<0.0050
Fluoranthene (mg/kg)	<0.020 DLCI	<0.080 DLCI	<0.20 DLCI	<0.010	<0.010
Fluorene (mg/kg)	<0.040 DLCI	<0.40 DLCI	<0.70 DLCI	<0.010	<0.050 DLCI
Indeno(1,2,3-c,d)pyrene (mg/kg)	0.017	<0.040 DLQ	<0.040 DLQ	<0.010	<0.010
1-Methylnaphthalene (mg/kg)	<0.050	<0.70 DLQ	<0.80 DLQ	<0.050	<0.20 DLQ

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID	L2130645-6	L2130645-7	L2130645-8	L2130645-9	L2130645-10
Description	Soil	Soil	Soil	Soil	Soil
Sampled Date	13-JUL-18	13-JUL-18	13-JUL-18	13-JUL-18	13-JUL-18
Sampled Time	09:20	09:23	09:26	09:30	09:34
Client ID	LTF-44	LTF-45	LTF-46	LTF-47	LTF-48
Grouping / **Analyte**					
SOIL					
Physical Tests Moisture (%)	13.6	20.2	12.7	19.8	26.3
Volatile Organic Compounds VOC Sample Container	Field MeOH	Field MeOH	Field MeOH	Field MeOH	Field MeOH
Benzene (mg/kg)	<0.0050	<0.0050	<0.0050	0.0427	0.0181
Ethylbenzene (mg/kg)	<0.015	<0.015	0.018	0.158	0.163
Methyl t-butyl ether (MTBE) (mg/kg)	<0.20	<0.20	<0.20	<0.20	<0.20
Styrene (mg/kg)	<0.050	<0.050	<0.050	<0.050	<0.050
Toluene (mg/kg)	<0.050	<0.050	<0.050	0.706	0.202
ortho-Xylene (mg/kg)	<0.050	<0.050	0.052	0.125	1.89
meta- & para-Xylene (mg/kg)	0.085	<0.050	0.161	0.486	1.02
Xylenes (mg/kg)	0.085	<0.075	0.213	0.612	2.91
Surrogate: 4-Bromofluorobenzene (SS) (%)	90.3	82.7	91.7	86.0	78.1
Surrogate: 1,4-Difluorobenzene (SS) (%)	95.9	95.9	92.8	113.9	92.6
Hydrocarbons EPH10-19 (mg/kg)	<200	6370	250	16800	14300
EPH19-32 (mg/kg)	<200	5490	<200	1960	1090
LEPH (mg/kg)	<200	6370	250	16800	14300
HEPH (mg/kg)	<200	5490	<200	1960	1090
Volatile Hydrocarbons (VH6-10) (mg/kg)	<100	<100	<100	<100	410
VPH (C6-C10) (mg/kg)	<100	<100	<100	<100	410
Surrogate: 2-Bromobenzotrifluoride (%)	92.3	97.3	96.1	100.4	106.0
Surrogate: 3,4-Dichlorotoluene (SS) (%)	72.9	69.5 SURR-ND	64.4 SURR-ND	71.4	73.5
Polycyclic Aromatic Hydrocarbons Acenaphthene (mg/kg)	<0.0050	<0.15 DLCI	<0.0050	<0.20 DLCI	<0.30 DLCI
Acenaphthylene (mg/kg)	<0.0050	<0.030 DLCI	<0.0050	<0.060 DLCI	<0.090 DLCI
Anthracene (mg/kg)	<0.0040	<0.15 DLCI	<0.0040	<0.10 DLQ	<0.070 DLCI
Benz(a)anthracene (mg/kg)	<0.010	<0.030 DLCI	<0.010	0.064	<0.018 DLCI
Benzo(a)pyrene (mg/kg)	<0.010	<0.050 DLCI	<0.010	0.075	<0.018 DLCI
Benzo(b&j)fluoranthene (mg/kg)	<0.010	<0.030 DLCI	<0.010	0.105	<0.030 DLCI
Benzo(b+j+k)fluoranthene (mg/kg)	<0.015	<0.042	<0.015	0.151	<0.035
Benzo(g,h,i)perylene (mg/kg)	<0.010	<0.030 DLCI	<0.010	0.056	0.021
Benzo(k)fluoranthene (mg/kg)	<0.010	<0.030 DLCI	<0.010	0.046	<0.018 DLCI
Chrysene (mg/kg)	<0.010	<0.030 DLCI	<0.010	<0.070 DLCI	<0.018 DLCI
Dibenz(a,h)anthracene (mg/kg)	<0.0050	<0.030 DLCI	<0.0050	<0.030 DLCI	<0.018 DLCI
Fluoranthene (mg/kg)	<0.010	<0.030 DLCI	<0.010	<0.20 DLCI	<0.040 DLCI
Fluorene (mg/kg)	<0.010	<0.080 DLCI	<0.010	<0.30 DLQ	<0.50 DLCI
Indeno(1,2,3-c,d)pyrene (mg/kg)	<0.010	<0.030 DLCI	<0.010	0.062	0.019
1-Methylnaphthalene (mg/kg)	<0.050	<0.60 DLCI	<0.050	<0.70 DLCI	1.74

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Grouping	Analyte	L2130645-11 Soil 13-JUL-18 10:53 CASB 1	L2130645-12 Soil 13-JUL-18 10:59 CASB 2	L2130645-13 Soil 13-JUL-18 11:01 CASB 3	L2130645-14 Soil 13-JUL-18 11:04 CASB 4	L2130645-15 Soil 13-JUL-18 11:07 CASB 5
SOIL						
Physical Tests	Moisture (%)	12.4	12.1	10.9	11.7	12.1
Volatile Organic Compounds	VOC Sample Container	Field MeOH	Field MeOH	Field MeOH	Field MeOH	Field MeOH
	Benzene (mg/kg)	<0.0050	<0.0050	<0.0050	0.0060	<0.0050
	Ethylbenzene (mg/kg)	<0.015	<0.015	<0.015	<0.015	<0.015
	Methyl t-butyl ether (MTBE) (mg/kg)	<0.20	<0.20	<0.20	<0.20	<0.20
	Styrene (mg/kg)	<0.050	<0.050	<0.050	<0.050	<0.050
	Toluene (mg/kg)	<0.050	<0.050	<0.050	<0.050	<0.050
	ortho-Xylene (mg/kg)	<0.050	<0.050	<0.050	<0.050	<0.050
	meta- & para-Xylene (mg/kg)	<0.050	<0.050	0.053	<0.050	<0.050
	Xylenes (mg/kg)	<0.075	<0.075	<0.075	<0.075	<0.075
	Surrogate: 4-Bromofluorobenzene (SS) (%)	89.7	78.6	87.0	86.4	87.7
	Surrogate: 1,4-Difluorobenzene (SS) (%)	98.2	90.6	97.7	96.7	97.9
Hydrocarbons	EPH10-19 (mg/kg)	<200	<200	<200	<200	<200
	EPH19-32 (mg/kg)	<200	<200	<200	<200	<200
	LEPH (mg/kg)	<200	<200	<200	<200	<200
	HEPH (mg/kg)	<200	<200	<200	<200	<200
	Volatile Hydrocarbons (VH6-10) (mg/kg)	<100	<100	<100	<100	<100
	VPH (C6-C10) (mg/kg)	<100	<100	<100	<100	<100
	Surrogate: 2-Bromobenzotrifluoride (%)	92.0	85.0	79.6	78.3	80.5
	Surrogate: 3,4-Dichlorotoluene (SS) (%)	81.5	72.4	74.4	68.8 SURR-ND	96.3
Polycyclic Aromatic Hydrocarbons	Acenaphthene (mg/kg)	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
	Acenaphthylene (mg/kg)	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
	Anthracene (mg/kg)	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040
	Benz(a)anthracene (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
	Benzo(a)pyrene (mg/kg)	<0.010	<0.010	0.014	<0.010	<0.010
	Benzo(b&j)fluoranthene (mg/kg)	<0.010	<0.010	0.016	<0.010	<0.010
	Benzo(b+j+k)fluoranthene (mg/kg)	<0.015	<0.015	0.016	<0.015	<0.015
	Benzo(g,h,i)perylene (mg/kg)	<0.010	<0.010	0.010	<0.010	<0.010
	Benzo(k)fluoranthene (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
	Chrysene (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
	Dibenz(a,h)anthracene (mg/kg)	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
	Fluoranthene (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
	Fluorene (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
	Indeno(1,2,3-c,d)pyrene (mg/kg)	<0.010	<0.010	0.011	<0.010	<0.010
	1-Methylnaphthalene (mg/kg)	<0.050	<0.050	<0.050	<0.050	<0.050

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID	L2130645-16	L2130645-17	L2130645-18	L2130645-19	L2130645-20
Description	Soil	Soil	Soil	Soil	Soil
Sampled Date	13-JUL-18	13-JUL-18	13-JUL-18	13-JUL-18	13-JUL-18
Sampled Time	11:10	11:12	11:16	13:08	13:10
Client ID	CASB 6	CASB 7	CASB 8	CASB 9	CASB 10
Grouping / **Analyte**					
SOIL					
Physical Tests Moisture (%)	13.4	11.8	12.3	11.9	18.0
Volatile Organic Compounds VOC Sample Container	Field MeOH	Field MeOH	Field MeOH	Field MeOH	Field MeOH
Benzene (mg/kg)	<0.0050	<0.0050	<0.0050	0.0079	<0.0050
Ethylbenzene (mg/kg)	<0.015	<0.015	<0.015	<0.015	<0.015
Methyl t-butyl ether (MTBE) (mg/kg)	<0.20	<0.20	<0.20	<0.20	<0.20
Styrene (mg/kg)	<0.050	<0.050	<0.050	<0.050	<0.050
Toluene (mg/kg)	<0.050	<0.050	<0.050	0.051	<0.050
ortho-Xylene (mg/kg)	<0.050	<0.050	<0.050	<0.050	<0.050
meta- & para-Xylene (mg/kg)	<0.050	<0.050	<0.050	0.051	<0.050
Xylenes (mg/kg)	<0.075	<0.075	<0.075	<0.075	<0.075
Surrogate: 4-Bromofluorobenzene (SS) (%)	84.8	92.8	96.5	88.8	89.0
Surrogate: 1,4-Difluorobenzene (SS) (%)	91.2	100.0	105.8	98.0	93.8
Hydrocarbons EPH10-19 (mg/kg)	<200	<200	<200	<200	<200
EPH19-32 (mg/kg)	<200	<200	<200	<200	<200
LEPH (mg/kg)	<200	<200	<200	<200	<200
HEPH (mg/kg)	<200	<200	<200	<200	<200
Volatile Hydrocarbons (VH6-10) (mg/kg)	<100	<100	<100	<100	<100
VPH (C6-C10) (mg/kg)	<100	<100	<100	<100	<100
Surrogate: 2-Bromobenzotrifluoride (%)	80.1	82.2	82.4	80.2	82.1
Surrogate: 3,4-Dichlorotoluene (SS) (%)	93.0	102.9	89.9	75.0	101.4
Polycyclic Aromatic Hydrocarbons Acenaphthene (mg/kg)	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Acenaphthylene (mg/kg)	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Anthracene (mg/kg)	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040
Benz(a)anthracene (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
Benzo(a)pyrene (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
Benzo(b&j)fluoranthene (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
Benzo(b+j+k)fluoranthene (mg/kg)	<0.015	<0.015	<0.015	<0.015	<0.015
Benzo(g,h,i)perylene (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
Benzo(k)fluoranthene (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
Chrysene (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
Dibenz(a,h)anthracene (mg/kg)	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Fluoranthene (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
Fluorene (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
Indeno(1,2,3-c,d)pyrene (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
1-Methylnaphthalene (mg/kg)	<0.050	<0.050	<0.050	<0.050	<0.050

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Grouping	Analyte	Sample ID: L2130645-21 Description: Soil Sampled Date: 13-JUL-18 Sampled Time: 13:12 Client ID: CASB 11	Sample ID: L2130645-22 Description: Soil Sampled Date: 13-JUL-18 Sampled Time: 13:14 Client ID: CASB 12	Sample ID: L2130645-23 Description: Soil Sampled Date: 13-JUL-18 Sampled Time: 13:14 Client ID: CASB 13	Sample ID: L2130645-24 Description: Soil Sampled Date: 13-JUL-18 Sampled Time: 13:16 Client ID: CASB 14	Sample ID: L2130645-25 Description: Soil Sampled Date: 13-JUL-18 Sampled Time: 13:18 Client ID: CASB 15
SOIL						
Physical Tests	Moisture (%)	10.8	12.4	10.1	11.0	11.3
Volatile Organic Compounds	VOC Sample Container	Field MeOH	Field MeOH	Field MeOH	Field MeOH	Field MeOH
	Benzene (mg/kg)	0.0282	<0.0050	<0.0050	<0.0050	<0.0050
	Ethylbenzene (mg/kg)	0.041	<0.015	0.015	0.016	<0.015
	Methyl t-butyl ether (MTBE) (mg/kg)	<0.20	<0.20	<0.20	<0.20	<0.20
	Styrene (mg/kg)	<0.050	<0.050	<0.050	<0.050	<0.050
	Toluene (mg/kg)	0.177	<0.050	<0.050	<0.050	<0.050
	ortho-Xylene (mg/kg)	<0.050	<0.050	<0.050	<0.050	<0.050
	meta- & para-Xylene (mg/kg)	0.143	<0.050	0.117	0.121	<0.050
	Xylenes (mg/kg)	0.143	<0.075	0.117	0.121	<0.075
	Surrogate: 4-Bromofluorobenzene (SS) (%)	87.3	88.2	93.0	87.3	88.7
	Surrogate: 1,4-Difluorobenzene (SS) (%)	94.1	100.1	101.9	94.4	97.5
Hydrocarbons	EPH10-19 (mg/kg)	700	210	<200	<200	<200
	EPH19-32 (mg/kg)	<200	<200	<200	<200	<200
	LEPH (mg/kg)	700	210	<200	<200	<200
	HEPH (mg/kg)	<200	<200	<200	<200	<200
	Volatile Hydrocarbons (VH6-10) (mg/kg)	<100	<100	<100	<100	<100
	VPH (C6-C10) (mg/kg)	<100	<100	<100	<100	<100
	Surrogate: 2-Bromobenzotrifluoride (%)	80.3	80.5	78.8	82.3	83.8
	Surrogate: 3,4-Dichlorotoluene (SS) (%)	Not Reportable SMI	82.6	99.4	83.3	86.8
Polycyclic Aromatic Hydrocarbons	Acenaphthene (mg/kg)	<0.0070 DLCI	<0.0050	<0.0050	<0.0050	<0.0050
	Acenaphthylene (mg/kg)	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
	Anthracene (mg/kg)	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040
	Benz(a)anthracene (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
	Benzo(a)pyrene (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
	Benzo(b&j)fluoranthene (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
	Benzo(b+j+k)fluoranthene (mg/kg)	<0.015	<0.015	<0.015	<0.015	<0.015
	Benzo(g,h,i)perylene (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
	Benzo(k)fluoranthene (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
	Chrysene (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
	Dibenz(a,h)anthracene (mg/kg)	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
	Fluoranthene (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
	Fluorene (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
	Indeno(1,2,3-c,d)pyrene (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
	1-Methylnaphthalene (mg/kg)	<0.050	<0.050	<0.050	<0.050	<0.050

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID	L2130645-26	L2130645-27	L2130645-28	L2130645-29	L2130645-30
Description	Soil	Soil	Soil	Soil	Soil
Sampled Date	13-JUL-18	13-JUL-18	13-JUL-18	13-JUL-18	13-JUL-18
Sampled Time	13:20	15:11	15:15	15:24	15:26
Client ID	CASB 16	BPX Y1	BPX Y2	AXY 1	AXY 2
Grouping / **Analyte**					
SOIL					
Physical Tests Moisture (%)	13.1	22.5	15.5	11.7	11.7
Volatile Organic Compounds VOC Sample Container	Field MeOH	Field MeOH	Field MeOH	Field MeOH	Field MeOH
Benzene (mg/kg)	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Ethylbenzene (mg/kg)	<0.015	<0.015	<0.015	<0.015	<0.015
Methyl t-butyl ether (MTBE) (mg/kg)	<0.20	<0.20	<0.20	<0.20	<0.20
Styrene (mg/kg)	<0.050	<0.050	<0.050	<0.050	<0.050
Toluene (mg/kg)	<0.050	<0.050	<0.050	<0.050	<0.050
ortho-Xylene (mg/kg)	<0.050	<0.050	<0.050	<0.050	<0.050
meta- & para-Xylene (mg/kg)	<0.050	<0.050	<0.050	<0.050	<0.050
Xylenes (mg/kg)	<0.075	<0.075	<0.075	<0.075	<0.075
Surrogate: 4-Bromofluorobenzene (SS) (%)	89.1	91.7	81.1	91.8	91.8
Surrogate: 1,4-Difluorobenzene (SS) (%)	96.1	99.7	94.1	103.0	101.9
Hydrocarbons EPH10-19 (mg/kg)	<200	<200	<200	<200	250
EPH19-32 (mg/kg)	<200	<200	<200	<200	<200
LEPH (mg/kg)	<200	<200	<200	<200	250
HEPH (mg/kg)	<200	<200	<200	<200	<200
Volatile Hydrocarbons (VH6-10) (mg/kg)	<100	<100	<100	<100	<100
VPH (C6-C10) (mg/kg)	<100	<100	<100	<100	<100
Surrogate: 2-Bromobenzotrifluoride (%)	81.2	82.7	81.6	83.4	83.6
Surrogate: 3,4-Dichlorotoluene (SS) (%)	89.3	89.8	58.0 SURR-ND	86.3	64.7 SURR-ND
Polycyclic Aromatic Hydrocarbons Acenaphthene (mg/kg)	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Acenaphthylene (mg/kg)	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Anthracene (mg/kg)	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040
Benz(a)anthracene (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
Benzo(a)pyrene (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
Benzo(b&j)fluoranthene (mg/kg)	<0.010	<0.010	0.011	<0.010	<0.010
Benzo(b+j+k)fluoranthene (mg/kg)	<0.015	<0.015	<0.015	<0.015	<0.015
Benzo(g,h,i)perylene (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
Benzo(k)fluoranthene (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
Chrysene (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
Dibenz(a,h)anthracene (mg/kg)	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Fluoranthene (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
Fluorene (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
Indeno(1,2,3-c,d)pyrene (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
1-Methylnaphthalene (mg/kg)	<0.050	<0.050	<0.050	<0.050	<0.050

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Grouping	Analyte	L2130645-1 Soil 13-JUL-18 09:04 LTF-39	L2130645-2 Soil 13-JUL-18 09:06 LTF-40	L2130645-3 Soil 13-JUL-18 09:10 LTF-41	L2130645-4 Soil 13-JUL-18 09:14 LTF-42	L2130645-5 Soil 13-JUL-18 09:17 LTF-43
SOIL						
Polycyclic Aromatic Hydrocarbons	2-Methylnaphthalene (mg/kg)	<0.020 DLCI	<0.20 DLCI	<0.60 DLQ	0.013	<0.10 DLQ
	Naphthalene (mg/kg)	<0.040 DLCI	<0.70 DLCI	<1.0 DLCI	<0.010	<0.20 DLCI
	Phenanthrene (mg/kg)	<0.020 DLCI	<0.060 DLCI	<0.60 DLQ	<0.010	<0.010
	Pyrene (mg/kg)	<0.050 DLQ	0.786	1.46	<0.010	0.060
	Quinoline (mg/kg)	<0.070 DLCI	<0.90 DLCI	<2.0 DLCI	<0.050	<0.090 DLCI
	Surrogate: Acenaphthene d10 (%)	108.0	Not Reportable SMI	Not Reportable SMI	100.2	110.3
	Surrogate: Chrysene d12 (%)	107.6	121.3	100.3	118.9	109.3
	Surrogate: Naphthalene d8 (%)	95.6	123.0	Not Reportable SMI	99.4	104.1
	Surrogate: Phenanthrene d10 (%)	101.3	122.9	97.2	111.3	84.1
	B(a)P Total Potency Equivalent (mg/kg)	0.043	0.030	0.037	<0.020	<0.020
	IACR (CCME) (mg/kg)	0.29	0.38	0.44	<0.15	<0.15

ALS ENVIRONMENTAL ANALYTICAL REPORT

Grouping	Analyte	L2130645-6 Soil 13-JUL-18 09:20 LTF-44	L2130645-7 Soil 13-JUL-18 09:23 LTF-45	L2130645-8 Soil 13-JUL-18 09:26 LTF-46	L2130645-9 Soil 13-JUL-18 09:30 LTF-47	L2130645-10 Soil 13-JUL-18 09:34 LTF-48
SOIL						
Polycyclic Aromatic Hydrocarbons	2-Methylnaphthalene (mg/kg)	0.017	<0.060 DLCI	0.019	<0.30 DLCI	0.829
	Naphthalene (mg/kg)	<0.010	<0.30 DLCI	<0.010	<0.50 DLQ	<0.90 DLCI
	Phenanthrene (mg/kg)	<0.010	<0.030 DLCI	<0.010	<0.090 DLCI	<0.30 DLQ
	Pyrene (mg/kg)	0.018	0.326	0.013	0.621	0.162
	Quinoline (mg/kg)	<0.050	<0.50 DLCI	<0.050	<0.60 DLCI	<2.0 DLCI
	Surrogate: Acenaphthene d10 (%)	100.4	Not Reportable SMI	99.6	Not Reportable SMI	Not Reportable SMI
	Surrogate: Chrysene d12 (%)	118.2	112.2	115.7	126.2	116.0
	Surrogate: Naphthalene d8 (%)	99.3	95.5	95.3	Not Reportable SMI	Not Reportable SMI
	Surrogate: Phenanthrene d10 (%)	110.3	106.0	107.4	Not Reportable SMI	128.0
	B(a)P Total Potency Equivalent (mg/kg)	<0.020	<0.046	<0.020	0.118	0.023
	IACR (CCME) (mg/kg)	<0.15	<0.38	<0.15	1.45	0.26

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID	L2130645-11	L2130645-12	L2130645-13	L2130645-14	L2130645-15
Description	Soil	Soil	Soil	Soil	Soil
Sampled Date	13-JUL-18	13-JUL-18	13-JUL-18	13-JUL-18	13-JUL-18
Sampled Time	10:53	10:59	11:01	11:04	11:07
Client ID	CASB 1	CASB 2	CASB 3	CASB 4	CASB 5
Grouping / **Analyte**					
SOIL					
Polycyclic Aromatic Hydrocarbons / 2-Methylnaphthalene (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
Naphthalene (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
Phenanthrene (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
Pyrene (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
Quinoline (mg/kg)	<0.050	<0.050	<0.050	<0.050	<0.050
Surrogate: Acenaphthene d10 (%)	98.9	85.2	77.3	79.7	79.2
Surrogate: Chrysene d12 (%)	116.4	97.4	90.3	93.8	89.8
Surrogate: Naphthalene d8 (%)	90.0	86.7	79.4	78.9	81.1
Surrogate: Phenanthrene d10 (%)	115.2	87.9	82.9	85.1	83.8
B(a)P Total Potency Equivalent (mg/kg)	<0.020	<0.020	0.020	<0.020	<0.020
IACR (CCME) (mg/kg)	<0.15	<0.15	0.21	<0.15	<0.15

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID	L2130645-16	L2130645-17	L2130645-18	L2130645-19	L2130645-20
Description	Soil	Soil	Soil	Soil	Soil
Sampled Date	13-JUL-18	13-JUL-18	13-JUL-18	13-JUL-18	13-JUL-18
Sampled Time	11:10	11:12	11:16	13:08	13:10
Client ID	CASB 6	CASB 7	CASB 8	CASB 9	CASB 10
Grouping / **Analyte**					
SOIL					
Polycyclic Aromatic Hydrocarbons / 2-Methylnaphthalene (mg/kg)	<0.010	<0.010	<0.010	0.010	<0.010
Naphthalene (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
Phenanthrene (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
Pyrene (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
Quinoline (mg/kg)	<0.050	<0.050	<0.050	<0.050	<0.050
Surrogate: Acenaphthene d10 (%)	82.2	81.6	82.3	79.9	84.5
Surrogate: Chrysene d12 (%)	95.3	93.9	93.9	90.1	96.8
Surrogate: Naphthalene d8 (%)	81.4	82.0	83.0	80.9	84.7
Surrogate: Phenanthrene d10 (%)	87.5	87.3	88.2	82.6	89.8
B(a)P Total Potency Equivalent (mg/kg)	<0.020	<0.020	<0.020	<0.020	<0.020
IACR (CCME) (mg/kg)	<0.15	<0.15	<0.15	<0.15	<0.15

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID	L2130645-21	L2130645-22	L2130645-23	L2130645-24	L2130645-25
Description	Soil	Soil	Soil	Soil	Soil
Sampled Date	13-JUL-18	13-JUL-18	13-JUL-18	13-JUL-18	13-JUL-18
Sampled Time	13:12	13:14	13:14	13:16	13:18
Client ID	CASB 11	CASB 12	CASB 13	CASB 14	CASB 15
Grouping / **Analyte**					
SOIL					
Polycyclic Aromatic Hydrocarbons / 2-Methylnaphthalene (mg/kg)	<0.020 DLQ	<0.010	0.018	0.021	<0.010
Naphthalene (mg/kg)	<0.010	<0.010	0.010	0.016	<0.010
Phenanthrene (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
Pyrene (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
Quinoline (mg/kg)	<0.050	<0.050	<0.050	<0.050	<0.050
Surrogate: Acenaphthene d10 (%)	83.2	86.3	78.4	87.5	84.0
Surrogate: Chrysene d12 (%)	91.9	98.1	92.0	99.3	96.3
Surrogate: Naphthalene d8 (%)	80.4	88.7	78.0	87.7	83.3
Surrogate: Phenanthrene d10 (%)	82.6	91.9	84.5	90.6	88.7
B(a)P Total Potency Equivalent (mg/kg)	<0.020	<0.020	<0.020	<0.020	<0.020
IACR (CCME) (mg/kg)	<0.15	<0.15	<0.15	<0.15	<0.15

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L2130645-26	L2130645-27	L2130645-28	L2130645-29	L2130645-30
	Description	Soil	Soil	Soil	Soil	Soil
	Sampled Date	13-JUL-18	13-JUL-18	13-JUL-18	13-JUL-18	13-JUL-18
	Sampled Time	13:20	15:11	15:15	15:24	15:26
	Client ID	CASB 16	BPX Y1	BPX Y2	AXY 1	AXY 2
Grouping	**Analyte**					
SOIL						
Polycyclic Aromatic Hydrocarbons	2-Methylnaphthalene (mg/kg)	<0.010	<0.010	<0.010	0.017	0.018
	Naphthalene (mg/kg)	<0.010	<0.010	<0.010	0.012	0.011
	Phenanthrene (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
	Pyrene (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
	Quinoline (mg/kg)	<0.050	<0.050	<0.050	<0.050	<0.050
	Surrogate: Acenaphthene d10 (%)	82.7	83.4	97.0	84.0	81.1
	Surrogate: Chrysene d12 (%)	96.4	94.8	105.5	97.4	91.6
	Surrogate: Naphthalene d8 (%)	83.6	81.6	94.4	86.4	86.3
	Surrogate: Phenanthrene d10 (%)	88.5	91.7	105.9	89.6	89.9
	B(a)P Total Potency Equivalent (mg/kg)	<0.020	<0.020	<0.020	<0.020	<0.020
	IACR (CCME) (mg/kg)	<0.15	<0.15	<0.15	<0.15	<0.15

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

Reference Information

QC Samples with Qualifiers & Comments:

QC Type Description	Parameter	Qualifier	Applies to Sample Number(s)
Matrix Spike	1-Methylnaphthalene	MS-B	L2130645-1, -10, -11, -2, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	2-Methylnaphthalene	MS-B	L2130645-1, -10, -11, -2, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Acenaphthene	MS-B	L2130645-1, -10, -11, -2, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Anthracene	MS-B	L2130645-1, -10, -11, -2, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Benz(a)anthracene	MS-B	L2130645-1, -10, -11, -2, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Benzo(a)pyrene	MS-B	L2130645-1, -10, -11, -2, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Benzo(b&j)fluoranthene	MS-B	L2130645-1, -10, -11, -2, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Benzo(g,h,i)perylene	MS-B	L2130645-1, -10, -11, -2, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Benzo(k)fluoranthene	MS-B	L2130645-1, -10, -11, -2, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Chrysene	MS-B	L2130645-1, -10, -11, -2, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Fluoranthene	MS-B	L2130645-1, -10, -11, -2, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Fluorene	MS-B	L2130645-1, -10, -11, -2, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Indeno(1,2,3-c,d)pyrene	MS-B	L2130645-1, -10, -11, -2, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Naphthalene	MS-B	L2130645-1, -10, -11, -2, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Phenanthrene	MS-B	L2130645-1, -10, -11, -2, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Pyrene	MS-B	L2130645-1, -10, -11, -2, -3, -4, -5, -6, -7, -8, -9

Qualifiers for Individual Parameters Listed:

Qualifier	Description
DLCI	Detection Limit Raised: Chromatographic Interference due to co-elution.
DLQ	Detection Limit raised due to co-eluting interference. GCMS qualifier ion ratio did not meet acceptance criteria.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
SMI	Surrogate recovery could not be measured due to sample matrix interference.
SURR-ND	Surrogate recovery marginally exceeded ALS DQO. Reported non-detect results for associated samples were deemed to be unaffected.

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
EPH-TUMB-FID-VA	Soil	EPH in Solids by Tumbler and GCFID	BC MOE EPH GCFID

Analysis is in accordance with BC MOE Lab Manual method "Extractable Petroleum Hydrocarbons in Solids by GC/FID", v2.1, July 1999. Soil samples are extracted with a 1:1 mixture of hexane and acetone using a rotary extraction technique modified from EPA 3570 prior to gas chromatography with flame ionization detection (GC-FID). EPH results include Polycyclic Aromatic Hydrocarbons (PAH) and are therefore not equivalent to Light and Heavy Extractable Petroleum Hydrocarbons (LEPH/HEPH).

LEPH/HEPH-CALC-VA	Soil	LEPHs and HEPHs	BC MOE LEPH/HEPH

LEPHs and HEPHs are measures of Light and Heavy Extractable Petroleum Hydrocarbons in soil. Results are calculated by subtraction of applicable PAH concentrations from EPH10-19 and EPH19-32, as per the BC Lab Manual LEPH/HEPH calculation procedure.
LEPHs = EPH10-19 minus Acenaphthene, Acridine, Anthracene, Fluorene, Naphthalene and Phenanthrene.
HEPHs = EPH19-32 minus Benz(a)anthracene, Benzo(a)pyrene, Fluoranthene, and Pyrene.

MOISTURE-VA	Soil	Moisture content	CWS for PHC in Soil - Tier 1

This analysis is carried out gravimetrically by drying the sample at 105 C for a minimum of six hours.

PAH-TMB-H/A-MS-VA	Soil	PAH - Rotary Extraction (Hexane/Acetone)	EPA 3570/8270

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 hexane and acetone. 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. Because the two isomers cannot be readily chromatographically separated, benzo(j)fluoranthene is reported as part of the benzo(b)fluoranthene parameter.

Benzo(a)pyrene Total Potency Equivalents [B(a)P TPE] represents the sum of estimated cancer potency relative to B(a)P for all potentially carcinogenic unsubstituted PAHs, and is calculated as per the CCME PAH Soil Quality Guidelines reference document (2010).

VH-HSFID-VA	Soil	VH in soil by Headspace GCFID	BC Env. Lab Manual (VH in Solids)

This analysis involves the extraction of a subsample of the sediment/soil with methanol. Aliquots of the methanol extract are then added to water and reagents, then heated in a sealed vial to equilibrium. The headspace from the vial is analyzed for Volatile Hydrocarbons (VH) by capillary column gas chromatography with flame-ionization detection (GC/FID). The methanol extraction and VH analysis are carried out in accordance with the British Columbia Ministry of Environment, Lands and Parks (BCMELP) Analytical Method for Contaminated Sites "Volatile Hydrocarbons in Solids by GC/FID" (Version 2.1 July 1999).

Reference Information

VH-SURR-FID-VA	Soil	VH Surrogates for Soils	BC Env. Lab Manual (VH in Solids)
VOC7-L-HSMS-VA	Soil	VOCs in soil by Headspace GCMS	EPA 5035A/5021A/8260C

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.

VOC7/VOC-SURR-MS-VA	Soil	VOC7 and/or VOC Surrogates for Soils	EPA 5035A/5021A/8260C
VPH-CALC-VA	Soil	VPH is VH minus select aromatics	BC MOE VPH

VPHs measures Volatile Petroleum Hydrocarbons in soil. Results are calculated by subtraction of specific Monocyclic Aromatic Hydrocarbons from VH6-10, as per the BC Lab Manual VPH calculation procedure.
VPHs = VH6-10 minus Benzene, Toluene, Ethylbenzene, Xylenes, and Styrene

XYLENES-CALC-VA	Soil	Sum of Xylene Isomer Concentrations	EPA 8260B & 524.2

Calculation of Total Xylenes

Total Xylenes is the sum of the concentrations of the ortho, meta, and para Xylene isomers. Results below detection limit (DL) are treated as zero. The DL for Total Xylenes is set to a value no less than the square root of the sum of the squares of the DLs of the individual Xylenes.

** 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
VA	ALS ENVIRONMENTAL - VANCOUVER, BRITISH COLUMBIA, CANADA

Chain of Custody Numbers:

17-653142 17-653143 17-653144

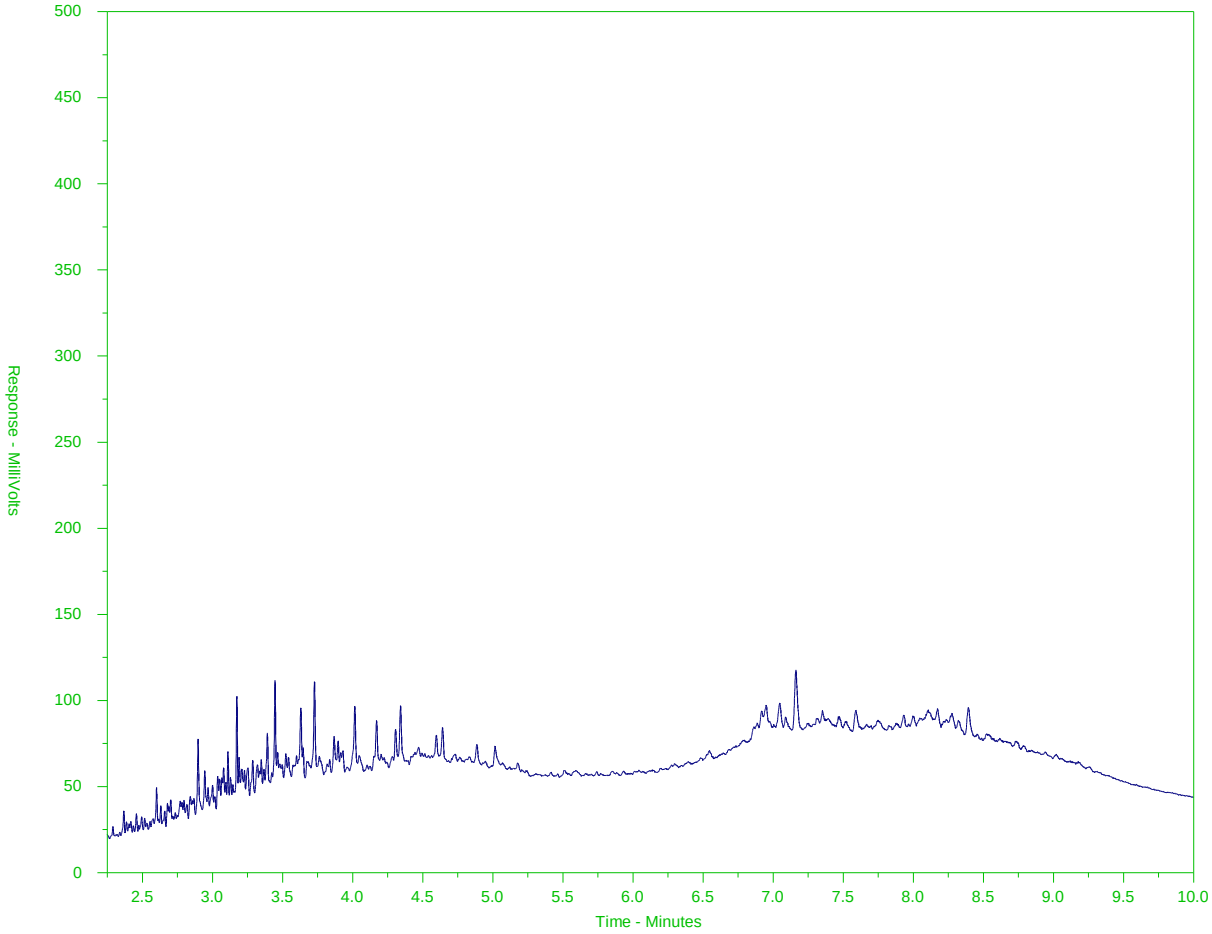
GLOSSARY OF REPORT TERMS

Surrogate - A compound that is similar in behaviour to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.
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 of sample.
mg/L - milligrams per litre.
< - Less than.
D.L. - The reported Detection Limit, also known as the Limit of Reporting (LOR).
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.

BC EPH HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2130645-1
Client Sample ID: LTF-39



← EPH10-19 →		← EPH19-32 →
nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →	← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →		

The BC EPH 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 three n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

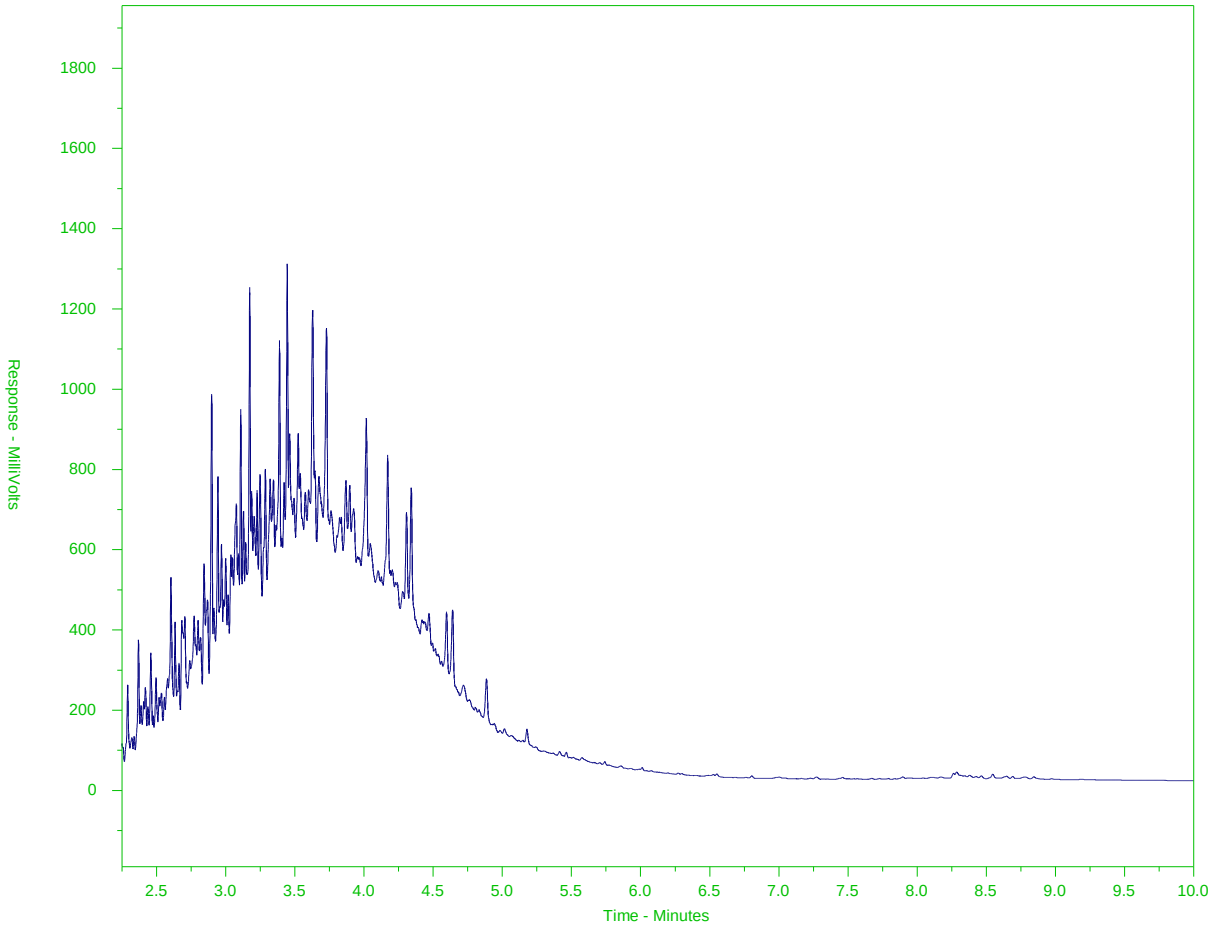
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

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

BC EPH HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2130645-2
Client Sample ID: LTF-40



← EPH10-19 →		← EPH19-32 →
nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →	← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →		

The BC EPH 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 three n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

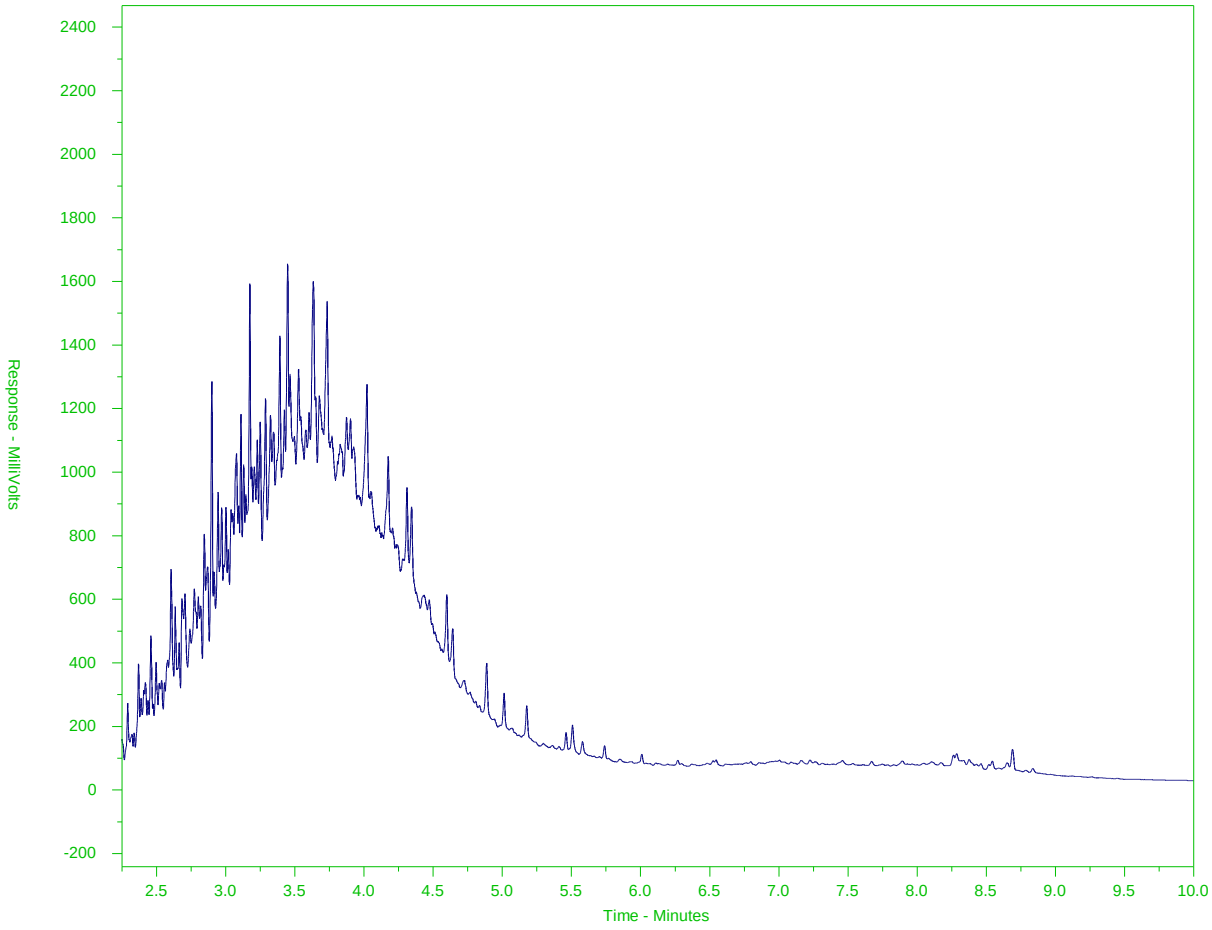
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

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

BC EPH HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2130645-3
Client Sample ID: LTF-41



← EPH10-19 →		← EPH19-32 →
nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →	← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →		

The BC EPH 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 three n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

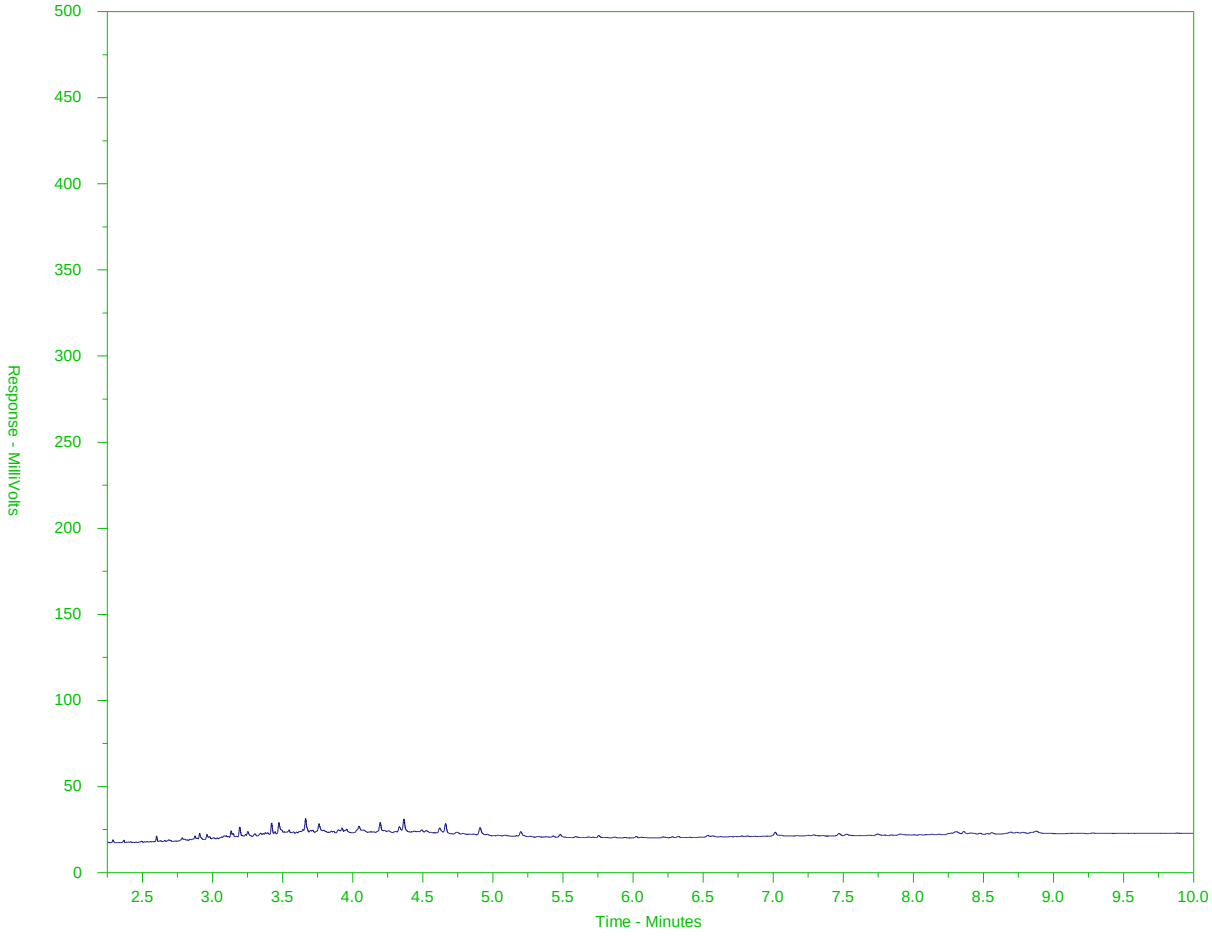
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

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

BC EPH HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2130645-4
Client Sample ID: LTF-42



← EPH10-19 →		← EPH19-32 →
nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →	← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →		

The BC EPH 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 three n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

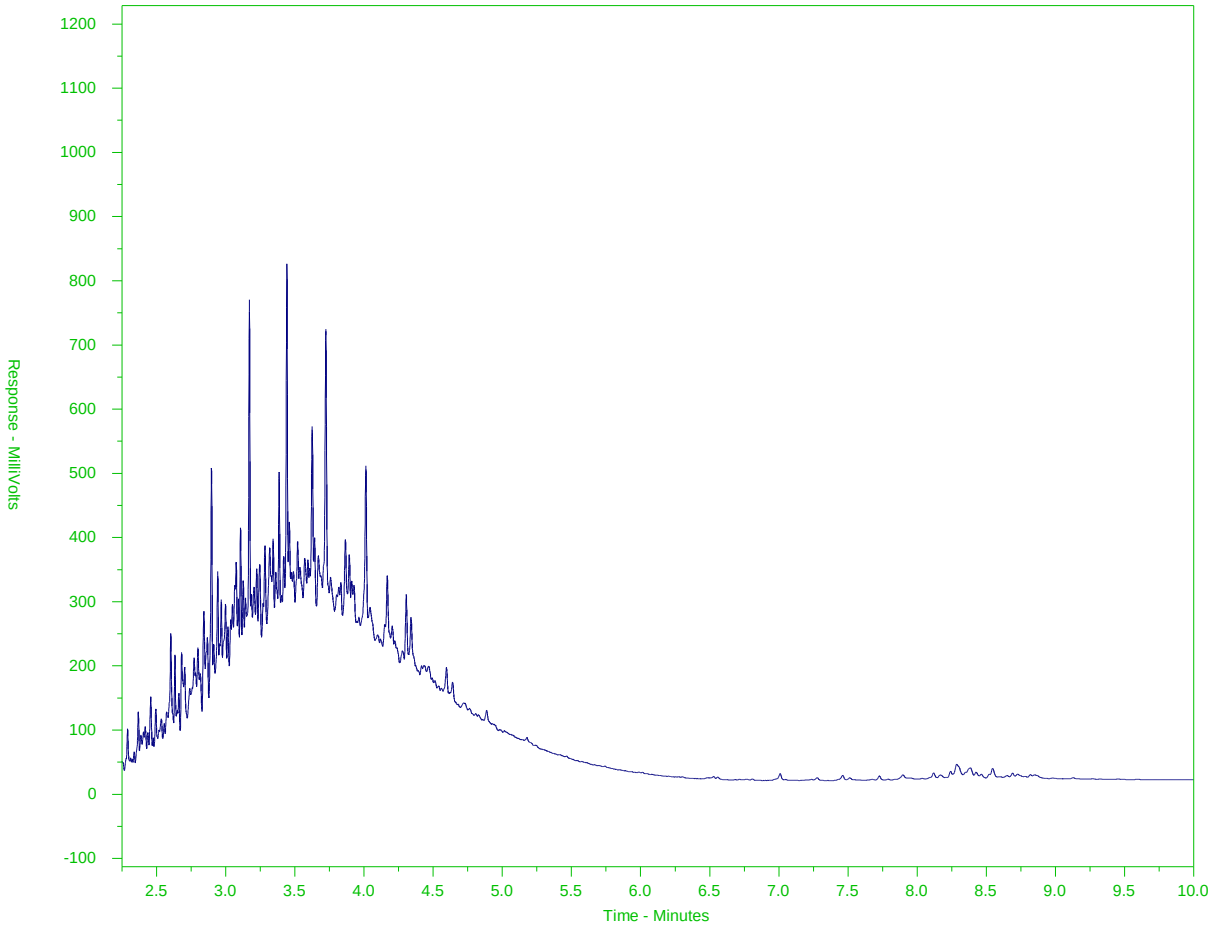
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

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

BC EPH HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2130645-5
Client Sample ID: LTF-43



← EPH10-19 →		← EPH19-32 →
nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →	← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →		

The BC EPH 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 three n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

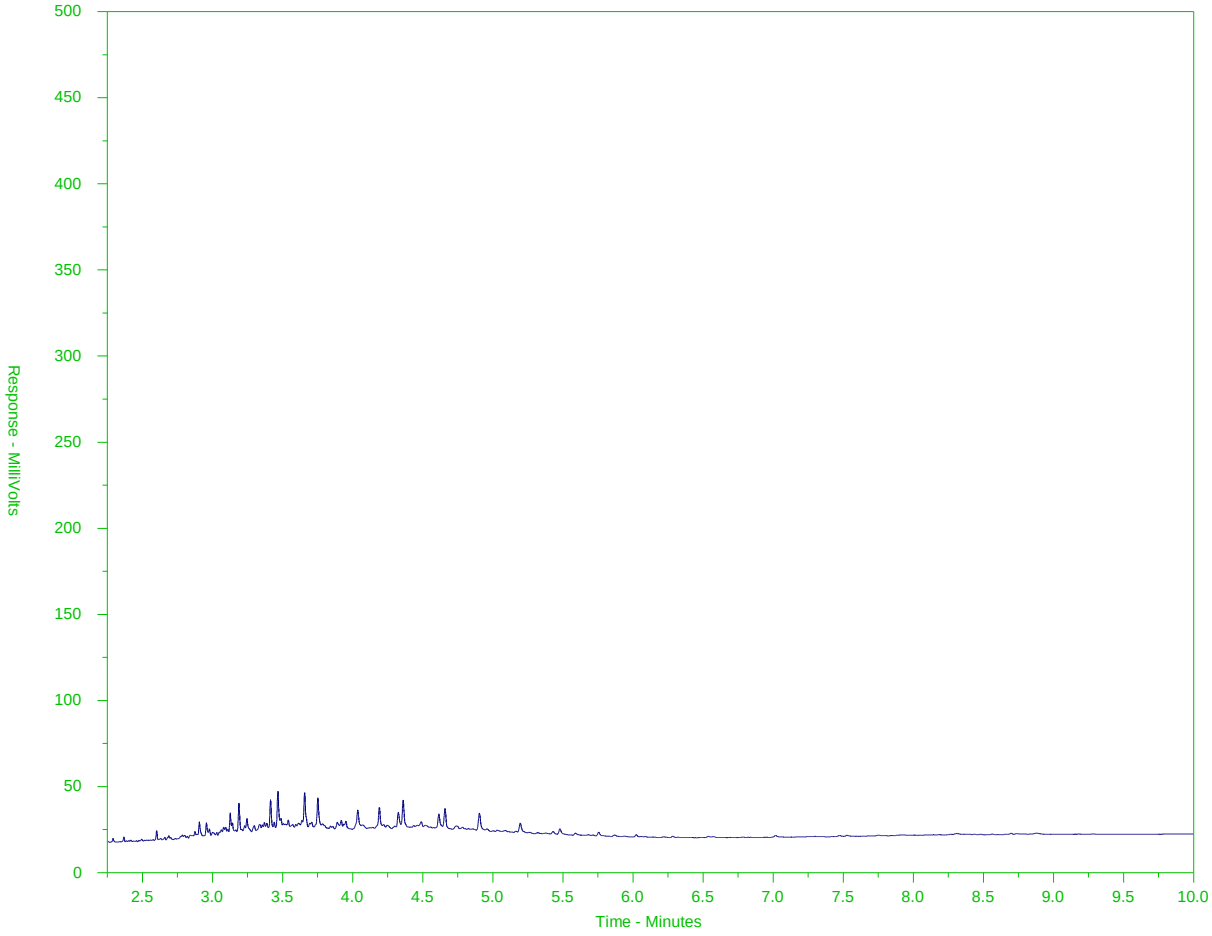
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

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

BC EPH HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2130645-6
Client Sample ID: LTF-44



← EPH10-19 →		← EPH19-32 →
nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →	← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →		

The BC EPH 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 three n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

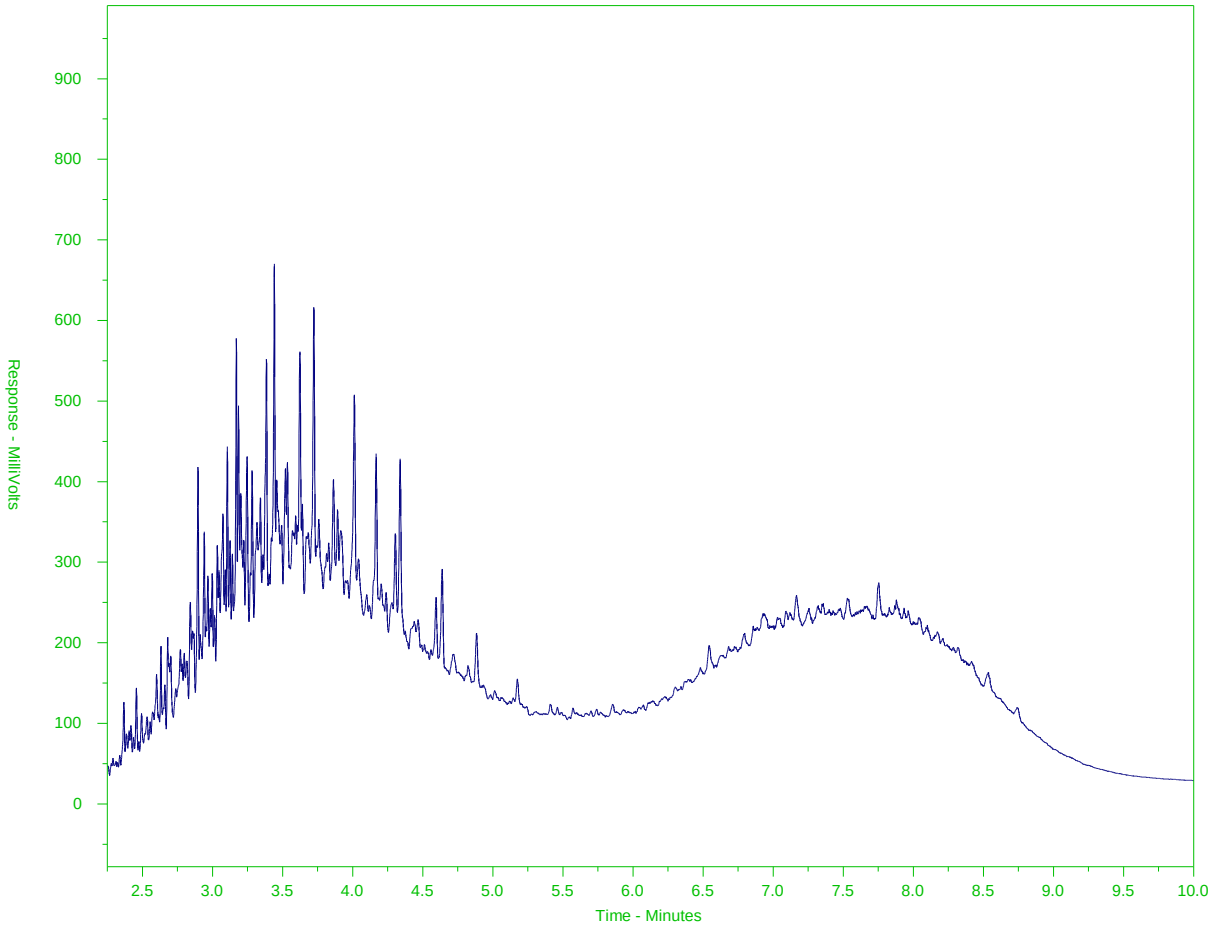
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

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

BC EPH HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2130645-7
Client Sample ID: LTF-45



← EPH10-19 →		← EPH19-32 →
nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →	← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →		

The BC EPH 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 three n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

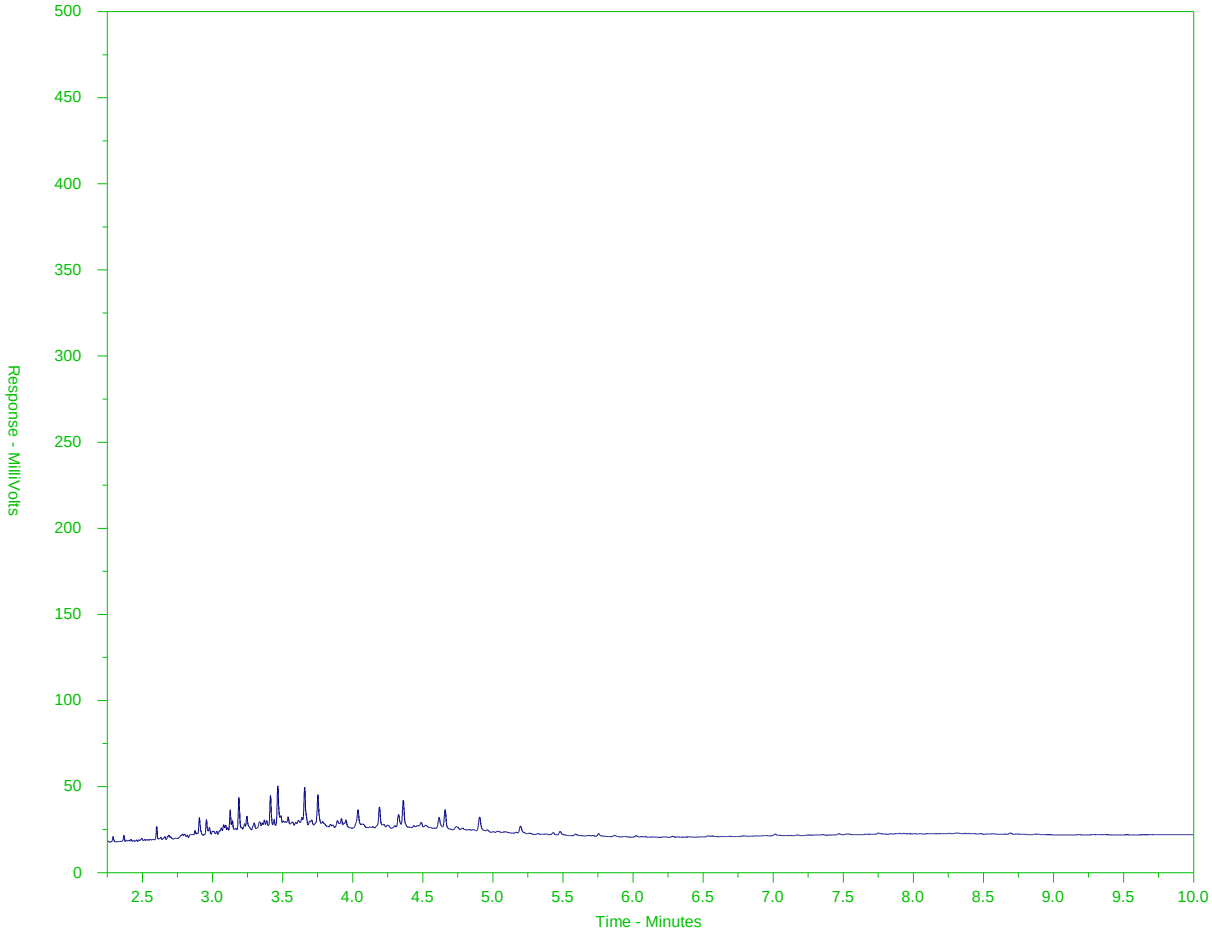
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

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

BC EPH HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2130645-8
Client Sample ID: LTF-46



← EPH10-19 →		← EPH19-32 →
nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →	← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →		

The BC EPH 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 three n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

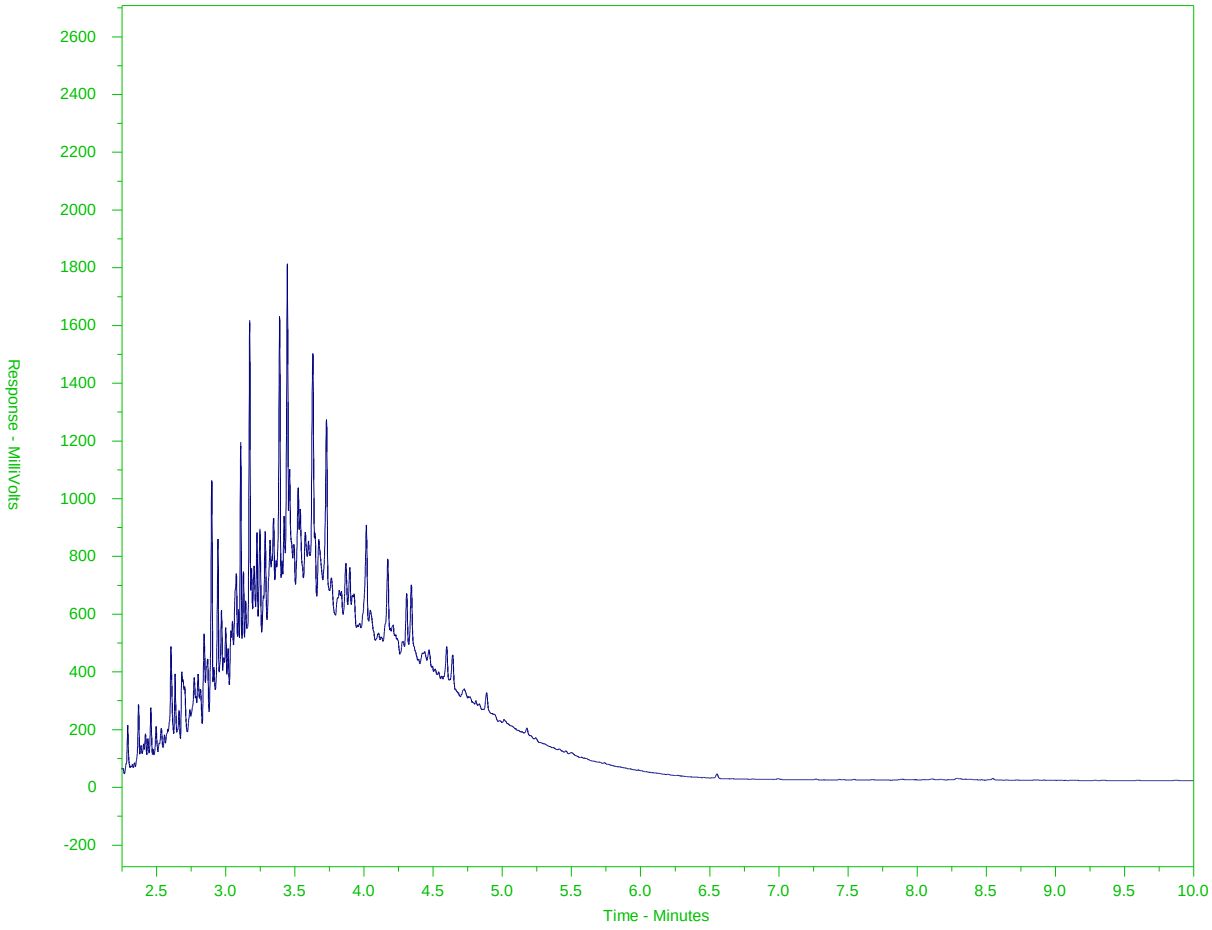
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

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

BC EPH HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2130645-9
Client Sample ID: LTF-47



← EPH10-19 →		← EPH19-32 →
nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →	← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →		

The BC EPH 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 three n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

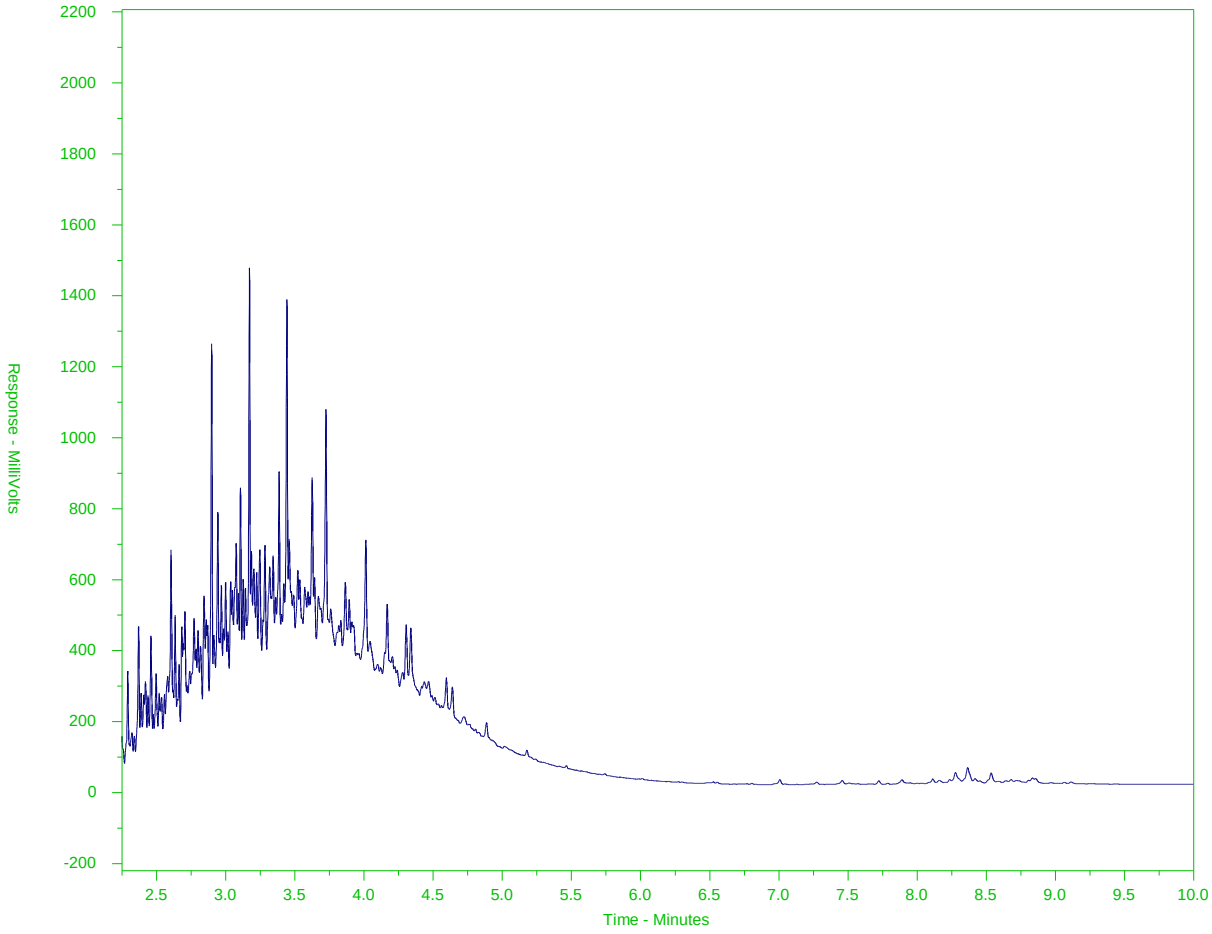
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

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

BC EPH HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2130645-10
Client Sample ID: LTF-48



← EPH10-19 →		← EPH19-32 →
nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →	← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →		

The BC EPH 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 three n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

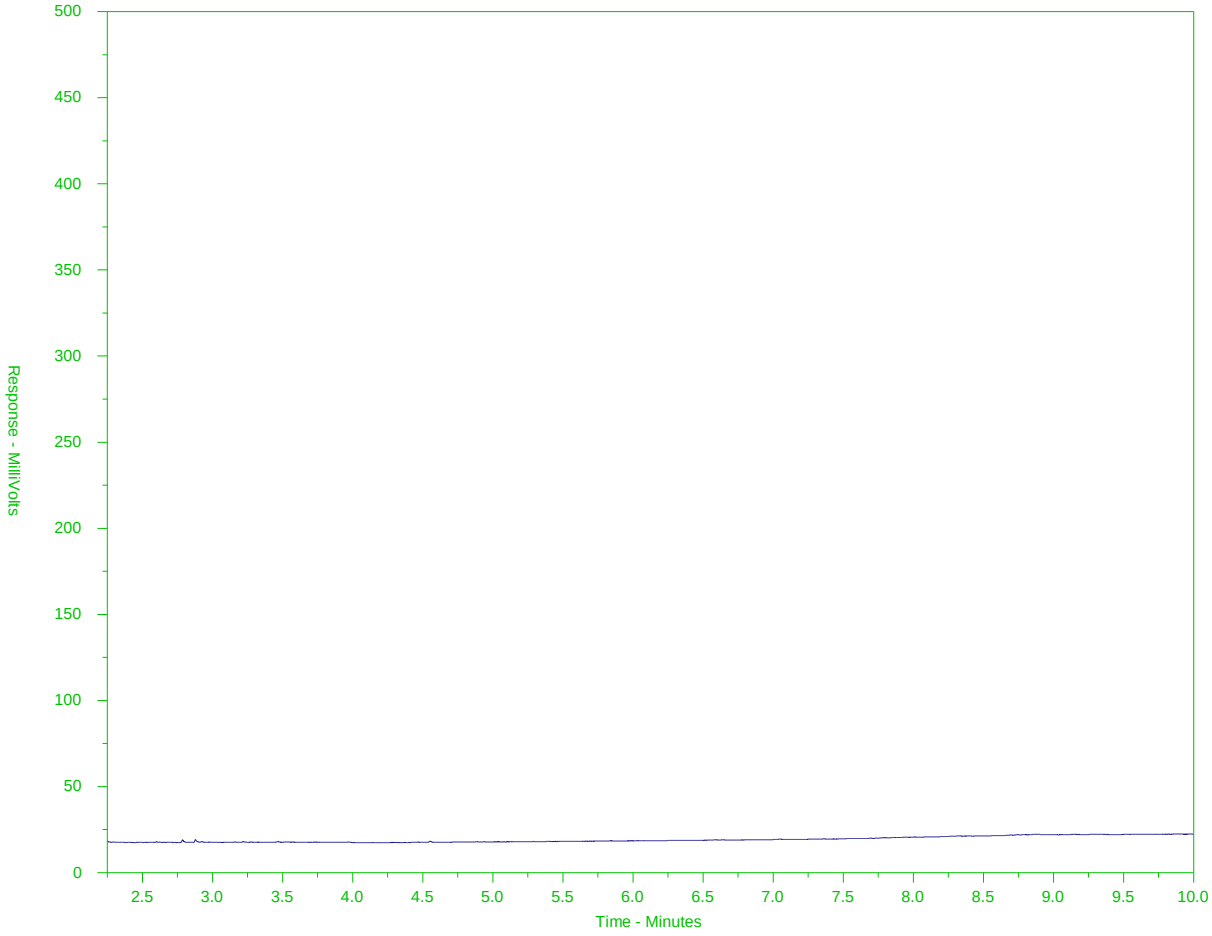
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

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

BC EPH HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2130645-11
Client Sample ID: CASB 1



← EPH10-19 →		← EPH19-32 →
nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →	← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →		

The BC EPH 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 three n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

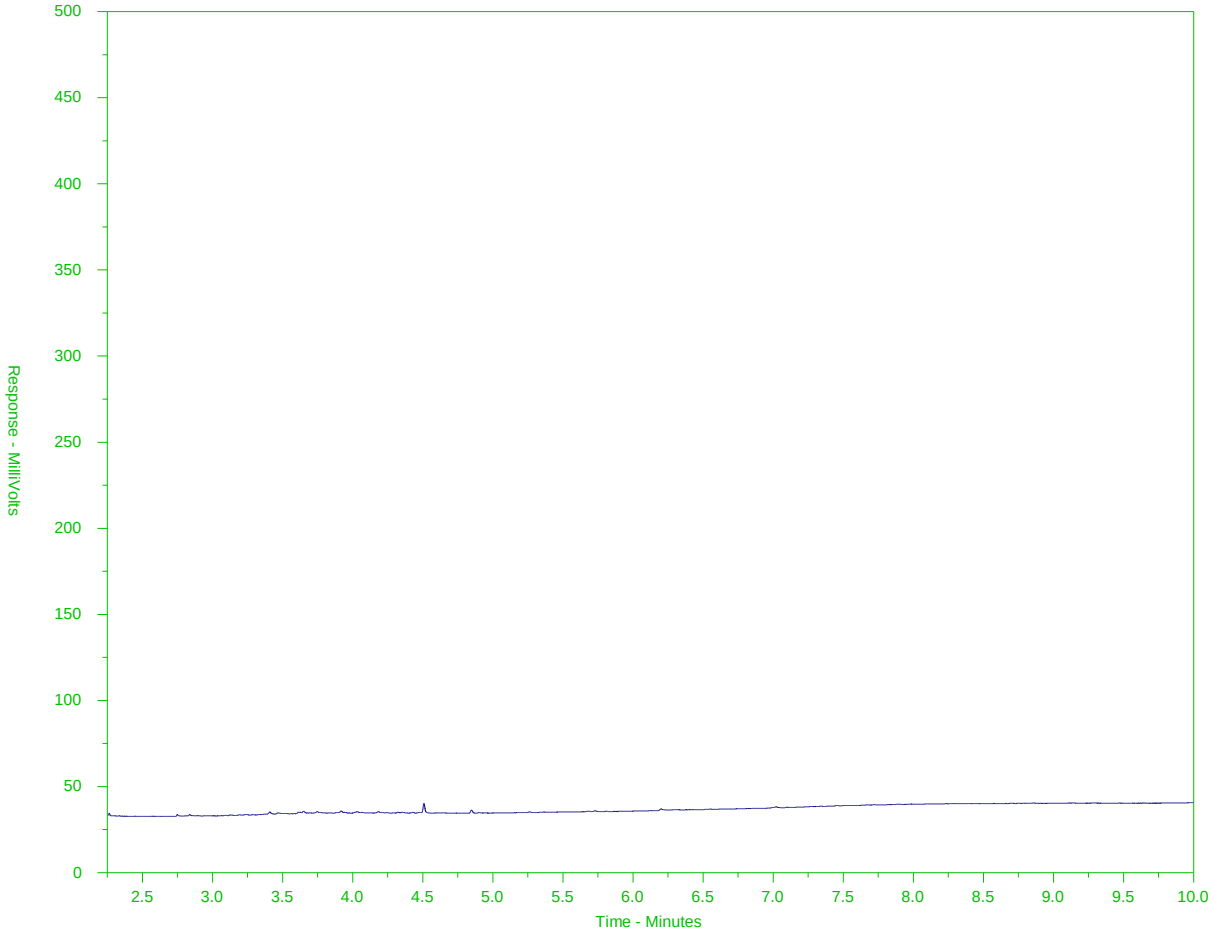
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

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

BC EPH HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2130645-12
Client Sample ID: CASB 2



← EPH10-19 →		← EPH19-32 →
nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →	← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →		

The BC EPH 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 three n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

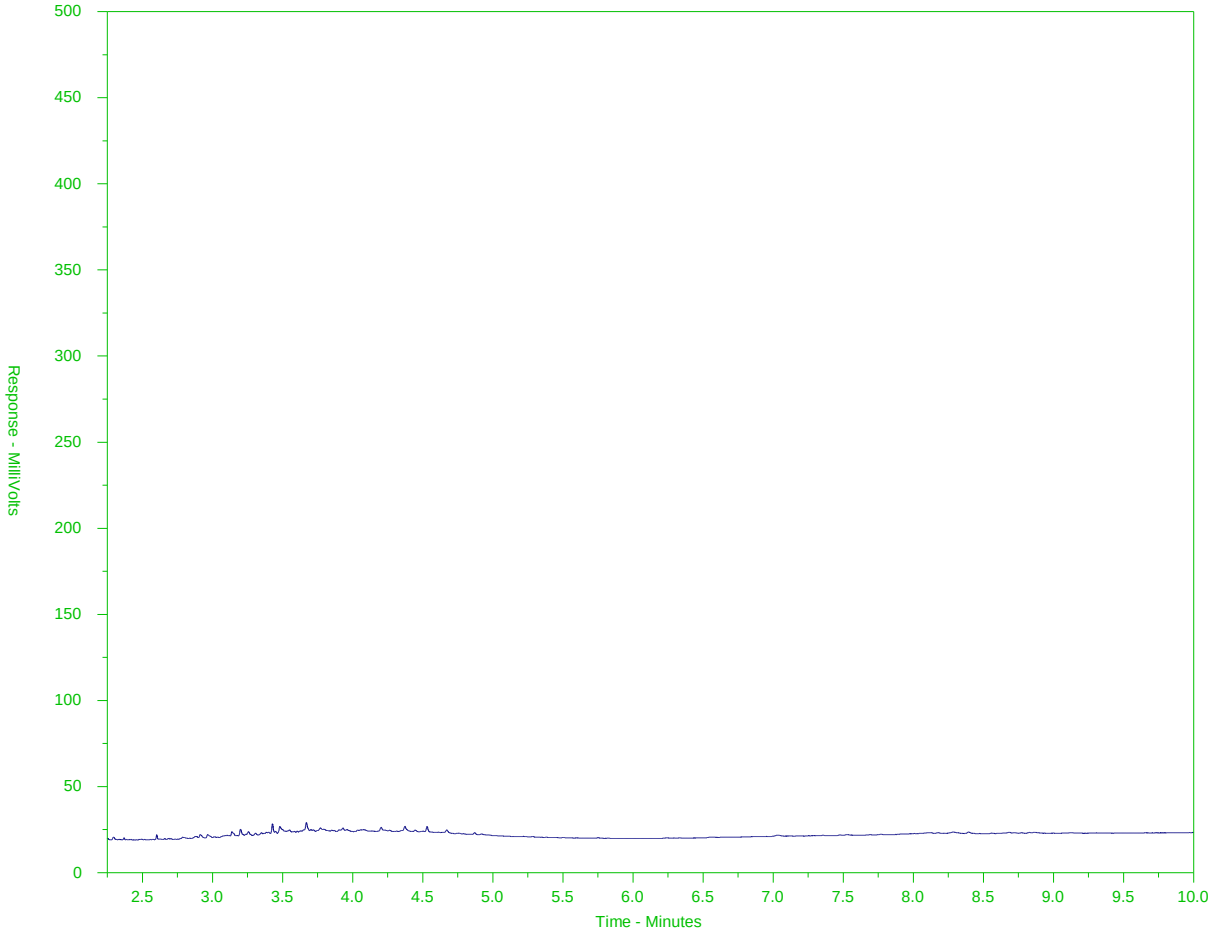
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

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

BC EPH HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2130645-13
Client Sample ID: CASB 3



← EPH10-19 →		← EPH19-32 →
nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →	← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →		

The BC EPH 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 three n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

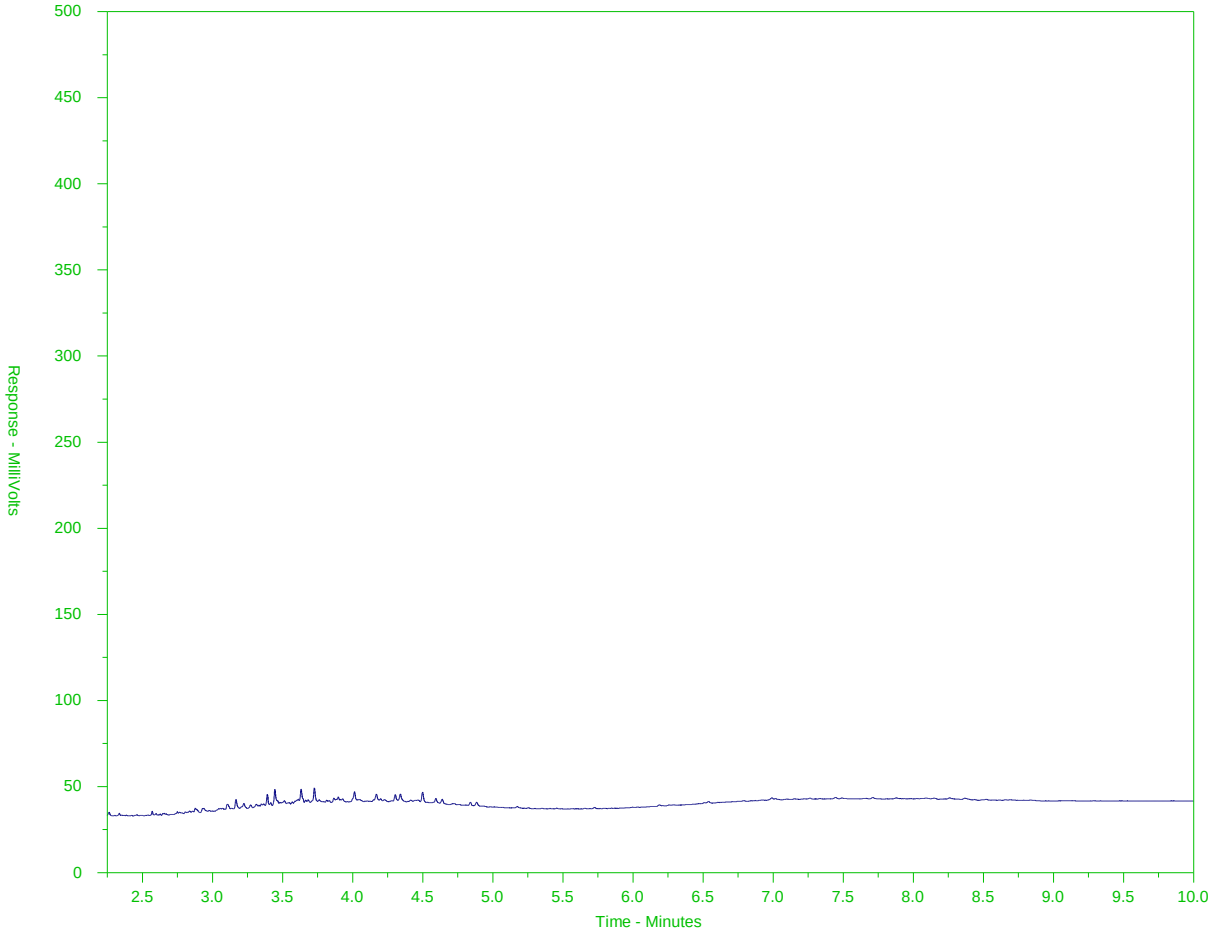
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

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

BC EPH HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: WG2827631-3#L2130645-13
Client Sample ID: CASB 3



← EPH10-19 →		← EPH19-32 →
nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →	← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →		

The BC EPH 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 three n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

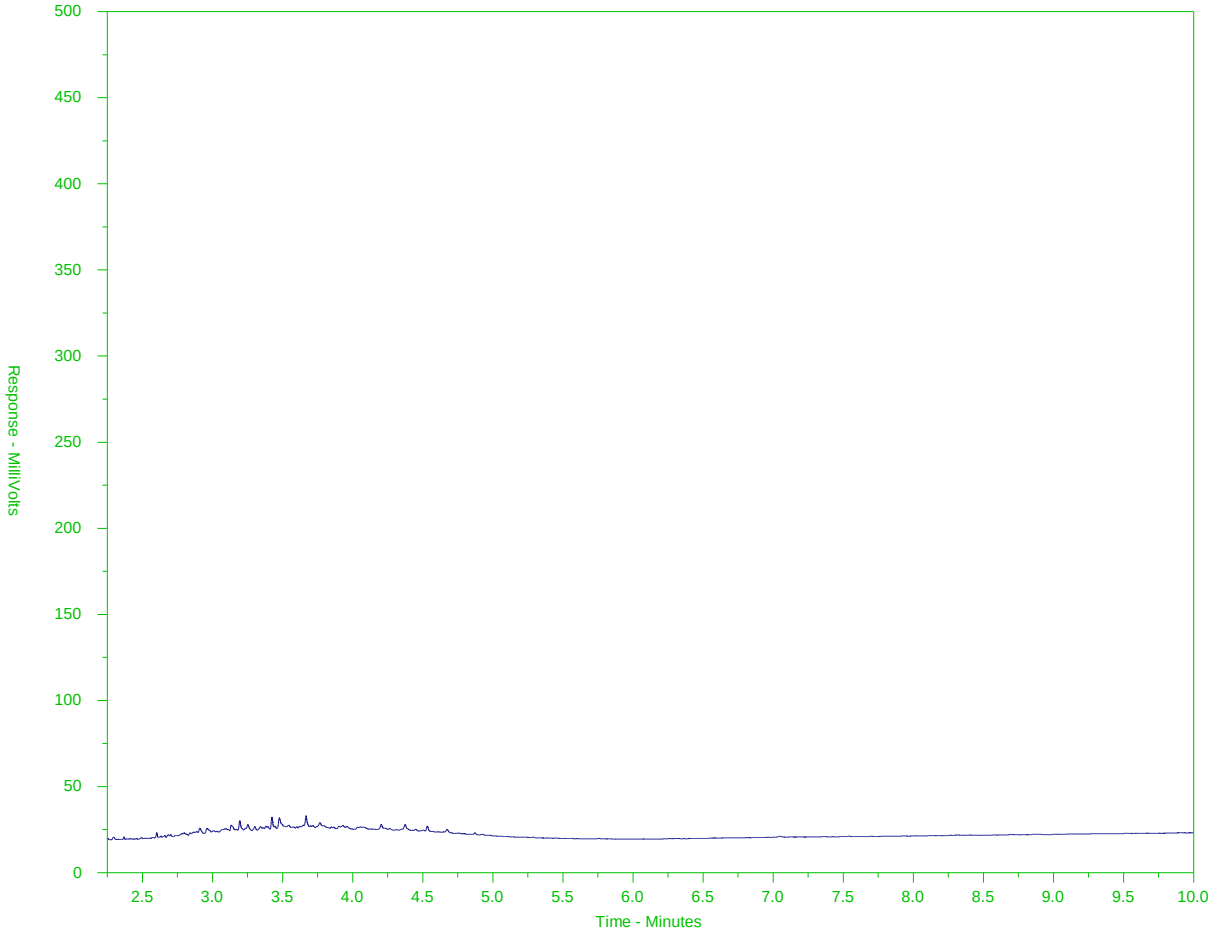
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

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

BC EPH HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2130645-14
Client Sample ID: CASB 4



← EPH10-19 →		← EPH19-32 →
nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →	← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →		

The BC EPH 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 three n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

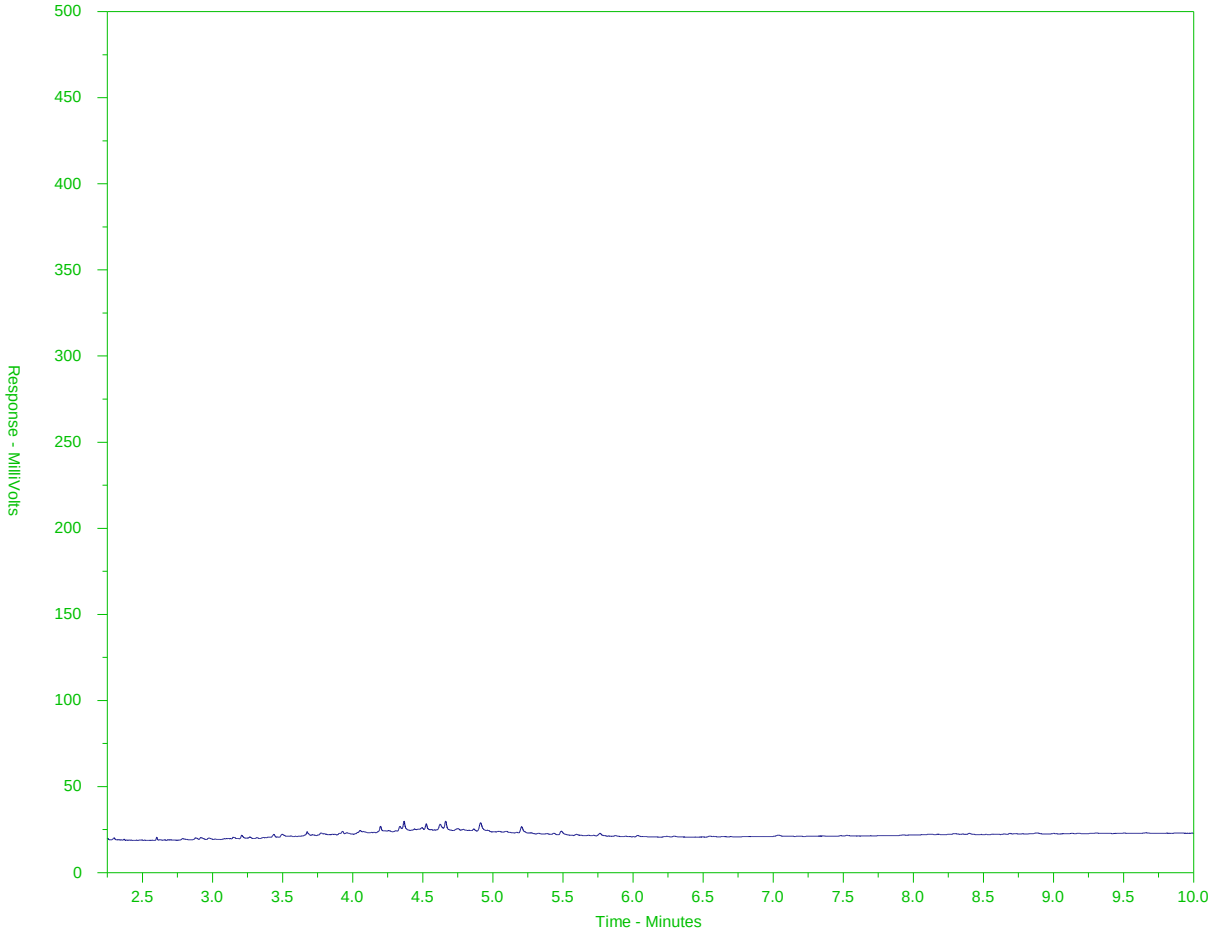
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

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

BC EPH HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2130645-15
Client Sample ID: CASB 5



← EPH10-19 →		← EPH19-32 →
nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →	← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →		

The BC EPH 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 three n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

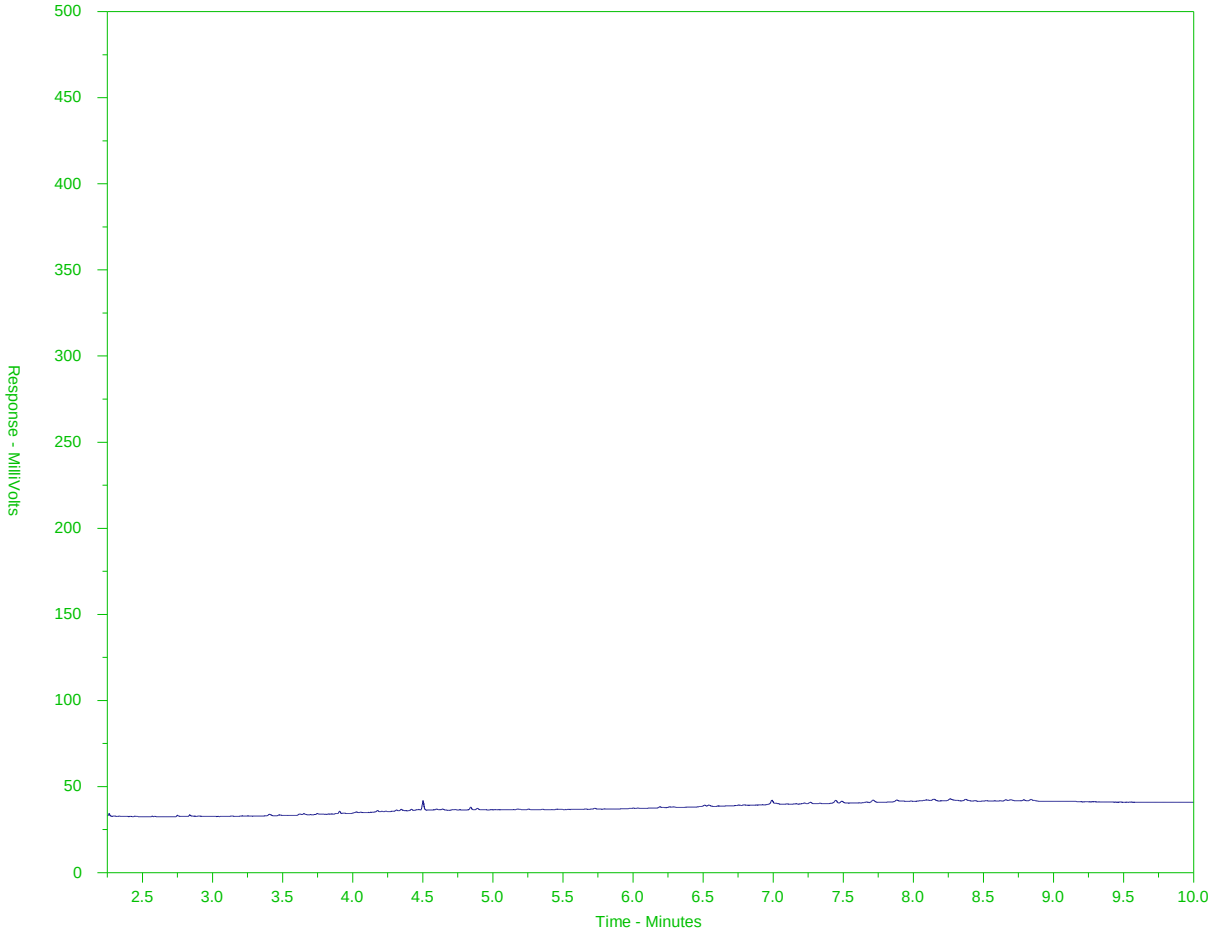
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

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

BC EPH HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2130645-16
Client Sample ID: CASB 6



← EPH10-19 →		← EPH19-32 →
nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →	← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →		

The BC EPH 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 three n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

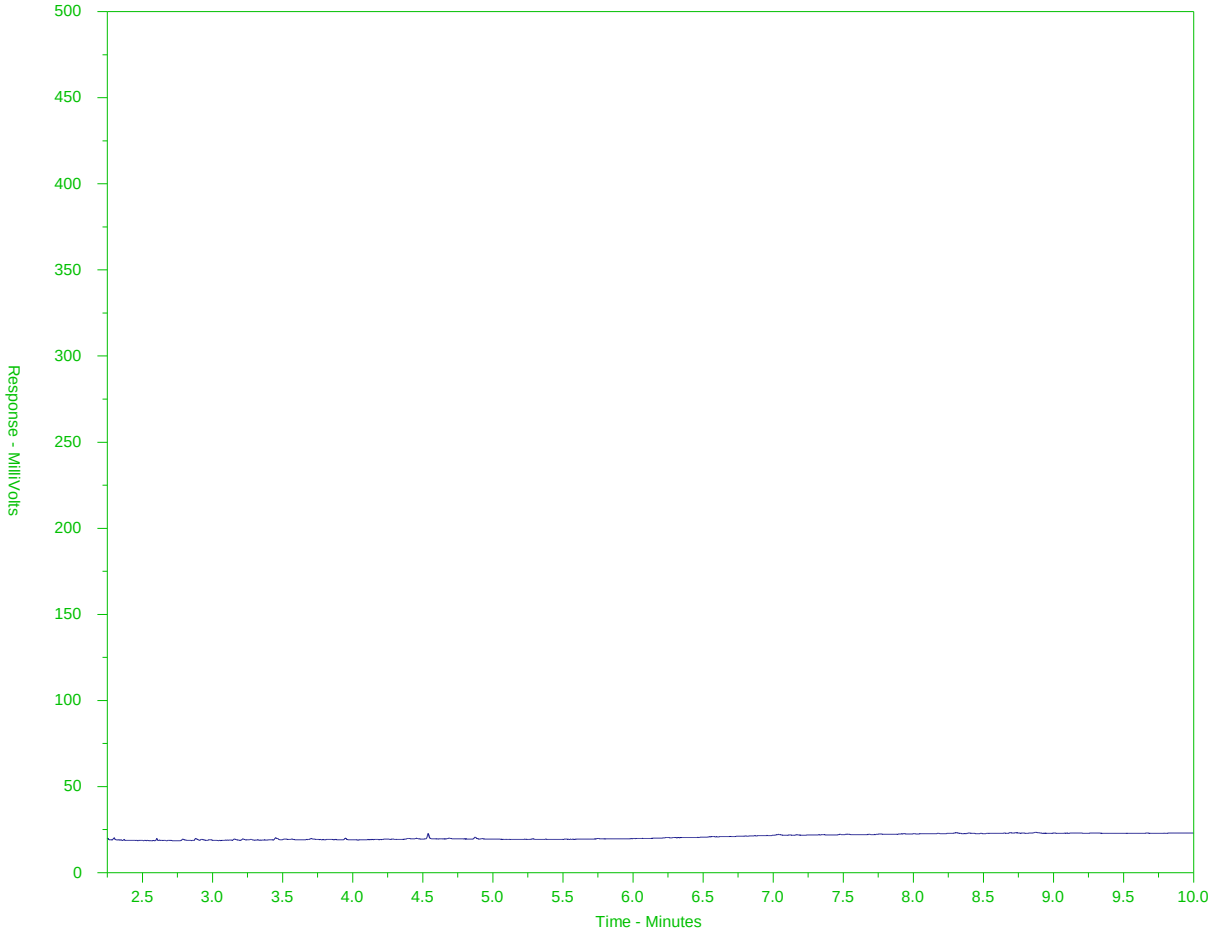
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

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

BC EPH HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2130645-17
Client Sample ID: CASB 7



← EPH10-19 →		← EPH19-32 →
nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →	← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →		

The BC EPH 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 three n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

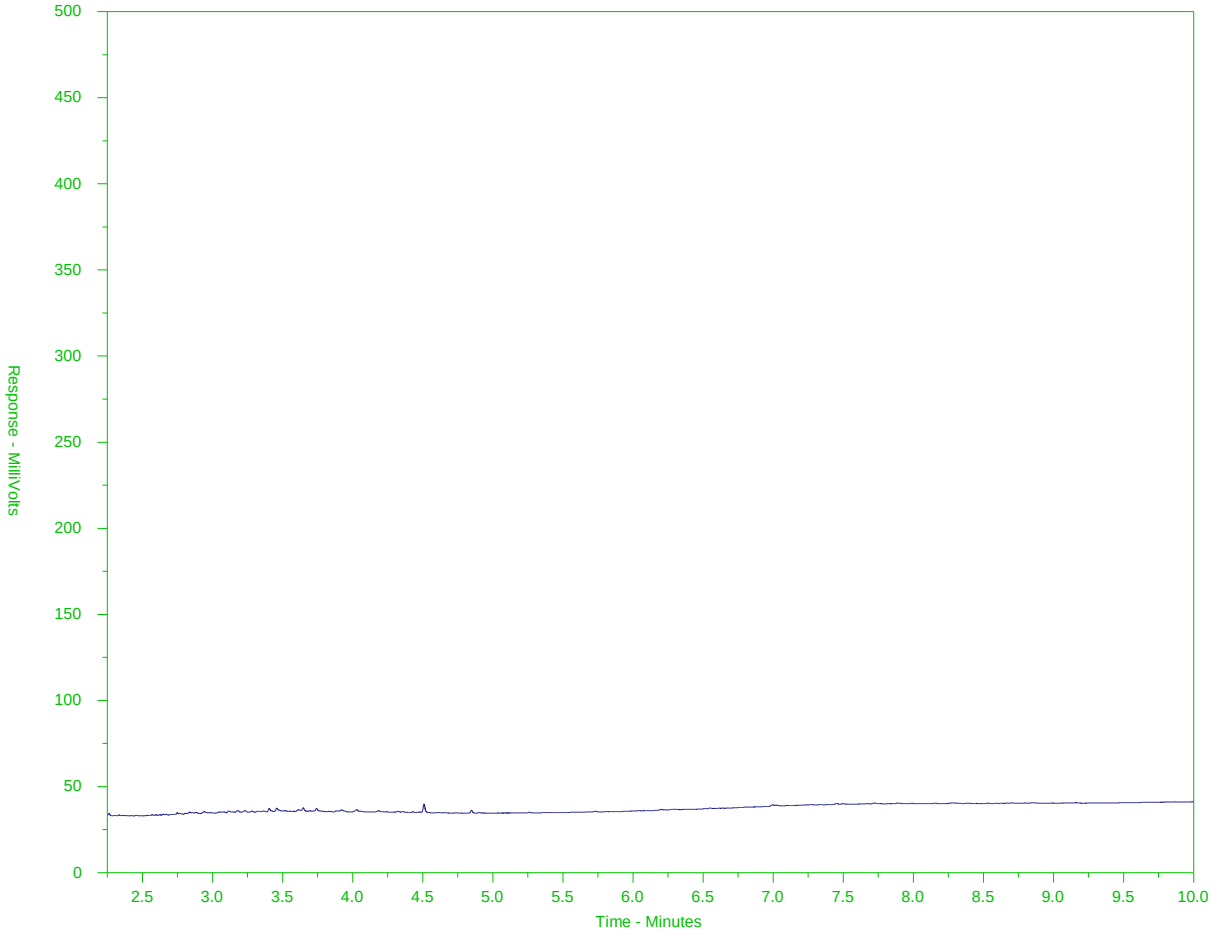
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

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

BC EPH HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2130645-18
Client Sample ID: CASB 8



← EPH10-19 →		← EPH19-32 →
nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →	← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →		

The BC EPH 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 three n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

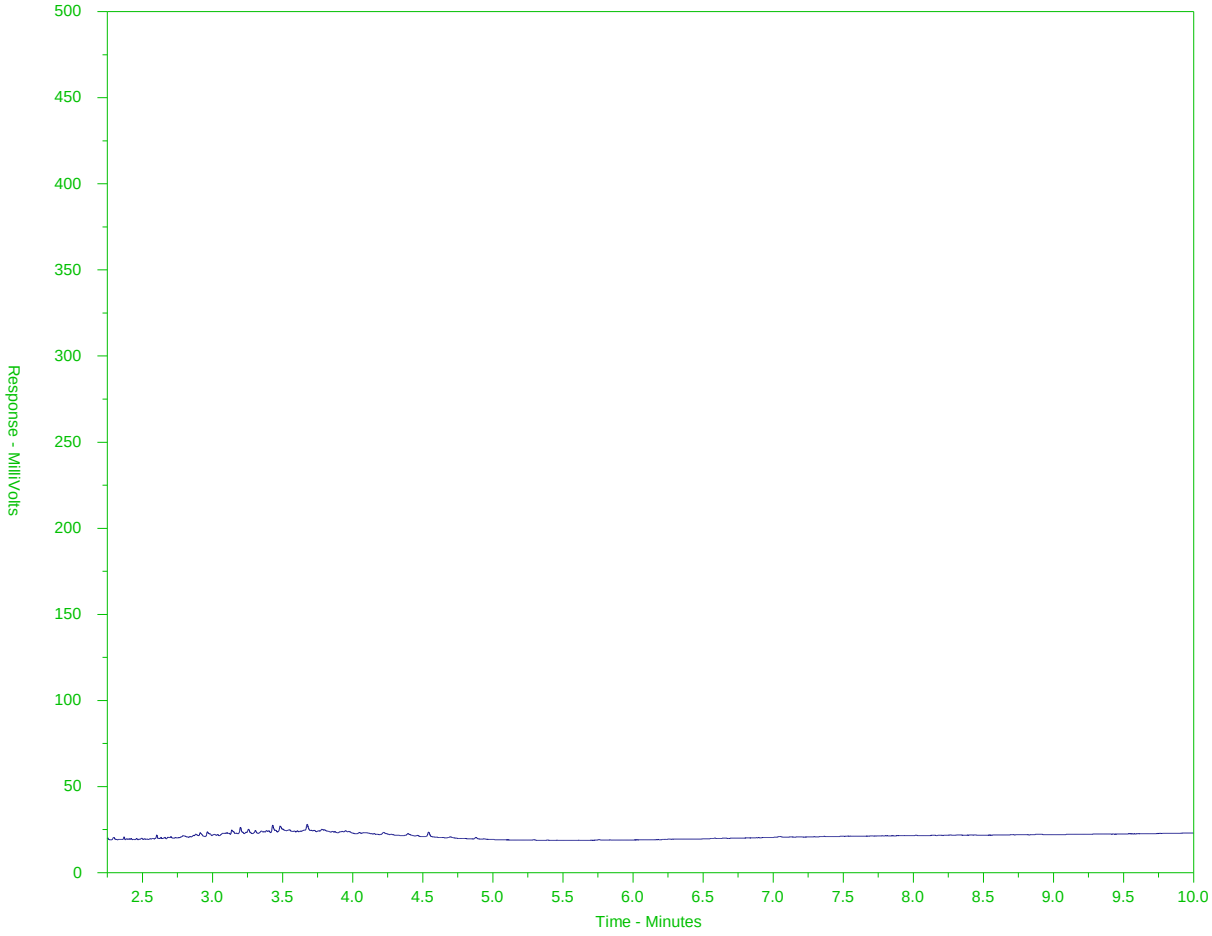
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

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

BC EPH HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2130645-19
Client Sample ID: CASB 9



← EPH10-19 →		← EPH19-32 →
nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →	← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →		

The BC EPH 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 three n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

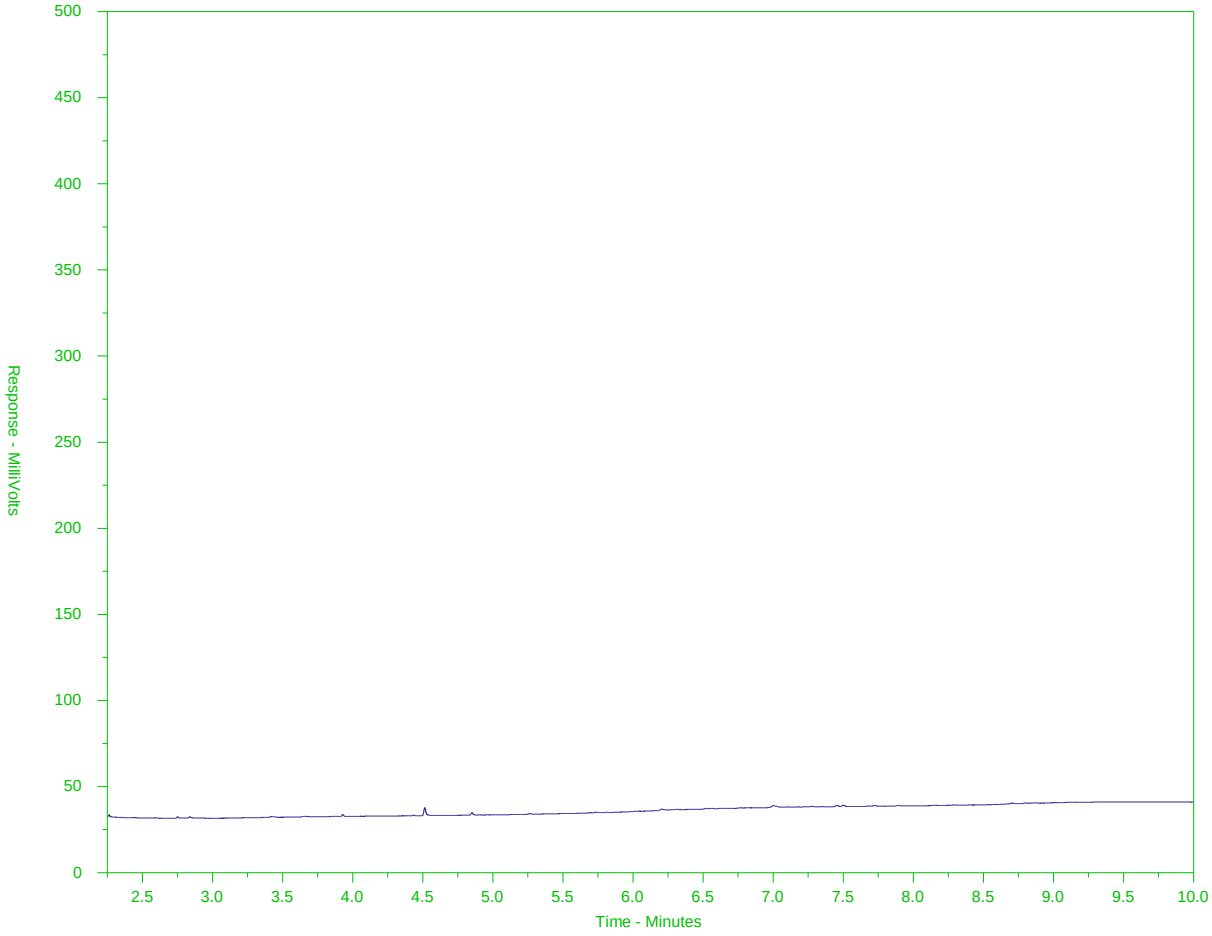
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

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

BC EPH HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2130645-20
Client Sample ID: CASB 10



← EPH10-19 →		← EPH19-32 →
nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →	← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →		

The BC EPH 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 three n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

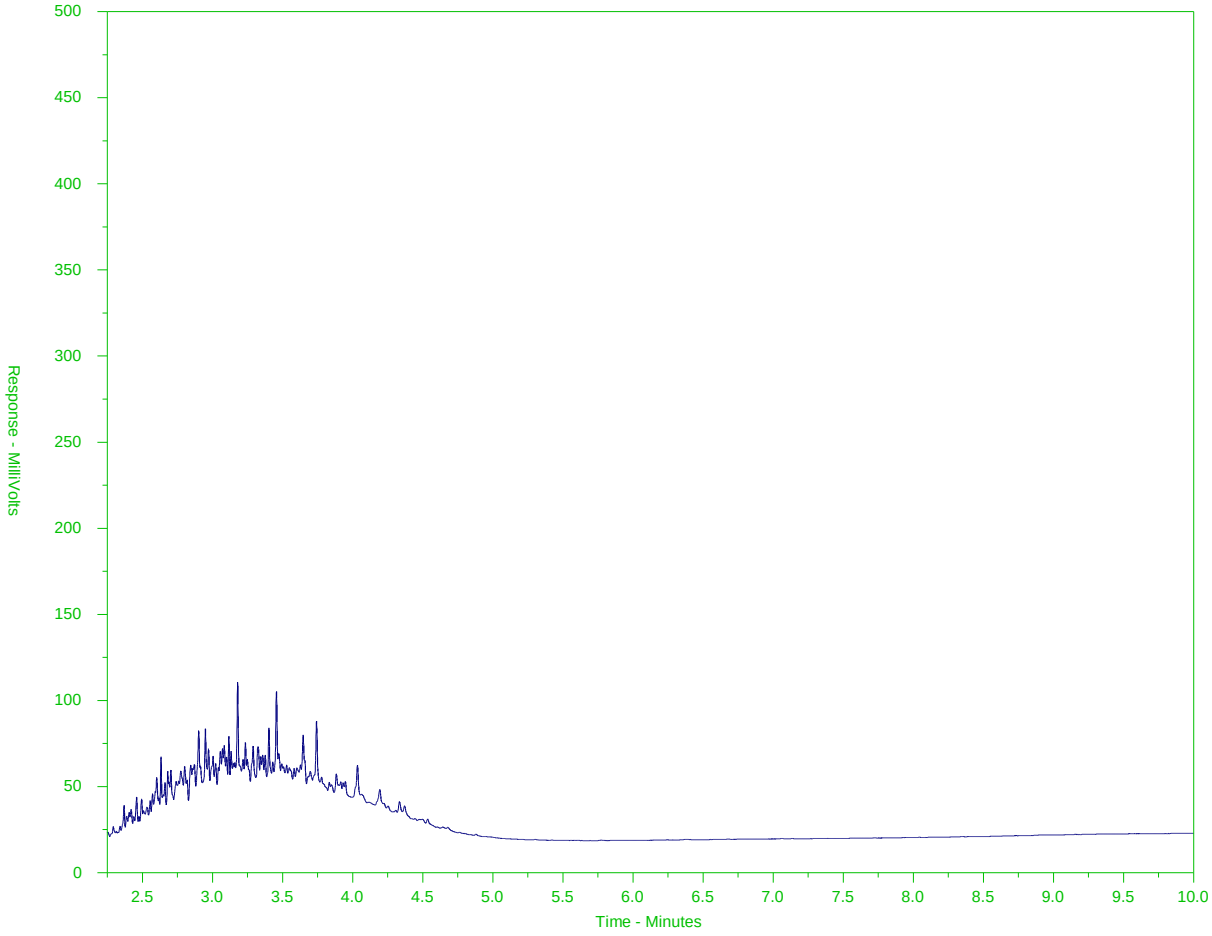
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

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

BC EPH HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2130645-21
Client Sample ID: CASB 11



← EPH10-19 →		← EPH19-32 →
nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →	← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →		

The BC EPH 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 three n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

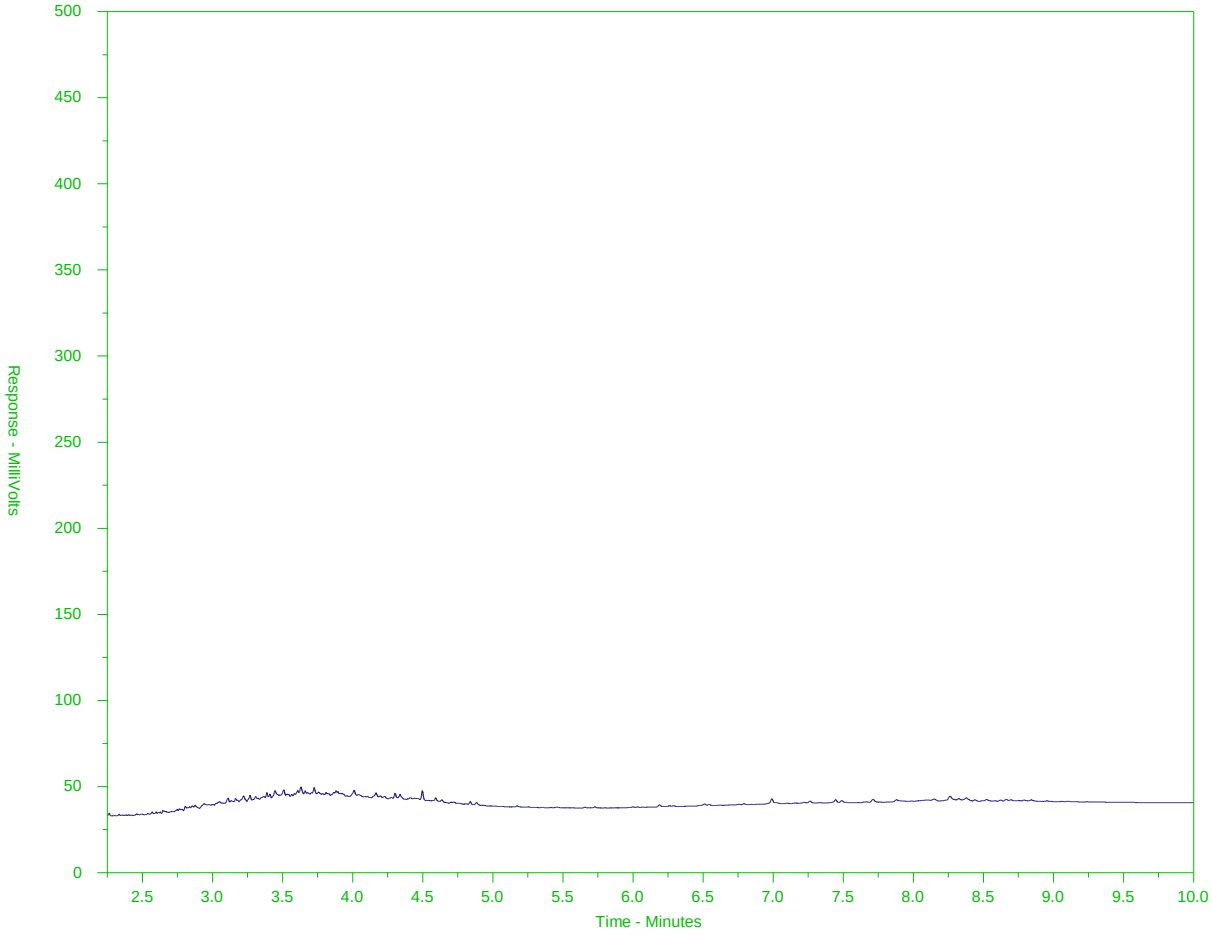
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

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

BC EPH HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2130645-22
Client Sample ID: CASB 12



← EPH10-19 →		← EPH19-32 →
nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →	← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →		

The BC EPH 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 three n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

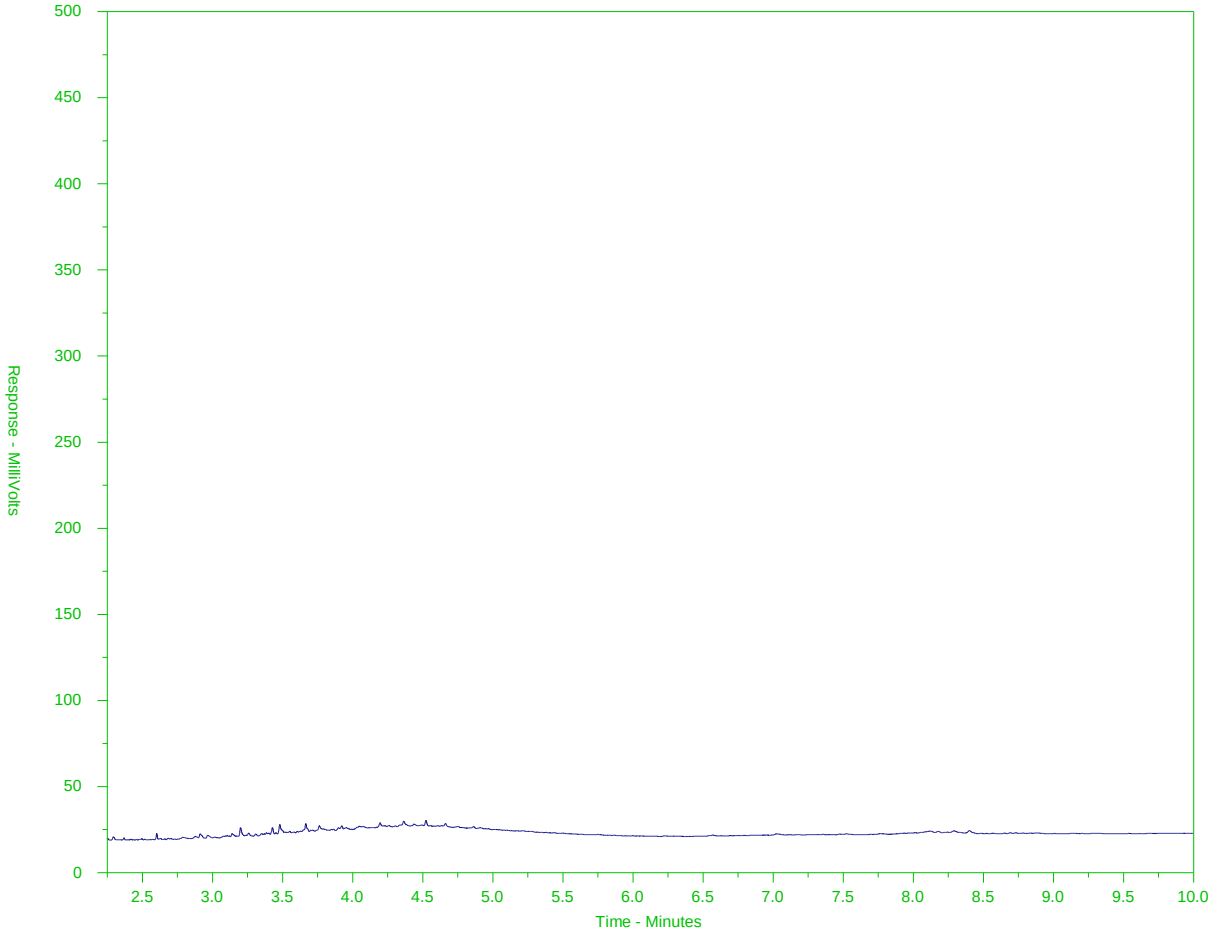
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

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

BC EPH HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2130645-23
Client Sample ID: CASB 13



← EPH10-19 →		← EPH19-32 →
nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →	← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →		

The BC EPH 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 three n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

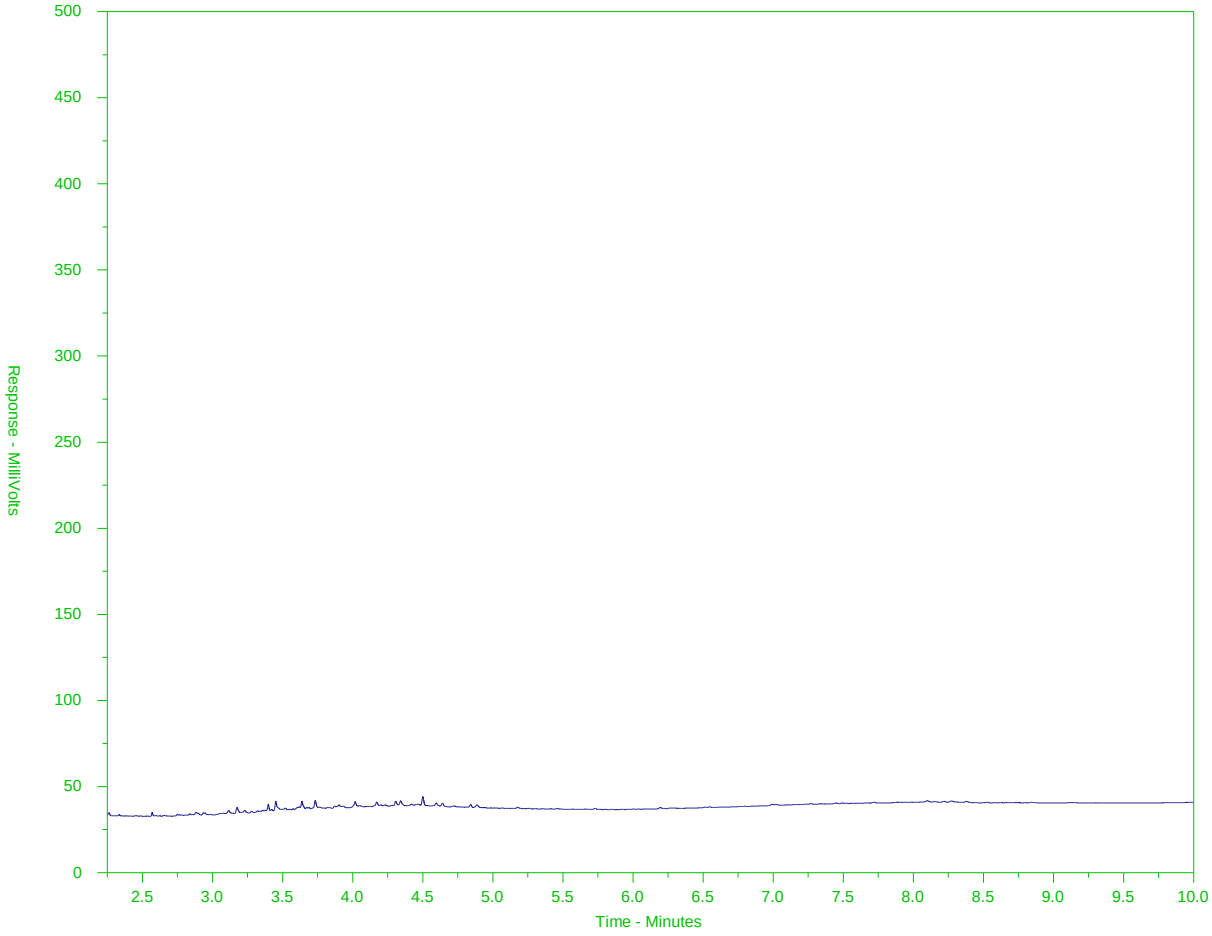
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

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

BC EPH HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2130645-24
Client Sample ID: CASB 14



← EPH10-19 →		← EPH19-32 →
nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →	← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →		

The BC EPH 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 three n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

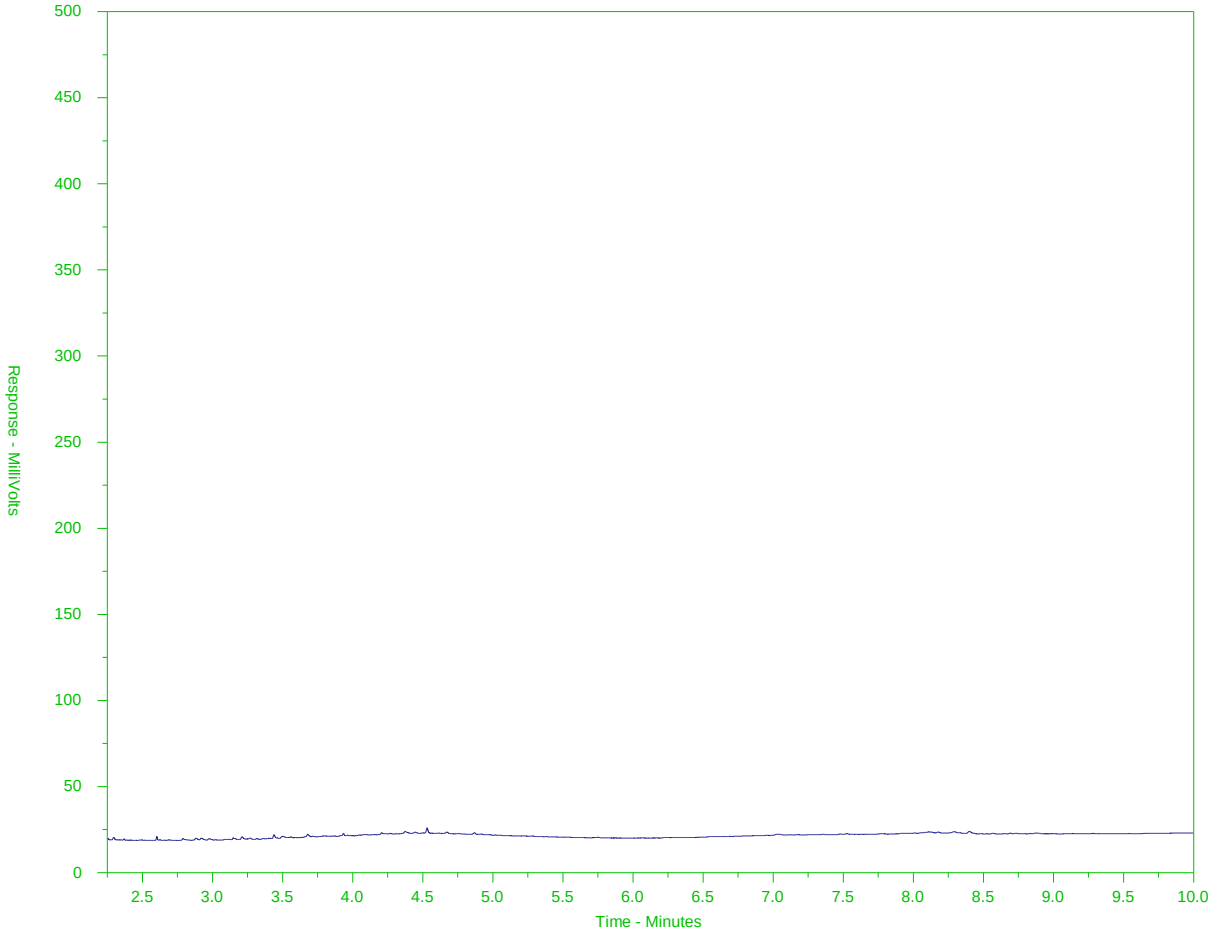
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

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

BC EPH HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2130645-25
Client Sample ID: CASB 15



← EPH10-19 →		← EPH19-32 →
nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →	← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →		

The BC EPH 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 three n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

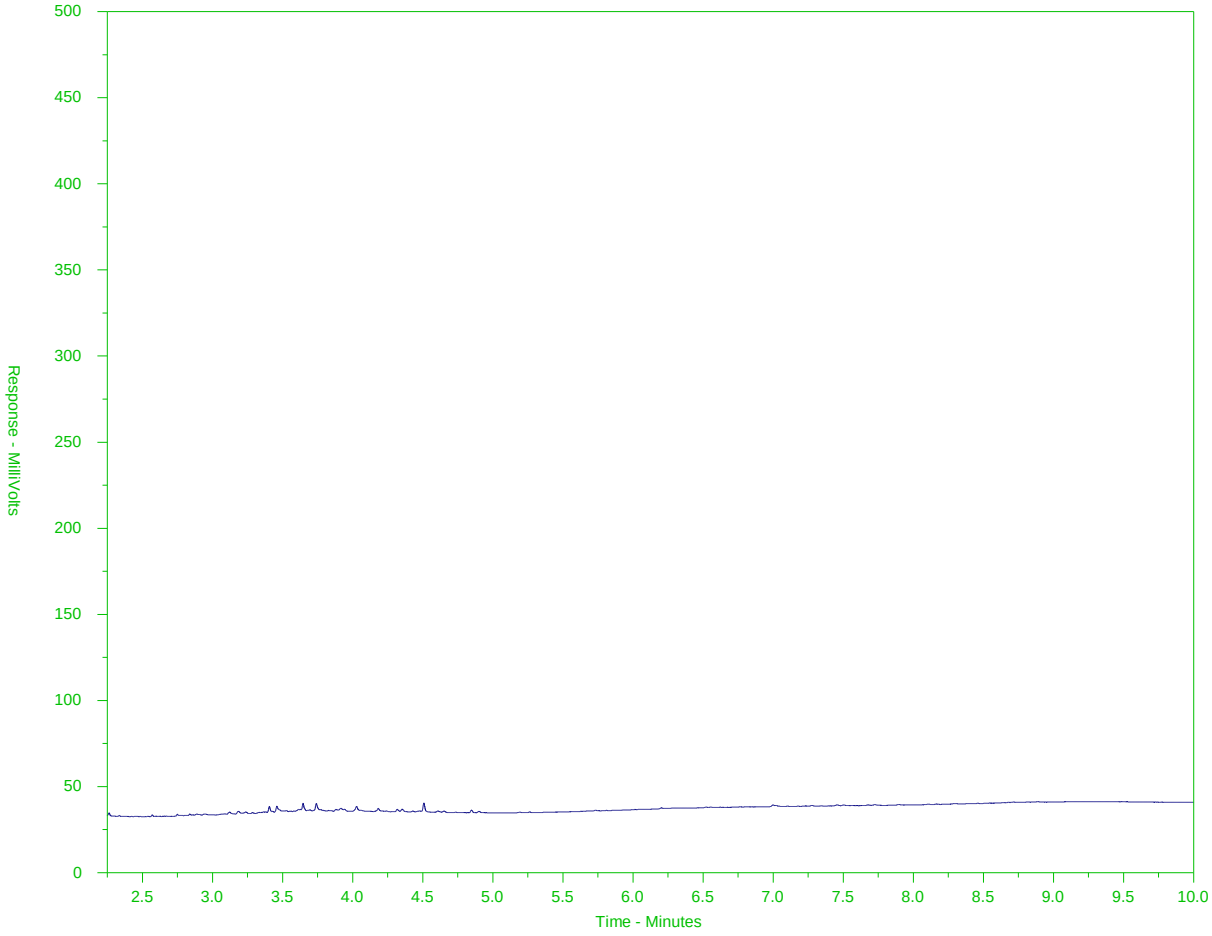
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

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

BC EPH HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2130645-26
Client Sample ID: CASB 16



← EPH10-19 →		← EPH19-32 →
nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →	← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →		

The BC EPH 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 three n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

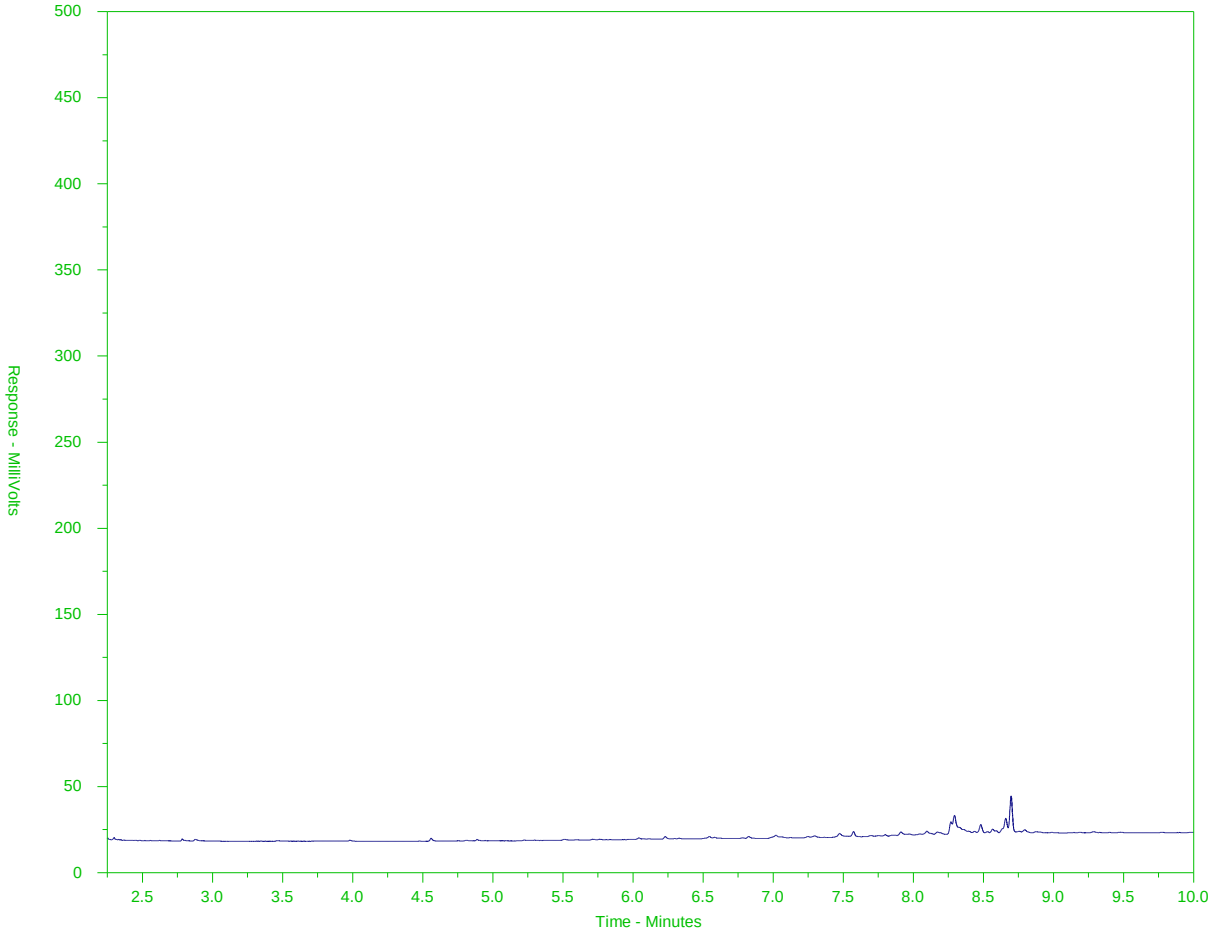
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

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

BC EPH HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2130645-27
Client Sample ID: BPX Y1



← EPH10-19 →		← EPH19-32 →
nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →	← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →		

The BC EPH 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 three n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

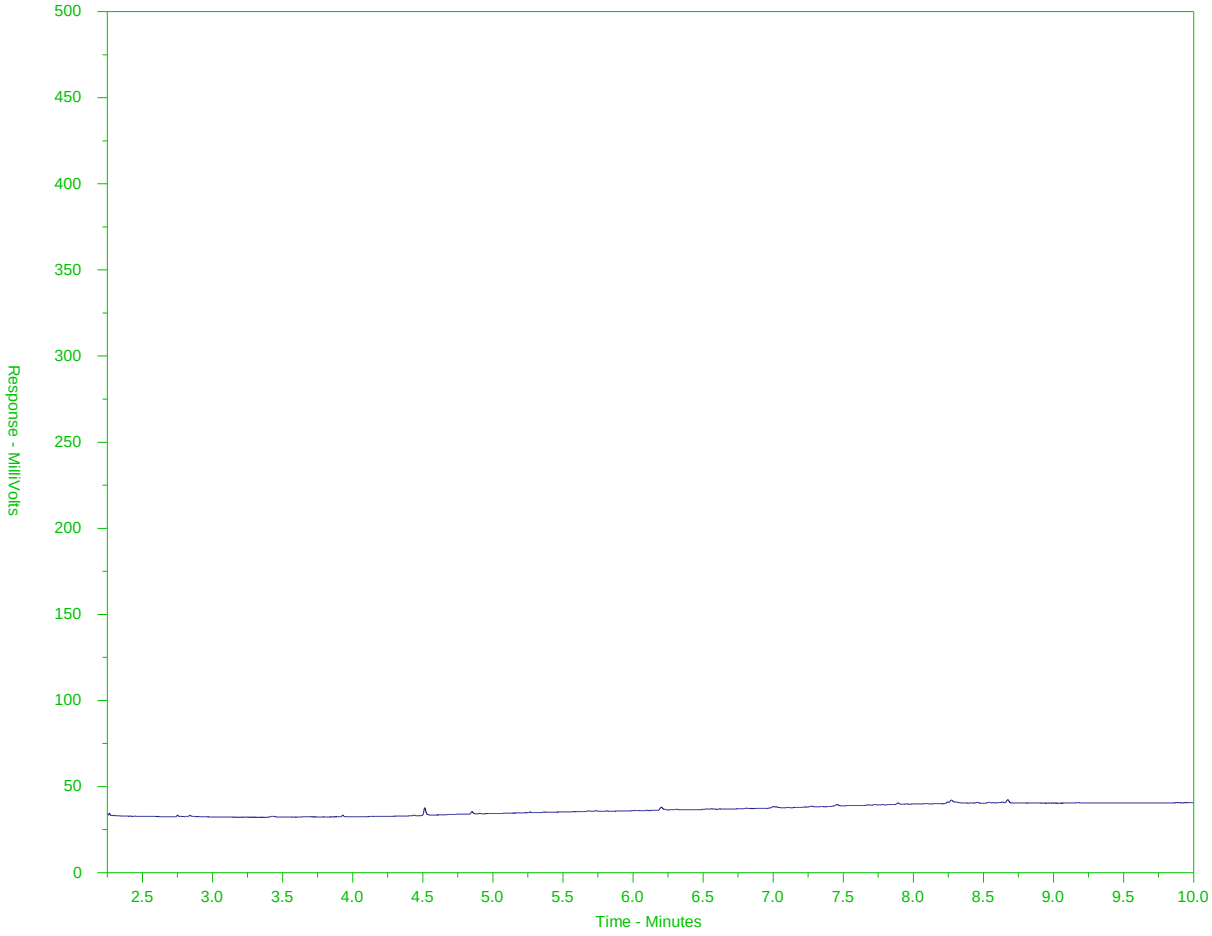
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

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

BC EPH HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2130645-28
Client Sample ID: BPX Y2



← EPH10-19 →		← EPH19-32 →
nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →	← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →		

The BC EPH 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 three n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

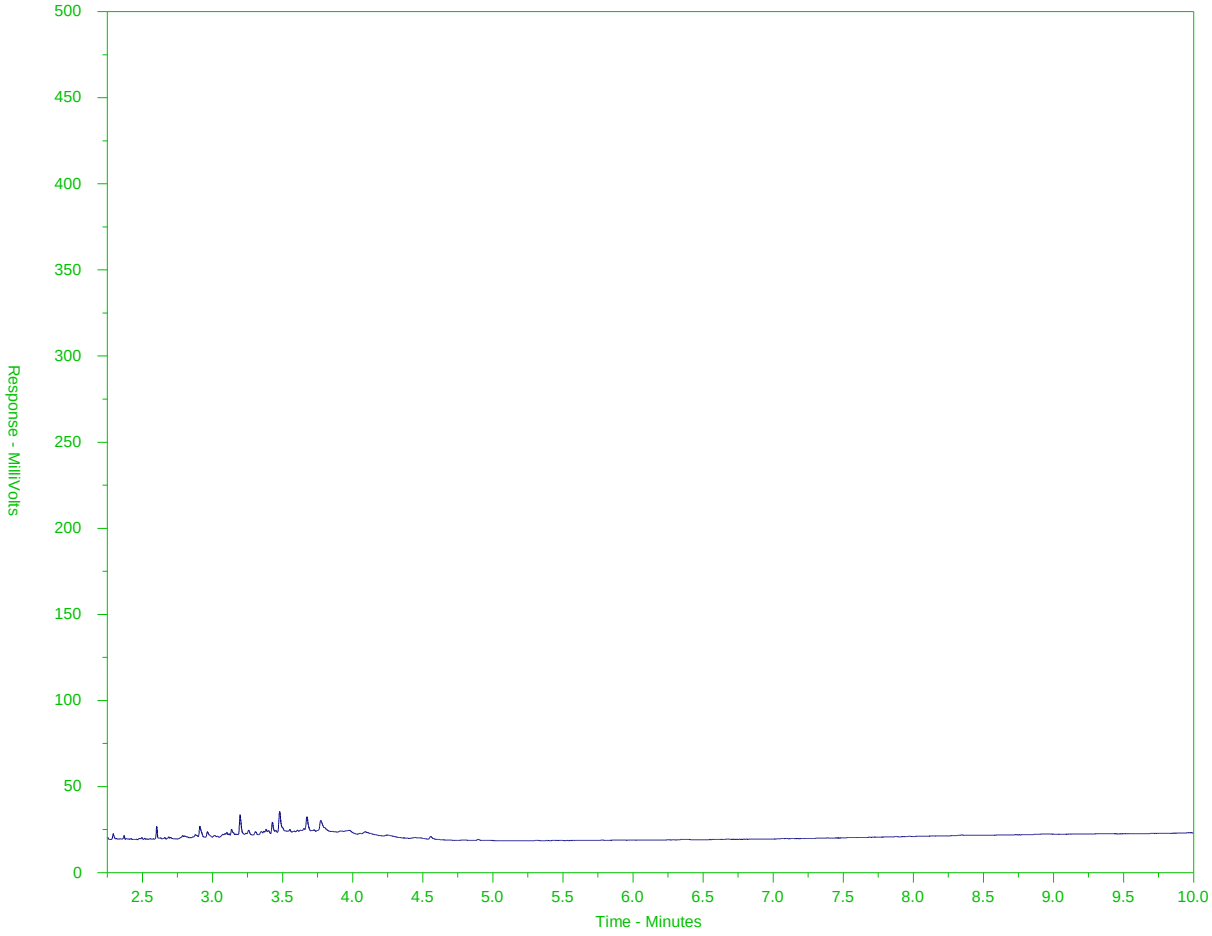
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

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

BC EPH HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2130645-29
Client Sample ID: AXY 1



← EPH10-19 →		← EPH19-32 →
nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →	← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →		

The BC EPH 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 three n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

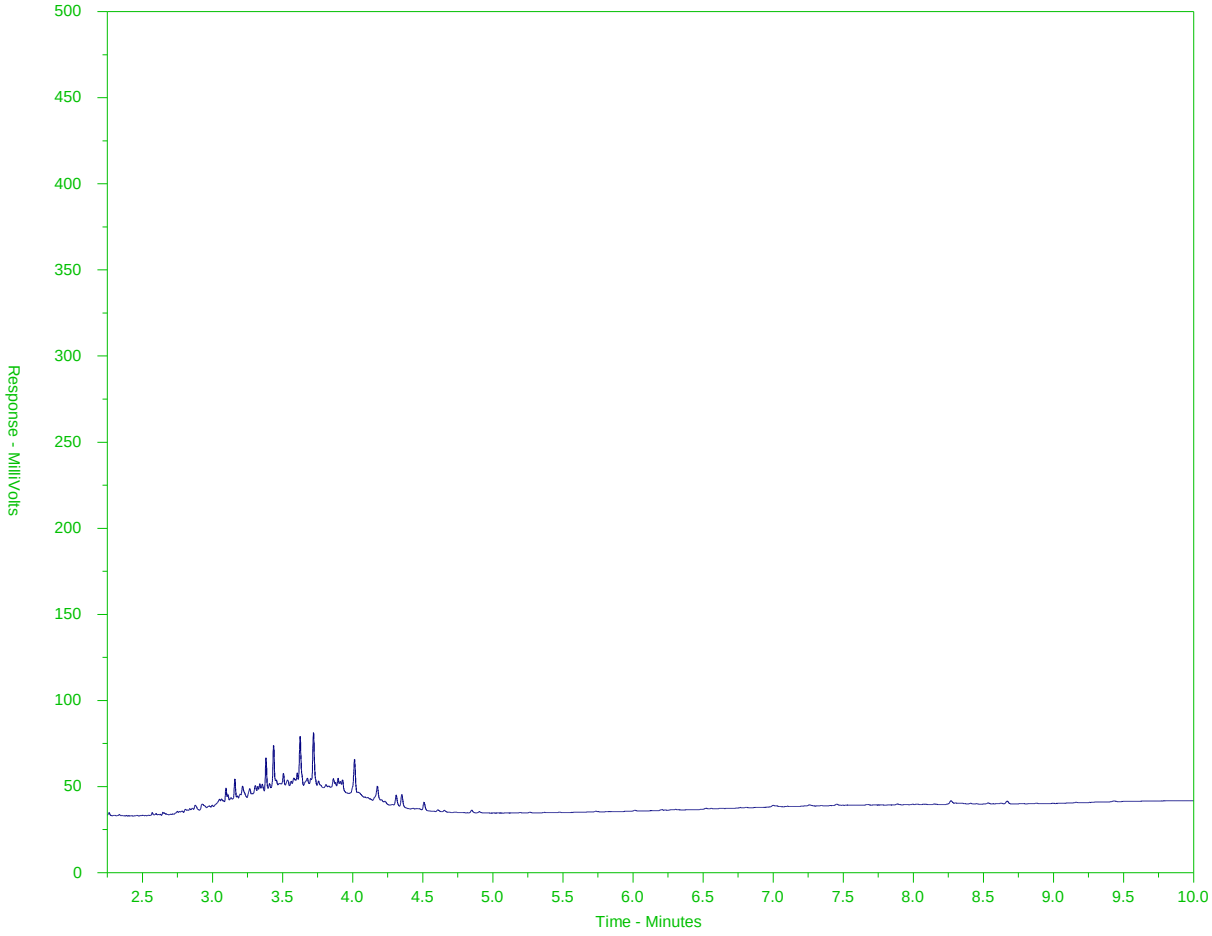
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

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

BC EPH HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2130645-30
Client Sample ID: AXY 2



← EPH10-19 →		← EPH19-32 →
nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →	← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →		

The BC EPH 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 three 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.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

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

Chain of Custody (COC) / Analytical Request Form

ALS Environmental
www.alsglobal.com

Canada Toll Free: 1 800 668 9878

L2130645-COFC

COC Number: 17 - 653142

Page 1 of 3

Report To	Contact and company name below will appear on the final report	Report Format / Distribution	Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)
Company:	SCML	Select Report Format: [X] PDF [X] EXCEL | | EDD (DIGITAL)	Regular [R] [✓] Standard TAT if received by 3 pm - business days - no surcharges apply
Contact:	Sukie Sidhu	Quality Control (QC) Report with Report [✓] YES [ ] NO	PRIORITY (Business Days): 4 day [P4-20%] [ ]; 3 day [P3-25%] [ ]; 2 day [P2-50%] [ ]
Phone:	867.332.0841	[ ] Compare Results to Criteria on Report - provide details below if box checked	EMERGENCY: 1 Business day [E-100%] [ ]; Same Day, Weekend or Statutory holiday [E2-200% (Laboratory opening fees may apply)] [ ]
	Company address below will appear on the final report	Select Distribution: [X] EMAIL | | MAIL [ ] FAX	
Street:		Email 1 or Fax: ssidhu@chibongmining.com	Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm
City/Province:		Email 2	For tests that can not be performed according to the service level selected, you will be contacted.
Postal Code:		Email 3	

Invoice To		Invoice Distribution	Analysis Request
	Same as Report To [✓] YES [ ] NO	Select Invoice Distribution: [X] 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: ayu@chibongmining.com	
Company:	SCML	Email 2	
Contact:	ssidhu@chibongmining.com		

Project Information		Oil and Gas Required Fields (client use)	
ALS Account # / Quote #:		AFE/Cost Center:	PO#:
Job #:		Major/Minor Code:	Routing Code:
PO / AFE:		Requisitioner:	
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	BTEX	Styrene	VPH	LEPH	HEPH	PAH	SAMPLES ON HOLD	Sample is hazardous (please provide further details)	NUMBER OF CONTAINERS
	LTF-39	13-Jul-18	09:04	Soil	↓	↓	↓	↓	↓	↓			4
	LTF-40		09:06										
	LTF-41		09:10										
	LTF-42		09:14										
	LTF-43		09:17										
	LTF-44		09:20										
	LTF-45		09:23										
	LTF-46		09:26										
	LTF-47		09:30										↓
	LTF-48	↓	09:34	↓									

Drinking Water (DW) Samples[1] (client use)	Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)
Are samples taken from a Regulated DW System? [ ] YES [ ] NO	
Are samples for human consumption/ use? | | YES | | NO	

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen [ ]	SIF Observations	Yes [ ]	No [ ]		
Ice Packs [ ] Ice Cubes [ ]	Custody seal intact	Yes [ ]	No [ ]		
Cooling Initiated [ ]					

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
9.5			10				

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by:	Date: 17-Jul-18	Time:	Received by: VD	Date: July 17/18	Time: 12:45	Received by: HA	Date: 7/18	Time: 1130

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

JULY 2017 FRONT

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

L2130645-COFC

COC Number: 17 - 653143

Report To	Contact and company name below will appear on the final report
Company:	SCML
Contact:	Subie Sidhu
Phone:	867-332-0841
	Company address below will appear on the final report
Street:	
City/Province:	
Postal Code:	
Invoice To	Same as Report To [x] YES [ ] NO
	Copy of Invoice with Report [x] YES [ ] NO
Company:	SCML
Contact:	ssidhu@chibougamining.com

Report Format / Distribution

Select Report Format: [X] PDF [ ] EXCEL [ ] EDD (DIGITAL)
Quality Control (QC) Report with Report [ ] YES [ ] NO
[ ] Compare Results to Criteria on Report - provide details below if box checked
Select Distribution: [X] EMAIL [ ] MAIL [ ] FAX
Email 1 or Fax: ssidhu@chibougamining.com
Email 2:
Email 3:

Invoice Distribution

Select Invoice Distribution: [X] EMAIL [ ] MAIL [ ] FAX
Email 1 or Fax: ayu@chibougamining.com
Email 2:

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] [X] Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4-20%] [ ]; 3 day [P3-25%] [ ]; 2 day [P2-50%] [ ]
EMERGENCY: 1 Business day [E-100%] [ ]; Same Day, Weekend or Statutory holiday [E2-200% (Laboratory opening fees may apply)] [ ]

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm
For tests that can not be performed according to the service level selected, you will be contacted.

Project Information

ALS Account # / Quote #:
Job #:
PO / AFE:
LSD:

Oil and Gas Required Fields (client use)

AFE/Cost Center: PO#:
Major/Minor Code: Routing Code:
Requisitioner:
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	BTEX	Styrene	VPH	LEPH	HEPH	PAH	SAMPLES ON HOLD	Sample is hazardous (please provide further details)	NUMBER OF CONTAINERS
	CASB 1	13-Jul-18	10:53	Soil									4
	CASB 2		10:59										
	CASB 3		11:01										
	CASB 4		11:04										
	CASB 5		11:07										
	CASB 6		11:10										
	CASB 7		11:12										
	CASB 8		11:16										
	CASB 9		13:08										
	CASB 10		13:10										
	CASB 11		13:12										
	CASB 12		13:14										

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

Are samples taken from a Regulated DW System? [ ] YES [ ] NO
Are samples for human consumption/ use? [ ] YES [ ] NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen [ ] SIF Observations Yes [ ] No [ ]
Ice Packs [X] Ice Cubes [ ] Custody seal intact Yes [ ] No [ ]
Cooling Initiated [ ]

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
9.5			1.0				

SHIPMENT RELEASE (client use)

Released by: Date: 17-Jul-18 Time:

INITIAL SHIPMENT RECEPTION (lab use only)

Received by: WD Date: July 17 18 Time: 12:45

FINAL SHIPMENT RECEPTION (lab use only)

Received by: HA Date: 7/18 Time: 1:30p

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

JULY 2017 FRONT

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

L2130645-COFC

COC Number: 17 - 653144

Report To	Contact and company name below will appear on the final report	Report Format / Distribution	Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)
Company:	SCML	Select Report Format: ☒ PDF ☐ EXCEL ☐ EDD (DIGITAL)	Regular [R] ☒ Standard TAT if received by 3 pm - business days - no surcharges apply
Contact:	Sukie Sidhu	Quality Control (QC) Report with Report ☐ YES ☐ NO	PRIORITY (Business Days): 4 day [P4-20%] ☐ / 3 day [P3-25%] ☐ / 2 day [P2-50%] ☐ — EMERGENCY: 1 Business day [E-100%] ☐ / Same Day, Weekend or Statutory holiday [E2-200%] (Laboratory opening fees may apply)] ☐
Phone:	867.332.0841	☐ Compare Results to Criteria on Report - provide details below if box checked	
	Company address below will appear on the final report	Select Distribution: ☒ EMAIL ☐ MAIL ☐ FAX	Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm
Street:		Email 1 or Fax: SSidhu@chibougamining.com	For tests that can not be performed according to the service level selected, you will be contacted.
City/Province:		Email 2	
Postal Code:		Email 3	

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: ayu@chibougamining.com	
Company:	SCML	Email 2	
Contact:	Sukie Sidhu		

Project Information		Oil and Gas Required Fields (client use)	
ALS Account # / Quote #:		AFE/Cost Center:	PO#
Job #:		Major/Minor Code:	Routing Code:
PO / AFE:		Requisitioner:	
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	BTEX	Styrene	VPH	LEPH	HEPH	PAH	SAMPLES ON HOLD	Sample is hazardous (please provide further details)	NUMBER OF CONTAINERS
	CASB 13	13-Jul-18	13:14	Soil	✓	✓	✓	✓	✓	✓			4
	CASB 14		13:16										
	CASB 15		13:18										
	CASB 16		13:20										
	~~CAS~~ BPX Y1		15:11										
	BPX Y2		15:15										
	AXY 1		15:24										
	AXY 2		15:26										

Drinking Water (DW) Samples[1] (client use)	Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)
Are samples taken from a Regulated DW System? ☐ YES ☐ NO	
Are samples for human consumption/ use? ☐ YES ☐ NO	

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐		SIF Observations	Yes ☐	No ☐	
Ice Packs ☒	Ice Cubes ☐	Custody seal intact	Yes ☐	No ☐	
Cooling Initiated ☐					

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
9.5			6				

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by:	Date: 17-Jul-18	Time:	Received by: VD	Date: July 17 18	Time: 12:41	Received by: AA	Date: 7/18	Time: 1130

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

JULY 2017 FRONT

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**.

SELWYN CHIHONG MINING LTD.

Memorandum

2014 Don Waste Facility Barrel Spill

SELWYN CHIHONG MINING LTD.

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Soil Sampling Summary

September 11, 2014

Don Camp Waste Management Facility (Dump)

DRAFT

On August 14, 2014 EM Jillian Chown conducted a follow-up site investigation on a fuel spill recorded by EM Beckie Rozander on August 13, 2014. This memo summarizes the intial findings at the site, soil sampling conducted, and recommendations for future follow-up.

1. Initial findings
    - Part of the contaminated soil was removed and placed on tarps.
    - Size of the spill extended past the intital area thought to be affected by the spill. Total area of the spill is estimated to be 15mx15mx .4m.
    - Spill appears to be related to the storage of fuel drums in that location. Some drums are empty and some are full to partially full.
2. Soil sampling
    - Initial sampling was conducted at the site on August 14, 2014 and comprised of the following 16 samples:
        - CSE-1 south wasll of intial excavation
        - CSE-2 west wall of initial excavation
        - CSE-3 east wall of initial excavation
        - CSE-4 north end, near bottom, of excavation
        - CS-1 from tarp 1- material from May 2014 spills on site
        - CS-2 from tarp 2- material from June 2014 spills on site
        - CS-3 a & b – tarp 3 – material from spill at Don dump (fuel barrel cache)
        - CS-4 a& b – tarp 4 - material from spill at Don dump (fuel barrel cache)
        - CS-5, 6 and 7 collected between barrels stacked on east side of excavation
        - CS-8 collected in front of barrels
        - CS-9 and 10- collected at far end of where barrels are stacked; outter edge of potential contamination

      (please see photos below for sample locations)
    - Samples were collected and stored in an ice packed cooler
    - Samples shipped to ALS labs for rush analysis

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3. Follow-up and Recommendations
    - Camp techs will move all barrels located in the area of the spill. All barrels will be checked for leaks and lids tightened. Barrels will be removed from dump and placed in a lined , secondary containment at the Don Camp airstrip(decommisioned fuel bladders).
    - Once all barrels have been removed, soil in the area will be excavated and placed on a large tarp located at the dump.
    - Confirmatory sampling will take place once excavation is complete
    - All contaminated material will be place in 1 ton sacs and taken off site to an LTF.
    - Permit to relocate contaminated material will be applied for by EM Jillian Chown.

UPDATE: August 28th, 2014

- All soil has been removed from spill site and placed on tarps.
- Final samples have been collected from excavation walls, floor, and from the material removed from the spill area (**See photos 6,7,8).** Final samples in the excavation consist of the following:
    - CSE-5- north wall
    - CSE-6 – west wall
    - CSE-7- west wall
    - CSE-8- east wall
    - CSE-9- east wall
    - CSE-10- floor
    - CSE-11- floor
    - CSE-12-floor
    - CSE-13- floor
    - SP-1 through to SP-10 are all taken from various places amongst the stockpiled material.
    - A total of 19 samples were collected
- Barrels continue to be removed from the dump and placed on the decommissioned fuel bladders at the Don Camp airstrip **(see photo 5).**
- Initial samples taken from the spill on August 14, 2014 confirm the presence of hydrocarbons in the east and west walls of the excavation, as well as in all piles of material on the tarps, except for one pile **(see photos 1 and 4)**. Additional samples of

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walls and floor of final excavation has been collected (see above list) as well as samples from the stockpiled material on the tarps. **Appendix A** contains all soil sampling results.

△ Soil sample over the BC/Yukon CSR guideline limits for Industrial Use

PHOTO 1: SAMPLES COLLECTED FROM INITIAL EXCAVATION OF CONTAMINATED SOIL

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PHOTO 2: SAMPLES COLLECTED AT OUTSKIRTS OF SPILL AREA (all clean)

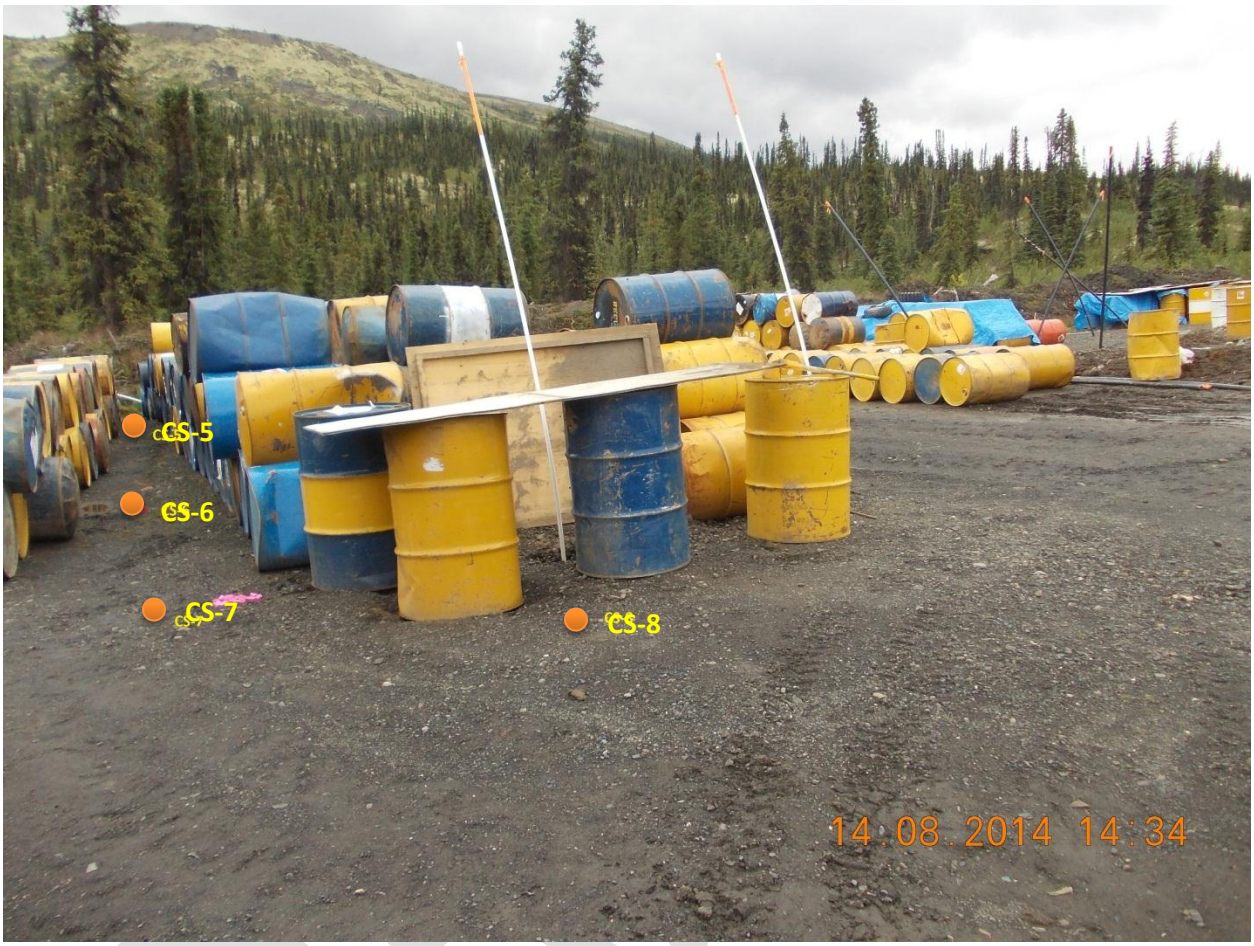

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PHOTO 3: ADDITIONAL SAMPLES TAKEN ON WESTERN EDGE OF POTENTIAL SPILL AREA (All Clean)

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PHOTO 4: SAMPLES COLLECTED FROM PREVIOUSLY COLLECTED SPILLS. CS-3 AND CS-4 IS COMPRISED OF MATERIAL FROM THE SPILL UNDER THE DRUMS AT THE DON DUMP. CS-1 IS MATERIAL FROM A SPILL IN MAY, 2014; CS-2 IS MATERIAL FROM A SPILL IN JUNE 2014.

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PHOTO 5: BARRELS REMOVED AND PLACED ON DECOMMISIONED FUE BLADDER

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PHOTO 6 AND 7 : FINAL SAMPLES OF MATERIAL REMOVED FROM SPILL AREA

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PHOTO 7

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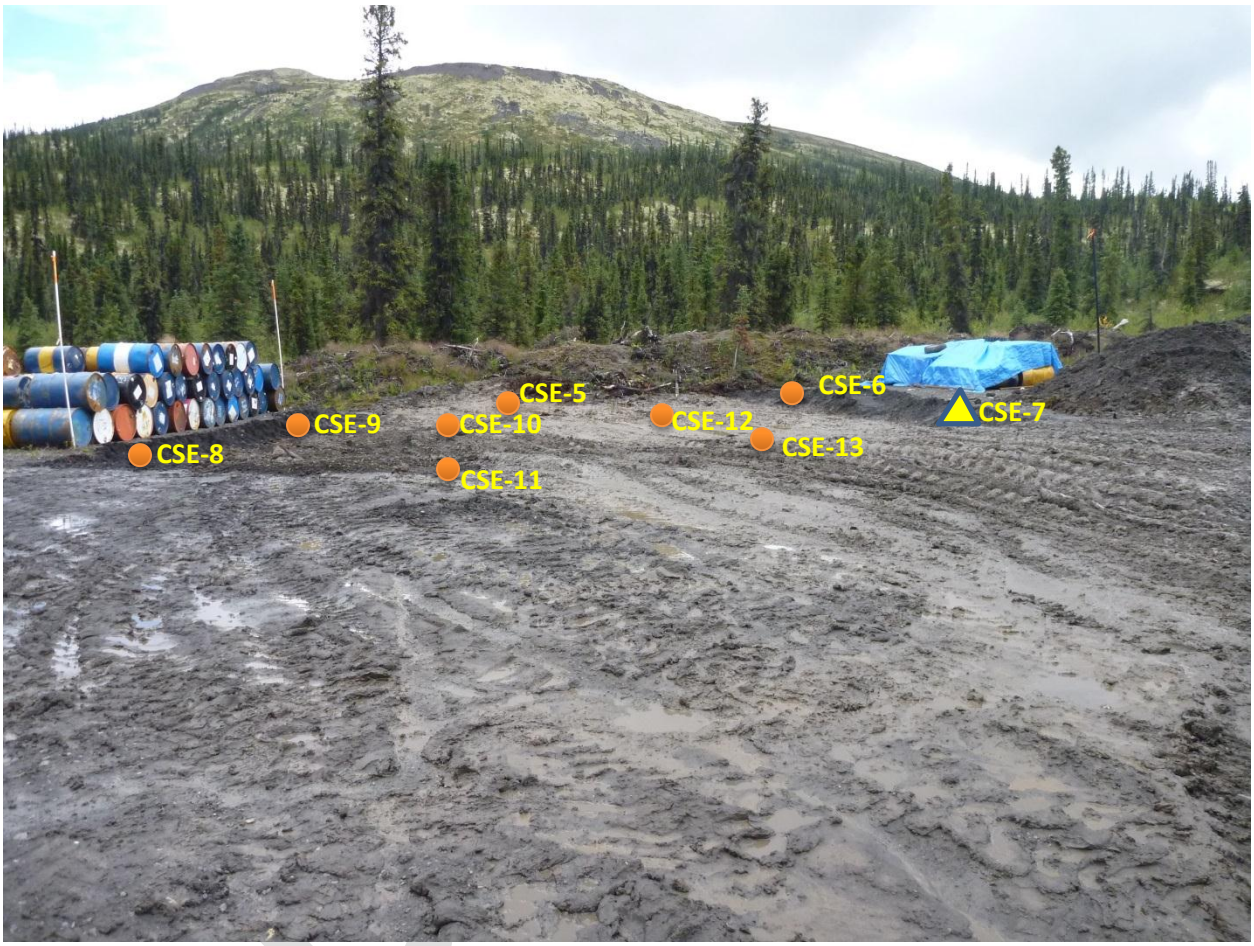
PHOTO 8: FINAL SAMPLES OF EXCAVATED SPILL AREA



Conclusions and Recommendations

All empty/partial/and full fuel barrels have been removed from the dump and placed in an impermeable containment area at the Don Camp Air Strip. Stockpiled soil is being placed into 1 Ton bags for storage which will then be transported off site to an approved LTF. Only two samples from the August 28, 2014 final sampling event came back with levels of hydrocarbon contamination above the BC/Yukon CSR regulations, SP-9 (Photo 7) and CSE-7 (Photo 8). CSE-7 was a sample located on the western edge of the

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spill and therefore more material from this western edge should be removed and placed into the 1 T bags. SP-9 was taken from material placed on the tarps.

Only one sample taken from the excavation came back positive for hydrocarbon contamination above the BC/Yukon CSR, therefore the vast majority of the contaminated material has been removed. Only a small wall on the west side of the excavation should be dug up and placed in 1 T bags for removal from site. A permit for relocation will be applied for shortly and bagged soil removal will take place this winter on the winter road (HPAR).

Regards,

Jillian Chown BSc

Senior Environmental Scientist

DRAFT

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APPENDIX A

SOIL SAMPLE LAB RESULTS

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DRAFT

Project			
Report To			Jillian Chown, SEL\
ALS File No.			L1510450
Date Received			29-Aug-14 13:30
Date			09-Sep-14

RESULTS OF ANALYSIS

Sample ID			CSE-5
Date Sampled			28-AUG-14
Time Sampled			10:00
ALS Sample ID			L1510450-1
Matrix			Soil
	Units	**BCCSR-S4/5-SOIL-I**	
Physical Tests			
Moisture	%	-	20.8
Volatile Organic Compounds			
Benzene	mg/kg	0.04	<0.040
Ethylbenzene	mg/kg	7	<0.050
Methyl t-butyl ether (MTBE)	mg/kg	-	<0.20
Styrene	mg/kg	50	<0.050
Toluene	mg/kg	2.5	<0.050
ortho-Xylene	mg/kg	-	<0.050
meta- & para-Xylene	mg/kg	-	<0.050
Xylenes	mg/kg	20	<0.075
Surrogate: 4-Bromofluorobenzene (SS)	%	-	83.7
Surrogate: 1,4-Difluorobenzene (SS)	%	-	90.4
Hydrocarbons			
EPH10-19	mg/kg	2000	<200
EPH19-32	mg/kg	5000	<200
LEPH	mg/kg	2000	<200
HEPH	mg/kg	5000	<200
Volatile Hydrocarbons (VH6-10)	mg/kg	-	<100
VPH (C6-C10)	mg/kg	200	<100
Surrogate: 3,4-Dichlorotoluene (SS)	%	-	103.5
Polycyclic Aromatic Hydrocarbons			
Acenaphthene	mg/kg	-	<0.050
Acenaphthylene	mg/kg	-	<0.050
Anthracene	mg/kg	-	<0.050
Benz(a)anthracene	mg/kg	10	<0.050
Benzo(a)pyrene	mg/kg	10	<0.050
Benzo(b)fluoranthene	mg/kg	10	<0.050
Benzo(g,h,i)perylene	mg/kg	-	<0.050
Benzo(k)fluoranthene	mg/kg	10	<0.050
Chrysene	mg/kg	-	<0.050
Dibenz(a,h)anthracene	mg/kg	10	<0.050
Fluoranthene	mg/kg	-	<0.050
Fluorene	mg/kg	-	<0.050
Indeno(1,2,3-c,d)pyrene	mg/kg	10	<0.050
2-Methylnaphthalene	mg/kg	-	<0.050
Naphthalene	mg/kg	50	<0.050

Phenanthrene	mg/kg	50	<0.050
Pyrene	mg/kg	100	<0.050
Surrogate: Acenaphthene d10	%	-	80.7
Surrogate: Chrysene d12	%	-	89.6
Surrogate: Naphthalene d8	%	-	74.7
Surrogate: Phenanthrene d10	%	-	92.3

Within Guideline	

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CSE-6 28-AUG-14 10:00 L1510450-2 Soil	CSE-7 28-AUG-14 10:00 L1510450-3 Soil	CSE-8 28-AUG-14 10:00 L1510450-4 Soil	CSE-9 28-AUG-14 10:00 L1510450-5 Soil	CSE-10 28-AUG-14 10:00 L1510450-6 Soil	CSE-11 28-AUG-14 10:00 L1510450-7 Soil	CSE-12 28-AUG-14 10:00 L1510450-8 Soil
11.7	16.8	20.0	15.7	16.4	13.9	15.8
<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
<0.050	0.075	<0.050	<0.050	<0.050	<0.050	<0.050
<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
<0.050	0.216	<0.050	<0.050	<0.050	<0.050	<0.050
<0.050	0.185	<0.050	<0.050	0.275	<0.050	<0.050
<0.050	0.187	<0.050	<0.050	0.229	0.104	<0.050
<0.075	0.372	<0.075	<0.075	0.504	0.104	<0.075
98.5	90.4	104.0	98.2	100.8	101.6	100.5
104.4	92.3	98.5	101.4	103.7	107.8	102.6
<200	2300	<200	<200	390	<200	<200
<200	<200	<200	<200	<200	<200	<200
<200	2300	<200	<200	390	<200	<200
<200	<200	<200	<200	<200	<200	<200
<100	<100	<100	<100	<100	<100	<100
<100	<100	<100	<100	<100	<100	<100
92.2	Not Reportable	116.2	98.9	Not Reportable	Not Reportable	99.7
<0.050	<0.070	<0.050	<0.050	<0.050	<0.050	<0.050
<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
<0.050	<0.10	<0.050	<0.050	<0.050	<0.050	<0.050
<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
<0.050	<0.050	<0.050	<0.050	0.095	<0.050	<0.050
<0.050	<0.20	<0.050	<0.050	<0.050	<0.050	<0.050

<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
80.1	99.6	96.7	89.3	93.4	90.7	98.3
79.8	97.5	89.3	79.1	94.1	80.9	90.9
77.0	107.2	85.0	86.7	83.9	78.8	85.5
84.8	99.6	105.5	86.1	97.4	83.0	105.8

CSE-13	SP-1	SP-2	SP-3	SP-4	SP-5	SP-6
28-AUG-14	28-AUG-14	28-AUG-14	28-AUG-14	28-AUG-14	28-AUG-14	28-AUG-14
10:00	10:00	10:00	10:00	10:00	10:00	10:00
L1510450-9	L1510450-10	L1510450-11	L1510450-12	L1510450-13	L1510450-14	L1510450-15
Soil	Soil	Soil	Soil	Soil	Soil	Soil
15.3	12.0	11.8	14.4	13.6	14.4	16.7
<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
0.052	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
0.105	<0.050	<0.050	0.056	<0.050	<0.050	<0.050
0.157	<0.075	<0.075	<0.075	<0.075	<0.075	<0.075
99.3	92.1	98.8	102.5	102.9	96.9	95.5
105.1	102.2	103.8	106.4	106.0	102.2	99.2
<200	<200	<200	210	<200	<200	<200
<200	<200	<200	<200	<200	<200	<200
<200	<200	<200	210	<200	<200	<200
<200	<200	<200	<200	<200	<200	<200
<100	<100	<100	<100	<100	<100	<100
<100	<100	<100	<100	<100	<100	<100
129.6	98.3	90.3	Not Reportable	111.1	100.3	108.7
<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050

<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
88.8	89.4	94.0	91.9	70.5	85.7	84.0
86.8	77.0	83.4	84.0	68.6	80.6	83.5
83.7	78.8	86.8	81.9	59.3	72.6	77.1
90.4	81.2	108.4	99.6	79.9	89.3	78.3

SP-7 28-AUG-14 10:00 L1510450-16 Soil	SP-8 28-AUG-14 10:00 L1510450-17 Soil	SP-9 28-AUG-14 10:00 L1510450-18 Soil	SP-10 28-AUG-14 10:00 L1510450-19 Soil
13.0	17.9	15.4	9.98
<0.040	<0.040	<0.040	<0.040
<0.050	<0.050	0.078	<0.050
<0.20	<0.20	<0.20	<0.20
<0.050	<0.050	<0.050	<0.050
<0.050	<0.050	<0.050	<0.050
<0.050	0.053	0.684	<0.050
<0.050	0.073	0.439	<0.050
<0.075	0.127	1.12	<0.075
97.4	101.6	96.3	100.3
101.2	105.5	102.1	104.6
<200	840	3210	<200
<200	<200	<200	<200
<200	840	3210	<200
<200	<200	<200	<200
<100	<100	240	<100
<100	<100	240	<100
91.9	Not Reportable	Not Reportable	94.6
<0.050	<0.050	<0.20	<0.050
<0.050	<0.050	<0.060	<0.050
<0.050	<0.050	<0.050	<0.050
<0.050	<0.050	<0.050	<0.050
<0.050	<0.050	<0.050	<0.050
<0.050	<0.050	<0.050	<0.050
<0.050	<0.050	<0.050	<0.050
<0.050	<0.050	<0.050	<0.050
<0.050	<0.050	<0.050	<0.050
<0.050	<0.050	<0.050	<0.050
<0.050	<0.050	<0.050	<0.050
<0.050	<0.050	<0.050	<0.050
<0.050	<0.050	<0.20	<0.050
<0.050	<0.050	<0.050	<0.050
<0.050	0.277	1.11	<0.050
<0.050	<0.10	<0.50	<0.050

<0.050	<0.050	0.073	<0.050
<0.050	<0.050	0.057	<0.050
87.1	86.0	104.8	94.2
78.3	81.0	98.0	90.9
80.0	75.6	106.7	82.3
95.3	93.2	96.9	91.7

Appendix F

Waste Movement Document

GENERAL WASTE MANAGEMENT
GWM
WHITEHORSE, YUKON 867-668-4004

Bill of Ladings

Date: Aug 17 / 2018
Driver: Clayton Hadley
Truck: 331

Billing Info

Company	SELWYN CONTRACTING
Address	
Contact	

Driver

Print:	**Clayton Hadley**
Signed	

Shipped From:

Company	HPAR RD.
Address	
Phone/Email	

Shipped To:

Company	GWM WHITEHORSE
Address	
Phone/Email	

Quantity	Description
696	M/T PLASTIC POLES
10	DRUMS OILY RAGS
3	POLES HOUSEHOLD BATTERIES
420	KG OILY WOOD (CONTAMINATED)
6	VEHICLE BATTERIES.

Comments

Lab Signature:

Mailing Address - Suite F – 4230 – 4th avenue, Whitehorse, YT Y1A 1K1
Shop – 7 Denver Road, Whitehorse, YT Y1A 5S8
Phone: 867-668-4004 Fax: 867-633-4470

GENERAL WASTE MANAGEMENT
GWM
WHITEHORSE, YUKON 867-668-4004

Bill of Ladings

Date: AUG 24/2018
Driver: Clayton Hadley
Truck: 331

Billing Info

Company	SELWYN CONTRACTING
Address	
Contact	SUKIE.

Driver

Print:	**Clayton Hadley**
Signed	

Shipped From:

Company	HYATT RD.
Address	
Phone/Email	

Shipped To:

Company	GRAM WASTE.
Address	
Phone/Email	

Quantity	Description	Comments
15,570 Kg	WASTE METAL (2 ROLL OFF CONTAINERS)	RECYCLED AT RAVEN RECYCLING.

Lab Signature:

Mailing Address - Suite F – 4230 – 4th avenue, Whitehorse, YT Y1A 1K1
Shop – 7 Denver Road, Whitehorse, YT Y1A 5S8
Phone: 867-668-4004 Fax: 867-633-4470

Appendix G

Burn Permit

Yukon
Community Services
Services aux collectivités

Yukon Wildfire Report Line
Rapport d'incendie de forêt au Yukon
1-888-798-FIRE (3473)

PERMIT NUMBER:
Numéro de permis : 13129

BURNING PERMIT
PERMIS DE BRÛLAGE

Issued at *Délivré à* Watson Lake
Issue date *Date de délivrance* June 06, 2018
Last name *Nom de famille* Sidhu
First name *Prénom* Sukie
Initial(s) *Initiales*
Company *Entreprise* Selwyn Chihong Mining
Address *Adresse* 2701-1055 W. Georgia, Van. V6E 0B6
Community *Localité* Watson Lake
Postal code *Code postal* V6E 0B6
Phone *Téléphone* (867) 332-0841

is hereby authorized to burn *est par la présente autorisé(e) à brûler*
☑ brush (handpiled) *broussailles (empilées manuellement)* ☐ slash *déchets de coupe* ☐ grass *herbages* ☐ other (describe) *autre (description)*

Located at *Situé à* 62 ° 33.830 ' latitude and *de latitude et à* 129 ° 31.803 ' longitude *de longitude* Coordinate Format • *coordonnées au format* (hdd° mm.mmm') • *hdd° mm.mmm'*

Geographic description
Description géographique

From *Du* date (mm/dd/yyyy) *date (mm/jj/aaaa)* 06-06-2018 hours (24 hr) *heure (24 h)* 1200
to date (mm/dd/yyyy) *Au date (mm/jj/aaaa)* 09-30-2018 hours (24 hr) *heure (24 h)* 12 00

This permit issued pursuant to *Ce permis est délivré en vertu de*
☐ *Forest Protection Regulations (2003) Règlement de 2003 sur la protection des forêts*
☑ *Yukon Forest Protection Act* Loi sur la protection des forêts du Yukon
☐ YEAA screening number *Numéro d'examen de la AYEE*

☐ This Permit has been renewed to Date (mm/dd/yyyy): *Ce permis a été renouvelé jusqu'au (mm/jj/aaaa) :* Hours (24 hr) *heure (24 h)*
Permittee (Signature): *Signature du titulaire :*
Renewing Officer (Print Name): *Agent chargé du renouvellement (en lettres détachées) :* Initials: *Initiales :* Date(mm/dd/yyyy): *Date (mm/jj/aaaa):*

THE FOLLOWING CONDITIONS MUST BE ABIDED BY:

1. Prior to igniting the onus is on the permittee to verify the fire danger on the day(s) they are wanting to burn.
2. The permittee shall employ on site, sufficient resources to ensure the fire will not escape control.
3. The fire must remain under supervision at all times until completely extinguished.
4. Burning is only permitted during periods of LOW Fire Danger.
5. Burning is not permitted during periods of MODERATE, HIGH, or EXTREME Fire Danger and this permit is immediately suspended and may be cancelled during such periods.
6 All fires must be extinguished prior to the expiry date of the permit or if the permit is suspended or cancelled.
7. Fires must not be ignited or allowed to continue to burn when the wind is strong enough to cause flames or sparks to be carried to other combustible material.
8. Contact the local Wildland Fire Management office at the numbers listed below prior to burning.
9. Advise the local Volunteer Fire Department at the indicated number prior to burning.
10. Additional Conditions.

Je m'engage à respecter les conditions suivantes :

1. *Le titulaire du permis a la responsabilité de la vérification du niveau de danger relatif aux feux de forêt en vigueur le(s) jour(s) où il prévoit allumer un feu.*
2. *Le titulaire du permis doit utiliser sur le site des ressources suffisantes pour s'assurer de maîtriser le feu.*
3. *Le feu doit rester sous surveillance en tout temps jusqu'à ce qu'il soit complètement éteint.*
4. *Le titulaire n'est autorisé à faire un feu que lorsque les panneaux affichant le niveau de danger indiquent qu'il s'agit d'une période où le risque de feux de forêt est BAS*
5. *Il est interdit d'allumer des feux lorsque les panneaux affichant le niveau de danger indiquent que le risque de feux de forêt est MODÉRÉ, HAUT ou EXTRÊME. Le présent permis est immédiatement suspendu et peut être révoqué dans ces conditions.*
6. *Tous les feux doivent être éteints avant la date d'expiration du permis, ou lorsque le permis est suspendu ou révoqué.*
7. *Aucun feu ne doit être allumé ou laissé en train de brûler lorsque le vent risque de pousser des flammes ou de transporter des étincelles à proximité d'autre matériel combustible.*
8. *Avant d'allumer un feu, il faut appeler le bureau de gestion des feux de forêt de la localité. Les numéros sont donnés ci-dessous.*
9. *Avant d'allumer un feu, il faut appeler le Service des pompiers volontaires de la localité. Les numéros sont donnés ci-dessous/en annexe.*
10. *Conditions supplémentaires :*

Any breach to the Act, Regulations, or permit conditions is an offence and the permittee is liable to prosecution and punishment by summary conviction
The Permittee may be liable for the costs associated with the extinguishment of any fires directly attributed to this permit.
Toute transgression à la Loi, *à ses règlements d'application ou aux conditions du permis constitue une infraction et le titulaire sera passible de poursuites judiciaires et de peine par procédure sommaire.*
Le titulaire du permis pourrait avoir à payer les frais liés à l'extinction d'un feu allumé en vertu du présent permis.

ISSUING OFFICER • *PERMIS DÉLIVRÉ PAR*

Sukie Sidhu
PERMITTEE • *TITULAIRE*

Wildland Fire Management phone numbers
Bureaux de Gestion des feux de forêt

Whitehorse, 456-3877
Teslin, 390-2531
Haines Junction, 634-7061
Watson Lake, 536-2005
Ross River, 969-2243
Carmacks, 863-5271
Mayo, 996-2343
Dawson, 993-5752

Wildland Fire Management Website:
Site Internet de Gestion des feux de forêt
http://www.gov.yk.ca/depts/community/firemanagement/index.html

The personal information requested on this form is collected under the authority of and used for the purpose of administering the *Yukon Environmental Assesment Act*. Questions about the collection and use of this information can be directed to the Protective Services Office, Department of Community Services, Yukon Government, Box 2703, Whitehorse, Yukon Territory, Y1A 2C6 (867) 456-3845.

Les renseignements personnels fournis dans les présentes sont recueillis en application de la Loi du Yukon sur l'évaluation environnementale *exclusivement aux fins de son administration. Veuillez adresser toute demande concernant la collecte ou l'utilisation de ces renseignements au bureau des Services de protection du ministère des Services aux collectivités : C.P. 2703, Whitehorse (Yukon), Y1A 2C6, (867) 456-3845.*

YG(4956)NC2 Rev. 02/2007

Appendix H

Land Treatment Facility Approval

Boreal Engineering
Land Treatment Facility
Approval Letter

PO BOX 21364
WHITEHORSE, YUKON
Y1A 6R7
(867) 335-0211
www.borealengineering.ca

July 25th, 2018

Selwyn Chihong Mining Ltd.
Sukie Sidhu, Senior Environmental Scientist
230-2237 2nd Avenue
Whitehorse, Yukon, Y1A 0K7

RE: Inspection of the Land Treatment Facility- Permit 24-043

Dear Ms. Sidhu,

Boreal Engineering Ltd was contracted by Selwyn Chihong Mining Ltd. to design and review construction of the Land Treatment Facility (LTF) cell at the Don Camp, Selwyn Project.

The inspection of the completed LTF occurred on July 16, 2018 with Mr. McKay (Heavy Equipment Supervisor). The cell has been constructed according to the plans provided in the LTF permit application. As built plans will be submitted following the survey.

If you have any questions and or concerns please contact the undersigned.

Thank You,

Erik Nyland, P.Eng.
Boreal Engineering Ltd.
enyland@borealengineering.ca

Appendix H

Land Treatment Facility Completion Memorandum

Land Treatment Facility Construction Memorandum

In 2017, construction of the Land Treatment Facility (LTF) under permit #24-043 commenced. However, due to weather constraints the LTF could not be completed. Construction of the LTF continued in the summer of 2018 with completion occurring in July 2018. The cell was constructed according to the engineered design as supplied by Boreal Engineering and submitted in the permit application.

The pictures below illustrate the construction of the LTF.

LTF Construction

LTF area cleared in September 2017. Please note this photo was taken after a rain event.

Base and walls of excavated area is smooth and does not have any protrusions.

Construction of berms with native ground with compaction occurring to a 95 % standard.

Non-woven geotextile liner was placed beneath the liner and the 40 mil LLDPE liner was placed.

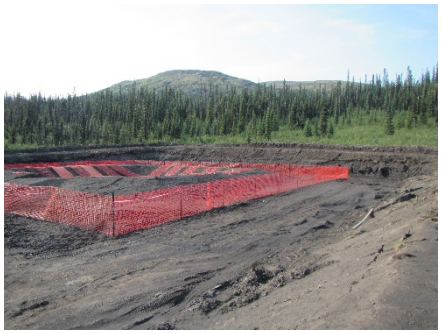
LTF Construction

The geotextile and LLDPE was keyed in around the entire perimeter by a 1m deep x 1 m wide trench. Please note, the liner was designed to specifically fit the cell and did not require any cutting or welding.

Non-woven geotextile liner placed on the LLDPE liner.

0.6m of clean fill with rocks no greater than 6cm was placed on the geotextile liner.

Snow fencing was installed to mark the presence of liner.



Fencing placed around the cell to protect animals from entering the cell. The 25 mill cover will not be installed until hydrocarbon-impacted soil can be placed into the cell.

Residual Items

Signs are being ordered to place around the cell indicating the *'This Facility Contains Contaminated Material'* and *'Authorized Personnel Only.'* Upon deposition of approved hydrocarbon impacted soil into the cell, the 24 mil coated woven cover will be placed so the outside edges are beyond the berm perimeters to allow precipitation to flow outside of the cell. The cover will be secured using Wind Defender.

Approval from
Yukon Environment Department

Sukie Kaur Sidhu

From: Cedric.Schilder@gov.yk.ca
Sent: July-31-18 2:04 PM
To: Sukie Kaur Sidhu
Subject: RE: LTF Completion and Memo

Hi Sukie,

Thank you for the report. Please take this email as approval under Part 3.6 of the permit to accept material into the facility. As relocation permits are not required when transporting material from the site to the LTF, we will be relying on the annual report to summarize the volume and source locations of material accepted into the LTF. Please ensure this information is tracked.

Please let me know if you need anything else.

Regards,

Cedric Schilder
A/Contaminated Sites Coordinator
Department of Environment | Environmental Programs Branch
T 867-667-8787 | Yukon.ca

From: Sukie Kaur Sidhu [mailto:ssidhu@chihongmining.com]
Sent: Monday, July 30, 2018 9:26 AM
To: Cedric.Schilder <Cedric.Schilder@gov.yk.ca>
Subject: LTF Completion and Memo

Hello Cedric,

Attached is a memo indicating completion of the LTF. Erik Nyland , a professional Yukon licensed engineer, viewed the LTF and did not appear to have an issue with it.
His contact information is below if you have any questions
Erik Nyland enyland@gmail.com, 867-335-0211

Also attached, is a memo requesting deposition of further contaminated soil into the LTF. I am headed into camp tomorrow and would like to deposit the requested soil into the LTF ASAP. This way the cover can be put on and so forth.

If you have any questions, please feel free to call me at 867-390-2048. I should be around all day.

Thanks,

Sukie Sidhu

Appendix I

Field Notes

S. Sidhu
C. Perry

Jan. 26 18 Jan Month / Quart Sampling

MW07-01 @ 14:12

WL 3.045m - DTB 8.495m = 5.45 x 6 = 32.7
= 33 Bailers

MW07-01 @ 14:37

Temp °C	0.1
DO %	29.9
DO mg/L	4.36
SPC us/cm	380.6
pH	7.49
ORP mv	87.6

↳ D/L to blue shuttle

MW07-02 @ 15:00 Sample - Frozen

WL = 4.181 ~~4.181~~ see below

DTB ~~5.850~~

* No D/L as it appears animal has taken logger

↳ upon arrival @ site the monument was open, there was no cap.

↳ force was applied to push the bailer past the ice plug that had formed →

↳ Bailer removed and water level meter tape was deposited down the stand pipe. The WL went flaccid @ 4.181m ↳ indicating bottom had been achieved

↳ upon removal it appeared (WL Probe) to be covered with slush. The bailer was then deposited to gather a sample. There was no water in bailer, only a slush plug @ bottom ∴ No Sample

S. Sidh
C. Perry

Jan 26th 18 Jan Month / Quart Sampling

MW10-09 @ 15:23

WL 1.529 m

DTB 5.428 m

3.899 x 6 = 23.39 = 23

23 Bailer volumes

x No logger to D/L

MW10-09 @ 15:28 Dup @ 15:25

Temp °C	YSI froze therefore →
DO %	
DO mg/L	
SPC us/cm	no parameters
pH	* Not enough sample to
ORP mV	take parameters in lab.

* YSI froze parameters not taken in lab.

MW07-02 Note Cont.

↳ No D/L so no download

↳ moose had eaten every willow in area ∴ suspect, they knocked well and dislogged data logger

* will look for in spring

(65)

C. Perry
S. Sidhu

Jan. 27 18 Jan Month Quarter Sampling

W3 @ 12:33

Temp °C	-0.1
DO%	80.7
DO mg/L	11.83
SPC us/cm	524.9
pH	7.32
ORP mv	88.3

Salt Flow W3

Run #1

Start @ 12:34
Stop @ 12:46

Mass 2.500kg
SPC us/cm 526
Flow 1.2900 m3/s

Run # 2

Start @ 12:47
Stop @ 13:59

Mass 2.000kg
SPC us/cm = 526
Flow 1.2349 m/s

Mean Q = 1.26 mB/s %RPD = 4.35 %

↳ Flow is braided

-20, Clear, Sunny

C. Perry
S. Sidhu

(66)

Jan. 27. 2018 Jan/Month Quarter Sampling

W5 @ 14:30

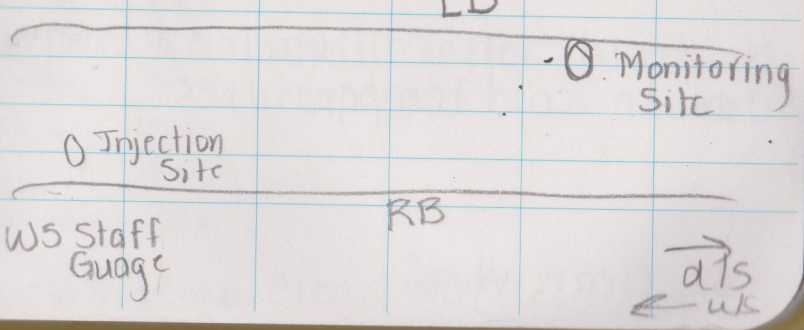
Temp °C	-0.1
DO%	98.0
DO mg/L	14.27
SPC us/cm	751.7
pH	7.76
ORP mv	188.2

Salt Flow W5

Start @ 14:31
Stop @ 14:34

Mass 2.5 kg
SPC us/cm 752
Flow 0.4192 m3/s

Only one salt flow was completed due to cold temperatures and the wind.
↳ equipment was freezing.
↳ spike of first flow was immensly high.



(67)

S. Sidhu
C. Perry

Jan 27 18 — Jan Month/Quarterly Sampling

W10 @ 15:13	
Temp °C	-0.1
DO %	98.7
DO mg/L	14.34
SPC us/cm	1088
pH	7.98
ORP mV	207.1

W10 Salt Flow
Run #1

Start @ 15:14
Stop @ 15:19

Mass = 0.500g
SPC us/cm 1092
Flow = 0.0505 m^3/s

No duplicate salt flow due to extreme cold temp (-37.0°C)

No field salt calibration @ any site due to cold temperatures

-37, Clear, Wind

5.699 4.875

(68)

C. Perry
S. Sidhu

Jan 28 18 — Jan Month/Quarterly Sampling

MW07-03 @ 10:56
WL = 3.739 m
DTB = 5.699 m
1.96 x 6 = 11.76 = 12
12 Bailer Volumes

MW07-03 @ 11:19		FBlank @ 11:20	
Temp °C	0.6	Temp °C	12.7
DO %	32.6	DO %	70.1
DO mg/L	4.56	DO mg/L	7.40
SPC us/cm	844.9	SPC us/cm	<RDL
pH	7.93	pH	8.67
ORP mV	234.8	ORP mV	135.0

↳ D/L to Blue Shuttle ↳ Jan 09 2018

MW10-08 @ 11:51
WL = 2.701 m
DTB = 4.875 m
2.174 x 6 = 13.044 = 13
13 Bailer Volumes

MW10-08 @ 12:04	
Temp °C =	-0.1
DO % =	52.5
DO mg/L	7.57
SPC us/cm	1242
pH	8.09
ORP mV	233.6

↳ D/L logger to field laptop

↳ -23 temp, Clear Wind

S. Sidhu
C. Perry

Jan 28 18 — Jan Month / Quarterly Sampling

W62 @ 12:38

Temp °C	-0.1
DO %	6.3
DO mg/L	0.91
SPC uS/cm	641.3
pH	8.16
ORP mV	220.9

748

W62 Salt Flow Run #1

Start @ 12:39
Stop @ 12:44

Mass = 1.000kg
SPC uS/cm = 735
Flow = 0.1259 m³/s

W62 Salt Flow Run #2

Start @ 12:46
Stop @ 12:50

Mass = 1.000kg
SPC uS/cm 799
Flow = 0.0971

Mean Q = 0.1115 m³/s RPD % 25.9 %

W8 + W56 @ 13:00
↳ site unsafe to access

1

January Sampling
↳ happend out of Faro

Travel Blank → 04. Jan. 2018
Exp → 04. Apr. 2018

S. Sidhu
C. Perry

Jan 28 18 — Jan Month / quarterly Sampling

XY Weather Station @ 13:18

Current Value

Rain = 0.00 mm
Solar Radia = 0.6 W/m²
Temp = -38.032 °C
Wind Sp. = 0.00 m/s
Gust 0.00 m/s
Wind dire 0.0 Ø
↳ batteries dead
↳ Δ'ed batteries to 100 %
↳ Δ'ed dessicant
↳ 35.8 cm

KM 90 Weather Station @ 13:45

Current Value

Wind Sp = 2.23 m/s
Gust Sp = 2.66 m/s
Solar Rad = -20.499
Temp °C = 3.39 W/m²
↳ battery @ 85 %
↳ Δ'ed dessicant
↳ 58.3 cm

Don WS @ 13:50
↳ Computer died due to cold; camp not open so could not charge it

(11) 2.0

C. Perry
S. Sidhu

Feb. 25. 18 **February Monthly Sampling**

W3 @ 12:28

Temp	-0.1
DO%	71.7
DO mg/L	10.47
SPC us/cm	535
pH	7.44
ORP mv	160.3

W3 Salt Run #1

Start @ 12:30
Stop @ 12:34

Mass = 2000g
SPC = 536
Flow = 111.11 m^3/s

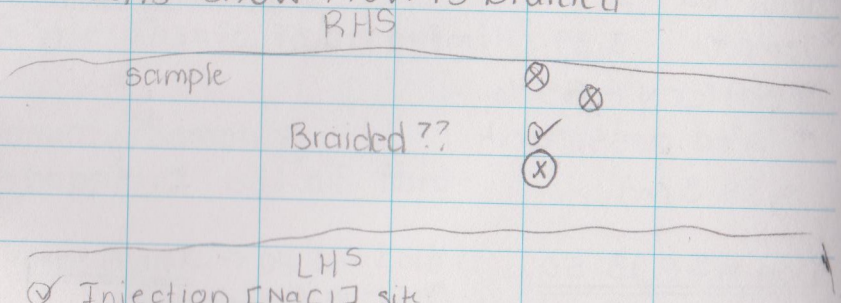
Run #2 W3 Salt Flow

Start @ 12:34
Stop @ 12:39

Mass 2000g
SPC = 536
Flow = 5.361 m^3/s

Mean Q = 58.24 m^3/s RPD% 181.56 %

x Results show flow is braided



C. Perry
S. Sidhu

2.214 kg

(72)

Feb. 25. 18 **February Monthly Sampling**

W5 @ 13:54

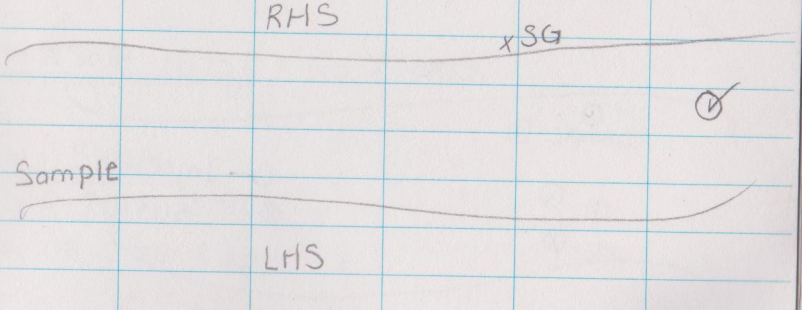
Temp °C	-0.1
DO%	74.9
DO mg/L	10.96
SPC	764.3
pH	7.76
ORP mv	150.5

W5 Salt Flow

Start @ 13:55
Stop @ 14:03

liquid
M_{NaCl} = 2.214 kg
SPC us/cm = 766
Flow = 0.7363

↳ did not have enough NaCl for a duplicate run



C. Perry
S. Sidhu

(73)

Feb. 25. 18 — February Monthly Sampling

W10 @ 15:07		Dup @ 15:06	
Temp °C	-0.1	Temp °C	-0.1
DO %	35.4	DO %	35.4
DO mg/L	4.94	DO mg/L	4.94
SPC us/cm	1088 → 1088	SPC us/cm	1088
pH	7.99 → 7.99	pH	7.99
ORP mV	157.2	ORP mV	157.2

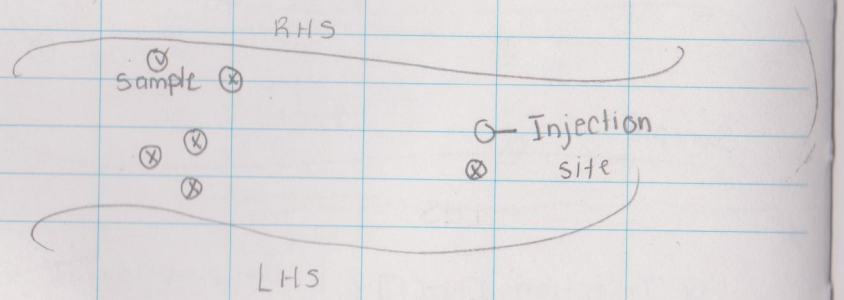
W10 Salt Flow Run #1

Start @	15:07	Mass	0.250 kg
Stop @	15:10	SPC us/cm	1087
		Flow =	0.0720

W10 Salt Flow Run #2

Start @	15:10	Mass	0.250 kg
Stop @	15:16	SPC us/cm	1095
		Flow =	0.0731

Mean Q = 0.073 m³/s RPD % = 1.51 %



(74)

C. Perry
S. Sidhu

Feb. 25. 18 — February Monthly Sampling

W62 @ 15:53		Field Blank @ 15:54	
Temp °C	-0.1	Temp °C	12.5
DO %	32.6	DO %	66.4
DO mg/L	4.72	DO mg/L	7.13
SPC us/cm	793.4	SPC us/cm	2.2
pH	7.96	pH	7.92
ORP mV	161.0	ORP mV	193.3

Taken in enviro dept @ Feb. 14th. 18

W62 Salt Flow Run #1

Start @	15:53	Mass	0.500
	15:59	SPC us/cm	839
		Flow	0.0325

W62 Salt Flow Run #2

Start @	16:03	Mass NaCl	0.500
Stop @		SPC us/cm	862
		Flow	0.0280

Mean Q = 0.0303 RPD % = 14.9 %

W81 W56 @ 16:30 = No Access

Travel Blank
Feb 8. 2018 = Batch
May 08. 2018 = Expirary

S. Sidhu
C. Perry

Feb 25, 18 WS Downloads

XY WS @ ~~16:25~~ 16:25

Snow = 37.0 cm

Δ°ed batters + dessicant

Rain = 0.0 mm

Solar Rad = 0.6 W/m³

Temp = 38.115 °C

Wind Spd. = 4.08 m/s

Gust Spd. = 4.27 m/s

Wind dir = 15.4 ~~Ø~~

KM90 @ 16:56

Snow = 71.5 cm

Δ°ed dessicant

Battery = 70%

Rain = 0.0 mm

Solar Rad = 43.1 W/m²

Temp = -16.451 °C

Wind Spd = 1.90 m/s

Gust Spd = 2.66 m/s

RH = 84.500 %

Dew Pt = -18.5 °C

S. Sidhu
C. Perry

Feb 25 18 WS Downloads

DON WS @ 17:17

Snow = 62 cm

Δ°ed dessicant

Battery = 60 %

Solar Radia =	20.6	W/m²
Temp =	-16.119	°C
RH =	82.2	%
Dew Pt	-18.5	°C
Rain	0.00	mm
Wind Spd	4.45	m/s
Guest Spd	4.45	m/s

N. Falloon
S. Sidhu

Mar. 26. 18 — March Monthly Sampling

W3@	14:03
Temp	-0.1
DO%	79.5
DO mg/L	11.65
SPC us/cm	546.5
pH	7.41
ORP mV	161.0

* No flow completed b/c the creek has become very braided and the main flow cannot be identified

* the auger drilled a hole and the water was very turbid, but moving. This might be caused by an upstream melt; unsure though

N. Falloon
S. Sidhu

Mar. 26. 18 — March Monthly Sampling

WSe 15:41		DUP1 15:42	
Temp °C	-0.1	Temp °C	-0.1
DO%	85.4	DO%	85.4
DO mg/L	12.5	DO mg/L	12.5
SPC us/cm	780	SPC us/cm	780
pH	7.69	pH	7.69
ORP mV	166.7	ORP mV	166.7

W5 Salt Flow

Run #1

Start@	15:43	SPC us/cm	782
Stop@	15:54	Mass	2.5 kg
		Flow	0.495 m^3/s

Run #2

Start@	15:55	Mass	2.5 kg
Stop@	16:02	SPC us/cm	787
		Flow	0.4512 m^3/s

Mean Q 0.4354
↳ 0.4354 m^3/s
= 435.4 L/s

RPD% = 7.29%

N. Falloon
S. Sidhu

March 26 18 — March Sampling

W10 @	16:47
Temp °C	-0.1
DO %	82.9
DO mg/L	12.10
SPC us/cm	1170
pH	7.67
ORP mV	145.0

Field Blank

~~W10~~ @ 16:48 DI = 23 Mar 18

Temp °C	6.1
DO %	62.8
DO mg/L	7.77
SPC us/cm	18.1
pH	8.83
ORP mV	202.0

W10 Salt Flow

Start @ 16:50
Stop @ 16:~~53~~ = 16:53

Mass = 0.250 kg
SPC us/cm = 1170
Flow = 0.0634 m³/s

Run # 2

Start @ 16:~~54~~
Stop @ 16:57

Mass = 0.250 kg
SPC us/cm = 0.0620 m³/s
Flow = 1170 us/cm

Mean Q = 0.0627 m³/s = 62.7 L/s
%RPD = 2.23

N. Falloon
S. Sidhu

March 26 18 — March Sampling

W62	17:35
Temp °C	-0.1
DO %	69
DO mg/L	8.57
SPC us/cm	817.4
pH	~~7.58~~ 7.75
ORP mV	159.4

W62 Salt Flow

Start @ 17:35
Stop @ 17:40

Flow L/s = 31.8
Mass kg = 0.500
SPC = 845 us/cm
Flow = 0.0318 m³/s

↳ no duplicate flow b/c both salt mass were added @ same time.
Mass should have been (0.250 kg) x 2

Travel Blank

Batch # = 9th Mar 18
Exp # = 9th Jun 18

W8 + W56 @ 18:00
No access due to health / safety issue

A. Hoeffs
S. Sidhu

April 14 18 Quarterly GW Sampling

DTB MW07-01 @ 13:45

DTB 8.479m - WL 3.519m = 4.955 = 29.73

30 Bailer Vols

MW07-01 @ 14:00

Temp °C	10.1
DO %	46.0
DO mg/L	5.15
SPC us/cm	290.8
pH	7.37
ORP mV	184.0

* DL to shuttle

MW07-02 @ 14:28

~~DTB~~ WL 4.240m DWL: 5.840 = 1.6 x 6 = 9.6

10 Bailer Vols

MW07-02 @ 14:35

Temp °C	10.6
DO %	58.9
DO mg/L	6.49
SPC us/cm	296
pH	7.28
ORP mV	108.4

* No logger to download

A. Hoeffs
S. Sidhu

April 14 18 Quarterly GW Sampling

MW10-09 @ 14:52

DTW 1.565 DTB 5.415 = 3.85 x 6 = 23

23 Bailer Vol

MW10-09 @ 15:02

Temp °C	13.1
DO %	28
DO mg/L	2.94
SPC us/cm	1219
pH	6.95
ORP mV	200.5

* No logger

MW10-08 @ 15:19

WL: 2.078 DTB: 4.880 = 2.802 x 6 = 16.8 = 17 Bailer

DI 10 Apr 18

MW10-08 @ 15:31

Temp °C	10.1
DO %	82.4
DO mg/L	9.19
SPC us/cm	1539
pH	6.86
ORP mV	218.3

Field Blank @ 15:32

Temp °C	15.1
DO %	59
DO mg/L	5.94
SPC us/cm	11.6
pH	7.29
ORP mV	243.5

* issues DIL logger

S. Sidhu
A. Hoeffs

April 14th 18 Quarterly GW Monitoring

MW07-03 @ 15:44

WL 3.870 m DTB = 5.700 - 1.83 x 6 = 10.98 - 11

11 Bailer Vol

MW07-03 @ 15:55

Temp °C	9.1
DO %	35.0
DO mg/L	3.89
SPC us/cm	734
pH	6.99
ORP mV	188.0

Dup 1 @ 15:56

Temp °C	10.0
DO %	47.6
DO mg/L	5.43
SPC us/cm	735
pH	7.22
ORP mV	169.5

* Field parameters for April 14th sampling were all taken indoors, as there was no container to use to gather the samples

S. Sidhu
A. Hoeffs
G. Xue

April 28 18 SW Compliance Monitoring

W3 @ 12:26

Temp °C	-0.1
DO %	81.2
DO mg/L	11.87
SPC us/cm	535.0
pH	6.75
ORP mV	236.5

** No flow - see note below **

* Brush saw required in areas for easier chopper access

No flow as the channel is very braided and the main flow cannot be identified.

A. Hoeffs
S. Sidhu
G. Xue

April 28 18 SW Compliance Monitoring

W5 @ 13:02

Temp °C	-0.1
DO %	86.8
DO mg/L	12.68
SPC us/cm	774.9
pH	7.22
ORP mv	213

Run # 1

Start @ 15:24 (YSI)
Stop @ 15:34 (YSI Time)

Mass = 2.0 Kg
SPC us/cm = 775
Flow = 0.2328 m^3/s

Run # 2

Start @ 15:35 (YSI Time)
Stop @ 15:43 (YSI Time)

Mass = 2.0 Kg
SPC us/cm 776
Flow = 0.2627 m^3/s

Mean Q = 0.2478 m^3/s
= 247.8 L/s

Discharge = 12.39 %
RPD % 12.39 %

A. Hoeffs
S. Sidhu
G. Xue

April 28 18 SW Compliance Sampling

W10 @ 13:51

Temp °C	0.0
DO %	84.5
DO mg/L	12.31
SPC us/cm	1178
pH	7.57
ORP mv	173.7

Run # 1

Start @ 16:11 (YSI Time)
Stop @ 16:17 (YSI Time)

Mass = 0.5 kg
SPC us/cm = 1178
Flow m^3/s = 0.092

Only one flow completed b/c there was not enough salt

Flow = 0.092 m^3/s
= 92.0 L/s

A. Hoeffs
S. Sidhu
G. Xue

April 28 18 — SW Compliance Sampling

W62 @ 14:32

Temp	0.1
DO %	84.0
DO mg/L	12.20
SPC us/cm	879.0
pH	7.54
ORP mv	174.9

Run #1

Start @ 16:53 (YSI Time) — Mass = 0.5kg
Stop @ 17:02 (YSI Time) — SPC = 881
Flow = 0.0394

Run #2 17:02

Start @ 17:02 — Mass = 0.250kg
Stop @ 17:12 — SPC = 882
Flow = 0.0200

W8 + W56 @ 13:30
Access unsafe

W62 Flow
Q = 0.0300 m^3/s → 30 L/s
%RPD Q = 66.35 %

A. Hoeffs
S. Sidhu
G. Xue

Apr. 28 18 — WS Station

XY @ 16:24

Rain	0.0	mm
Solar Rad	623.1	W/m^2
Temp °C	39.601	°C
Wind Speed	3.53	m/s
Gust Speed	3.53	m/s
Wind dir	0.0	ø
Snow =	50.0	cm

Δ'ed Dessicant + batteries

KM @ 90 @ 16:41

Rain	0.0	mm
Solar Rad	2.28	m/s
Wind Speed	2.28	m/s
Gust Speed	454.4	W/m^2
Solar Rad	1.886	°C
Temp	~~47.7~~	~~%~~
R/H	47.7	%
Dew Pt	-8.0	°C
Snow =	77.5	cm

Δ'ed dessicant
battery = 65%

88

A. Hoeffs
S. Sidhu

Apr 28 18 WS Station
DON WSQ 16:59
Solar Rad = 134.4 W/m²
Temp = -0.311 °C
RH = 59.700 %
Dew Pt = -7.2 °C
Rain = 0.0 mm
Wind Speed 6.12 m/s
Gust Speed 6.31 m/s

May 18 18 HPAR Inspection

KM 88 09V 0484207
6931429
↳ 11 x 500mL
1 in 1.85 6 photos

≈ 3.08 L/s flow

@ 12:16 - near KM 90 WS
↳ Sediment from outcrop flowing into Don Creek

T. Smith (1) May. 15/18

+10 raining

13:30 - Arrive at Don Camp

15:22 - 1 photo taken at the core yard. (pumping water out of ditch)

16:15 - Finish core yard culvert.
- Used 3½ tank's of water = 200L x 3.5 (use water from the same pond)

16:50 - started next culvert below the air port between the dump and Airport.
- Took 2 photo's
- road is washed out.
- used 2.5 tank's of water = 200L x 2.5

R.D. PENHALL LTD. MADE IN VANCOUVER, CANADA
DUKSBAK WATERPROOF

METRIC FIELD

T. Smith (2) raining +10 May 15/18

17:50 - culvert Km 99
- took 2 photo's
- 50L

19 bags seed

T. Smith +10 sunny (3) May. 16/18

- Km 97

8:25 - 3 photo taken
- 50L of water used.

9:05 - Km 95
- 2 photo's taken.
- culvert was flowing when the crew arrived.

9:15 - Km 93
- 3 photos taken
- culvert is working
- streaming done
- 100L of water used.

R.D. PENHALL LTD. MADE IN VANCOUVER, CANADA
DUKSBAK WATERPROOF

METRIC FIELD

N. Falloon
J. Hagett
S. Sidhu

ver rd

ver rd

.5
.8
frozen
ganics

ntial

10

ver rd

H_2O

N. Falloon
S. Sidhu

May 28 — SW Compliance Sampling

Temp	3.1
DO%	87.9
DO mg/L	11.77
SPC	250.1
pH	7.01
ORP mV	1342

W3 @ 11:34

W3 @ 11:34
↳ Hailing
*

W5 @ 12:00

Temp °C	2.4
DO%	88.4
DO mg/L	12.12
SPC us/cm	383.1
pH	7.27
ORP mV	140.9

*

DUP 1 @ 12:01

Temp °C	2.4
DO%	88.4
DO mg/L	12.12
SPC us/cm	383.1
pH	7.27
ORP mV	140.9

SG @ 12:05 0.638m

* A flow could not be completed due to creek velocity + debris

N. Fallon
S. Sidhu

SW Compliance Sampling — May 28 18

W10 @ 12:35

Temp °C	2.1
DO %	86.0
DO mg/L	11.81
SPC us/cm	436.4
pH	7.17
ORP mV	-12.3

*

SG @ 12:36 0.502m

W62 @ 13:01

Temp °C	1.5
DO %	84.3
DO mg/L	11.78
SPC us/cm	360.2
pH	7.39
ORP mV	88.1

SG @ 13:02 = 0.656m

*

* A flow could not be completed due to creek velocity + debris

N. Falloon
S. Sidhu

May 28 18 SW Compliance Sampling

W8 @ 13:34

Temp °C	2.9
DO %	79
DO mg/L	10.63
SPC us	6458
pH	7.36
ORP mV	27.2

*

W8 @ 13:35 FB

Temp °C	72
DO %	73.6
DO mg/L	9.09
SPC us/cm	L2.0
pH	7.86
ORP mV	92.2

May 17 2018
FB date ↑

W56 @ 13:52

Temp °C	0.6
DO %	85.6
DO mg/L	12.29
SPC	260.4
pH	7.53
ORP mV	86.6

* Due to health + safety issues a flow could not completed.

Travel Blank Batch 15-Mar-18
Exp 15 June 18

S. Sidhu
N. Falloon

May. 28. 18 Wild Life Obs

1 Male caribou → 1/2 KM away from W
↳ Feeding → Hail, Wind
@ 11:25

1 Swan @ 11:45 near Don Camp
20 ducks @ 11.45 PONDS in Don wet lands / Wet lands

Wolf tracks @ 13:50 near WS6

Ptarmagin @ 13:50 near WS6

KM 65 on HPAR @ 14:52
↳ 2 caribou → 1 female 1 Juvi
↳ feeding
↳ viewed from chopper

KM 93 on HPAR @ 15:00
↳ 1 sheep → viewed from chopper

E. John Sunny (25)
temp + 10
may 24 2018

Km 28 ~~[illegible]~~
time: 16:28
Culvert steaming.
used 40 Gallons

photo's taken
105-0573
105-0576

Km 11.9
time 17:27
Steaming culvert.
photo's taken # 105-0577-105-0578
used 45 Gallons of water

Km 11.6
filling tank up 100 Gallons
time: 17:50

Km 11.9
time: ~~18:10~~ ~~18:10~~ 18:10
used 60 Gallons

Km 11.6
time: ~~17:45~~ 18:45
filling tank to 100 Gallons

Km 1.9 18:08
Steam Culvert
used 30 Gallons.

time: 18:26
drained 70 Gallons

E. John
T. Smith
Cloudy
windy
+10
(26)
June 7 2018

time: 10:37
~~fuel~~ fuel berm. put tarp over dirt pile
photo's taken # 101-0269-101-0271

time: 11:58
Don Camp
Changed the pads on all the fuel drums and put new stickers on them.
Dispose of old pads @ dump.

E. John temp +10 Cloudy (27) June 08 2018

Don comp water room
time: 8:30
Cleaning water tank out. # 1
photo's taken # 101-0272 - 101-0276
drained 170 Gallons, filled it up again then drained it again. filled to 140. drained it dry.
tank # 2 time: 10:30
drained 170 Gallons.
~~to~~
tank # 3 time: 1:15
drained all water. Scrubbed the tank.
All tanks are empty

Km 89 wash out
time: 14:30
photo's taken # 101-0277 - 101-0280

Km 86.1 ~~wash~~
time: 14:40
photo's taken # 101-0282 - 101-0286

T. Smith Cloudy
E. John +10 (28) June 09 2018

Don comp check
Don land fill check
time: 11:03.
burner is good. need to replace pads
bear fence is good. everything else in order.
no spills

consumibles yard.
time: 11:07
no spills. everything in order.
Some buckets fell over. ~~put~~ stack it back. Later

Don Air strip fuel and berms time: 11:12
Jet A in good order. replace pads
~~Jet~~ Diesel 1 in good order photo's taken # 101-0288 - 101-0294
Diesel 2 in good order
Spill kits present. ~~photo's taken #~~
berm is half full with water. sheen on surface. change filter at berm find new one

Gas enviro tank and berm
time: 11:20
- sheen on surface
- spillkit present
- photo's taken
needs a new filter.
photo's taken # 101-0295 - 101-0296

E. John
T. Smith

Cloudy +10
Sunny
no wind

29

June 09 201

time: 13:10
Jet A fuel berm
Spill- photo's taken # 101-0297-101-0301
GPS

found spill on check of comp. Looks like old Gator was used. put more pads where it is leaking.
length- 2.82 m
width 1 m
depth
400 m water source,

E. John
T. Smith

cloudy
windy
temp +1

30

June 10 2015

Consumibles yard.
Co Retorp the drill at back of the Consumible yard.
time: 9:30

Don ~~waste~~ land fill
time: 9:49
Spill kits, first Aid, fire extinguisher present at the land fill. everything is in order.

benching behind the shop
time: 10:13
operator doing work on slopes.
photo's taken # 101-0303- 101-0305

Large enviro tanks
changed all the pads on tanks.
time: 10:20

berm at Don Air Strip
time: 10:40
filter doesn't need to be changed. changed all Socks and pads, put old pads in C can at the land fill
photo taken # 101-0306

E. John
T. Smith

Cloudy
windy
temp +1

(31)

June 10 2018

Gas enviro tank
time: 10:56
no spills, spill kit present.

Jet A berm
time: 11:00
high water level, filter is working. sheen on surface.

Don shop check
time: 11:13
no issues

E. John
T. Smith

(32)

-1 cloudy

June 11/18

Don Comp
7:56 - Take t-bac sample don holding tank

Don Comp
8:00 - Take t-bac sample don Kitchen sink.

Don Comp
Time: 8:24
Sample: holding tank #1
YSI Reading - YSI is being sent out on June 12/18, putting aside a bottle of water for later reading

---

Don Comp
time: 8:26
Sample: holding tank #2
YSI reading - put aside a bottle for later reading.

E. John
T. Smith

Cloudy / temp +4 / no wind

33

June 11 2018

Don camp
time: 8:28
Sample: D Holding tank #3
ysi: put aside a bottle for later reading.

Don water shed
time: 13:25
Setting up flow meter to pump hooked up the computer. last reading was 137m³ before I Reset it to 0

Don waste facilatiy
time: 14:16
operator digging a pit.
GPS burn pit
09 V 0473906
UTM 6934334
Photo's taken # 101-0307 - 101-0310

---

enviro office
~~4:0~~ time: 15:00
Scan notes, fill wild life log
Put pictures on computer
done

E. John
T. Smith

sunny / temp +4 / no wind

34

June 12 2018

Safty meeting
time: 7:30

---

we Don water shed
time: 7:49
Water used: 1m³

Don waste facility burn pit
time: 7:58
measurements

length = 10.10m width = 5.22m Depth = 1.2m

Km 90
time: 14:24
moose in valley ~~ster~~ feeding.

Km 88
time: 14:30
Seen three Caribou on Road
photo's taken # 105-0581 - 105-0582

Km 82 bridge check time: 14:54
photos taken # 105-0583-105-0589

E. John
S. Ceeser

Sunny
no wind
temp +10

35

June 12/18

Km = 86 bridge
time: 3:10
photo's taken # 105-0590 - 105-0594

Km: 94.4 bridge
time; 3:30
photo's taken # 105-0596 - 105-0601

Km: bridge to nowhere
time; 3:40
photo's taken # 105-0603 - 105-0606

Km: 100.8 bridge
time: 3:46
photo's taken # 105-0608 - 105-0612

E. John
S. Ceaser

Sunny
no wind
temp +10

35

June 12/18

Km = 86 bridge
time: 3:10
photo's taken #105-0590 - 105-0594

Km: 94.4 bridge
time; 3:30
photo's taken # 105-0596 - 105-0601

Km: bridge to nowhere
time; 3:40
photo's taken # 105-0603 - 105-0606

Km: 100.8 bridge
time: 3:46
photo's taken # 105-0608 - 105-0612

Sunny
no wind
temp +5

36

June 13 18

Safty meeting
time; 7:00

Don Camp water shed
time: 7:18
used $4m^3 = 3m^3$ since yesterday

08:30 Don Camp Daily Inspections
Silk fencing needs to be fixed
photo taken # 105-0613 - 105-0614

13:13 Grizzly Bear @ Km96 below gully - eating
- 1 photo Taken 105-0616 - 105-0617

14:05 Emptied rain water/melted snow from berm @ XY generator shop
- Replaced Absorbent Pads.
- 1 photo Taken - 105-0618

14:15 XY Enviro Tanks
- Replaced Absorbent Pads
- 1 photo Taken. 105-0619

16:17 Tech Crew burning @ Land Fill
- Everything going as planned.

14:31 XY Land Fill photo taken 105-0621 105-0622
- Few rusty barrells/old wood needs to hauled to Don Camp Land Fill
- Old steel/rubber material needs to be hauled

13:30 - Grizzly Bear spotted @ km96

E. John
S. Ceoser

Sunny
no wind
+10

37

June 13 18

Don waste facility burn pit
time: 11:52
~~tes~~ Comp tech seperating all. Contaminated wood and burning all wood that has no Contimination.
photo's taken # 105-0615

E. John
S. Ceoser

cloudy
no wind
temp +5

38

June 14 18

Safty meeting
time: 7:00
Don water shed
time: 7:15
used 6 m^3 so used since yesterday 2 m^3
Don Comp inspection
time: 8:06
Don Generetor shed
clean, Garbage empty.
Don Air strip enviro tanks
time: 8:18
no Garbage. pads Are good.
Don Air strip fuel berm
time: 8:21
filter is good. pad are good
sheen on berm. half water
Don Gas enviro tank
time: 8:24
no spills, no Garbage
Don Jet A fuel berm
time: 8:25
full, sheen, pads Are ok.
Don Consumibles yard . time: 8:27
no Garbage

E. John
S. Ceaser

cloudy
no wind
temp +5

June 14/18

Don waste facility
time: 8:30
everything in order

Aneversary reed cutting willows.
time: 9:50

Don shop back slope
time: 10:00
putting up snow fencing.

Don shop back slope
time: 13:00
putting up snow fencing.
photo's taken # 105-0622 - 105-0626

Don waste facility
time: 14:40
Checking on the burning.
photo taken # 105-0627 - 105-0628

---

enviro office
Calibrate the ysi
time: 15:05

Condutivity - 14.13
ph 4.0
Calibrate 4.0

ph 7.0
Calibrate 96.98

ph 10.
Calibrate 10.

June 14/18

15:27 YSI Reading - Water sample from Tank #1 (Don Camp)

~~Temp~~ 6.3 °C
~~mm Hg~~ 658.3 mm Hg
50.5 $\frac{A}{S}$ DO%
6.21 $\frac{A}{S}$ DO $\frac{mg}{L}$
410.2 $\frac{A}{S}$ SPC $\frac{uS}{cm}$
7.15 $\frac{A}{S}$ pH
-30.8 $\frac{A}{S}$ pH mV
138.4 ORP mV

15:38 YSI Reading - Water Sample from Tank #2 (Don Camp)

5.0 °C
658.4 mm Hg
53.8 $\frac{A}{S}$ DO%
6.85 $\frac{A}{S}$ DO% $\frac{mg}{L}$
402.8 $\frac{A}{S}$ SPC $\frac{uS}{cm}$
7.25 $\frac{A}{S}$ pH
-36.7 $\frac{A}{S}$ pH mV
290.6 ORP mV

E. John
S. Caesar

(41)

June 14/18

13:54 YSI Reading - Water Sample from Tank #3 (Don Camp)

4.9 °C
658.6 mm Hg
50.7 A/S DO%
6.46 A/S DO% mg/L
3.99.7 A/S SPC µS/cm
7.23 A/S pH
-35.7 A/S pH mV
389.7 ORP mV

E. John
S. Caesar

(41)

June 14/18

13:54 YSI Reading - Water Sample from Tank #3 (Don Camp)

4.9 °C
658.6 mm Hg
50.7 A/S DO%
6.46 A/S DO% mg/L
3.99.7 A/S SPC us/cm
7.23 A/S pH
-35.7 A/S pH mV
389.7 ORP mV

E. John
S. Caesar

Sunny
no wind
temp +5.

(42)

June 15 2018

Don camp Safty meeting
time: 7:00

Don water water shed
time: 7:15 used $9m^3 = 3m^3$

Don camp Generator shop
time: 8:15
- No Absorbent Pads requires changing

Don Airstrip - Enviro Tanks
Time: 8:20

Don Airstrip - Fuel Berm
Time: 8:24

Don Airstrip Regular Gas Tanks Berm
Time: 8:27

Don Consumable Yard
Time: 8:29

Don Land Fill
Time: 8:32

Don Camp - Fuel Drums in Camp
Time: 8:37

9:15 - Porcupine eating in the Avalanche Rescue Box
- 1 photo Taken

E. John
S. Caesar

Sunny / clear
+3

June 15/18

9:19 Weekly Road Inspections
No Limit Road.
photo Taken # 105 - ~~0629~~ 0630

9:23 Silk Fencing - all need change
Photo Taken # 105 - 0631
Requires repairs

9:24 Bridge Crossing - ~~1~~ Km in from Jnct.
- Cracking on surface
- photo Taken # 105 - 0632

9:27 Cracking ~~on~~ on ~~bot~~ Culvert - Surface.
photo ~~taken~~ # 105 - 0633
- requires repairs

9:30 Km 2 - Tree on Road.
Taking different route

E. John
S. Caesar

Sunny / clear
+3

June 15/18

9:51 Weekly Road Inspections
HC Road
- Cracking on road surface
- Sluffing on side of roadside
- photo Taken # 105 - 0634

9:54 1 Km in - ersion on side of hill
photo Taken # 105 - 0635

10:36 Don Camp Land Fill
- ~~Not burning~~ Tech burning
old wood
- photo Taken # 105 - 0636
105 - 0637

Don Comp - Spill in front of drillers Dry
time: 11:29
photo's ~~taken~~ #
Comp techs useed Gator. Its Just a small amount that leaked from a hose that they took off the Drillers dry stove.
GPS 09 V 0473244
6934658

13:25 Cutting Willows between Km 98 - Km96.
- GPS - 09 V 0475681 6934667
- photo Taken #105-0640
- photo Taken #105-0641 with willows in bucket - filled half with water.

14:06 Seeding @ back slope behind maintanance shop

Stage #1
L = 60.4m
W = 20.8m
A = 1,256.32m

Stage #2
L = 90.9m
W = 30.4m
A = 2,763.36m

Stage #3
L = 70.0m
W = 30.32m
A = 2,122.4m

Stage #4
L = 90.8m
W = 20.9m
A = 1,897.72m

Stage #5
L = 70.9m
W = 2.9m
A = 205.61m

Total Area Seeded
= 8,245.41

13:30 Office Admin.
- downloading Pictures
- data download

S. Caesar Cloudy / Sunny +2

47

June 16/18

07:00 Tool Box Meeting

07:27 Don Water Shed -> 12m³ 3m³

07:51 Generator shop
- Changed Pads.

08:00 Watershed - Inspected.
- See Inspection Report

8:05 Fuel Drums on tents
- See Inspection Report

08:17. Don Airstrip Lge Fuel Tanks
- Changed Pads

08:23 Fuel Berms - Airstrip
- Changed Pads
- See Inspections Report

8:38 Regular Gas Tank - Berm
- Changed Pads
- See Inspection Report

S. Caesar Sunny / Slightly Cloudy +2

48

June 16/18

09:01 Consumable Yard
- See Inspection Report

09:07 Don Land Fill
- See Inspection Report

10:20 Data Entry
- Wildlife log

14:36 Caribou (2) eating - Km 96
- photo Taken #105-0642

14:51 No Limit Road
- Cracking on culvert
- photo Taken #105-0643

14:54 No Limit Road
- Cracking on Road
- photo Taken #105-0644

14:57 No Limit Road - 2km from Jct.
- Erosion on top bridge
- photo Taken #105-0645
#105-0646

S. Caesar | Cloudy +5 | June 16/18

15:03 No Limit Road - 2.5 km
- Cracking on culvert
- photo Taken #105-0647~~67~~

15:07 No Limit Road - 2.5km
- swamp area in middle of road
- photo Taken #105-0648

13:42 Downloading Pictures

S. Caesar Cloudy +5 (49) June 16/18

15:03 No Limit Road - 2.5 km
- Cracking on culvert
- photo Taken #105-0647

15:07 No Limit Road - 2.5km
- swamp area in middle of road
- photo Taken #105-0648

13:42 Downloading Pictures

S. Caesar Cloudy +3 (50) June 17/18

07:00 ToolBox / Safety mtg.

08:08 Don Camp Water Shed → 12m³ 3m³

08:21 Generator shop
- See Inspection Report.

08:25 Drums on tents
- See Inspections Report

08:28 Don Camp
- See Inspections Report

08:35 Heli Pad
- See Inspections Report

08:40 Don Airstrip - Enviro Tanks
- See Inspections Report
- Pads replaced June 16, 2018

08:44 Fuel Berm Airstrip
- See Inspections Report

Note # Packer working on Airstrip

S. Caesar | Cloudy +2 | (51) June 17/18

08:50 Berm near Regular Gas Tank
- replaced Pads - June 16, 2018
- See Inspections Report

08:54 Consumable Yard
- See Inspection Report

09:00 Don Land Fill
- No burning - waiting for a go ahead from Forestry
- See Inspection Report

09:24 Office Admin
- data Entry

14:07 HC Road
- Cracking on road
- 1 photo Taken # 105-0649

14:10 HC Road
- Cracking / Erosion on road
- erosion occurring in side of ditch.
- 1 photo Taken # 105-0650

S. Caesar | Cloudy / slight rain +2 | (52) June 17/18

14:16 HC Road
- erosion - side of hill
- 1 photo Taken # 105-0651

14:18 HC Road
- Cracking on surface of road on top of culvert
- 1 photo Taken # 105-0652

15:10 Moose on road @ turn off to bridge to nowhere Feeding

15:30 Office Admin
- data entry
- Up-loading Photos

S. Caesar Sunny +3 (53) June 18/18

07:00 Tool Box mtg.

07:24 Don Camp Watershed
- 12m³ 3m³

07:48 Generator Shop
- Free of garbage
- See Inspections Report

07:55 Fuel ~~on~~ Drums on tents
- Free of garbage
- See Inspections Report

08:06 Airport Airstrip - Enviro Tanks
- See Inspections Report

08:09 Fuel Berm Airstrip
- See Inspection Report

08:16 Berm near Regular Gas Tank
- See Inspection Report

08:22 Consumable Yard
- See Inspections Report

S. Caesar Sunny +3 (54) June 18/18

08:26 Don Waste Facility
- See Inspection Report

08:46 Core Yard
- 1 photo Taken #105-0653
- Tech Crew disabled Tent - see photo

10:15 Office Admin
- Data Entry

14:00 Inspected culvert from XY to km98.
- No photos Taken
- All culvert are in good condition - water flowing

15:31 Moose Feeding @ km94

15:48 Equipment / Tech Crew Working @ LRT Laydown
- laying ~~out~~ down

S. Caesar Sunny-Clear +5 (55)

June 19/18

07:00 Tool Box Mtg

07:27 Watershed Flow -> 12m³ 3m³

07:43 Generator Shop
- See Inspections Report

07:48 Drums on tents
- See Inspections Report

07:55 Heli Pad
- See Inspections Report

08:09 Airstrip Enviro Tanks
- See Inspection Report

08:12 Fuel Berm Airstrip
- See Inspection Report

08:6 Berm near regular gas tank.
- Water - low
- No garbage in area
- 1 photo Taken #105-0654

08:20 Consumable Yard
- See Inspections Report

S. Caesar Sunny/clear +5 (56)

June 19/18

08:24 Don Waste Facility.

11:33 Oil spill @ maintenance shop
- 2 photo Taken #105-0655
  #105-0656

GPS 09V0473100
6934471

Measurement
L = 70.6m
W = 70.9m
D = 20.0m
Have to go back and re-measure Spill Area

TA =
used Fresh soil.

1:47 Km 82 - Silt Fencing
- repair silt fencing
- 1 photo Taken #105-0657.

13:56
~~1:56~~ XY Km 82 - 4 Caribou - Feeding
- 3 bulls, 1 female

14:20 Km 86 - Bridge - Silt Fencing
- 1 photo Taken #105-0658

T. Smith
S. Caesar

Sunny
+ 25

(57)

June 19/18

14:40 Km 94 - Bridge - Silt Fencing
- 1 photo Taken # 105-0659

15:01 Bridge To Nowhere - Silt Fencing
- 1 photo Taken # 105-0660
- Repairs were made

15:15 Km 100 - Bridge - Silt Fencing
- 1 photo Taken # 105-0661
- Repairs were made

15:30 End of Airstrip
- Installed Silt Fencing
- 1 photo Taken # 105-0662

T. Smith
S. Caesar

Sunny
+25

57

June 19/18

14:40 Km 94 - Bridge - Silt Fencing
- 1 photo Taken # 105-0659

15:01 Bridge To Nowhere - Silt Fencing
- 1 photo Taken # 105-0660
- Repairs were made

15:15 Km 100 - Bridge - Silt Fencing
- 1 photo Taken # 105-0661
- Repairs were made

15:30 End of Airstrip
- Installed Silt Fencing
- 1 photo Taken # 105-0662

T. Smith
S. Caesar

Sunny
+19

58

June 20/18

07:00 Toolbox Mtg.

07:16 Water Shed Flow
12m³, 010 Error
- Add lube to flow sensor

8:39 Generator Shed
- See Inspection Report

8:44 Water Shed
- See Inspection Report

8:50 - Fuel Drums on tents
- See Inspection Report

- Don Camp
- See Inspection Report

9:12 Large Fuel tanks (Don Airstrip
~~A~~ - See Inspection Report

9:26 Berm Near Regular gas tank
- See Inspection Report
Re-do measurements

* Note: Oil spill.

T.Smith
S.Caesar

Sunny
+19

59

June 20/18

9:33 Don Consumable Yard
- See Inspection Report

9:40 Don Waste Facility
- See Inspection Report

9:50 Heli-Pad
- See Inspection Report

10:00 Core Yard
- See Inspection Report

10:29 Oil spill Measurements
- Re-calculate - Date 19/18
→ L = 0.863 m
W = 0.79 m
D = 0.20 m
V = 0.136354 m^3

10:43 Install Silt Fence at End of Airstrip
- Photo taken #105-0663

T.Smith
S.Caesar

Sunny
+21

60

June 20/18

11:14 Repair Silt fence at end of Airstrip

11:48 2 Grizzlies (sow+cub)
- walking on the road
- Km 99

13:50 Repair Silt fence on No-Limit Road
- 1 photo Taken #105-0664
- GPS → 09 V 0478571
6934085

14:10 Repair Silt fence on No-Limit Road
- 2 photo taken #105-0665
#105-0666
- GPS → 09 V 0478721
6933979

14:35 Repair Silt fence on No-Limit Road
- 1 Photo taken #105-0667
G.P.S → 09 V 0478791
6933872

T.Smith
S.Caesar

Sunny
+27

Jun

14:50 Repair Silt fence o
No Limit Road
· 1 Photo taken # 105-06
G.P.S → 09 V 0479306
6933540

T. Smith
S. Caesar

Sunny
+27

(61)

June 20/18

14:50 Repair Silt fence on No Limit Road
- 1 Photo taken #105-0668
G.P.S → 09 V 0479306
6933540

T. Smith
S. Caesar

Cloudy/smoky
+3

(62)

June 21/18

07:00 Tool Box Mtg.

07:45 Water Shed Flow
- 14 m^3 3m^3?
- See Inspection

08:00 [redacted] Data Entry

10:29 Don Camp Daily Inspections

10:35 Generator shop
- See Inspections Report

10:38 Core yard
- See Inspection

10:40 Heli Pad
- See Inspection

10:43 Drums on Tents
- put pads down at Watershed fuel drum.
- Changed pads below fuel drum at Don Camp Office
- Changed pads below fuel drum at Kitchen
- Changed pads below ~~de~~ fuel drum at Enviro tent

T. Smith
S. Caesar

Smoky
+20

63

June 21/18

10:50 Changed pad's ~~#~~ below fuel drum at Alcan tent.

11:02 Enviro Tanks - Don Airstrip
- See Inspections Report

11:05 Berm at Airstrip
- Water level - low

11:13 Berm near Regular Gas Tank.
- See Inspection Report
- Water level - low

11:16 Consumable Yard
- See Inspections Report
- Land Treatment Facility - Construction on hold - waiting for Geo Filter Cloth.

11:19 Don Waste Facility
- See Inspections Report
- large Contiminated Soil - Rip on side requires repairs
- 1 photo #105-0669

11:31 Don Camp
- See Inspection Report

T. Smith
S Caesar

Sunny
+29

64

June 21/18

13:15 Wrap damaged contaminated soil bag with suran wrap
- 1 photo taken #105-0670

14:10 6 Caribou feeding above km 82 bridge - near XY camp.
- 5 bulls, 1 cow

14:15 XY camp
- Clean up Lime by outhouse dump into outhouse
- 2 photo Taken #105-0671 #105-1672

14:20 XY Outhouse behind maintenance shop → put red tape "DO NOT ENTER", as outhouse is slatted to one side. ~~0675~~
- 1 photo Taken #105- ~~0673~~ ~~0673~~

14:36 XY Berm - Generator shop
- Changed Pad - rodents chewed up Pads
- 1 photo Taken #105-0674

T. Smith Sunny + 25 (65)
S. Caesar June 21/18

14:43 XY - Enviro Tanks
- Pads does need to be replaced.
- See Inspections Report

T. Smith Sunny +25 (65)
S. Caesar June 21/18

14:43 XY - Enviro Tanks
- Pads does need to be replaced.
- See Inspections Report

16:00 Data Entry

T. Smith cloudy (66)
S. Caesar +4 June 22/18

07:00 Toolbox Mtg.

07:26 Water Shed flocs
- 16 m^3 3 m^3

07:45 Data Entry
Don Camp Daily Inspections
10:50 ~~16:00~~ - Generator shop

10:~~48~~ 52 Fuel Drums on Tent
- See Inspections Report
- lay down Pads under Fuel Drums in Don Camp Area - Offices, Kitchen Area, Enviro Tent.

11:20 Large Enviro Tank - Airport Airstrip
- See Inspections Report

11:23 Fuel Berm at Airport Airstrip
- Water level - low
- See Inspections Report
- Tarp Contimaniated Soil is secured

T.Smith cloudy +4 (67)
S. Caesar

June 22/18

11:28 Regular Gas Tank Berm - Airport Airstrip
- ~~Tarp on Contaminated Soil - secured~~.
- Water level low
- See Inspection Report

11:31 Consumable Yard
- HO - working @ LTF yard
- See Inspections

11:35 Don Waste Facility.
- See Inspections Report
- 4 contaminated Soil Bags - Ripped behind C-Can - high priority
- 5 photos Taken ① # 105-0676 ② # 105-0677 ③ # 105-0678 ④ # 105-0679 ⑤ # 105-0680
- Change Pads @ emty Fuel drums
- Ripped Bag - Containing old Tarp. Photo Taken # 105-0681. ~~next~~ next to Red C-can.

T. Smith cloudy +14 (68)
S. Caesar

June 22/18

13:20 Changed rip contaminated Large White bags next to C-Can, replace it with a new bag.
- Replaced absurbent pad's around empty fuel drum's next to red C-Can at dump.

14:43 Don Waste Facility
- Top "Pipe" needs to be replaced on Incenarator. Rusting. Photo Taken # 105-0682

14:48 Consumable Yard
HEO - Working
- 1 photo Taken # 105-0683

14:55 Clean ~~some of the~~ absurb pad's in the Maintenence shop yard around Equipment

16:00 Data entry

T. Smith
S. Caesar

Sunny
+2

69

June 23/18

07:00 Toolbox Mtg

07:30 Water Shed Flow
- 19m³ 3m³

08:45 Data Entry

9:58 Inspection - DNE-120
- No over flow - ground is dry and was covered with fresh ~~1 photo Taken~~ dirt last year '2017'.
- 1 photo Taken #105-0684

10:19 Inspection - DNE-073
- No over Flow
- 1 photo Taken #105-0685

10:50 Daily Camp Inspection
10:51 Generator shop - See Report
10:53 Core Yard - See Inspection Report
10:55 Heli Pad - See Inspection Report
11:00 Drums (Fuel) on Tents.
- See Inspections Report.

T. Smith
S. Caesar

Sunny +5

70

June 23/18

11:10 Large Fuel Tanks - Enviro Airport Airstrip
- See Inspections Report

11:13 Fuel Berm at Airstrip
- See Inspections Report.
- Water level - low
- Tarp secured - contiminated Soil.

11:21 Regular Gas Tank - Berm - Don Airstrip
- Water level low
- See Inspection Report

11:25 Consumable Yard - See Inspection Report

T. Smith
S. Caesar

Sunny + 5

(71)

June 23/18

11:30 Don Waste Facility.
- See Inspections Report
- Tech Crew burning garbage.

13:20 Don Waste Facility
- lay down Tarp to transfer contaminated soil Bags by C-Can to prevent further environmental damage to ground surface.
- HEO - assisting and moving bags onto Tarp.
- 1 bag ripped open - Enviro crew will shovel into new bag ⇒ 1 photo Taken #105-0686
- moved approximately 6 contaminated bags onto Tarp. Photo Taken #105-0687

14:50 Transfer contaminated soil from ripped bag to new bag.
- photo taken #105-0688

T. Smith
S. Caesar

Sunny +5

71

June 23/18

11:30 Don Waste Facility.
- See Inspections Report
- Tech Crew burning garbage.

13:20 Don Waste Facility
- lay down Tarp to transfer Contiminated ~~Soil~~ Bags by C-Can to prevent further environmental damage to ground surface.
- HEO - assisting and moving bags onto Tarp.
- 1 bag ripped open - Enviro crew will shovel into new bag ⇒ 1 photo Taken #105-0686
- moved approximately 6 contiminated bags onto Tarp. Photo Taken #105-0687

14:50 Transfer contaminated Soil from ripped bag to new bag.
- Photo taken #105-0688

T. Smith
S. Caesar

cloudy + Rain +4

72

June 24/18

07:00 Toolbox Mtg, Safety Mtg

08:05 Water Shed Flow
21 m^3 3 m^3
- See Inspection Report

09:30 Generator Shop
- See Inspections Report.

09:32 Heli Pad
- see Inspections Report

09:35 Fuel Drums on Tents
- See Inspections Report

09:37 Behind Kitchen Deck - looks ~~oil~~ spill? 1 photo Taken #105-0689
- Grease

09:52 Enviro Tanks - Airport Airstrip
- See Inspections Report

09:54 Fuel Drums ~~@~~ Berm at Airstrip
- Water level - low
- Tarp is very ~~sturdy~~ secured.

T.Smith
S.Caesar

Cloudy / rain
+4

73

June 24/18

10:01 Regular Gas Tank Berm at Airport Airstrip
- Water level - low
- See Inspections

10:05 Consumable Yard.
- See Inspection Report
- HEO - not working in area - they Working @ the Gravel Pit at Airport Airstrip.

10:09 Don Waste Facility

10:23 Core yard - Area
See Inspections Report
- creek Flow - steady

Don Waste Facility

10:48 Don Waste Facility
- Shoveling Contiminated Soil to lined bag. 1 photo #taken # 105-0690

13:22 - Due to rain check Large Berm at Airstrip by Enviro tank's

T. Smith
S. Caesar

Raining, cloudy
+10

74

June. 24/18

13:29 Due to rain check fuel Berm next regular gas tank at Don airstrip

13:35 Don Waste Facility
- Continue transfering contaminated soil into new bag.

T.Smith
S.Caesar

Cloudy
+2

75

June 25/18

07:00 Toolbox Mtg.

07:22 Water Shed Flow
21 m^3 3 m^3, Error 010
- Apply KY Jelly
- See Inspection Report

9:09 Generator Shop
- See Inspection Report.

9:11 Core Area
- See Inspection Report

9:19 Large Fuel Fuel Storage Tanks - Don Airstrip
- See Inspections Report.

9:21 Fuel Berm - Airstrip
- Water level - low
- Tarp secured - rain water built up on North West Corner of berm
- ~~See Inspection Report~~
- 1 photo Taken #105-0690.

T.Smith
S.Caesar

Cloudy
+2

76

June 25/18

09:29 Regular Gas Tank - Berm
- Water level - high where filter is located.
- Replaced Absorbent Pads
- 1 photo Taken #105-0691
- Put Gator down around Filter ~~as~~ due to heavy rain, and one side of berm is full of water, to prevent further environmental damage to environment.
- Approx - 150m from water source.

9:55 Consumable Yard
see Inspections Report

9:59 Don Waste Facility
- See Inspections Report

10:25 Heli Pad - See Inspections Report

10:26 Fuel Drums on Tents
- See Inspections Report

T. Smith
S. Caesar

Raining
+5

77

June 25/18

11:15 Don Waste Facility
- Continue transfering contaminated soil into new bag.

13:15 Don Waste Facility
- Continue transfering contaminated soil into new bag.

13:48 Weekly Road Inspection - Don Road
- Km 96 Sign - below hill ~~on~~ curve requires repairs and ~~the sign is too~~ side of the road is washing out from rain run-~~off~~.
  - 1 photo Taken #105-0695

14:19 Km 86 - Willow Creek Bridge
- Repaired Silt Fencing

14:50 Culvert between Km 84 and Km 86, the water is flowing under the culvert
- down stream of culvert the water is making its own channell

T. Smith
S. Caeser

Raining
+10

78

June. 25/18

(continue) ⇒ Ribbon off area on culvert Post.
- 3 photos Taken #105-0692 #105-0693, #105-0694.

15:53 Data Entry
- Daily Camp check
- Field Sheet
- Field Notes (scan)
- Upload Photos

T. Smith
S. Caesar

Raining
+2

(78)

June 26/18

07:00 Toolbox Mtg.

07:40 WATER Shed flow
24 m^3 3 m^3
• See Ispection Report

08:09 Large Enviro Tanks - Airport Airstrip
• See Inspections Report

08:10 Fuel Berm - End of Airstrip
• Water level - low
• Tarp secured @ corner of berm. Water level by Tarp is getting high due Rain
• 1 photo Taken # 105-0696

08:20 Regular Gas Tank - Berm
• Water level high @ corner of berm due to Rain.
• Pads changed - June 25, 2018.
• Add Pads inside of berm to minimize leakage flowing onto ground water
•

T. Smith
S. Caesar

Raining
+2

(80)

June 26/18

08:20 (Con'd) Regular Gas Tank - Berm.
• Put Gator down outside of berm where water level is high.
• 2 photos Taken # 105-0697, #105-0698

08:48 Consumable Yard
• HTEO - Not working LTF, due rain. - material to wet.
• See Inspections Report

09:00 Don Waste Facility
• See Inspections Report
• 2 Burn Barrels requires replacing, due heat damage
• 1 photo Taken # 105-0699

09:07 Core Yard
• See Inspections Report

09:09 Generator Shop
• See Inspections Report

T. Smith
S. Caesar

Raining +2

June 26/18

09:10 Heli Pad - See Inspections Report.

09:12 Fuel Drums on Tent
- See Inspections Report

09:42 Moose - Km 100 - walking on Road.

09:57 HC Road - Weekly Inspection.

10:12 Wash out at end of road.
- 1 photo Taken #105 - ~~0690~~ 0700
- Road Surface - cracking
- ditches - requires repairs - mud sliding on road ~~at the~~ as ~~beginning~~ you enter HC Road Access.

10:34 NO Limit Road Weekly Inspections
- See Inspection Report

13:20 Berm @ regular gas tanks
- Water level - High - due to heavy rainfall
- Water overflow from berm - put Pads down
- 1 photo Taken #105 - ~~0701~~ 0701

T. Smith
S. Caesar

Raining +2

June 26/18

13:35 Road @ end of Airstrip - Road is cracking due to heavy rainfall - requires repairs - High.
- 1 photo Taken #105 - 0702

13:51 Don Waste Facility
- Tech Crew burning old wood from stock pile.

14:00 Data Entry
- Upload Pictures
- Field sheet
- Field Notes
- Wild life Log
- Calibrate YSI (due in the morning - June 27/18)
- Road Inspections - HC, NO Limit

T. Smith
S. Caesar

Light Raining +3

83

June 27/18

07:00 Toolbox Mtg.

07:30 Water Shed flow
25 m^3 3 m^3
• See Inspection Report

07:52 ~~Lar~~ Fuel Berm at End of Airstrip.
• Water Level by Tarp is stable - med.
• Tarp secured - contiminated Soil
• See Inspections Report.

07:58 Large Enviro Tanks - Airport Airstrip
• See Inspections Report

08:03 Berm near Regular Gas Tank.
• Water level - "High" at corner of berm.
• Changed out Filter - label - date
• Changed Pads under new filter + added more ~~to~~ inside Berm.

T. Smith
S. Caesar

Light Rain +3
Fog - AM

84

June 27/18

8:41 Don Nask Facility.
• Tech Crew burning old wood/lumber
• See Inspections Report.

08:47 Consumable Yard.
• See Inspections Report.
• Re-Stack one pallet of buckets.

08:56 Generator shop
• See Inspections Report

08:58 Core Yard - See Inspection Report

9:04 Heli Pad. see Inspection Report

09:05 Fuel Drums on Tents
• See Inspection Report

09:10 YSI Calibration
pH 4 = 4.02
pH 7 = 7.00
pH 10 = 10.00

Conductivity → 1413

T. Smith
S. Caesar

cloudy
+9

June 27/18

11:30 Put pple on marker @ km 85 culvert.

WS

time: 15:34 Samples @ 15:14 travel block 15:14

vsi Reading @ 15:24

vsi Temp = 3.0

mmHg = 630.4 spc $\frac{us}{cm}$ = 53.1

Do % = 74.8 ph = 6.94

Do $\frac{mg}{L}$ = 10.12 ph mv = -17.4

orp mv = 19.2

WS6 Duplicate Semple

time: 15:~~30~~ 14 Samples @ 15:14 Dup @ 15:30

vsi Reading @ 15:37

temp = 6.1 spc $\frac{us}{cm}$ = 228.0

mmHg = 630.1 ph = 7.43

Do % = 84.5 ph mv = -44.4

Do $\frac{mg}{L}$ = 10.49 orp mV = 36.8

T. Smith
S. Caesar
cloudy
+9
(85)
June 27/18

11:30 Put pple on marker @ km 85 culvert.

WS

time: 15:34 Samples @ 15:14 travel bleck 15:14

ysi Reading @ 15:24

vs Temp = 3.0

mmHg	= 630.4	Spc $\frac{us}{cm}$	= 53.1
Do %	= 74.8	ph	= 6.94
Do $\frac{mg}{L}$	= 10.12	ph mv	= -17.4
		orp mv	= 19.2

WS6

Duplicate Semple

time: 15:~~30~~ 14 Samples @ 15:14 Dup @ 15:30

VSi Reading @ 15:37

temp	= 6.1	Spc $\frac{us}{cm}$	= 228.0
mmHg	= 630.1	ph	= 7.43
Do %	= 84.5	ph mv	= -44.4
Do $\frac{mg}{L}$	= 10.49	orp mV	= 36.8

E. John
S. Caeser
~~June~~
cloudy
+10
no wind
(86)
June 28/18

7:00 Safty meeting

---

time 7:30

Don water sled 27 m^3 use 2 m^3 since yesterday

---

time: 9:46

WS 62

the grey box was full of water. got to go back and get another one to replace this one. photo taken #

---

time: 10:55

Airport Berm - drain rain water by end of berm - Tarp secured.

---

time: 11:40

WL2

Samples @ 11:40

VSi Reeding @

I lost the bottom connection to the box so I'll have to find another one. fell into the creek. no flow. water is to fast

temp	= 5.0	Spc $\frac{us}{cm}$	= 304.4
mmHg	= 639.0	ph	= 7.19
Do %	= 85.2	ph mV	= -32.4
Do $\frac{mg}{L}$	10.86	orp mV	= 90.6

E. John
S. Caesar

Cloudy
light Rain
+8

(87)

June 28/18

W62

time: 12:00

Site	mark bench	back Site	Height instrument	SG	Pipe
W62					
	100	10249.6	102.496	100.273	100.051
Run 1	249.6	249.6	~~222.30~~	222.3	244.5
Run 2		253.8	102538	226.2	248.4
				100.276	100.054
				- 0.003	-0.003

E. John
S. Caesar

Cloudy
light rain
+8

88

June 28/18

Close out

249.6

253.8

E. John
Sr. Caesar

cloudy
light Rain
light wind

(89)

Jun 28/18

~~15:11~~ W5c

time: 15:11

- Water Level - High can't do flows or survey and data
- 1 photo Taken

~~Temp = 66.7~~ 5.6 °

mmHg = 660.7

DO% = 89.2

DO ~~mg~~/L = 11.21

SPC uS/m = 349.3

pH = 7.44

pH mV = -45.8

ORP - mV = 105.2

17:00 YSI Calibration

pH 4 → 4.0

pH 7 → 7.1

pH 10 → 10.1

- Conductivity → 1413

E. John
S. Caesar

cloudy
light Rain
light wind

(89)

June 28/18

~~15:11~~ W5

time: 15:11

- Water Level - High can't do flows or survey and data
- 1 photo Taken

~~Temp = 660.7~~ 5.6 .
mmHg = 660.7
DO% = 89.2
DO $\frac{mg}{L}$ = 11.21
SPC $\frac{us}{m}$ = 349.3
pH = 7.44
pH mV = -45.8
ORP - mV = 105.2

17:00 YSI Calibration
pH 4 → 4.0
pH 7 → 7.1
pH 10 → 10.1

- Conductivity → 1413

E. John
S. Caesar +3

Partly Cloudy

June 29/18

07:00 Tool Box mtg

07:17 Watershed Flow 30m3 3m3

---

time: 9:14
W10
Set up logger - connected the computer
Set it up
no flow or survey do to fast water.
~~Sample 9:14~~ Samples @ 9:14
YSI Reading @ 9:24
temp = 3.9 °C spc $\frac{us}{cm}$ 358.9
mm Hg = 647.9 ph = 7.27
DO % = 86.4 ph mV = -23.8
DO $\frac{mg}{L}$ = 11.36 orp mV = 34.0

---

time: 10:38
Comp check

E John
S. Caesar

Cloudy / Partly Sunny
+5

91

June 29/18

12:43 W3 - Water Sample / Field Blank.
- No Flow - Water level - High

Readings

13:04 YSI Readings

Temp = 6.7°C
mm Hg = 606.3
DO% = 90.2
DO% $\frac{mg}{L}$ = 10.96
SPC $\frac{us}{cm}$ = 265.7
pH = 7.79
pH mV = -49.9
ORP mV = 111.2

14:45 HEO Operator transferring into Large Enviro Tanks @ Airport Arrstrip.
- Monitoring Transfer - for any Fuel Spills.
- Clean up diesel spill while transferring

14:50 Large Fuel Berm - Enviro Tank - Monitor.
- Water level - low
- Water level by Tarp - low

15:30 Diesel Spill - While transferring fuel
- Put gator down
- Put pads into Berm
- Approx - 1 Litre
- 150 m - to water source
- 1 photo Taken #105-

E. John
S. Caesar

cloudy
+5

92

June 29/18

15:30 Fuel Transfer - Con'd
- Air lock - pressure on the hose.
- 1 photo Taken #105-0710
- GPS

L = 58.2m
W = 29.2m
A =

16:30 Data Entry.

E. John
S. Caesar

Partly Cloudy
+3

93

June 30/18

07:00 Tool Box Mtg

07:27 Watershed Flow -> 32m3 ~~3~~m3

07:31 Office Admin - Data Entry

11:02 Generator Shop
- See Inspections Report.

11:05 Core Yard
- See Inspections Report.
- Pick-up garbage in yard.

11:07 Heli Pad - See Inspections Report

11:09 Fuel Drums on Tent
- See Inspections Report

11:29 Due Equipment Working ~~at~~ ~~I will~~ at end of Airstrip - I will do Inspections @ Enviro Tanks + Berm in the Afternoon.
- HEO - installed @ culvert

E John
S Caesar

Partly Cloudy +3
Raining - PM

94

June 30/18

11:35 Berm near Regular Gas Tank - Airport
- Water level High @ far end of berm, due to rainfall.

11:41 Consumable Yard
- See Inspections Report.

11:46 Don Waste Facility
- Tech Crew burning old wood/ lumber - separating hydro carbon wood.

13:15 Data Entry -> Daily Camp Inspection

14:25 Regular Gas Tank - Berm
- Changed out Absorbent Pads
- Water level - high

15:26 ~~Heli Pad~~ ->
Enviro Tanks - Airport Airstrip
- See Inspections Report
- GPS (diesel spill) June 29, 2019
  09V 0478656
  6933183

15:31 Fuel Berm Airstrip heavy
- Drained Berm by Tarp - rainfall
- Water Level - med - rainfall
- Absorbent - ~~req~~ ~~pds~~ NO
- Tarp Secured - Water level

E John
S. Caesar

Cloudy +2

July 1/18

07:00 Tool Box / Safety Mtg.

07:29 Watershed Flow - 32m³ 3m³
- Error 32m³ 3m³ ⇒ Added Ky Gel.

08:41 XY - Weather Station
changed dessicant / changed batteries 100%
downloaded data. Download Data ⇒ Diver
⇒ 78% Battery.

09:43 Km 90 - Weather Station
changed dessicant / changed batteries 100%
downloaded data. Download Data - Diver
⇒ 93% Battery

10:15 Km 100 - Weather Station
changed dessicant / Batteries 65%
- Download Data - Diver - nothing installed.

10:46 Consumable Yard - See Inspection Report

10:50 Large Fuel Tanks - Airstrip
- See Inspections Report

10:52 Berm @ Airport Airstrip
- Water low
- See Inspections
- Tarp secured - drain water - due to heavy rainfall.

E. John
S. Caesar

Cloudy +2

July 1/18

11:00 Regular Gas Tank - Berm
- See Inspections Report.

11:09 Maintenance Shop
- See Inspections Report

11:12 Carpenter Shop
- See Inspections Report

11:13 No Limit shop
- See Inspections

13:30 WHMIS - due to rain and Internet I (Sheila) had completed my course. Although - slow access to site.

E. John
S. Caesar

Sunny +3

97

July 2/18

07:00 Tool Box Mtg

07:24 Watershed Flow -> 35m³ 3m³

Bi-Monthly Camp con'd / Daily Camp Insp.

08:21 Generator shop
- See Inspections Report
- changed Absorbent Pads / Threw garbag out.

08:30 Watershed - Bi-Monthly con'd
- See Inspection Report.

08:35 Fuel Drums on Tents - Bi-Monthy Con'd.
- See Inspections Report.

09:11 Large Fuel Storages - Airport Airstrip
- change pads @ all 3 Tanks and by Light RL4000.
- See Inspections Report.

09:23 Fuel Berm Airstrip
- Water level - low
- Change Pads
- Tarp secured.

E. John
S. Caesar

Sunny +3

98

July 2/18

09:39 2 Caribou running on Airport Airstrip

09:43 Berm @ Regular Gas Tanks
- Water level High - due to recent rainfall
- Absorbent Pads changed on ~~J~~une 30.

09:46 Consumable Yard
See Inspections Report.

09:52 Don Waste Facility
- Tech Crew burning - sorting out Contaminated Tarps, ~~etc~~ and Wood/lumber.
- Equipment assisting in digging out ~~pile~~ wood from Old wood pile
- See Inspections Report.

10:50 Maintenance shop.
- Cleaned old Absorbent Pads under equipment - put in Don Waste Facility.

13:10 Don Camp
- Change Absorbent Pads on Fuel Drums.

E. John
S. Caesar

Sunny + 15

July

14:10 monitor berm - drain rai
at end of Airstrip by Tarp

14:15 Regular Gas Berm - Airport A
- draining berm - put snake
pads around far end of
berm. Joe assisted.
- cleaned out berm that h
pads inside - put into C
@ Don Waste Facility.
- monitoring drainage.

15:38 Data Entry.
- Field Sheet
- Daily Camp Inspection
- Bi-Monthly Inspection

E. John
S. Caesar

Sunny +15

July 2/18

14:10 monitor berm - drain rainwater at end of Airstrip by Tarp.

14:15 Regular Gas Berm - Airport Airstrip
- draining berm - put snakes, pads around far end of berm. Joe assisted.
- cleaned out berm that had pads inside - put into C-Can @ Don Waste Facility.
- monitoring drainage.

15:38 Data Entry
- Field Sheet
- Daily Camp Inspection
- Bi-Monthly Inspection

S. CAESAR - AM Cloudy +3
T. SMITH - SHIFT CHANGE (AM)

July 3/18

07:00 Tool Box Mtg

07:19 Watershed Flow -> 38m³ 3m³

11:42 Generator Shop
- See Inspection Report

11:46 Core Yard
- See Inspection Report

11:50 Heli Pad
- See Inspection Report

13:07 Large fuel tank's (Don Air Strip)
- See Inspection Report

13:15 Fuel berm Air Strip
- See Inspection Report
- Water level Low
- Tarp secured

13:26 Berm @ Regular Gas Tank
- See Inspection Report

T. Smith

cloudy/sunny
+14

101

July 3/18

13:32 Consumable Yard
- See Inspection Report

13:37 Don Waste Facility
- See Inspection Report

13:50 Water Shed
- See Inspection Report

13:54 Fuel Drum on Tents
- See Inspection Report

15:30 Data Entry
- Daily Inspection Report
- Field Sheet
-

T. Smith | cloudy/sunny +14 | 101 | July 3/18

13:32 Consumable Yard
- See Inspection Report

13:37 Don Waste Facility
- See Inspection Report

13:50 Water Shed
- See Inspection Report

13:54 Fuel Drum on Tents
- See Inspection Report

15:30 Data Entry
- Daily Inspection Report
- Field Sheet
-

T. Smith | Sunny +6 | 102 | July 4/18

07:00 Toolbox Mtg.

07:32 Water Shed Flow
41 m^3 3 m^3
- See Inspection Report

7:50 Generator Shop
- See Inspection Report

7:58 Core Yard
- See Inspection Report

8:05 Large Storage Tanks (Dom Air Strip)
- See Inspection Report

8:11 Fuel Berm AirStrip
- Water Level low
- Tarp Secured
- See Inspection Report

8:19 Berm @ Regular Gas Tank
- See Inspection Report

T.Smith

Sunny
+9

(103)

July 4/18

8:30 Consumable Yard
- See Inspection Report

8:35 Don Waste Facility
- See Inspection Report
- ~~Structure~~ Crew Start on construction of building at site.

8:50 Fuel Drums On Tents
- See Inspection Report

9:02 Heli Pad
- See Inspection Report

9:08 Don Camp
- See Inspection Report

9:25 Don Waste Facility
- Monitering sprungstructure
- 1 Photo taken #105-0713

10:20 Monitor and assist with sprung structure

T.Smith

Sunny
+19

(104)

July 4/18

13:05 Monitor and assist with sprung structure at Don Waste Facility

16:00 Data Entry
- Field sheet
- Daily Camp Inspection

Sunny
+12

105

T. Smith

July 5/18

07:00 Toolbox Mtg

07:30 Water Shed Flow
43 m^3 Error 0010
· Apply K Y Jelly to sensor.
· See Inspection Report

7:50 Core Yard
· See Inspection Report

7:53 Generator Shop
· See Inspection Report

8:00 Large Fuel Storage Tank's
· See Inspection Report

8:06 Fuel Berm Air Strip
· See Inspection Report

8:14 Berm @ Regular Gas Tank
· See Inspection Report

Sunny
+13

106

T. Smith

July 5/18

8:20 Consumable Yard
· See Inspection Report

8:25 Don Waste Facility
· See Inspection Report
· Crew Working on Sprung Structure

8:30 · Found one Fuel leak from Heavy Equipment Packer. At Don Dump · 2 Photo taken #105-0714
#105-0715

· G.P.S. 09 V 0473933
6934386

Measurement
L = 1.30 m
W = 1.0 m
D = 0,102

· Removed 3 bucket's of contaminated soil
· Apply Gator to spill site
· Most of fuel was on surface due to the ground being packed down.
· approx fuel was 1 Litre

Sunny +20

107

T. Smith

July 5/18

10:34 Fuel Drums On tents
- See Inspection Report

10:39 Heli Pad
- See Inspection Report

10:44 Don Camp
- See Inspection Report

11:40 Monitor Sprung Stucture at Don Waste Facility

13:03 Don Waste Facility
- Monitor Sprung structure and assist the crew

15:30 Data Entry
~~Daily Site Inspection~~
- Field Sheet
- Daily Camp Inspection

Sunny +20

107

T. Smith

July 5/18

10:34 Fuel Drums On tents
- See Inspection Report

10:39 Heli Pad
- See Inspection Report

10:44 Don Camp
- See Inspection Report

11:40 Monitor Sprung Stucture at Don Waste Facility

13:03 Don Waste Facility
- Monitor Sprung structure and assist the crew

15:30 Data Entry
~~Daily Site Inspection~~
- Field Sheet
- Daily Camp Inspection

Cloudy +5

108

T. Smith

July 6/18

07:00 Toolbox Mtg

07:28 Water Shed flow
47 m^3 3 m^3
- See Inspection Report

07:37 Heli Pad
- See Inspection Report

07:41 Fuel Drum On Tents
- See Inspection Report

07:49 Generator Shop
- See Inspection Report

07:52 Core Yard
- See Inspection Report

07:59 Large Fuel Storage tanks (Don Air Strip)
- See Inspection Report

8:05 Fuel Berm Air Strip
- Wate level Low
- See Inspection Report

Cloudy +8 (109)

T. Smith July 6/18

8:13 Berm @ Regular Gas Tank
- See Inspection Report

8:18 Consumable Yard
- See Inspection Report
- HEO working at L.T.F.

8:24 Don Waste Facility
- Crew working on Sprung Structure
- See Inspection Report

8:45 Don Camp
- See Inspection Report

9:15 Don Waste Facility
- Monitor and assist crew with Sprung Structure

10:45 Leaving Don Camp for XY to monitor fuel Transfer.

Cloudy/Raining +7 (110)

T. Smith July 6/18

11:35 Monitor Fuel transfer at XY. Large Fuel Storage Tank
- Transfer 2 fuel cubes into storage tank
- 4700 L x 2
- Crew did a good job.

12:50 Weekly Road Inspection
- Don Road

13:27 Weekly Road Inspection
- No Limit Road

14:00 Weekly Road Inspection
- HC Road

16:00 Data Entry
- Daily Camp Inspection
- Weekly Road Inspection
- Field Sheet

T.Smith — Sunny +3 — July 7/18

07:00 Toolbox Mtg

07:18 Water Shed flow
- 50 m^3 3 m^3
- See Inspection Report

7:30 Generator Shop
- See Inspection Report

7:37 Core Yard
- See Inspection Report

7:44 Large fuel storage Tanks (Don Air strip)
- See Inspection Report

7:49 Fuel Berms Air Strip
- Tarp Secured
- See Inspection Report

7:56 Fuel Berm @ Regular Gas Tank
- See Inspection Report

T.Smith — Sunny +7 — July 7/18

8:04 Consumable Yard
- See Inspection Report

8:09 Don Waste Facility
- Crew Working on Sprung Structure
- See Inspection Report

8:25 Fuel Drums On Tents
- See Inspection Report

8:32 Heli Pad
- See Inspection Report

8:39 Don Camp
- See Inspection Report

8:50 Monitor Fuel Transfer at Large Fuel Storage Tanks (Don Air Strip)
- From fuel cubes to Storage Tanks
- Transfer 4700 Litre x 2 into Storage tank.
- Crew did a good job.
- No incedent

cloudy
+9

(113)

T. Smith

July 7/18

10:40 Don Waste Facility
- Monitor and assist with Sprung Structure

13:06 Don Waste Facility
- Monitor and assist with Sprung structure

16:00 Data Entry
- Field Sheet
- Daily Camp Inspection

T. Smith — cloudy +9 — July 7/18

10:40 Don Waste Facility
- Monitor and assist with Sprung Structure

13:06 Don Waste Facility
- Monitor and assist with Sprung structure

16:00 Data Entry
- Field Sheet
- Daily Camp Inspection

T. Smith — Cloudy +6 — July. 8/18

07:00 Toolbox Mtg, Safety Mtg

07:30 Water Shed flow
- 53 m^3 3 m^3
- See Inspection Report

7:41 Generator Shop
- See Inspection Report

7:43 Core Yard
- see Inspection Report

7:51 Large Fuel Storage Tanks
- See Inspection Report

7:57 Fuel Berm Air Strip
- Tarp Secured
- Water level Low
- See Inspection Report

8:05 Berm @ Regular Gas Tank
- See Inspection Report

T.Smith — cloudy +7 — July 8/18

8:11 Consumable Yard
- See Inspection Report

8:15 Don Waste Facility
- Crew Working on Sprung Structure
- See Inspection Report

8:25 Heli Pad
- See Inspection Report

8:32 Fuel Drums On Tents
- See Inspection Report

8:39 Don Camp
- See Inspection Report

9:00 Don Waste Facility
- Monitor and assist with Sprung Structuee
- Crew is working good together

T.Smith — cloudy +8 — July.8/18

10:29 Large Fuel Storage Tanks
- Monitor fuel transfer
- From fuel cubes to Large Storage tanks
- Transfer 4700 Litres x2 into Large Storage Tanks
- Crew did a good job with transfering the fuel.

11:35 Don Waste Facility
- Monitor and assist with Sprung Structure

13:20 Don Waste Facility
- Monitor and assist with Sprung Structure

15:40 Data Entry
- Daily Camp Inspection
- Field Sheet
- Field Note's

Sunny
+6

117

T.Smith

July. 9/18

07:00 Toolbox Mtg.

07:19 Water Shed Flow
$56 m^3$ $3 m^3$
• See Inspection Report

7:32 Generator Shop
• See Inspection Report

7:36 Core Yard
• See Inspection Report

7:44 Large Fuel Storage Tanks
• See Inspection Report

7:51 Fuel Berm Air Strip
• Tarp Secured
• Water Level Low
• See Inspection Report

8:00 Berm @ Regular Gas Tank
• Water level Low
• See Inspection Report

Sunny
+12

118

T.Smith

July 9/18

8:06 Consumable Yard
• See Inspection Report

8:10 Don Waste Facility
• See Inspection Report

8:30 Heli Pad
• See Inspection Report

8:35 Fuel Drums On Tents
• See Inspection Report

8:41 Don Camp
• See Inspection Report

9:13 Moved all Silt fencing from Airstrip to Carpenter Shop

9:32 Don Waste Facility
• Monitor and assist with Sprung Structure

9:35 Don Waste Facility
• Incenerater ~~caught fire~~ Leak burning liquid and was burning on ground

T.Smith

Sunny
+19

(119)

July 9/18

10:26 Don Waste Facility
- Monitor and assist with Sprung Structure
- Check on fire that happen with the Incenerator.

13:10 Don Waste Facility
- Monitor and assist with Sprung Structure

15:45 Data Entry
- Daily Camp Inspection
- Field Sheet

T.Smith | Sunny +19 | 119 | July 9/18

10:26 Don Waste Facility
- Monitor and assist with Sprung Structure
- Check on fire that happen with the Incenerator.

13:10 Don Waste Facility
- Monitor and assist with Sprung Structure

15:45 Data Entry
- Daily Camp Inspection
- Field Sheet

T.Smith | Cloudy +5 | 120 | July 10/18

07:00 Toolbox Mtg

07:15 Water Shed Flow
- 59 m^3 3 m^3
- See Inspection Report

7:32 Generator Shop
- See Inspection Report

7:37 Core Yard
- See Inspection Report

7:45 Large Fuel Storage Tanks
- See Inspection Report

7:55 Fuel Berm Airstrip
- Tarp Secured
- See Inspection Report

8:03 Berm @ Regular Gas Tank
- See Inspection Report

8:09 Consumable Yard
- See Inspection Report

Sunny
+14

(121)

T. Smith

July 10/18

8:15 Don Waste Facility
- Crew Working on Sprung Structure
- See Inspection Report

8:29 Heli Pad
- See Inspection Report

8:36 Fuel Drums On Tents
- See Inspection Report

8:46 Don Camp
- See Inspection Report

9:10 Don Waste Facility
- Monitor and assist with Sprung Structure

@ 14:22 1 male juv caribou
↳ walking

15:45 Data Entry
- Daily Camp Inspection
- Field Sheet

T. Smith

Sunny
+14

121

July 10/18

8:15 Don Waste Facility
- Crew Working on Sprung Structure
- See Inspection Report

8:29 Heli Pad
- See Inspection Report

8:36 Fuel Drums On Tents
- See Inspection Report

8:46 Don Camp
- See Inspection Report

9:10 Don Waste Facility
- Monitor and assist with Sprung Structure

@ 14:22 1 male juv caribou
↳ walking

15:45 Data Entry
- Daily Camp Inspection
- Field Sheet

S. Sidhu
T. Smith

Cloudy
+5

122

July 11/18

07:00 Toolbox Mtg

7:30 Water Shed Flow
60 m^3 Error 010
- Apply KY Jelly to sensor

7:44 Generator Shop
- See Inspection Report

7:50 Core Yard
- See Inspection Report

7:56 Large Fuel Storage Tanks
- See Inspection Report

8:03 Fuel Berm Air Strip
- Tarp Secured
- See Inspection Report

8:09 Fuel Berm @ Regular Gas Tank
- See Inspection Report

8:13 Consumable Yard
- See Inspection Report

S. Sidhu
T. Smith

Cloudy
+7

(123)

July 11/18

8:17 Don Waste Facility
- Crew Working on Sprung Structure
- See Inspection Report

8:35 Heli Pad
- See Inspection Report

8:40 Fuel Drums On Tents
- See Inspection Report

8:47 Don Camp
- See Inspection

T. Smith

cloudy
+9

(124)

July 12/18

8:05 Arrive at Km3

8:30 ~~Repair Culvert, Dug it up and put on coller~~
- 3 photo taken #105-0716
  #105-0721 #105-0720
- G.P.S 09 V ~~0473248~~ 0534807 ~~6934617~~ 6877662

#1
- Replace culvert

10:52 Km6 Beaver dam in Culvert. 3 Photo's taken
#105-0717
#105-0718
#105-0719
- Culvert's are flowing

15:35 #2 Culvert Install
- GPS 09 V 0533978
  6878742

- HEO Started ditching
  Photo Taken #105-0722
  #105-0723 #105-0724

T. Smith — cloudy +4 — 125 — July 13/18

7:00 Toolbox Mtg

8:10 (Con→) Culvert #2

11:30 · Complete 1 Photo Taken
- Install new culvert #105-0725
- Lay GEO cloth
- covered culvert

12:35 Culvert #3, km2
GPS 09V 0533889
6878822

· 2 Photo Taken #105-0726
- Install new culvert #105-0727
- Lay Geo cloth
- covered culvert

16:00 Started on Culvert #4
- G.P.S. 09V 0533281
6879357

Photo Taken #105-0728
- Install new culvert
- Lay Geo cloth
- covered culvert

T. Smith. — Sunny +6 — 126 — July 14/18

07:00 Toolbox Mtg

8:45 Culvert #5
- GPS 09V 0534099
6878652
- Set up water pump
- Put sand bags in place to stop flow so HEO can work on road.
- 3 Photo Taken #105-0729
#105-0730
#105-0731
- Lay GEO cloth down
- Install new culvert
- Covered culvert
-

Cloudy
+5

129

T. Smith

July 16/18

07:00 Toolbox Mtg

8:10 Arrived at Km13

9:05 Culvert #8
- G.P.S. 09 V 0529408
6884098
- 3 Photo Taken #105-0741
#105-0742
#105-0743
- Install new culvert
- Lay GEO cloth
- Covered culvert

16:00 Stage culverts at Km12
Sinkhole for culvert install

Cloudy
+9

130

T. Smith

July 17/18

07:00 Toolbox Mtg

9:00 Daily Site Inspection

9:10 Water Shed Flow
- 72m³ 0010 Error
- Apply KY Jelly to sensor

9:47 Kitchen Sink Water sample
Don Camp

13:05 Fly to Annive To take
Photo's of Reclaimed area
with Heli,

T. Smith
S. Caesar

Cloudy
+4

July 18/18

07:00 Tool Box mtg

07:32 Water shed Flow
74m³ 3m³

~~08:00~~

8:00 Daily Site Inspection

9:45 Grizzly Bear above W-62
150m away. Feeding, doesn't feel safe to do flow and staff gauge.

10:09 W-10 1 photo Taken # 105-07 ~~77~~
- Data Download - Battery Level 90%
- Staff gauge → 0.456
- Creek Flow

10:30

	Dis	Depth	Velocity	~~LB 15.5~~
RB	~~11.0~~	2.8	0.36	
	11.2	2.11	0.53	
	11.4	2.14	0.57	
	11.6	2.14	0.84	
	11.8	2.15	0.74	
	12.0	2.17	0.71	
	12.2	2.15	0.75	
	12.4	2.14	0.74	
	12.6	2.12	0.76	

T. Smith
S. Caesar

Cloudy
+4

July 18/18

	Dis	Depth	Velocity	
	12.8	2.9	0.70	
	13.0	2.9	0.65	
	13.2	2.9	0.56	
	13.4	2.6	0.63	
	13.6	2.6	0.50	
	13.8	2.2	0.47	
	14.0	2.1	0.39	
	14.2	2.0	0.35	
RB 11.00	14.4	1.17	0.24	
	14.6	1.17	0.17	
	14.8	1.16	0.09	
LB Second run	15.0	1.14	0.09	stick in way move Flow meter behind.
	14.8	1.~~16~~	~~0.06~~ 0.05	
	14.6	1.~~18~~	~~0.05~~ 0.18	
	14.4	1.17	0.22	
	14.2	2.0	0.37	
	14.0	2.0	0.39	
	13.8	2.1	0.47	
	13.6	2.6	0.49	
	13.4	2.6	0.65	
	13.2	2.9	0.68	
	13.0	2.9	0.72	
	~~12.8~~	2.9	0.74	
	12.6	2.12	0.77	

T. Smith
S. Caesar

Cloudy +4
Light Rain

33

July 18/18

W-10	Dis	Depth	Velocity	
Con'd	12.4	2.14	0.73	
	12.2	2.15	0.72	
	12.0	2.16	0.73	
	11.8	2.16	0.82	
	11.6	2.14	0.84	
	11.4	2.13	0.63	
	11.2	2.11	0.54	
RB	11.0	2.10	0.35	End Time 12:05

14:13 W-5
Data Download
Staff Gauge -> 0.5990
1 photo Taken #105-0778

14:30	Dis	Depth	Velocity
LB	~~22.22~~ ~~22.27~~	2.2	0.36
	21.7	2.5	0.59
	21.2	2.0	0.62
	20.7	2.0	0.66
	20.2	2.0	0.61
	19.7	2.0	0.72
	19.2	2.4	0.78
	18.7	2.4	0.63
	18.2	2.6	0.68

10.7
RB ~~10.8~~
LB ~~22.27~~
22.22

T. Smith
S. Caesar

Cloudy +4
Raining

134

July 18/18

W-5	Dis	Depth	Velocity	
Con'd	17.7	2.8	0.65	
	17.2	2.8	0.59	
	16.7	2.8	0.70	
	16.2	2.1	0.90	
	15.7	2.3	0.96	
	15.2	2.4	0.80	Foot back from tape - rock in the way
	14.7	2.6	0.98	
	14.2	2.5	0.93	
	13.7	2.7	0.96	
	13.2	2.10	0.86	
	12.7	2.13	0.72	
	12.2	2.14	0.83	
	11.7	2.15	0.81	
	11.2	2.12	0.66	
R.B	10.7	2.7	0.53	Second Run
	11.2	2.12	0.69	
	11.7	2.13	0.88	
	12.2	2.14	0.71	
	12.7	2.14	0.60	
	13.2	2.10	0.87	
	13.7	2.7	0.93	
	14.2	2.6	0.86	move a Foot Back rock in the way
	14.7	2.7	0.95	
	15.2	2.5	0.73	move back a foot rock in the way
	15.7	2.2	0.92	

T. Smith
S. Caesar

Cloudy +4
Light Rain

July 18/18

W-5	Dis	Depth	Velocity	
Con'd	16.2	2.0	0.86	
	16.7	2.7	0.78	
	~~17.2~~	2.9	0.51	
	~~17.7~~	2.6	0.59	
	18.2	2.5	0.55	
	18.7	2.5	0.57	
	19.2	2.3	0.81	
	19.7	2.2	0.62	
	20.2	2.0	0.81	
	20.7	2.0	0.63	
	~~21.2~~	2.1	0.59	
	21.7	2.6	0.54	
	22.2	2.5	0.42	endtime 15:24

16:35 Data Entry

T. Smith
S. Caesar

Cloudy +4
Light Rain

135

July 18/18

W-5	Dis	Depth	Velocity	
Con'd	16.2	2.0	0.86	
	16.7	2.7	0.78	
	17.2	2.9	0.51	
	17.7	2.6	0.59	
	18.2	2.5	0.55	
	18.7	2.5	0.57	
	19.2	2.3	0.81	
	19.7	2.2	0.62	
	20.2	2.0	0.81	
	20.7	2.0	0.63	
	21.2	2.1	0.59	
	21.7	2.6	0.54	
	22.2	2.5	0.42	end time 15:24

16:35 Data Entry

T. Smith
S. Caesar

cloudy
+5
Light Rain

136

July. 19/18

07:00 Toolbox Mtg

07:35 Water Shed flow
76m³ 3m³

08:15 Daily Site Inspection

10:15 12 caribou running on road @Km89

10:53 W-62
Tommy repairing Wires
Add → Dessicant
NO → Data Download → NO Device Found
→ Need to change Box
Staff Gauge → 0.5780
2 photo Taken # 105-0779
#105-0780
Creek Flow

11:30 RB

Dis	Depth	Velocity	
11.25	0.00	0.00	LB 13.55
11.45	2.10	0.25	
11.65	2.9	0.21	
11.85	2.10	0.10	Flow behind a rock
12.5	4.0	0.53	
12.25	2.17	0.63	
12.45	4.0	0.27	Flow - rock in front
12.65	4.4	0.44	
12.85	4.8	0.68	

T. Smith
S. Caesar

Cloudy +5
Light Rain

137

July 19/18

W-62	Dis	Depth	Velocity	
Con'd	13.5	4.5	0.40	
	13.25	4.4	0.06	moved a foot back blouder on the way
	13.45	2.13	0.06	
LB	13.55	0.00	0.00	second Run
	13.45	2.13	0.07	
	13.25	4.5	0.05	moved a foot back boulder in way
	13.5	4.5	0.39	
	12.85	4.4	0.62	
	12.65	4.5	0.51	
	12.45	2.19	0.31	Velocity low - rock in front of tape.
	12.25	2.18	0.60	
	12.5	2.16	0.55	
	11.85	2.14	0.09	
	11.65	2.11	0.08	
	11.45	2.10	0.34	
	11.25	2.9	0.10	end time 12:01

T. Smith
S. Caesar

Sunny/cloudy +7

138

July 19/18

12:53 W-10 - Changed out - Dessicant
Staff Gauge → 0.4570
1 photo Taken #105-0781
Creek Flow

13:14

	DIS	Depth	Velocity	
RB	10.8	0.00	0.00	LB 14.9
	11.1	2.10	0.58	
	11.4	2.12	0.77	
	11.7	2.15	0.63	
	12.0	2.14	0.73	
	12.3	2.11	0.75	
	12.6	2.8	0.65	
	12.9	2.7	0.56	
	13.2	2.7	0.68	
	13.5	2.4	0.47	
	13.8	2.2	0.38	
	14.1	1.19	0.31	
	14.4	1.16	0.23	
	14.7	1.12	0.06	
LB	14.9	0.06	0.00	
	14.6	1.15	0.08	
	14.3	1.16	0.27	
	14.0	1.18	0.37	
	13.7	2.0	0.47	
	13.4	2.4	0.48	

T. Smith
S. Caesar

cloudy / sunny
+7

139

July 19/18

W-10	Dis	Depth	Velocity	
Con'd	13.1	2.7	0.63	
	12.8	2.7	0.66	
	12.5	2.10	0.72	
	12.2	2.12	0.71	
	11.9	2.13	0.77	
	11.6	2.15	0.78	
	11.3	2.10	0.63	
	11.0	2.9	0.45	end Time: 13:40

14:48

W-5

Staff Gauge --> 0.5998

1 photo Taken # 105-0781

Creek Flow

15:07	Dis	Depth	Velocity	
LB	22.4	0.00	0.00	RB 10.90
	22.0	2.7	0.48	
	21.6	2.3	0.60	
	21.2	1.16	0.75	
	20.8	1.17	0.70	
	20.4	1.19	0.74	
	20.0	1.19	0.84	
	19.6	2.1	0.73	
	19.2	2.1	0.77	
	18.8	2.5	0.61	
	18.4	2.6	0.40	

T. Smith
S. Caesar

cloudy +7
Light Rain

140

July 19/18

W-5	Dis	Depth	Velocity	
Con'd	18.0	2.6	0.60	
	17.6	2.8	0.58	
	17.2	2.7	0.62	
	16.8	2.6	0.59	
	16.4	2.0	0.67	
	16.0	2.2	0.69	
	15.6	2.5	0.85	
	15.2	2.2	0.95	
	14.8	2.5	0.87	
	14.4	2.7	0.85	
	14.0	2.7	0.89	
	13.6	2.8	0.95	
	13.2	2.9	0.83	
	12.8	2.12	0.58	
	12.4	2.13	0.92	
	12.0	2.10	0.90	
	11.6	2.10	0.75	
	11.2	2.9	0.73	
RB	10.90	0.0	0.0	Second Run
	11.3	2.12	0.67	
	11.7	2.9	0.82	
	12.1	2.14	0.88	
	12.5	2.12	0.89	
	12.9	2.12	0.70	

T. Smith cloudy +7
S. Caesar Light Rain

141

July 19/18

W-5	Days	Depth	Velocity
Con'd	13.3	2.9	0.86
	13.7	2.5	0.90
	14.1	2.7	0.88
	14.5	2.7	0.83
	14.9	2.4	0.96
	15.3	2.2	0.86
	15.7	2.4	0.86
	16.1	2.2	0.79
	16.5	2.2	0.76
	16.9	2.5	0.64
	17.3	2.7	0.65
	17.7	2.6	0.56
	18.1	2.3	0.63
	18.5	2.7	0.51
	18.9	2.4	0.55
	19.3	2.1	0.78
	19.7	2.2	0.78
	20.1	1.18	0.89
	20.5	1.19	0.76
	20.9	1.19	0.68
	21.3	2.0	0.59
	21.7	2.5	0.58
	22.1	2.5	0.46

end Time 15:56

T. Smith Cloudy +7
S. Caesar Light Rain

141

July 19/18

W-5	Days	Depth	Velocity
Con'd	13.3	2.9	0.86
	13.7	2.5	0.90
	14.1	2.7	0.88
	14.5	2.7	0.83
	14.9	2.4	0.96
	15.3	2.2	0.86
	15.7	2.4	0.86
	16.1	2.2	0.79
	16.5	2.2	0.76
	16.9	2.5	0.64
	17.3	2.7	0.65
	17.7	2.6	0.56
	18.1	2.3	0.63
	18.5	2.7	0.51
	18.9	2.4	0.55
	19.3	2.1	0.78
	19.7	2.2	0.78
	20.1	1.18	0.89
	20.5	1.19	0.76
	20.9	1.19	0.68
	21.3	2.0	0.59
	21.7	2.5	0.58
	22.1	2.5	0.46

end Time 15:56

T. Smith
S. Caesar

Sunny
+8

142

July 20/18

07:00 Toolbox Mtg

07:49 Water Shed Flow
$79\ m^3$ $3m^3$

08:05 Daily Site Inspection

09:43 Wolf running on road between Consumable Yard and Don Waste Facility.

10:30 W-62
- Staff Gauge → 0.5560
- 1 photo Taken #105-0782
- Changed out Batteries - data logger

11:01 W-10
- Staff Gauge → ~~0.45~~ 0.4450
- 1 photo Taken #105-0783
- See next page for flow readings.
- Change battery on Velocity Flow Meter.

T. Smith
S. Caesar

Sunny / cloudy
+8

(143)

July 20/18

W-10 -> Creek Flow

11:08	Dis	Depth	Velocity	
RB	10.85	0.00	0.00	LB 14.95
	11.15	2.9	0.52	
	11.45	2.11	0.79	
	11.75	2.15	0.53	
	12.5	2.12	0.74	
	12.835	2.10	0.75	
	12.65	2.7	0.68	
	12.95	2.6	0.65	
	13.25	2.4	0.64	
	13.55	2.4	0.52	
	13.85	2.1	0.35	
	14.15	1.17	0.28	
	14.45	1.16	0.15	
	14.75	1.13	0.03	
LB	14.95	0.00	0.00	second Run
	14.65	1.15	0.06	
	14.35	1.14	0.24	
	14.5	1.17	0.33	
	13.75	2.3	0.41	
	13.45	2.3	0.49	
	13.15	2.6	0.66	
	12.85	2.7	0.61	

T. Smith
S. Caesar

cloudy +8

(144)

July 20/18

W-10 Con'd	Dis	Depth	Velocity	
	12.55	2.8	0.69	
	12.25	2.11	0.64	
	11.95	2.14	0.65	
	11.65	2.14	0.65	
	11.35	2.10	0.61	
	11.5	2.9	0.43	end Time 11:36

T. Smith
S. Caesar

Cloudy
+3

145

July 21/18

07:00 Toolbox Mtg

7:20 Water Shed Flow
82 m^3 3 m^3

08:35 W-62
- Repairing Data Logger / Testing if it downloads data (Fixed)
* Data Downloaded
- Add Dessicant
- Battery Level - 95%

09:49 W-5
- Staff Gauge -> 0.5850
- 1 photo Taken #105-0784
- Creek Flow

10:05 LB

Dis	Depth	Velocity
22.5	0.00	0.00
21.65	2.6	0.51
21.25	2.2	0.56
20.85	1.17	0.71
20.45	1.17	0.66
20.5	1.18	0.69

RB 10.55

T. Smith
S. Caesar

Cloudy +3

146

July 21/18

	Dis	Depth	Velocity	
W-5 Con'd	19.65	1.18	0.75	
	19.25	2.0	0.72	
	18.85	1.19	0.70	
	18.45	2.3	0.61	
	18.5	2.4	0.58	
	17.65	2.6	0.65	
	17.25	2.6	0.68	
	16.85	2.6	0.67	
	16.45	2.3	0.69	
	16.5	1.19	0.92	
	15.65	2.1	0.83	
	15.25	2.5	0.84	
	14.85	2.3	0.81	
	14.45	2.4	0.86	
	14.5	2.4	0.92	
	13.65	2.6	0.84	
	13.25	2.8	0.89	
	12.85	2.9	0.84	
	12.45	2.13	0.61	rock in the way moved a foot back
	12.5	2.11	0.85	
	11.65	2.11	0.93	
	11.25	2.10	0.72	
	10.85	2.8	0.70	
RB	10.55	0.00	0.00	second Run
	10.95	2.12	0.67	

T. Smith
S. Caesar

Cloudy +3

147

July 21/18

W-5	Dis	Depth	Velocity
Con'd	11.35	2.9	0.71
	11.75	2.13	0.76
	12.15	2.12	0.81
	12.55	2.12	0.75
	12.95	2.9	0.79
	13.35	2.5	0.96
	13.75	2.6	0.89
	14.15	2.6	0.77
	14.55	2.3	0.92
	14.95	2.3	0.90
	15.35	2.3	0.90
	15.75	2.0	0.81
	16.15	1.19	0.81
	16.55	2.5	0.60
	16.95	2.7	0.50
	17.35	2.6	0.46
	17.75	2.5	0.50
	18.15	2.5	0.51
	18.55	2.3	0.52
	18.95	2.1	0.61
	19.35	2.1	0.71
	19.75	1.19	0.72
	20.15	1.18	0.68
	20.55	1.18	0.63

T. Smith
S. Caesar

Cloudy +3

148

July 21/18

W-5	Dis	Depth	Velocity	
Con'd	20.95	1.19	0.51	
	21.35	2.3	0.57	
	21.75	2.6	0.48	end time 10:57

14:30 XY Camp Inspections → Weekly
- Enviro Tank - changed out Absorbent Pads.

15:30 HC Road Inspection
- See Report

15:55 Don Camp Inspection
- See Report

16:19 Data Entry

T. Smith Clear +3
S. Caesar Sunny.

149

July 22/18

07:00 Tool Box/Safety Mtg

07:26 Watershed Flow
84m³ 3m³

07:30 D.S.I.

09:32 W-62
- Staff Gauge -> 0.5561
- 1 photo Taken #105-0785
- Creek Flow

9:45 LB

Dis	Depth	Velocity	
11.2	0.00	0.00	RB 13.70
11.4	2.8	0.24	
11.6	2.7	0.42	
11.8	2.8	0.16	
~~12.8~~ 12.8	~~2.9~~ 2.14	0.32	moved back a foot rock in the way
12.2	2.16	0.57	
12.4	2.16	0.45	
12.6	4.2	0.46	
12.8	4.5	0.63	
13.0	4.1	0.29	
13.2	4.2	0.18	moved a foot back rock in the way
13.4	2.12	0.08	
13.6	2.11	0.22	

T. Smith Sunny +3
S. Caesar

150

July 22/18

W-62 Con'd RB

Dis	Depth	Velocity	
13.7	0.00	0.00	Second Run
13,5	2.11	0.20	
13,3	4.1	0.08	moved a foot back rock in the way.
13,1	4.3	0.35	moved a foot back rock in the way.
12.9	4.3	0.49	
12.7	4.3	0.66	
12.5	4,4	0.17	
12.3	4.1	0.31	
12.1	2.16	0.54	
11.9	2.13	0.09	
11.7	2.12	0.10	
11.5	2.9	0.52	
11.3	2.6	0.07	end Time 10:05

10:30 W-10 45 4450
- Staff Gauge -> 0.4390
- 1 photo Taken #105-0786
- Creek Flow

10:37 RB

Dis	Depth	Velocity	
11.1	0.00	0.00	LB 15.2
11.4	2.5	0.62	
11.7	2.10	0.82	
12.0	2.14	0.50	
12.3	2.14	0.67	

T. Smith Sunny +3 (151)
S. Caesar July 22/18

	Dis	Depth	Velocity	
W-10	~~Depth~~			
Con'd	12.6	2.11	0.68	
	12.9	2.8	0.62	
	13.2	2.7	0.59	
	13.5	2.5	0.63	
	13.8	2.4	0.39	
	14.1	2.0	0.37	
	14.84	1.16	0.28	
	14.7	1.15	0.16	
	15.0	1.12	0.05	
LB	15.2	0.00	0.00	second Run
	14.9	1.14	0.04	
	14.6	1.14	0.22	
	14.3	1.18	0.34	
	14.0	2.3	0.42	
	13.7	2.3	0.54	
	13.4	2.5	0.65	
	13.1	2.7	0.63	
	12.8	2.9	0.74	
	12.5	2.10	0.64	
	12.2	2.13	0.73	
	11.9	2.14	0.82	
	11.6	2.9	0.58	
	11.3	2.9	0.36	move back a foot rock in the way

end Time: 10:53

T. Smith Sunny +15 (152)
S. Caesar July 22/18

14:00 Cougar running on road @ km 84.

14:14 XY Camp -> Sow and 2 cubs running in valley.

14:19 Don Road Inspections - starting point XY camp.
- See Inspections Report

T. Smith
S. Caesar

Clear +5

153

July 23/18

07:00 Tool Box Mtg

07:32 Watershed Flow
85m³ 3m³ -> Error 10
• Apply Ky Gel to sensor.

07:~~07~~45 Cleaning Office

08:35 DS1

11:06 W-5
• Staff Gauge -> 0.5600
• 1 photo Taken #105-0787

13:22 Bull Moose - Feeding @ 96km.

13:30 ↑ Road Inspection From XY camp to Steel Creek.
• Road Condition - good
• HEO Operator Working @ Placer Creek, repairing road surface & ruts.
↓ 15:17 • Repair Silt Fencing @ Steel Creek
• 1 Photo taken #105-0789

T. Smith
S. Caesar

Clear +15

154

July 23/18

15:51 Placer Creek
• Road/Bridge Sign needs to be put up.
• Need new silt fencing replaced on both sides of bridge
• 2 photos Taken #105-0790-0791
• 1 photo Taken of Sign - 105#0792

T. Smith (Am) Sunny +5
S. Caesar

July 24/18

07:00 Tool Box Mtg

07:24 Watershed Flow
88m³ 3m³

07:25 Data Entry

08:30 DSI

13:43 W-62
- Staff Gauge -> 0.5340
- 1 photo Taken #105-0793
- Creek Flow

11.63
13.91

	Dis	Depth	Velocity	notes
RB	11.68	0	0	
	11.7	0.28	0.06	
	11.9	0.29	0.29	Rock in way moved back
	12.1	0.32	0.09	moved back Rock
	12.3	0.31	0.04	
	12.5	0.32	0.43	moved back Rock
	12.7	0.38	0.47	
	12.9	0.44	0.30	
	13.1	0.44	0.15	
	13.3	0.42	0.52	moved back - Rock
	13.5	0.42	0.34	moved back - Rock

E. John
S. Caesar

Sunny 25

July 24/18

	Dis	Depth	Velocity	notes
W-B 62 Con'd	13.7	0.37	0.07	
LB	13.9	0	0	
Run #2	13.9	0	0	LB
	13.8	0.34	0.13	
	13.6	0.34	0.03	moved back Rock
	13.4	0.4	0.35	
	13.2	0.42	0.40	moved back Rock
	13.	0.34	0.41	~~AA~~ //
	12.8	0.35	0.48	— —
	12.6	0.34	0.51	
	12.4	0.29	0.18	
	12.2	0.29	0.03	
	12.	0.27	0.22	
	11.8	0.26	0.24	
	11.6	0	0	RB

S. Ceaser
E. John

Sunny
no wind
+28

3

July 24 2018

time: 14:40

W10

Staff Gauge reading = 0.428

	Dist	depth	vel	notes
RB	11.0	0	0	
	11.3	0.29	0.52	
	11.6	0.29	0.45	
	11.9	~~0.45~~ 0.28	0.57	
	12.2	0.32	0.52	
	12.5	0.32	0.74	
	12.8	0.29	0.55	
	13.1	0.24	0.45	
	13.4	0.27	0.39	
	13.7	0.24	0.37	
	14.	0.20	0.32	
	14.3	0.17	0.26	
	14.6	0.14	0.11	
	14.9	0.14	0.27	
LB	15.2	0	0	

S. Ceaser
E. John

Sunny
no wind
+28

4

July 24 2018

time: 15:00

W10

Run #2	Dist	depth	vel	notes
LB	15.2 ~~15.2~~	0	0	
	14.9	0.14	0.07	
	14.6	0.17	0.15	
	14.3	0.18	0.26	
	14.	0.23	0.30	Rock moved back
Distance	13.~~7~~	0.24	0.36	
13.4	~~13.5~~	0.28	0.57	
13.1	~~13.2~~	0.28	0.51	
12.8	~~12.9~~	0.29	0.57	
12.5	~~12.6~~	0.32	0.59	
12.2	~~12.3~~	0.33	0.66	
11.9	~~12~~	0.34	0.61	
11.6	~~11.7~~	0.29	0.54	
11.3	~~11.4~~	0.28	0.24	
RB 11	~~11.1~~	0	0	

E. John
S. Caesar

Sunny +5

(5)

July 25/18

07:00 Tool Box Mtg

07:20 Water Shed Flow
90m3 3m3

07:28 DSI

7:51 Ditching behind the Don Shop.
photo's taken #1050795 - 1050796

13:45 ws's data download
Staff Gauge 0.551

Time 14:00

~~WS BM BS height SG pipe~~

Bm	BS	height	SG	pipe	Close out
R	0.759		1713	1649	0.759
100	100.759		101.713	101.649	100.759
Run #2					
~~0 100 768~~	0.768		1726	1657	0.768
			101.726	101.657	
Run #3 100	0.677		0.161	1558	0.677
Run #4					
100	0.672		0.1622	1558	
	0.005		-0.001		

E. John
S. Caesar

wind +3C
Sunny

(6)

July 25 2018

Time 14:33
WS
RB 10.50
LB 22

Dist	depth	vel	notes
10.50	0	0	
11	0.28	0.83	
11.4	0.33	0.38	
11.8	0.39	0.30	Rock moved back
12.2	0.34	0.38	
12.6	0.29	0.83	
13.	0.28	0.90	
13.4	0.26	0.85	
13.8	0.24	0.82	
14.2	0.27	0.78	
14.6	0.25	0.77	
15.	0.23	0.72	
15.4	0.23	0.78	
15.8	0.18	0.59	
16.2	0.24	0.61	
16.6	0.26	0.52	
17.	0.26	0.44	
17.4	0.26	0.37	
17.8	0.24	0.55	
18.2	0.24	0.44	
18.4	0.23	0.55	

E. John
S Caesar

sunny
wind
temp + 30

July 25 18

+ Cont other page

WS	Dist	Depth	vel	notes
	18.8	0.24	0.49	
	19.2	0 24	0.47	
	19.6	0. 18	0.55	
	20.	0.20	0.66	
	20.4	0.17	0.54	
	20.8	0.21	0.62	
	21.2	0.24	0.49	
	21.6	0.24	0.44	
	22	0	0	
Run#2	Dist	depth	vel	notes
LBF	22	0	0	
time	21.5	0.23	0.46	
: 15:00	21.	0.19	0.43	
	20.5	0.18	0.60	
	20.	0.18	0.62	
	19.5	0.17	0.61	
	19.	0. 24	0.64	
	18.5	0. 23	0.59	
	18.	0. 24	0.48	
	17.5	0. 24	0.45	
	17	0. 28	0. 39	
	16. 5	0.24	0. 48	
	16.	0.18	0.57	
	15.5	0. 22	0.66	

E. John
~~Caesar~~
S. Caesar

Sunny
+ 30
wind

July 25 2018

WS

+ cont ~~other~~ other Page

Dist	depth	vel	notes
15.	0.23	0.63	
14.5	0.24	0.74	
14.	0.25	0.78	
13.5	0.26	0.80	
13.	0.28	0.83	
12.5	0.21	0.79	
12.	0.21	0.78	
11.5	0.27	0.69	
11.	0.29	0.55	
10.5	0.0	0.0	
~~10~~	~~0.~~	~~0.0~~	

E. John
S. Caesar

Sunny +5

(9)

July 26/18

07:00 Tool Box Mtg

07:36 Watershed Flow
92 m^3 3 m^3

07:48 DSI

08:07 Enviro Tank -> Berm
- Changed Filter on the Ends of berm,
- Fix valve on berm leading to Filter.
- Changed Absorbent Pads

08:55 Regular Gas Berm
- Changed Absorbent Pads

09:50 Tighten Valve @ Airport Berm near Enviro Tanks

11:03 Cleaned + replace spill Kit by

14:08 W-62
- Staff Gauge -> 0.5200
- 1 photo Taken.
- Creek Flow

E. John
S. Caesar

Sunny +28

(10)

July 26/18

14:20
W-62
Con'd RB

Dis ~~Depth~~	Depth	Velocity
11.4	0.00	0.00
11.5	0.27	0.08
11.8	0.28	0.39
12.1	0.28	0.30
12.4	0.28	0.40
12.7	0.38	0.18
13.0	0.44	0.51
13.3	0.42	0.27
13.5	0.37	0.03
13.75	0.28	0.07
13.9	0.00	0.00
13.6	0.37	0.04
13.4	0.40	0.24
13.2	0.42	0.47
13.0	0.44	0.29
12.8	0.41	0.16
12.6	0.38	0.40
12.4	0.34	0.45
12.2	0.27	0.14
12.0	0.28	0.04
11.8	0.29	0.37
11.6	0.28	0.10

LB 13.9

LB 14:27
13.90

Second Run

end time 14:34

E. John
S. Caesar

Sunny +28

(11)

July 26/18

15:57 W-10

- Staff Gauge -> 0.4200
- 1 photo Taken #105
- Change Logger -> # 2731014 doesn't work
- Creek Flow

LB > 15.12

	Dis	Depth	Velocity	
RB	10.96	0.00	0.00	
	11.4	0.28	0.17	
	11.7	0.29	0.34	
	12.0	0.31	0.15	
	12.3	0.27	0.32	
	12.6	0.27	0.30	
	12.9	0.29	0.57	
	13.2	0.28	0.61	
	13.5	0.23	0.53	
	13.8	0.22	0.27	moved a foot back rock in way.
	14.1	0.14	0.23	
	14.4	0.08	0.24	
	14.7	0.12	0.09	
	15.1	0	0	

E. John
S. Caesar

Sunny +28

(12)

July 26 2018

W10

~~Depth~~

time:	Dist	Depth	vel	note
	15.1	0	0	
	14.6	0.13	0.13	
	14.3	0.17	0.29	
	13.8	0.22	0.29	
	13.4	0.21	0.50	
	13.	0.22	0.47	
	12.6	0.26	0.72	
	12.2	0.29	0.56	
	11.8	0.29	0.54	
	11.4	0.26	0.38	
	11.1	0.26	0.20	
	10.9	0	0	

E. John Sunny + 7 (13)
S. Caesar

July 27/18

15: 07:00 Tool Box Mtg

07:22 Watershed Flow
94m3 3m3

8:20
16:0 W10 changed out data logger box
R changed out logger
changed out data logger box
changed out logger
still says sensor fail
do it back at camp with
more sensors.

9:30
xy camp check.

13:05
W10 swapped out everything, working
now.

E. John Sunny
S Caeser + 3C

14

July 27/18

time
13:23
Run #1

BM	bS	height	SG	pipe	Close out
100	1044	101044	1659	1421	104.4
			101655	101.421	
Run #2					
100	1064	101.064	167.1	1437	106.4
			101.671	101.437	
		-0.02			
Run #3					
	1063		1669	1436	1063
Run #4					
	1074		1681	1447	1074
Run #5					
100	1098		1694	1463	
Run #6					
	1124		1728	1496	
Run #7	0462		1069	0836	0462
Run #8	0481		1079	0846	
	-0.18		-0.01	-0.01	

E
S

15

16.0
R

E. John
S Caesor

Wind
Sunny
+30

15

July 27 18

time: 14:44

WS RB 10m

Staff Gauge .560 LB 21.8

time: 14:50

Dist	Depth	vel	notes
21.8	0	0	
21.4	0.24	0.18	
21.	0.18	0.38	
20.6	0.19	0.32	
20.2	0.18	0.35	
19.8	0.19	0.35	
19.4	0.21	0.42	
19	0.24	0.43	
18.6	0.20	0.59	
18.2	0.20	0.38	
17.8	0.24	0.27	
17.4	0.24	0.20	
17	0.26	0.40	
16.6	0.27	0.37	
16.2	0.26	0.43	
15.8	0.21	0.33	
15.4	0.22	0.46	
15	0.24	0.48	
14.6	0.24	0.48	
14.2	0.29	0.52	
13.8	0.27	0.68	

E. John
S. Caesar

Sunny
Wind
+30

16

July 27 18

WS

Dist CONT	Depth	vel	notes
13.4	0.26	0.63	
13	0.24	0.64	
12.6	0.28	0.53	
12.2	0.32	0.63	
11.8	0.29	0.64	
11.4	0.33	0.56	
11	0.29	0.41	
10.6	0.31	0.53	
10.2	0.24	0.44	
LB 10	0	0	
LB 10	0	0	Run # 2 time: 15:19
10.3	0:20	0.43	
11.3	0.33	0.55	
12.3	0.33	0.56	
13.3	0.29	0.65	
14.3	0.24	0.53	
15.3	0.23	0.56	
16.3	0.29	0.43	
17.3	0.26	0.35	
18.3	0.22	0.47	
19.3	0.17	0.46	
20.3	0.17	0.48	
21.3	0.24	0.39	
21.8	0	0	

E.John
S.Caesar

Sunny +30

17

July 27/18

time: 15:58

Calibrate ysi

pH 4 = 4.01

pH 7 = 7.01

pH 10 = 10.2

Conductivity =

E.John
S.Caesar

Sunny +7

18

July 28/18

07:00 Tool Box Mtg

07:18 Watershed Flow
$94m^3$ $3m^3$ - Error 010
- Add KY Gel

09:44 W-5
- Staff Gauge → 0.4990
- 1 photo Taken → # 105-0799
- YSI Reading

09:49 - Data Down load

09:56 - Water Samples

YSI

Temp = 9.9 °C

mmHg = 669.5

DO% = 85.5

DO% $\frac{mg}{L}$ = 9.70

SPC $\frac{uS}{cm}$ = 581.9

pH = 8.00

pH mV = -81.7

ORP mV = 212.2

E. John Sunny +10 (19)
S. Caesar

July 28/18

09:55 RB

RB - 10.2
LB - 21.8

Dis	Depth	Velocity
10.7	0.27	0.34
11.2	0.32	0.73
11.7	0.31	0.66
12.2	0.29	0.56
12.7	0.28	0.70
13.2	0.24	0.76
13.7	0.23	0.84
14.2	0.22	0.76
14.7	0.23	0.51
15.2	0.20	0.59
15.7	0.18	0.58
16.2	0.23	0.56
16.7	0.26	0.53
17.2	0.24	0.36
17.7	0.23	0.55
18.2	0.20	0.58
18.7	0.22	0.46
19.2	0.18	0.50
19.7	0.17	0.32
20.2	0.18	0.46
20.7	0.20	0.43
21.2	0.22	0.47
21.7	0.19	0.31

E. John Sunny +2 (20)
S. Caesar

July 28/18

W-5 LB 10:18

second Run

Dis	Depth	Velocity
21.8	0.00	0.00
21.3	0.24	0.41
20.8	0.23	0.43
20.3	0.18	0.44
19.8	0.17	0.58
19.3	0.20	0.61
18.8	0.21	0.65
18.3	0.20	0.56
17.8	0.24	0.58
17.3	0.23	0.49
16.8	0.24	0.48
16.3	0.24	0.51
15.8	0.20	0.68
15.3	0.19	0.75
14.8	0.22	0.62
14.3	0.22	0.72
13.8	0.23	0.84
13.4	0.24	0.80
12.8	0.26	0.86
12.3	0.28	0.69
11.8	0.30	0.69
11.3	0.31	0.72
10.8	0.28	0.48
10.3	0.24	0.60

end Time: 10:27

E. John Sunny +10 (21)
S. Caesar July 28/18

11:32 W-8
- Water Samples @ 11:36
- YSI reading @ 11:40

temp =	3.0	spc	374.8
mmHg =	639.2	ph	7:49
Do % =	78.7	ph mv	-53.4
Do mg/L =	10.60	orp mv	32.3

time 11:36a
WSC
Samples @ 11:36
YSI reading @

Temp =	12.3	SPC =	374.1
mmHg =	639.1	pH =	8.19
Do % =	79.9	pH mV =	-92.7
Do mg/L =	~~85.5~~ 8.55	ORP ~~pH~~ mV =	124.7

- 1 photo Taken #105-0780
YSI - bouncing numbers.

E. John Sunny +10 (22)
S. Caesar July 28/18

12:17 MW-07-02
DTW = 4.04
DTB = 5.843
DTG = ~~829~~ 0.829

4.04
- 5.843

purge 11 boilers.
14:39 YSI Readings

Temp =	5.0	SPC =	338.0
mmHg =	644.8	pH =	7.47
Do % =	23.5	pH mV =	-51.5
Do mg/L =	3.00	ORP mV =	184.5

12:26 Water Samples @ 13:18
-
MW-07-01
DTW = 1.936
DTB = 6.460
DTG = 1.160
purge ~~65~~ 39 boilers
12:57 Data Download
13:30 YSI Readings @

Temp =	8.6	SPC =	321.8
mmHg =	634.5	pH =	7.74
Do % =	51.6	pH mV =	-57.2
Do mg/L =	6.02	ORP mV =	158.9

* NO. NITRIC ACID preservative for DISSOLVE metals

E. John Sunny + 20 (23)
S. Caesar July 28/18

13:37 XY - Weather Station
- Data Download
- Battery Level → 95%
- Change Dessicant

14:17 Moose lying down in lake @ km 100

14:20 DSI - Don Camp.

14:26 Berm @ Airport - Enviro Tanks
- 1 photo Taken #105 - ~~#800~~
- Tech Crew patching - berm.

15:45 Calibrate YSI
pH 4 = 4.01
pH 7 = 7.01
pH 10 = 10.1
Conductivity → 1314

16:03 Data Entry

E. John
S. Caesar

Sunny + 20

(23)

July 28/18

13:37 XY - Weather Station
- Data Download
- Battery Level → 95%
- Change Dessicant

14:17 Moose lying down in lake @ km 100

14:20 DSI - Don Camp.

14:26 Berm @ Airport - Enviro Tanks
- 1 photo Taken #105 ~~#800~~
- Tech Crew patching - berm.

15:45 Calibrate YSI
pH 4 = 4.01
pH 7 = 7.01
pH 10 = 10.1
Conductivity → 1314

16:03 Data Entry

E. John
S. Caesar

Sunny + 5

(24)

July 29/18

07:00 Tool Box / Safety Mtg.

07:41 Water Shed Flow
$97 m^3$ $3 m^3$

08:30 Don Weather Station - Km 100
- Data Download
- Battery Level → 65%
- Changed Dessicant

08:55 Don Weather Station - Km 90
- Data Download
- Battery Level → 95%
- Changed Dessicant

09:16 MW-07-3
- Data Download
- DTW = ~~0.35 3.986~~ 3.986
- DTB = 5.708
DTG = 1.35
Purge = 10
- Water Samples Collected @ 09:30

E. John Sunny +10 (25)
S. Caesar July 29/18

09:34. YSI Readings - mw07-03

	Temp = 3.1	SPC = 751.1	
	~~#~~ mmHg 660.4	pH = 7.12	
46.6	DO% ~~6.83~~	pHmV = -32.2	
	DO mg/L 6.23	ORPmV = 186.9	

11:05 ~~9:50~~ mw-10-08

11:05 • Data Download + ~~Temperature~~
• DTV = 2.664
• DTB = 4.884
• DTG = 095
• Purdge = 13

11:18 • Water Samples Collected
• YSI Readings @ 11:25

Temp	4.3	SPC	1095
mmHg	656.1	pH	6.81
DO%	65.6	pHmV	-15.3
DO mg/L	8.45	ORPV	225.7

11:20 • Field Blank Collected.
ysi reading @

temp	12.6	spc	23.6
mmHg	656.1	ph	7.80
Do%	59.7	phmv	-70.5
Do mg/L	6.32	orpV	229.8

E. John Cloudy +10 (26)
S. Caesar July 29/18

11:40 mw-10
• Staff Gauge → 0.410 90% battery
11:46 • Data Download - logging / ~~but current reading~~
• 1 photo Taken #105-0802
• Water Samples @ 11:51
• YSI Readings @ 12:04

Temp	8.4	SPC	641.4
mmHg	657.0	pH	6.93
Do%	79.7	pHmV	-21.9
Do mg/L	9.30	ORPmV	48.5

Creek Flow @ 11:51

Dis	Depth	Velocity	
11	0	0	LB=15.9
11.3	0.28	0.23	RB 11.0
11.6	0.30	0.48	
11.9	0.34	0.38	
12.2	0.32	0.67	
12.5	0.28	0.57	
12.8	0.26	0.52	
13.1	0.24	0.50	
13.4	0.24	0.45	
13.7	0.23	0.30	
14	0.20	0.11	
14.3	0.12	0.17	
14.6	0.17	0.27	

E. John cloudy +10 (27)
S. Caesar July 29/18

	Dis	Depth	Velocity
W-10			
Con'd	14.9	0.14	0
	15.1	0	0
1203	15.1	0	0
Run #2	14.8	0.19	0.20
	14.6	0.18	0.04
	14.4	0.16	0.15
	14.2	0.13	0.19
	14.0	0.19	0.03
	13.8	0.22	0.23
	13.6	0.24	0.30
	13.4	0.24	0.36
	13.2	0.24	0.36
	13.0	0.25	0.35
	12.8	0.26	0.33
	12.6	0.29	0.44
	12.4	0.29	0.43
	12.2	0.32	0.36
	12.0	0.33	0.42
	11.8	0.30	0.47
	11.6	0.29	0.46
	11.4	0.29	0.15
	11.2	0.28	0.34
	11.0	0	0

E. John cloudy +10 (28)
S. Caesar July 29/18

12:30 XY-B1 - Monthly Inspection
- Change Absorbent Pads on Fuel Drum
- Add Pads under Fuel Drum

12:48 Km86 - Bridge
- 2 photo Taken #105 - 0803 - 0804

15:08 YSI Calibration
ph 4.00 = 4.01
ph 7.00 = 7.01
ph 10.00 = 10.01
cond. 14.13 = 14.13

E. John Sunny +7 (29)
S. Caesar July 30/18

07:00 Tool Box Mtg

07:22 Water shed Flow
100m³ 3m³

08:28 MW10-09
DTW = 1.211
DTB = 5.425
DTG = ~~91.9~~ 0.919
Purdge = 25

8:42 Water Samples Collected
~~YSI Reading Dup 1~~
YSI Reading @ 0.901

Temp	6.7	SPC	1316
mm Hg	650.2	pH	7.23
DO%	21.6	pHmV	-37.8
DO mg/L	2.63	ORPmV	26.4

09:07 W-62
- Data Download
- Staff Gauge Reading -> 0.500
- 1 photo Taken
- Water Samples Taken @ 9:17 ~~0.917 ES~~
- 90% batteries

E. John Sunny +7 (30)
S. Caesar July 30/18

~~AA~~ W-62 con'd
- YSI Reading

Temp	7.8	SPC	575.1
mm Hg	650.9	pH	7.75
DO%	80.4	pHmV	-66.4
DO mg/L	9.55	ORPmV	96.1
LB 13.8		RB 11.4	

Flow

	Dis	Depth	Velocity	
RB	11.4	0	0	
	11.6	0.27	0.22	
	11.8	0.27	0.20	
	12.	0.27	0.01	
	12.2	0.27	0.14	
	12.4	0.33	0.40	
	12.6	0.30	0.08	
	12.8	0.42	0.12	
	13.	0.42	0.53	
	13.2	0.40	0.39	foot back Rock
	13.4	0.33	0.02	- -
	13.6	0.29	0.01	
	13.8	0	0	

E. John
S. Caesar

Sunny + 15
no wind

(31)

July 30/18

time 09:38

W62

	Dist	Depth	vel	note
	13.8	0	0	
	13.5	0.29	0.02	
	13.2	0.41	0.38	
	12.9	0.41	0.34	
	12.6	0.32	0.17	
	12.3	0.29	0.44	
	12	0.28	0.04	
	11.7	0.27	0.40	
	11.4	0	0	

end time: 9:42

11:00 W3

11:09
- Water Samples
- YSI Readings

11:35

Temp	= 12.8	SPC	= 439.4
mmHg	= 676.7	pH	= 8.02
Do %	= 84.4	pHmV	= -83.9
Do mg/L	= ~~439.4~~ 8.91	ORPV	= 164.7

E. John
S. Caesar

Sunny + 15

(32)

July 30/18

W-3 - Water Flow

RB 13.4
LB 41.6

	Dis	Depth	Velocity
LB	~~13.~~ 41.6	0.00	0.00
~~RB~~			
11:11	41.0	0.23	0.47
	40.0	0.23	0.69
	39.0	0.26	0.61
	38.0	0.28	0.49
	37.0	0.36	0.36
	36.0	0.28	0.47
	35.0	0.32	0.52
	34.0	0.34	0.54
	33.0	0.25	0.38
	32.0	0.29	0.31
	31.0	0.27	0.32
	30.0	0.30	0.35
	29.0	0.24	0.66
	28.0	0.24	0.70
	27.0	0.27	0.46
	26.0	0.25	0.64
	25.0	0.27	0.55
	24.0	0.27	0.42
	23.0	0.24	0.33
	22.0	0.26	0.50
	21.0	0.23	0.61
	20.0	0.25	0.42
	19.0	0.22	0.44

E John Sunny +15 (33)

St Caesar July 30/18

	Dis	Depth	Velocity	
R3				
Con'd	18.0	0.18	0.16	
	17.0	0.22	0.54	
	16.0	0.22	0.07	
	15.0	0.19	0.44	
	14.0	0.19	0.11	
RB	13.4	0.00	0.00	Second Run
11:23	15.0	0.17	0.46	
	17.0	0.21	0.46	
	19.0	0.22	0.36	
	21.0	0.23	0.52	
	23.0	0.23	0.32	
	25.0	0.24	0.60	
	27.0	0.28	0.51	
	29.0	0.27	0.69	
	31.0	0.28	0.40	
	33.0	0.24	0.39	
	35.0	0.38	0.55	
	37.0	0.33	0.54	
	39.0	0.26	0.59	
	41.0	0.24	0.52	End +1 m 11:32

13:30 Data Entry

- DSI
- Water Quality
- COC
- Field Notes
- Field ~~Notes~~ Sheet 2018

T. Smith
S. Sidhu

July 11th DWF Con Soil Samp of Bags

DWF Bag # 1 · 11 July 18 @ 09:44
L = 80.9 cm
W = 70.3 cm
D = 100 cm
Vol = 568,727 cm
= 0.5687 m³
- Augered halfway down and no hydrocarbin smell

DWF Bag # 2 · 11 July 18 @ 10:15
2A 2B
L = 0.902 m
W = 1.307 m
D = 70.3 = 0.703 m
0.8288 m³

DWF Bag # 3 · 11 July 18 @ 10:26
3A / 3B
A3 / B3
D = 704 = 0.704 m
W = 1.10 m
L = 1.20 m
A = 0.9293 m³

DWF Bag 4 · 11 July 18 @ 10:42
A4 / B4
D = 606 m
W = ~~1.710m~~ 1.07 m
L = 1.20 m
A = 0.7781 m³

A Total on this page = 3.1049 m³

T Smith
S. Sidhu

July 11 18 DWF Soil Sampling

DWF Bag #5 11 July 18 @ 10:58
A5 / B5
D = .305
L = 1.107
W = 1.105
A = 0.3731 m³

DWF Bag #6 11 July 18 @ 11:19
A6 / B6
D = 1.50
L = 1.302
W = 1.107
A = 2.1620

DWF Bag #7 11 July 18 @ 11:34
A7 / B7
D = .061 m
L = 1.20
W = 1.102
A = 0.0807 m³

DWF Bag #8 11 July 18 @ 13:58
#8
D = 0.505 m
L = 1.09
W = 1.10
A = 0.6055 m³

A of page = 3.2213 m³

T Smith
S. Sidhu

Jul 11 18 DWF Soil Sampling

DWF #9 11 July 18 @ 14:09
#9
D = 0.60 m
L = 1.09
W = 1.109
A = 0.7253 m³

DWF #10 Bag 11 July 18 @ 14:20
#10
D = 0.408
L = 1.06
W = 1.07
A = 0.4628 m³

DWF # Bag 11 11 July 18 @ 14:30
#11
D = 0.47
L = 1.08
W = 1.19
A = 0.6040 m³

DWF # Bag 12 11 July 18 @ 14:42
#12
D = 0.507
L = 1.09
W = 1.09
A = 0.6024 m³

A of page = 2.3945 m³

T. Smith
S. Sidhu

11 Jul 18 DWF Soil Sampling

DWF, Bag #13 — 11 July 18 @ 14:57 #13
D = 0.52
W = 1.08
L = 1.12
A = 0.6290 m³

DWF, Bag #14 — 11 July 18 @ 15:11 #14
D = 0.48
W = 1.09
L = 1.09
A = 0.5703 m³

DWF, Bag #15 — 11 July 18 @ 15:26 #15
D = 0.78
W = 1.108
L = 1.00
A = 0.8642 m³

DWF, Bag #16 — 11 July 18 @ 15:42 #16
D = 0.33
W = 0.60
L = 1.10
A = 0.2178 m³

A of page = 2.2813 m³

T. Smith
S. Sidhu

11 Jul 18 DWF Soil Sampling

DWF, Bag #17 — 11 July 18 @ 15:56 #17
D = 0.45
W = 1.024
L = 1.00
A = 0.4608 m³

DWF, Bag #18 — 11 July 18 @ 16:04 #18
D = 0.38
L = 1.02
W = 1.01
A = 0.3915 m³

DWF, Bag #19 — 11 July 18 @ 16:18 #19
D = 0.85
L = 1.07
W = 1.10
A = 1.0000 m³

DWF Bag #20 — 11 July 18 @ 16:28 #20
D = 0.80
L = 1.20
W = 1.05
A = 1.008 m³

A of Page = 2.8603 m³

T Smith
S. Sidhu

11 July 18 DWF Soil Sampling

DWF Bag #21 — 11 July 18 @ 16:40 #21
L = 1.05
D = 0.80
W = 1.10
A = 0.9240 m³

DWF Bag #22 — 11 July 18 @ 16:55 #22
L = 1.05
D = 0.80
W = 1.10
A = 0.9240 m³

12 July 18 Soil Samp

DWF Bag #23 — 12 July 18 @ 09:33 #23
L = 1.10
D = 0.80
W = 1.05
A = 0.9240 m³

DWF Bag #24 — 12 @ July 18 @ 09:44 #24
L = 0.80
D = 0.94
W = 1.05
A = 0.7896 m³

A of page = 3.5616 m³

G. Ladue
S. Sidhu

12 July 18 DWF Soil Sampling

DWF Bag #25 — 12 July 18 @ 10:10 #25
L 1.05
D 0.50
W 1.05
A = 0.5513 m³

DWF Bag #26 — 12 July 18 @ 09:57 #26
D = 1.10
L = 0.80
W = 1.05
A = 0.9240 m³

DWF Bag #27 — 12 July 18 @ 10:23 #27
D = 0.96
L = 0.90
W = 0.99
x Broken
A = 0.8554 m³

DWF Bag 28 — 12 July 18 @ 10:38 #28
D = 0.80
L = 0.90
W = 0.98
A = 0.7056 m³

A of page = 3.0363 m³

104

G Ladue
S. Sidhu

12 Jul 18

DWF Con Soil Sam

DWF 29

D = 0.54
L = 0.80
W = 0.99

12 July 18 10:46
29
2 Bags in 1
A = 0.42768 m³

DWF 30

D = 0.65
W = ~~1.0~~ 1.10
L = 1.20

12 July 18 10:56
30
A = 0.858 m³

DWF 31

D = 0.70
W = 1.05
L = 0.80

12 July 18 @ 11:04
31
A = 0.5880 m³

DWF 32

D = 0.85
W = 0.90
L = 1.20

12 July 18 @ @ 11:13
#32
A = 0.9180 m³

105

33+A-H+34

G Ladue
S. Sidhu

12 Jul 18

DWF Con Soil Sampling

12 July 18

DWF ~~#33~~

33 added

D = 0.70
L = ~~0~~ 1.10 Measure
W = 0.80

2 Bags in 1
A = 0.6169 m³

No sample measure as came from same location @ 11:26

DWF ~~#34~~
Measure only - A
D = 0.70
W = 0.95 = A = 0.532 m³
L = 0.80

B
D = 0.80
W = 0.85 A = 0.7480 m³
L = 1.10

C
D = 0.80
W = 1.00 A = 0.8800 m³
L = 1.10

D
D = 0.70
W = 1.10 A = 0.924 m³
L = 1.20

E
D = 0.80
W = 0.90
L = 1.10
A = 0.7920 m³

F
D = 0.70
W = 0.90
L = 1.30
A = 0.8190 m³

G
D = 0.46
W = 0.90
L = 1.16
A = 0.3960 m³

H
D = 0.50
W = 0.90
L = 1.10 A = 0.4950 m³

G. Ladue
S. Sidhu

DWF Contam Soil Samp

DWF # 34 — 12 July 18 @ 13:30

D	0.70
L	0.80
W	1.10

34

A = 0.6160 m³

DWF # 35 — 12 July 18 @ 13:35

D =	0.80
L =	0.90
W =	1.30

35

A = 0.9360 m³

DWF # 36 — 12 July 18 @ 13:40

D =	0.60
L =	0.95
W =	1.20

36

A = 0.6840 m³

DWF # 37 — 12 July 18 @ 13:45

D	0.60
L	0.90
W	1.20

37

A = 0.6480 m³

G. Ladue
S. Sidhu

DWF Contam Soil Sampling

DWF # 38 Pail Bag @ 14:48

Sample 1 = 12 pails x 20L = 240L

12 July 18 @ 14:48 38-1

Sample 2 = 13 pails x 20L = 260L

12 July 18 @ 15:00 38-2

July 13 2018 LTF - Sampling

LTF Sampling - bags from dump

LTF # 39 @ 09:04

D =	0.50
L =	1.20
W =	0.90

A = 0.5400 m³

LTF # 40 @ 09:06

D =	0.50
L =	~~0.0~~ 1.30
W	0.90

A = 0.5850 m³

LTF # 41 @ 09:10

D =	0.70
L =	1.10
W =	0.90

* Top soil

A = 0.6930 m³

S. Sidhu
G. Ladue

(108)

13 Jul 18

LTF Con Sample

LTF-42 @ 09:14

D = 0.60
W = 1.00
L = 1.30

A = 0.780 m³

LTF-43 @ 09:17

D = 0.90
W = 0.90
L = 1.20

A = 0.756 m³

LTF-44 @ 09:20

D = 0.50
W = 0.80
L = 1.10

A = 0.440 m³

LTF 45 @ 09:23

D = 0.40
L = 0.90
W = 1.10

A = 0.3960 m³

LTF-46 @ 09:26

D = 0.45
W = 0.90
L = 1.20

A = 0.486 m³

(109)

S. Sidhu
G. Ladu

13 Jul 18 LTF Con Sample

LTF-47 @ 09:30

D = 0.30
W = 1.10
L = 1.20

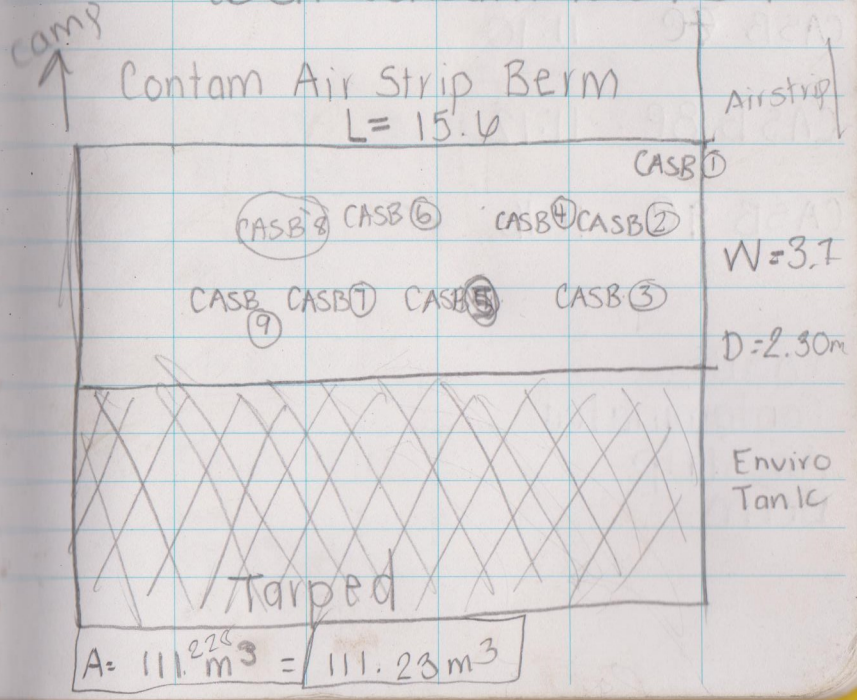
A = 0.396 m³

LTF-48 @ 09:34

D = 0.60
W = 1.10
L = 1.20

A = 0.792 m³

@ 09:36 heard a wood pecker @ Con Consum Yard / LTF



A = 111.22 m³ = 111.23 m³

G. Ladue
S. Sidhu
13 Jul 18

CASB Sampling

CASB 1 @ 10:53

CASB 2 @ 10:58

CASB 3 @ 10:59

CASB 4 @ 11:01

CASB 5 @ 11:04

CASB 6 @ 11:07

CASB ~~7~~ @ 11:10

CASB 8 @ 11:12

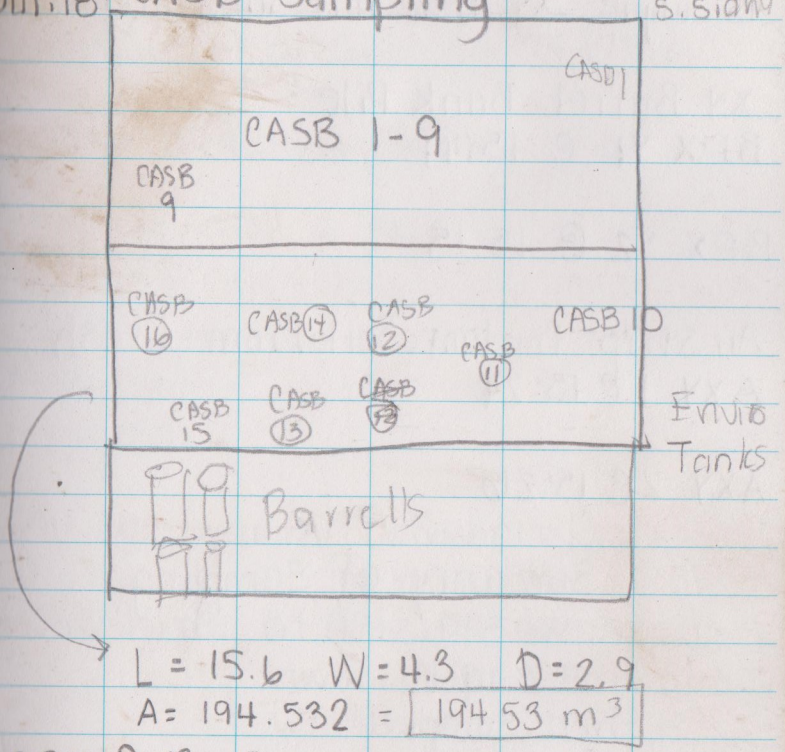
CASB 9 @ 11:16

CASB
Contaminated
Air Strip
Berm

194 m³
13 Jul 18

CASB Sampling

G. Ladue
S. Sidhu



L = 15.6 W = 4.3 D = 2.9
A = 194.532 = 194.53 m³

CASB 10 @ 13:08

CASB 11 @ 13:10

CASB 12 @ 13:12

CASB 13 @ 13:14

CASB 14 @ 13:16

CASB 15 @ 13:18

CASB 16 @ 13:20

G. Dickson
S. Sidhu
13 July 18 XY Con Soil Sampling

XY Barrel Bank Pile
BPX Y1 @ 15:11

BPX Y2 @ 15:15

Air Strip Contam Soil From Crash
AXY 1 @ 15:24

AXY 2 @ 15:26

Summary of sampling
↳ auger was used to ~~drill~~ down into the bag ½ down
↳ then sampled
↳ bags labelled

Air Strip Berm
Removed ½ tarp and drilled down. Gathered sample ; then retarped and did sam→ on other side

M. McKay
S. Sidhu
July 14.18 Top HPAR Inspection
Gravel Source by Gate Km 74-75
↳ 1 pic
↳ 09V 0492828, 6922151

* strip topside W 345
↳ knock trees down
↳ dry rd
↳ capped

↳ water bar → culvert above

↳ gravel source @ 09V 0493875
6923311
± 6 m
↳ LHS towards Km 0.0

↳ gravel source @ 09V 0495112
6922955
@ 10:45

↳ WOI - culvert → inspection rpt. @ 10:48
↳ Water bar → low flow

@ 10:53 - ↳ rd

K. McKay
S. Sidhu

Top HPAR Inspection

gravel source - 09V 0499231 ±4
@ 11:22 iPhone 6918575

@ 11:26 - clear section side

@ 11:40 Shale gravel source
Km 61.9 - 61.8
09 V 0500607 +/- 5
6916572

@ 11:41 - 2 pics of good rd
- 3ft lift?

Km 62.? @ Gravel Soura
@ 11:50
09V 0499757 ±4m
6916338

@ 16:13 Fill 7 1/4

July 15:18 Inspections
@ 08:55 72 m^3

↳ Bimonthly Inspection
↳ completed @ 10:00

@ 10:29 CYD
↳ large rip rap should be placed @ bottom and should come up 4 feet.
↳ additional rip rap should be removed and smaller pcs. should be used as filler
↳ upstream remove smaller rip rap and relocate to downstream
↳ leave or remove geotextile liner

@ 10:45 Don Maintenance Shop Slough
↳ armour a side ditch ~~W~~ Z ~~WO~~
a trench on lower 2 portion of trenchs
↳ create a settling pond (4ft x ?) at bottom bench, place silt fencing which will recreate a location for sediment to settle

July 15 Inspections

@ 10:57 - armouring (big rocks) can be removed from ditch adjacent to cold storage seacan.

@ 11:08 LTF → ask HEO for pics
↳ good / seed / reslope rest area

@ 11:16 DWF
↳ create a water bar from ℄ soil to armoured ditch
↳ fix side erosion

@ 11:20 Milky Creek - Deck in 2015
↳ center log @ LHS abutment rotted
↳ RHS add riprap to abutment - place by hand
↳ consider replacing
↳ may require the use of assesment W Wood core sample → costly
↳ RHS → upper hole on bridge deck
* state how viewing them

July 15 Inspections

@ 11:49 Don Creek Bridge
↳ lg hole on end headed to XY
↳ rotted deck due to soil. Soil absorbs moisture which in turn wood absorbs
↳ can seed rotted logs
↳ geotextile holds in moisture which then pentrates the wood
↳ the timber ends still have rott and due to the bark the rott has ↑ faster
↳ cribbing covered by geotextile and dirt
* replace W bridge from KM 30

@ 12:10 Willow Creek Bridge
↳ bottom cross beams have been saturated
↳ numerous locations where wood rott is evident
* replace W culvert

@ 12:30 XY Laydown
↳ fix water bar
↳ clear ditches
↳ seed old pond locations

15 July Inspection

@ 12:43 KM 82 Bridge
- ↳ cribbing w geo liner
- ↳ Δ° method
- ↳ wood rott present

General Bridge Info
- ↳ geotextile liner keeps moisture in soil that can then penetrate wood.
- ↳ soil absorbs moisture → soil on bridge deck gets moist → wood rott
- ↳ would not approve bridges for LDV only until wood assess can b done
  - ↳ cheaper 2 replace

* all built in 2010

@ 12:53 Adit
- ↳ 2011 went in an came across a cave which yielded no further entry

E. John
S. Caesar

Sunny +15

(33)

July 30/18

	Dis	Depth	Velocity	
WS Con'd	18.0	0.18	0.16	
	17.0	0.22	0.54	
	16.0	0.22	0.07	
	15.0	0.19	0.44	
	14.0	0.19	0.11	
RB 11:23	13.4	0.00	0.00	Second Run
	15.0	0.17	0.46	
	17.0	0.21	0.46	
	19.0	0.22	0.36	
	21.0	0.23	0.52	
	23.0	0.23	0.32	
	25.0	0.24	0.60	
	27.0	0.28	0.51	
	29.0	0.27	0.69	
	31.0	0.28	0.40	
	33.0	0.24	0.39	
	35.0	0.28	0.55	
	37.0	0.33	0.54	
	39.0	0.26	0.59	
	41.0	0.24	0.52	End of Measurement 11:32

13:30 Data Entry

- DSI
- Water Quality
- COC
- Field Notes

- Field ~~Notes~~ Sheet 2018

E. John
S. Caesar

Cloudy. +5

(34)

July 31/18

07:00 Tool Box Mtg

08:35 Watershed Flow
$104 m^3$ $3 m^3$

8:37 travel blanks
#1
#2

S Sidhu
T Smith

SON-001 @ 13:25
WL = 0.060 m *water in casing + monument
DTB = 12.015
SN T5149 - Installed logger

14:51 XYC-304
Manual measurement of Data logger
- sensor #1 - pos B dg = -45.2 deg C
Hz = -45.2
US -45.4

14:58 Sensor #2 - dg = -45.9 deg C
Hz = -49.3
US = 49.9

S. Sidhu
T. Smith

Cloudy +23

(35)

July 31/18

XYC-304 (con)

15:01 Sensor #3 PosB Dg 2.1
Hz 1.3
uS 1.1

15:15 Download 4328 arrays
·changed dessicant, changed batteries.

15:50 XYC-312-1
* cannot take manual measurement due to sensors being screwed in

16:06 XYC-312-1 PosB
Sensor #2 Dg = 9.9
Hz = 9.9
uS = 9.9

T. Smith
S. Sidhu

Sunny +2

(36)

Aug. 1/18

07:00 Toolbox Mtg.

07:16 Water Shed flow
105 m³ 3m³

8:25 XYC-312-1
·Change dessicant

↳ XYC 312-1
↳ added logger → stated mismatch
↳ downloaded 2702 data arrays

9:00 XYC-320
1 Photo Taken #105-0805

9:24 XYC-320
sensor? ~~dus~~ 352.4 uS 2dg
8049.6 Dg 2dgC
2837.1 Hz 2dg
Sensor? 353.5 uS 2.4dg
8000.5 Dg 2.5dg
2828.6 Hz 2.4dg

Downloads

XYC 320 - Continued

		Dg °C
Sensor ?	372.6 us	4.2
Pos B	7202.1 ~~Hz~~ Dg	4.2
	2683.7 ~~Dg~~ Hz	4.2
Sensor ?	344.6 us	1.9
POS B	8404.9 → ~~8404.9~~ Dg	1.8
	2898.7 Hz	1.9

* wires chewed and not marked.
  ↳ stripped and then read

XYC - 323 @ 09:43
↳ water in logger
  ↳ pipe should be cut

XYC - 323 @ 1
↳ would not d/L
↳ loggers are water logged
↳ removed wires - labelled channel w tape
↳ manual measurements

T. Smith
S. Sidhu
Aug 1 18

Downloads

XYC 323 - Man Readings POS B @ 10:30

Sensor	Reading	Dg °C
1	Dg 7946.1	1.3
@ 10:30	Hz 2818.9	1.3
	us 354.7	1.4
# 2	Dg 7035.1	4.1
	Hz 2652.3	4.1
	us 377.0	4.1
# 3	Dg 7313.3	4.2
	Hz 2704.3	4.2
	us 369.7	4.2
#4	Dg 7177.7	7.5
	Hz 2679.1	7.5
	us 373.2	7.5
#5	Dg 7013.7	1.5
	Hz 2648.2	1.5
	us 379.5	1.5

S. Sidhu
T. Smith

Aug. 01.18 Data Downloads

XYC 335 @ 10:52

* memory has wrapped since last d/L
* arrays might have an issue
  ↳ d/L 4210 data arrays
  ↳ water in bottom logger
  ↳ Δ'ed dessicant
  ↳ set bucket up + duct tape

Sensor	Reading	Dg °C
#1	Dg = 8504.6	1.7
	Hz = 2916.2	1.7
	Us = 342.9	1.6
#2	Dg = 7558.8	2.0
	Hz = 2749.3	1.9
	Us = 363.7	2.0
#3	Dg = 6609.2	11.1
	Hz = 2570.8	11.1
	Us = 388.9	11.1
#4	Dg = 6300 8	8.9
	Hz = 2510.0	8.9
	Us = 398.3	8.9

S. Sidhu
T. Smith

Aug. 01.18 Data Downloads

XYC. 330 @ 11.40

* had 2 create logger + sensors
* R0-R1 as written on logger boy
* wires chewed
* downloaded 3986 data arrays
Δ'ed dessicant

Sensor	Reading		Dg°C
#1 @ 12:28	Dg	No read, wire chewed	
	Hz		
	Us		
#2	Dg	8808.6	2.5
	Hz	2967.8	2.5
	Us	336.9	2.5
#3	Dg	6480.6	5,3
	Hz	2545.6	5.3
	Us	392.8	5.3
#4	Dg	5673.3	8.8
	Hz	2381.8	8.9
	Us	419.8	8.8

T. Smith
S. Sidhu

Aug 01 Data Downloads
BRO-017 @ 13:20
↳ 432 new array d/L's

Manual Readings

Sensor	Reading		Dg
#1		7948.2 ~~794.8~~	
	Dg		1.0
	Hz	2819.2	1.7
	Us	354.7	1.7
#2	Dg	6432.2	4.4
	Hz	2536.3	4.5
	Us	394.2	4.5
#3	Dg	7174.8	5.9
	Hz	2678.3	5.9
	Us	373~~3~~.3 ↳373.3	5.8

WL = 0.298m
DTB = Max line > 50m

T Smith
S. Sidhu
RBGW

Aug 01-18 Data Downloads
DNE 131 @ 14:30
*made new file b/c other 3 files did not match configuration
* Δ²ed dessicant
↳ d/L 3138 data arrays

Manual Readings

Sensor	Reading		Dg °C
#1	Dg		Sensor not working
	Hz		
	Us		
#2	Dg	7820.4	Ø No Dg reading
	Hz	2796.3	Ø
	Us	357.6	Ø
#3	Dg	7014.1	No Dg reading
	Hz	2648.4	
	Us	377.5	

T. Smith
S. Sidhy

Aug. 01.16 Data Downloads

DNE - 113 @ 15:04

↳ exposed to weather
↳ water logged
↳ 2 pictures
} Removed logger

Sensor	Readings		Dg
#1	Us	373.2	6.8
	Hz	2671.3	6.8
	Dg	7177.9	6.8
#2	Hz	2812.8	1.7
	Dg	7912.9	1.8
	Us	355.5	1.8
#3	Hz	2667.3	5.0
	Dg	7116.2	5.1
	Us	374.8	5.0
#4	Hz	2679.2	6.8
	Dg	7178.9	6.8
	Us	373.2	6.8

T. Smith
S. Sidhu

Aug. 01 Data Downloads Aug. 01.16

DNE - 115 @ 15:30

Manual Measurement

Sensor	Readings		Dg
#1	Dg	8076.6	2.8
	Hz	2842.0	2.8
	Us	351.8	2.8
#2	Dg	7017.9	5.2
	Hz	2649.2	5.1
	Us	377.4	5.1
#3	Dg	6889.3	7.5
	Hz	2624.9	7.5
	Us	380.9	7.5
#4	Dg		
	Hz		
	Us		

(45)

T. Smith
S. Sidhu

Aug. 01. 18 Data Downloads
DNE-116 @ 15:35
Manual Measurement

Sensor	Reading		Dg
#1	Dg	7096.7	4.4
	Hz	2664.1	4.4
	Us	375.3	4.5
#2	Dg	6931.8	2.6
	Hz	2632.8	2.6
	Us	379.8	2.7
#3	Dg	6534.3	7.7
	Hz	2556.3	7.6
	Us	391.1	7.6
#4	Dg	5601.0	11.0
	Hz	2366.1	11.0
	Us	422.5	11.1

(46)

Aug. 01. 18 Data Downland
DNE-198 @ 15:50
↳ DL 7764 arrays

Sensor	Reading		Dg
#1	Dg	8960 5	2.3
	Hz	2993.4	2.3
	Us	334.0	2.3
#2	Dg	7634.1	3.0
	Hz	2763.0	3.0
	Us	361.9	2.9
#3	Dg	6470.5	7.3
	Hz	2543.4	7.3
	Us	339.1	7.3

T. Smith
S. Sidhu

(47)

Aug 2/18

7:00 Toolbox Mtg

Water Shed Flow
108 m³ 3 m³

Data Downloads

DNE-119 @ 7:50
↳ 4288 Data Arrays D/L
↳ had to make a new program for logger DNE-119-2018
↳ Δ'ed dessicant

Manual Readings

Sensor		Reading		Dg °C
#1	Hz		2589.2	1.6
	Dg		6705.2	1.6
	Us		386.1	1.6
#2	Hz	2719.4		3.6
	Dg	7395.5		3.6
	Us	367.7		3.6
#3	Hz	2743.4		5.4
	Dg	7526.4		5.3
	Us	364.5		5.4

(48)

T. Smith
S. Sidhu

Aug 2-18 Data Downloads

SON-009 @ 08:40
↳ data logger wrecked * removed logger
↳ see pics
WL = ~~3.9009~~ 3.909 DTP = 4.004

DNE-132 @ 09:04
WL = 0.05
DTB = > 50m

MW10-13B @ 09:41
↳ Water logged * removed logger

MW10-13
WL = 4.445
DTB = 7.066

(49)

T. Smith
S. Sidhu

Aug. 02.18 Data Downloads
DON. 242 @ 09:58
↳ dIL 445 arrays

Manual Readings

Sensor	Reading		DG%
#1	Hz	2765.5	1.4
	Dg	7648.3	1.5
	Us	361.5	1.4
#2	Hz	2737.1	3.6
	Dg	7492.2	3.6
	Us	365.3	3.6
#3	Hz	2571.9	6.1
	Dg	6616.7	6.2
	Us	388.7	6.1

(50)

T. Smith
S. Sidhu

Aug. 02.18 Data Downloads
DON - 244 @ 10:55
Manual Readings

Sensor	Reading		DG
#1	Hz	2927.8	0.9
	Dg	8572.0°	0.0
	Us	341.5us	0.5
Unknown ↳ end chewed off	Hz	2784.1	0.1
	Dg	7751.6	0.5
	Us	259.1	0.1
Unknown	Hz	} Damaged	
	Dg		
	Us		

T. Smith
S. Sidhu

51

Aug. 02.18 Data Downloads
DON-243 @ 11:14 Manual Measure

Sensor				
#1	Dg	7629.7		1.3
	Hz	2762.2		1.3
	Us	262.0		1.3
#2	Dg	6799.1		3.5
	Hz	2607.7		3.6
	Us	~~383~~.5		3.6
		383		
#3	Dg	~~6228~~	6228.3	6.5
	Hz	2495.7		6.5
	Us	400.6		6.5

↳ datalogger - water logged
* removed + brought back

52

T. Smith
S. Sidhu

Aug. 02.18 Data Downloads
DON-241 @ 11:25
↳ DIL 445 arrays
Manual Measurement

Sensor	Reading			Dg
#1	Dg	8137.6		0.7
	Hz	2852.5		0.5
	Us	350.5		0.5
#2	Dg	7409.4		1.7
	Hz	2722.0		1.7
	Us	367.3		1.7
#3 Temp did not work	Dg	7338.1	No Dg.°C	~~0.6~~
	Hz	2709.9		
	Us	369.1		
#4	Dg	7340.0		4.8
	Hz	2709.2		4.7
	Us	369.1		4.8

(53)

T. Smith
S. Sidhu

Aug. 02. 18 Data Downloads
MW10-14 @ 14:09 -
↳ D/L to fC-MD
WL = 2.245 mbtoc
DTB = 4.505 m

SON-008 @ 14:49
WL = 2.445
DTB = 15.225
D/L to blue shuttle

(54)

S. Sidhu
T. Smith

Aug. 02. 18 Data Downloads
ANE-210 @ 15:27
↳ 2892 Arrays d/L

Sensor	Reading		Dg
#1	Hz	2865.0	2.4
	Dg	8209.2	2.3
	Us	349.0	2.4
#2	Hz	2632.0	5.8
	Dg	6927.1	5.8
	Us	379.9	5.8
#3	Hz	2738.8	4.7
	Dg	7501.7	4.7
	Us	365.1	4.7

(55)

T. Smith
S. Sidhu

Aug. 02.18 Data Downloads
ANE-215 @ 15:28
Manual Readout

Sensor	Reading		Dg
#1	Dg	7864.5	2.8
	Hz	2804.4	2.8
	Us	356.5	2.8
#2	Dg	7321.2	4.7
	Hz	2705.6	4.7
	Us	369.5	4.7
# 3	Dg	6989.7	6.2
	Hz	2643.9	6.3
	Us	378.2	6.3

ANE-240 @ 15:56
WL = 8.395
DTB = > 50m

(56)

T. Smith
S. Sidhu

Aug. 02.18 Data Downloads
ANE-223 @ 14:06
* making water

Sensor	Reading		Dg
#1	Dg	7936.7	2.7
	Hz	2817.2	2.7
	Us	354.9	2.7
#2	Dg	7541.5	3.6
	Hz	2746.1	3.6
	Us	364.1	3.6
# 3	Dg	7550.5	4.2
	Hz	2747.9	4.2
	Us	363.9	4.2

S. Sidhu
T. Smith

Cloudy +6

57

Aug. 3/18

07:00 Toolbox Mtg

07:20 Water Shed flow
109 m^3 Error 010

7:35 D.S.I.

S. Sidhu
T. Smith

Cloudy +4

58

Aug. 4/18

7:00 Toolbox Mtg

7:24 Water Shed Flow
109 m^3 3 m^3

D.L's of Water logged Dataloggers

7:33 DNE - 113
↳ dried out + attempt D/L
↳ 1439 Data Arrays
↳ Had to create a file
↳ stopped data logger

7:50 Don 243 - Could not download

7:58 XYC 323-1 Could not download

08:12 XYC 323
↳ tried to connect, even created a new site, would not work
* data logger fail.

9:55 Drained all enviro tanks
- D2 + Jet A release valve needs to be replace due to being crack.
- fill a 20L pale a 1/4 full

S. Sidhu
T. Smith
Aug. 04.18

59

HCW-085
Data Logger damaged by a slidr
Removed logger
Wires chewed
Could not access wires b/c they were chewed off and are too short
Wire # 2+3

Sensor	Reading	
#1	Dg 8628.7	0.7
	Hz 2937.4	0.4
	Us 340.4	0.4

HCW 073@ 16:08
* Had to cut wires as chewed on lower end
* to low to install data logger

S. Sidhu
T. Smith
Aug. 4/18

60

HCW-073@ 16:10

Sensor	Reading	Dg
#1	Dg 8716.8	2.0
	Hz 2952.3	2.0
	Us 338.7	2.0
#2	Dg 7289.5	15.8
	Hz 2699.8	15.6
	Us 370.3	15.7
#3	Dg 7166.4	2.7
	Hz 2676.9	2.7
	Us 373.5	2.7

S. Sidhu
T. Smith
Aug. 4/18

HCW-082 @ 16:28
↳ DL 3233 Arrays

Manual Readings

Sensor	Reading		Dg
#1	Dg	7624.4	2.7
	Hz	2761.2	2.7
	Us	362.1	2.8
#2	Dg	6538.1	5.4
	Hz	2556.8	5.3
	Us	391.0	5.4
#3	Dg	6495.6	6.8
	Hz	2548.6	6.9
	Us	392.3	6.8

S. Sidhu
T. Smith

(61)

Aug. 4/18

HCW-082 @ 16:28

↳ DL 3233 Arrays

Manual Readings

Sensor	Reading		Dg
#1	Dg	7624.4	2.7
	Hz	2761.2	2.7
	Us	362.1	2.8
#2	Dg	6538.1	5.4
	Hz	2556.8	5.3
	Us	391.0	5.4
#3	Dg	6495.6	6.8
	Hz	2548.6	6.9
	Us	392.3	6.8

S. Sidhu
T. Smith

Rain +2

(62)

Aug. 5/18

07:00 Toolbox Mtg

7:55 Water Shed Flow
109 m³ 3m³

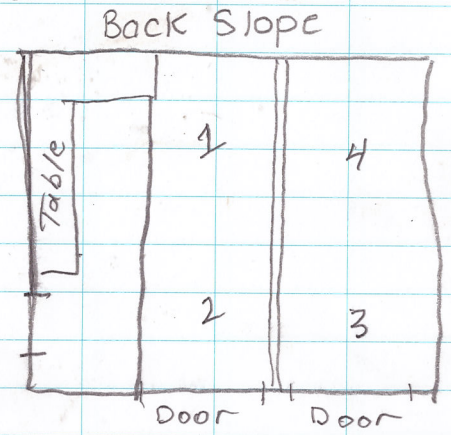
13:15 Soil Sample at No-Limit Shop. Floor

13:18 NLS 1

13:26 NLS 2

13:33 NLS 3

13:41 NLS 4



DMS

14:35 DSI

S. Sidhu
T. Smith

Rain +4

(63)

Aug. 6/18

7:25 Water Shed Flow
110 m^3 Error 0.010
• Apply KY gell to sensor

10:00 Km 91 3 Bull caribou
on the road

11:02 End of XY Airstrip
1 caribou, Male, Juvenile
Feeding

13:27 HCW 078 - 2 wires

Sensor	Read		Dg
#1	Dg	6502.5	9.1
	Hz	2550.0	9.0
	Us	392.1	9.0
#2	Dg	7410.7	4.1
	Hz	2722.2	4.1
	Us	367.3	4

S. Sidhu
T Smith

(64)

Downloads

Aug. 06 18

SON - 015 @ 13:40
Therm d/L
↳ append to file

WL = dry
DTB. 7.345

HCW 88 @ 14:04
25 data arrays → wrong d/L 66600
↳ Δ'ed dessicant Δ'ed → 21600
↳ manual d/L

Sensor	Readings		Dg
#1	Dg	8251.7	2.2
	Hz	2872.5	2.1
	Us	348.1	2.1
#2	Dg	7092.4	3.5
	Hz	2663.2	3.4
	Us	375.5	3.5
+3	Dg	6755.0	5.7
	Hz	2598.7	5.7
	Us	384.7	5.6

WL @ top of pipe @ 14:14

S. Sidhu
T. Smith
Aug 06 18 Downloads

65

SON-014 @ 14:38
D/L'ed

MD DL 2 blue shuttle @ 14:42
WL 6.200
DTB 14.561

SON-016 @ 14:48
D/L to B.S MD
WL 1.455 m
DTB 11.995 m

TSF-009 @ 15:01
D/L to computer
· Well damaged
Could not do a SPP
* wireless antenna eaten by animal

T. Smith
S. Sidhu
Aug. 06 18 Downloads

66

HCE-034 @ 15:21
436 New Arrays

Sensor	Reading		Dg
#1	Dg	8487.6	1.0
	Hz	2913.3	1.0
	Us	343.2	1.0
#2	Dg	7965.1	1.8
	Hz	2822.1	1.8
	Us	354.3	1.8
#3	Dg	7358.6	3.2
	Hz	2712.6	3.2
	Us	368.6	3.2

HCE-030
WL @ surface
↳ making water
↳ took a picture + video
↳ put cap back on

S. Sidhu
T. Smith

(67)

Aug 06 18 Downloads

HCE - 035 @ 15:50

436 arrays

3 damaged → #1 damaged → cut wires and reinstalled

Repaired

WL = @ surface

Sensor			
#3	Dg	6765.8	4.0
	Hz	2601.3	4.0
	Us	384.4	4.0
#1	Dg	8133.4	1.8
	Hz	2851.8	1.8
	Us	350.6	1.7
#2	Dg	7723.4	2.4
	Hz	2779.1	2.5
	Us	359.8	2.5

S. Sidhu
T. Smith

(68)

Aug 06 18 Downloads

BRO - 016 @ 16:26

1394 Data Arrays

3 damaged

↳ cut - stripped and wired back in

Sensor			
# 1	Dg	8502.4	1.3
	Hz	2915.8	1.2
	Us	342.9	1.2
# 2	Dg	7515.8	2.4
	Hz	2741.4	2.4
	Us	364.7	2.3
# 3	Dg	7275.6	3.8
	Hz	2697.2	3.9
	Us	370.7	3.9

T. Smith
S. Sidhu

Aug. 06.18 Downloads

BR 0-014 @ 16:26
14.71 blocked
↳ could not get water level meter
passed 14.71.
↳ 2 wells, 1 lower → plugged @ surface

T. Smith
S. Sidhu

(69)

Aug 06:18 Downloads

BRO-014 @ 16:26
14.71 blocked -
↳ could not get water level meter passed 14.71.
↳ 2 wells, 1 lower → plugged @ surface

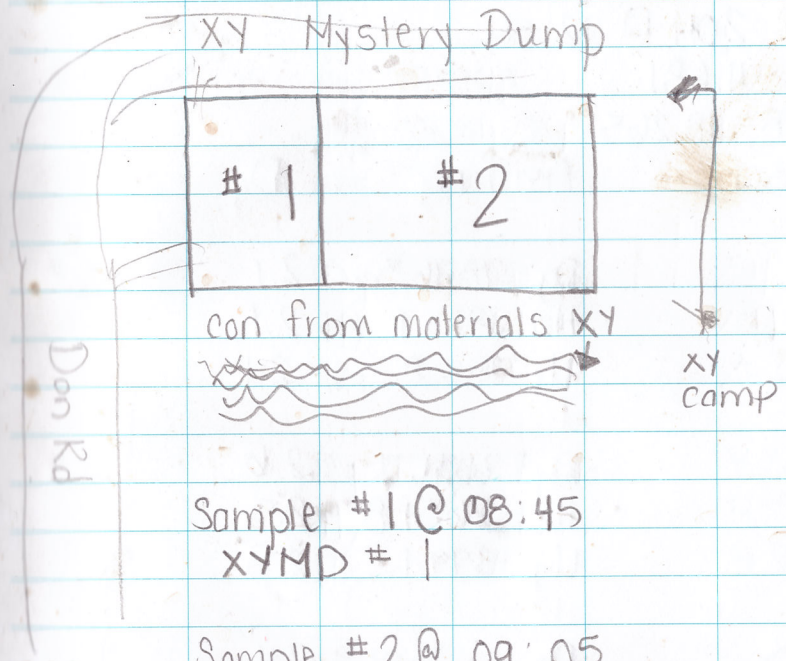
S. Sidhu
T. Smith

Rain +4

(70)

Aug 7/18

7:30 Water Shed Flow
110 m³ Error 010
· Apply KY gell to sensor



Sample #1 @ 08:45
XYMD #1

Sample #2 @ 09:05
XYMD #2

Found burned metals, hoses tidy tank pump etc.
Pictures taken

T. Smith
S. Sidhu

71

Aug. 07.18 Downloads

ANC. 201 @ 12:47
DNE

ANC 204 @ 12:56
WL: 4.681
DTB: 18.265

Sensor	Reading		Dg
#1	Dg	7896.3	2.1
	Hz	2810.1	2.1
	Us	355.8	2.1
#2	Dg	7031.7	2.6
	Hz	2651.8	2.5
	Us	377.1	2.5
#3	Dg	7332.9	2.4
	Hz	2707.8	2.4
	Us	369.2	2.4

72

S. Sidhu
T. Smith

Aug 07 Downloads
ANC 208 @ 13:10
WL = 0.040 Blocked @
DTB = blocked

Sensor

#1	Dg	7945.3	2.5
	Hz	2818.7	2.5
	Us	354.7	2.5
#2	Dg	7590.0	3.1
	Hz	2755.0	3.1
	Us	362.9	3.1
#3	Dg	7206.8	4.3
	Hz	2684.4	4.3
	Us	372.5	4.3

T. Smith
S. Sidhu

Aug. 7. 18 Downloads

ANC - 211 @ 13:23 → 2015

↳ wrapped since last d/L

↳ 3227 new arrays

↳ Δ'ed dessicant *needs a lid

↳ d/L to 2015 File →

Manual Readings

Sensor	Reading		Dg
#1	Dg	8236.7	2.2
	Hz	2869.8	2.2
	Us	348.4	2.2
#2	Dg	7272.6	3.1
	Hz	2696.8	3.1
	Us	370.8	3.1
#3	Dg	6814.1	4.2
	Hz	2610.1	4.2
	Us	383.0	4.2

218
219
238

T. Smith
S. Sidhu

Aug. 7. 18 Downloads

ANC - 213

Sensor	Reading		Dg
#1	Dg	7929.1	1.8
	Hz	2815.0	1.8
	Us	355.1	1.8
#2	Dg	7181.6	2.6
	Hz	2680.9	2.6
	Us	373.1	2.6
#3	Dg	6808.0	3.9
	Hz	2609.3	3.8
	Us	383.2	3.8

T. Smith
S. Sidhu

Aug. 07 Downloads

ANC-238 @ 14:12
WL = 4.195
DTB = > 50m
Stick says 160 cm

ANC 219 @ 14:20
Capped, can't access

ANC 218 @ 14:22
↳ wires chewed up
↳ vinyl low to ground
↳ no idea which sensors ~~wor~~ are which → fixed wires → ☺

Sensor	Read		Dg
#1?	Dg	7916.1	2.4
	Hz	2813.6	2.4
	Us	355.4	2.4
#2?	Dg	7200.8	2.5
	Hz	2683.5	2.5
	Us	372.6	2.6
#3?	Dg	7491.8	3.5
	Hz	2737.1	3.5
	Us	365.3	3.6

WL = ~~5.174~~ 5.235
DTB = > 50.0m

T. Smith
S. Sidhu

Aug. 07 Downloads

ANE 229-3 @ 15:00
440 new arrays
2017 file
Will adjust settings 2 2015
↳ wrapped logger
ANE 229-2 @ 15:04
↳ 440 arrays
↳ will load 2015 settings

Sensor	Read		Dg
#1	Dg	7679.4	2.9
	Hz	2771.1	3.0
	Us	360.8	2.9
#2	Dg	7123.8	3.9
	Hz	2669.1	3.9
	Us	374.6	3.9
#3	Dg	2718.3	4.6
	Hz	7389.7	4.6
	Us	367.8	4.5

WL = 7.110
DTB = > 50 m

(77)

T. Smith
S. Sidhy

Aug. 07 Downloads

DH10-02 @ 15:38
Water issues
will not connect via wire or USB

DH10-02A
DL @ 15:46
WL - ~~Dry~~ Dry
DTB: 8.360

DH10-02B
DL @ 15:50
WL Dry
DTB: 26.892

*DH10-02C
* removed logger → brought back to camp

MW10-12
WL = @ surface
DTB = 10.335 = 10.335

SON-023 @ 16:18
↳ DL w USB → water inside
↳ Transmitter card corroded
WL = Dry
DTB = 3.545
↳ did download

T. Smith
S. Sidhu

Aug. 07 Downloads

DH10-02C @ 15:38
Water issues
will not connect via wire or USB

DH10-02A
DL @ 15:46
WL ~~Dry~~ Dry
DTB: 8.360

DH10-02B
DL @ 15:50
WL Dry
DTB: 26.892

*DH10-02C
* removed logger → brought back to camp

MW10-12
WL = @ surface
DTB = 10.335 = 10.335

SON-023 @ 16:18
↳ DL W USB → water inside
↳ Transmitter card corroded
WL = Dry ↳ did download
DTB = 3.545

S. Sidhu
T. Smith

cloudy

Aug. 8/18

9:05 Water Shed Flow
110 m^3 3 m^3

9:34 Water Sample Don Camp Kitchen Sink

14:00 Cut and pile wood at Km 93 across the road from the No-Limit Junction.
• GPS 09V 0480987 6932439

R. Charlie cloudy +9 (79)
T. Smith Aug. 9/18

7:26 Water Shed flow
110 m^3 3 m^3

9:00 Burn pile of wood at Km93

12:50 Monitor Fire at Km93

16:00 Check wood pile at Km89
- Wood is still in good condition, no rot.

R. Charlie cloudy +9 (79)
T. Smith Aug 9/18

7:26 Water Shed flow
110 m^3 3 m^3

9:00 Burn pile of wood at Km 93

12:50 Monitor Fire at Km 93

16:00 Check wood pile at Km 89
- Wood is still in good condition, no rot.

R. Charlie Raining +5 (80)
T. Smith Aug 10/18

7:17 Water Shed flow
110 m^3 Error 0.10
- Apply KY to sensor

8:10 Km 89 - cut and pile (~~Km~~ Old Km 13) wood
- Burn Old 8' x 12' shack

G.P.S. 09 V 0483966 6931678

14:30 MW07-03
- Brushing out site
- Brushed out trail to site from road

R. Charlie Clear +4 (80)
T. Smith Aug. 11/18

07:30 Water Shed Flow
110 m^3 Error 010
• Apply KY to sensor

08:50 MW07-02
• Brushing out Landing pad for Heli at site

10:18 1 Photo taken a XY Dump
• HEO cleaned up dump and put all waste into Red bin

10:29 XYC 308
• HEO work on site with D8, 1 Photo taken

10:35 XYC 304
• HEO work on site with D8
• 1 Photo taken

11:11 MW10-08
• Brushing out Landing pad for Heli at site

R. Charlie cloudy +14 (81)
T. Smith Aug. 11/18

14:00 HEO Istalling culvert at Km86 next to Willow Creek bridge.
• 1 Photo taken

R. Charlie
T. Smith

Cloudy/Rain
+6

82

Aug. 12/18

07:36 Water Shed Flow
110 m^3 3 m^3

08:50 W62
- Brushing out Landing pad for Heli at site.
- cut and pile brush
- Brush out trail to site

13:22 W5
- Brushing out Landing pad for Heli at site
- cut and pile brush

R. Charlie Cloudy/Rain (82)
T. Smith +6
Aug. 12/18

07:36 Water Shed Flow
110 m^3 3 m^3

08:50 W62
- Brushing out Landing pad for Heli at site.
- cut and pile brush
- Brush out trail to site

13:22 W5
- Brushing out Landing pad for Heli at site
- cut and pile brush

R. Charlie Rain +4 (83)
T. Smith
Aug. 13/18

07:23 Water Shed flow
110 m^3 3 m^3

7:35 DSI (Don Camp)

8:26 Km 92
- 2 Moose feeding, both male's

9:02 XY Camp Check Inspection
- Photo taken of old Fuel barrels

10:00 Steele Creek / Placer Creek
- Ispection on silt fencing that Camp tech installed

11:45 Km 89 Picked up tin from roof of the shack that was burned down and took it to XY dump Where the Red bin is.

15:30 Data Entry

R. Charlie Rain +6 84
T. Smith Aug. 14/18

07:20 Water Shed flow
110 m^3 Error 010 Apply KY
to sensor

07:29 DSI

8:09 Km 91 Moose 1 male
Feeding.

8:35 Don Road Ispection
· XY to Don Camp

9:16 No-Limit Road Inspection

9:48 HC Road Inspection

R. Charlie Rain +6 (84)
T. Smith Aug. 14/18

07:20 Water Shed flow
110 m³ Error 010 Apply KY
to sensor

07:29 DSI

8:09 Km 91 Moose 1 male
Feeding

8:35 Don Road Ispection
· XY to Don Camp

9:16 No-Limit Road Inspection

9:48 HC Road Inspection

S. Caesar Cloudy +6 (85)
T. Smith Aug. 15/18

07:25 Water Shed flow
110 m³ 3 m³

08:38 1 Bull Moose @ 93 km - No Limit
Jnct. Standing. 1 Cow moose

09:20 XY - Camp - Bi-monthly Inspections
· Generator shop
· Change Absorbent Pad on Fueldrum.
· 1 photo Taken #105-0844.
· Changed Absorbent Pads @ Enviro Tank.

09:42 Tech Crew - cleaning and sorting
Red C-can @ XY camp - near Airstrip
· 5 photo Taken # 105-0845 -0855

10:00 HEO - reclamation on side of
mountain - across From XY camp
· 1 photo Taken # 105 -0856

11:15 Monitor Fuel Transfer - Airport Airstrip
Enviro Tank.

T. Smith
S. Caesar

Sunny +5
Partly cloudy

88

Aug 16/18

14:28 XY-SON-001
- Download
- Battery Level - 94%
- Water Level - High
- 1 photo Taken #105-0857

15:10 XYC-305
- Seed Area
L = 58.36m
W = 26.12 m
A = 1,524.3632
- 1 photo Taken #105-0858

S. Caesar
T. Smith

Cloudy +

89

Aug. 17/18

07:30 Water Shed flow
110 m^3 Error 010
- Apply KY to sensor

7:35 Data Entry

9:00 DSI

09:06 Generator shop
- Changed Absorbent Pads

10:40 Seeding behind Maintenance shop - Slope - bottom slope
- 1 photo Taken #105-0859

Stage 1
- L = 22.73m
W = 6.15m
A = 139.7895m

Stage #2
L = 43.94m
W = 15.10m
A = 663.494m

T.Smith
S.Caesar

Cloudy +5
Light Rain

(90)

Aug 17/18

Seeding meas. con'd - Backslope of maintenance shop.
2nd slope from bottom

Stage#1 L= 44.72m
W= 2.50m
A= 111.8m

Stage#1 3rd Slope - behind Maintenance shop
L= 44.20m
W= 2.32m
A= 102.544m

Stage#2 L= 17.23m
W= 2.15m
A= 37.0445

4th Slope
Stage#1 L= 37.52m
W= 3.34m
A= ~~2.98m~~ 125.3168m

Stage#2 L= 31.57m
W= 2.98m
A= 94.0786m

Total Area = 1,274.0674

T.Smith
S.Caesar

partly Cloudy +5
Light Rain

(91)

Aug 17/18

13:50 Seeding - Core Yard Ditch
Stage#1 L= 36.62m
W= 17.95m
A= 657.329
Stage#2 L= 33.18m
W= 8.93m
A= 296.2974
Stage#3 L= 21.75m
W= 9.70m
A= 210.975

Total Area = 1,164.6014

- 3 photos Taken #105-0860

15:48 Hauled - Open Top Barrel to X1 camp - Red C-can.

16:10 Km 89 Bull moose

T. Smith
S. Caesar

Cloudy + 6
light rain

(86)

Aug 15/18

13:30 Bi-monthly Camp check - Don Camp.

16:30 Data Entry.

T. Smith
S. Caesar

Cloudy + 5

(87)

Aug 16/18

07:00 Tool Box mtg

07:24 Watershed Flow
110 m^3 3 m^3

8:20 D.S.I.

9:37 Km 86 Bull Moose, Feeding on the other side of Don creek

10:26 XYC-304
- Data Download Arrays 4391
- Battery level ->
- Manual Readout

	Read	Dg	Can't read out on Geoton ~~The readings~~
Sensor #1	Dg	35.7	
	Hz	36.3	
	Us	35.6	
#2	Dg	44.1	
	Hz	45.7	
	Us	44.9	
#3	Dg	4.5	
	Hz	4.5	
	Us	4.5	

T. Smith
S. Carbar

Sunny +5
Partly cloudy

Aug 16/18

14:28 XY-SON-001
- Download
- Battery Level - 94%
- Water Level - High
- 1 photo Taken #105-0857

15:10 XYC-305
- Seed Area

L = 58.36m
W = 26.12 m
A = 1,524.3632
- 1 photo Taken # 105-0858

S.Caesar Cloudy + 6 (92)
T.Smith Aug. 18/18

07:24 Water Shed flow
113 m³ 3m³

08:08 Bull moose standing @ km 96.

08:54 XYC - 308 - Seeded
L = 54.91m • 1 photo Taken
W = 28.20m #105-0861
A = 1,548.462

09:46 XYC - 304 - Seeded
L = 41.93m 1 photo Taken
~~09:46~~ W = 42.64m #105-0862
A = 1,787.8952

11:05 Km 86 - Willow Creek - seeded
Stage #1 L = 13.45 m
W = 8.36m
A = 112.442 m
Stage #2 L = 17.48 m
W = 3.63m
A = 63.4524 m
Stage #3 L = 19.85 m
W = 4.92 m
A = 97.662 m

T.Smith Cloudy + 6 (93)
S.Caesar Aug 18/18

Con'd Km 86 - Willow Creek - Seeded
Stage #4 ~~Total Area~~
L = 14.88m
W = 7.90m
A = 117.552 m

Total Area = 391.1084 m

• 4 photo Taken #105-0866

12:30 Km 90 - Cow and calf - feeding

13:20 Seeded back slope from Airport
Stage #1 Arrival Shed.
L = 30.57 m
W = 11.58 m
A = 354.0006
• 1 photo Taken #105-0867

Seeded Slope across ~~from~~ behind Arrival
Stage #2 Shed.
L = 29.15 m
W = 12.43 m
A = 362.3345

Total Area = 716.3351

T. Smith
S. Caesar

Cloudy +6

Aug 18/18

14:05 Seeded Slope across from Arrival Shed at Airport Airstrip.

Stage #1. L = 31.80 m
W = 18.59 m
A = 591.162 m

Stage #2 L = 29.10m
W = 9.98m
A = 289.42m

Stage #3 L = 27.11m
W = 7.96m
A = 215.7956

Stage #4 L = 27.79m
W = 11.24m
A = 312.3596

Total Area = 1,408.7372

15:25 DS1

16:00 Data Entry

T. Smith
S. Caesar

Cloudy +6

94

Aug 18/18

14:05 Seeded Slope across from Arrival Shed at Airport Airstrip.

Stage #1. L = 31.80 m
W = 18.59 m
A = 591.162 m

Stage #2 L = 29.10m
W = 9.98m
A = 289.42 m

Stage #3 L = 27.11m
W = 7.96m
A = 215.7956

Stage #4 L = 27.79m
W = 11.24 m
A = 312.3596

Total Area = 1,408.7372

15:25 DSI

16:00 Data Entry

T. Smith
S. caesar

Sunny + 3

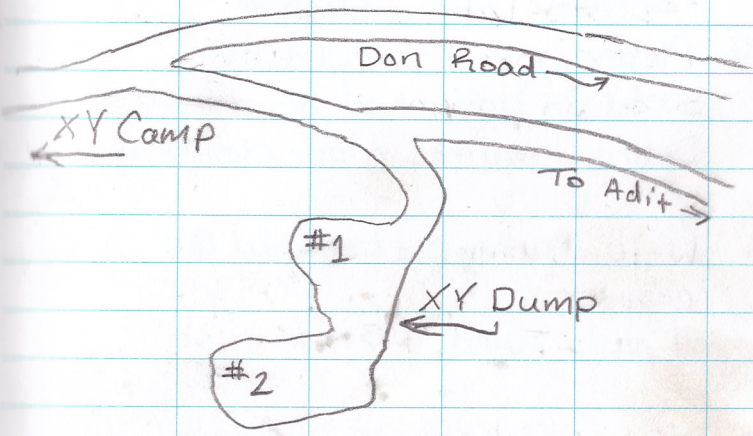
95

Aug 19/18

07:00 Tool Box/Safety mtg

07:45 Water Shed Flow
116m³ 3m³

09:02 XY-Dump - Soil Samples



Sample #1 @ 9:18
XYD #1

Sample #2 @ 9:28
XYD #2

S.Caesar
T.Smith

Sunny +8

(96)

Aug. 19/18

9:37 XY Dump seeding
L = 45.37m
W = 31.88m
A = 1,446.3956
~~Total Area~~
·2 photo Taken #105 -
* Please note - We did not Seed on bottom of dump - Debris requires more clean-up.

14:08 W-10 - Brushing Out Landing Pad for chopper.
·1 photo Taken #105 -

16:00 YSI - Calibrations - Run #1
pH 4 = 4.00
pH 7 = 7.00 > Change Battery
pH 10 = 10.10 → Calibrate Value
Conductivity →

16:45 YSI - Calibration - Run #2
pH 4 = 4.00
pH 7 = 7.00
pH 10 = 10.19 → Calibrate Value
Conductivity → 1413 → Calibrat Value

S.Caesar
T.Smith

Sunny +8

(96)

Aug. 19/18

9:37 XY Dump seeding
L = 45.37m
W = 31.88m
A = 1,446.3956
~~Total Area~~
-2 photo Taken #105 -
* Please note - We did not Seed on bottom of dump - Debris requires more clean-up.

14:08 W-10 - Brushing Out Landing Pad for chopper.
-1 photo Taken #105 -

16:00 YSI - Calibrations - Run #1
pH 4 = 4.00
pH 7 = 7.00 > Change battery
pH 10 = 10.10 → Calibrate Value
Conductivity →

16:45 YSI - Calibration - Run #2
pH 4 = 4.00
pH 7 = 7.00
pH 10 = 10.19 → Calibrate Value
Conductivity → 1413 → Calibrat Value

T.Smith
S.Caesar

Cloudy +3

(97)

Aug 20/18

07:00 Tool Box Mtg

07:21 Watershed Flow
119 m^3 33 m^3 Error 10 - Applied Ky-Gel.

08:10 Bridge Inspection - Bridge To Nowhere
-5 photos Taken #105-

Run #1

08:52 W-62 - Survey

I.B.M.	bs	height	SG	pipe	close out
100	0.265	101.265	101.283	101.264	0.265

~~Run #2~~

B.m.	bs	height	SG	Pipe	close out
100	0.265				

Run #1

09:45 W-62 - Survey

Bm	bs	height	SG	Pipe	close out
100	~~0.2477~~ ~~0.246~~ 0.247	~~101.518~~	101.269 ~~101.259~~	101.247 ~~101.245~~ 101.247	0.265
100	~~0.247~~ 0.247	~~101.253~~	101.269	~~101.248~~	100.247

Run #2

Bm	bs	height	SG	Pipe	close out
100	0.247		101.269	101.248	0.247
100	0.247		101.269	101.248	100.247

T. Smith
S. Caesar

Cloudy + 5

Aug 20/18

W-62 - Con'd

10:15 Data Download
Battery Level -> 80 %

10:25 • Staff gauge -> 0.7450
1 photo Taken # 105 -

~~collected~~
Water Samples - W-62 - cond.

10:30 YSI Readings
Temp = 5.5 SPC $\frac{us}{cm}$ = 515.0
mmHg = 649.5 pH = 7.52
DO % = ~~80.3~~ ~~0.11~~ pHmV = -49.4
DO $\frac{mg}{L}$ = 10.11 ORPmV = 31.6

10:39 Water Samples collected / Dup #1

Water Flow

11:15 RB

Dis	Depth	Velocity
11.3	0.00	0.00
11.5	0.44	0.39
11.7	0.41	0.18
11.9	0.41	0.07
12.1	0.43	0.91
12.3	0.47	1.02
12.5	4.17	0.61
12.7	4.19	0.93
12.9	4.17	1.07

RB 11.33
LB 13.85

T. Smith
S. Caesar

Cloudy + 5

Aug 20/18

W-62 Con'd

Dis	Depth	Velocity	
13.1	4.18	0.47	
13.3	4.12	0.27	move Foot back boulder in way.
13.5	2.19	0.22	
13.7	2.18	0.32	
13.85	0.00	0.00	Second Run 11:30
13.55	2.18	0.15	
13.25	4.11	0.31	move Foot back boulder in way
12.95	4.17	0.78	
12.65	4.17	0.40	
12.35	4.13	0.68	
12.5	4.4	0.45	
11.75	2.19	0.11	
11.45	4.1	0.55	end Time 12:05 pm

LB

13:59 W - 8
Collected Water Samples
• YSI Readings
14:07 Temp = 3.0 SPC $\frac{us}{cm}$ = 667.2
mm Hg = 639.6 pH = ~~6.67~~ 7.40
DO % 68.7 pH mV = -43.1
DO $\frac{mg}{L}$ 9.24 ORP mV = 20.9

T. Smith Sunny + 7 (100)
S. Caesar Aug 21/18

07:00 Tool Box Mtg.

07:19 Watershed Flow
122 m^3 3 m^3

8:52 W-10

8:56
- Water samples - Collected
- Data Download - Battery Level → 90%
- Staff Gauge Reading → 0.5120
- 1 photo Taken #105 -

09:14
- YSI Readings

Temp = 5.2 SPC = 599.0
mm Hg = 651.1 pH = 7.15
Do % = 97.3 pHmV = -35.8
Do $\frac{mg}{L}$ = 12.34 ORPmV = 52.0

9:30 Creek Flow

RB → 10.9
LB → 15.0

	DIS	Depth	Velocity
RB	10.9	0.00	0.00
	11.1	2.11	0.69
	11.3	2.12	0.62
	11.5	2.16	0.73
	11.7	2.15	0.83
	11.9	4.1	0.81
	12.1	4.2	0.72
	12.3	2.18	0.66

T. Smith Sunny + 7 (101)
S. Caesar Aug 21/18

	DIS	Depth	Velocity	
W-10 Con'd.	12.5	2.17	0.71	
	12.7	2.14	0.70	
	12.9	2.14	0.69	
	13.1	2.12	0.66	
	13.3	2.10	0.67	
	13.5	2.8	0.65	
	13.7	2.10	0.61	
	13.9	2.7	0.61	
	14.1	2.5	0.52	
	14.3	2.4	0.39	
	14.5	2.2	0.46	
	14.7	2.2	0.21	
	14.9	2.0	0.21	end Time: 09:45
LB	15.0	0.00	0.00	
	14.7	2.3	0.17	
	14.4	2.2	0.44	
	14.1	2.6	0.57	
	13.8	2.8	0.61	
	13.5	2.10	0.65	
	13.2	2.12	0.71	
	12.9	2.14	0.72	
	12.6	2.14	0.73	
	12.3	2.18	0.73	
	12.0	4.1	0.82	
	11.7	2.16	0.82	

T. Smith
S. Caesar

Sunny + 7
slightly cloudy

102

Aug 21/18

W-10	Dis	Depth	Velocity	
cont'd	11.4	2.15	0.76	
	11.1	2.12	0.73	end Time: 09:53

13:28 Working with Triton - John
- Collecting Bugs @ W-10

W-56

15:30
- Water Samples / Field Blank Collected
- YSI Readings

15:42 Temp = 10.1 SPC ^{uS} = 333.7
mm Hg = 639.2 pH = 8.03
DO % = 80.1 pH mV = -85.3
DO $\frac{mg}{L}$ = 9.00 ORP mV = 133.5

16:35 Data Entry

16:40 ~~YS~~ YSI Calibration →
pH 4 = 4.02
pH 7 = 7.00
pH 10 = 10.03
Conductivity → Calibration Value → 1413

T.Smith
S.Caesar

Sunny + 7
Slightly cloudy

102

Aug 21/18

W-10	Dis	Depth	Velocity
Con'd	11.4	2.15	0.76
	11.1	2.12	0.73

end Time: 09:53

13:28 Working with Triton - John
- Collecting Bugs @ W-10

W-56

15:30
- Water Samples / Field Blank Collected
- YSI Readings

15:42 Temp = 10.1 SPC ^{uS} = 333.7
mmHg = 639.2 pH = 8.03
DO% = 80.1 pH mV = -85.3
DO $\frac{mg}{L}$ = 9.00 ORP mV = 133.5

16:35 Data Entry

16:40 ~~YS~~ YSI Calibration →
pH 4 = 4.02
pH 7 = 7.00
pH 10 = 10.03
Conductivity → Calibration Value = 1413

S.Caesar
T.Smith

Raining + 5

103

Aug. 22/18

07:00 Toolbox Mtg.

7:22 Water Shed Flow
124 m^3 3 m^3

09:03 W-56 - Assisting John - Triton - Collecting Bugs

13:46 W-5 - Assist John - Triton - Collecting Bugs

'W-5

14:05
- Water samples - collected
- Staff Gauge Readings → 0.~~6950~~ 6890
- 1 photo Taken #105 -

14:16
- YSI Readings

Temp = 6.8 SPC = 549.8
mmHg = 660.7 pH = 7.74
DO% = 84.3 pH mV = -69.5
DO $\frac{mg}{L}$ = 10.29 ORP mV = 200.4

14:06 - Data Download - Battery Level

T. Smith cloudy +8
S. Caesar W-5 - Creek Flow

104

Aug 22/18

15.43

Dis	Depth	Velocity
~~RB~~ LB ~~22.15~~ ~~10.65~~	0.00	0.00
21.65	2.12	0.34
21.15	2.10	0.38
20.65	2.9	0.39
20.15	2.9	0.44
19.65	2.9	0.51
19.15	2.9	0.42
18.65	2.10	0.39
18.15	2.13	0.48
17.65	2.12	0.47
17.65	2.13	0.96
16.65	2.8	0.96
16.15	2.11	1.02
15.65	2.11	1.11
15.15	2.12	1.22
14.65	2.15	1.20
14.15	2.15	1.08
13.65	2.15	1.06
13.15	2.15	1.18
12.65	4.0	1.14
12.15	4.2	1.19
11.65	4.4	1.02
11.15	4.1	0.95

RB - 10.65
LB - ~~2222~~ 22.15

end Time: 16:01

T. Smith cloudy +8
S. Caesar

105

Aug 22/18

W-5 con'd

Dis	Depth	Velocity
RB 10.65	0.00	0.00
11.55	4.5	0.94
12.55	4.3	1.11
13.55	2.15	0.98
14.55	2.15	1.19
15.55	2.10	1.05
16.55	2.9	0.96
17.55	2.10	0.92
18.55	2.10	0.85
19.55	2.7	0.93
20.55	2.7	0.65
21.55	2.12	0.70

~~Start~~ Second Run 16:02

end Time 16:10

16:45 Enviro Tank - Berm
- No water in Berm.

16:49 Regular Gas Tank - Berm
- Water Level - low

16:54 Data Entry

16:55 YSI - Calibration
- Conductivity → 1336 → Calibration Value = 1413

S. Caesar
T. Smith

Rain +4

(106)

Aug. 23/18

7:20 Water Shed Flow
127 m^3 ~~m^3~~ Error 010

8:15 DSI

11:15 LTF -
- 3 photos Taken #105
- Secured
- Geo cloth placed down /
- Contimanited Soil covered.

W-3
11:56 - Water samples collected
12:12 - YSI Readings
Temp = 6.7° SPC = 426.5
mm Hg = 668.8 pH = 7.79
Do % = 84.6 pH mV = -71.4
Do $\frac{mg}{L}$ = 10.37 ORP mV = 150.0

12:17 Creek Flow

RB 12.94
LB 40.90

	Dis	Depth	Velocity
~~RB~~ LB	~~2.4~~	~~0.00~~	~~0.00~~
LB	40.90	0.00	0.00
	~~39.1~~ 40.	4.1	0.03

T. Smith
S. Caesar

Cloudy +4

(107)

Aug 23/18

W-3 cond

Dis	Depth	Velocity	
39.1 ~~30.0~~	2.10	0.41	
38.1	4.0	0.48	
37.1	4.2	0.90	
36.1	4.6	1.17	
35.1	4.4	0.68	
34.1	4.7	0.81	
33.1	4.9	0.75	
32.1	4.2	0.85	
31.1	4.1	0.74	
30.1	4.0	0.89	
29.1	4.2	0.61	
28.1	4.0	0.81	
~~27.1~~	2.15	0.94	
26.1	2.19	0.63	
~~25.1~~	2.19	0.94	
~~24.1~~	4.1	0.76	
~~23.1~~	4.0	0.70	
22.1	2.13	0.80	
21.1	2.14	0.86	
20.1	4.0	0.82	
19.1	2.15	0.71	
18.1	2.13	0.37	move Foot back rock in way.
17.1	2.10	0.69	
16.1	2.5	0.82	
15.1	2.15	0.61	

T. Smith
S. Caesar

Light Rain + Cloudy.

Aug 23/15

	Dis	Depth	Velocity	
W-3				
Con'd	14.1	2.12	0.87	
	13.1	2.10	0.23	end run First run
RB	12.04	0.00	0.00	Second Run
	14.3	2.16	0.62	
	16.3	2.17	0.77	
	18.3	2.10	0.20	
	20.3	2.11	0.94	
	22.3	2.17	0.59	
	24.3	2.18	0.80	
	26.3	2.19	0.86	
	28.3	4.0	0.99	
	30.3	4.0	0.84	
	32.3	4.2	0.78	
	34.3	4.3	0.84	
	36.3	4.6	0.89	
	38.3	2.16	0.90	
	40.3	2.16	0.72	end run: 12:57

Travel Blank
Batch: 24-July-2018
Expiry Date: 24-Oct-2018

Field Blank - Aug 6, 2018

16:30 Data ~~Entry~~.

T. Smith
S. Caesar

Light Rain + 4 cloudy.

108

Aug 23/18

	Dis	Depth	Velocity	
W-3 Con'd	14.1	2.12	0.87	
	13.1	2.10	0.23	end run First run
RB	12.04	0.00	0.00	Second Run
	14.3	2.16	0.62	
	16.3	2.17	0.77	
	18.3	2.10	0.20	
	20.3	2.11	0.94	
	22.3	2.17	0.59	
	24.3	2.18	0.80	
	26.3	2.19	0.86	
	28.3	4.0	0.99	
	30.3	4.0	0.84	
	32.3	4.2	0.78	
	34.3	4.3	0.84	
	36.3	4.6	0.89	
	38.3	2.16	0.90	
	40.3	2.16	0.72	end run: 12:57

Travel Blank
Batch: 24-July-2018
Expiry Date: 24-Oct-2018

Field Blank - Aug 6, 2018

16:30 Data Entry.

T. Smith
S. Caesar

Sunny + 3 slightly cloudy.

109

Aug 24/18

07:00 Tool Box Mtg.

07:16 Watershed Flow
129 m³ 3m³

08:34 XY - Weather Station
- Data Download
- Battery Level → 100%
- Changed Dessicant
- Changed out batteries
- Mini Diver ~~XM~~ Battery Level - 70%

10:12 Km 90 - Weather station
- Data Down load - Battery Level → 90%
- mini Diver Down load
- Battery Level → 85%
- Changed Dessicant

10:56 Km 100 - Weather Station
- Data Down load - Battery Level → 60%

NO! → mini Diver Down load - Battery Level →
- Changed Dessicant

11:10 DS1

T. Smith
S. Caesar

Cloudy +3

Aug 24/18

14:15	Km 82 - Bridge - repair Silt Fencing.
14:35	Km 85 - Repair Silt Fencing
14:43	Km 86 - Willow Creek - Silt Fencing Repairs
15:17	Km 89 - repar Silt Fencing
15:21	Km 89.5 - repair Silt Fencing
15:58	Km 93 - No Limit Jnct - Silt Fencing repair
16:30	Data Entry.

T.Smith
S.Caesar

Cloudy +3

110

Aug 24/18

14:15 Km 82 - Bridge - repair Silt Fencing.

14:35 Km 85 - Repair Silt Fencing

14:43 Km 86 - Willow Creek - Silt Fencing Repairs

15:17 Km 89 - repair Silt Fencing

15:21 Km 89.5 - repair Silt Fencing

15:58 Km 93 - No Limit Jnct - Silt Fencing repair

16:30 Data Entry.

T.Smith
S.Caesar

Cloudy +3
Light Rain

111

Aug 25/18

07:00 Tool Box Mtg.

Watershed Flow

07:15 133m3 3m3 Error 10

08:41 DSI - Xy Camp
- 2 photo Taken # 105 - 0880 - Red C-can/Area.
- Changed Absorbent Pads @ Enviro Tank
- Changed Absorbent Pads @ generator shop.
- 1 photo Taken # 105-0881
- Xy Land Fill - A few debris requires removing. Sent out photos on Aug 19, 2018. 1 photo Taken # 105-0902
- Camp Tech placing Absorbents Pads under Equipment.

09:17 Bridge Inspections:
Km 82
- 3 photos Taken # 105-0883

T. Smith
S. Caesar

Cloudy +3

(112)

Aug 25/18

09:33 Km 86 - Willow Creek - Culvert
- 3 photos Taken #105-0886.

09:57 Road Inspection - No Limit Road.

10:31 Km 94 - Bridge
- ~~4~~ photos Taken # ~~0889~~ 105-0890

10:38 ~~No Limit F~~ HC Road Inspection

11:15 1 cow / 2 calf - km 99
- Standing / Feeding.

11:22 Bridge To Nowhere.
- photo Taken on Aug 20/18.

11:28 Km 100 - Milky Way Bridge
- ~~53~~ photos Taken # 105 - ~~0893~~ 0985

13:05 Ice Auger
- Cleaned Auger
- Changed blades on auger

14:45 Bull moose @ ~~9~~km 90 - Feeding

T. Smith
S. Caesar

Sunny +10

(113)

Aug 25/18

15:17 XY Old barrel pit next to Green shop
- 1 Photo taken #105-0897

15:29 XYC - 315 Reclamed Drillers Pad.
- 1 photo Taken #105-0898

15:30 Grizzly below XYC-308 - walking

15:32 XYC-316 - Reclaimed Drillers Pad
- 1 photo Taken #105-0899

15:44 XYC-319 - Reclaimed Drillers Pad
- 1 photo Taken #105-0900

15:45 XYC -318 Reclaimed Drillers Pad
- 1 photo Taken #105-0901

15:53 Caribou - walking on side of Mountain @ XY camp.

S. Caesar
T. Smith

Foggy +5

114

Aug. 26/18

7:26 Water Shed flow
133 m^3 Error 010
• Apply vaseline to sensor

7:30 Data Entry

13:48 DS1 - B1 - monthly - Don Camp
• Waste Facility
• 1 photo Taken #105 - 0902
HEO, hauled old bridge from Willow creek ~~bridge~~ Km 86.

13:56 LTF - secured
• 1 photo Taken. #105 - 0903

14:15 Install silt fence at end of Don Airstrip.
• 1 photo Taken #105-0903

16:00 Data Entry.

S. Caesar
T. Smith

Foggy +5

114

Aug. 26/18

7:26 Water Shed Flow
133m³ Error 010
• Apply vaseline to sensor

7:30 Data Entry

13:48 DSI - Bi-monthly - Don Camp
• Waste Facility
• 1 photo Taken #105-0902
HEO, hauled old bridge from Willow creek ~~bridge~~ Km 86.

13:56 LTF - secured
• 1 photo Taken #105-0903

14:15 Install silt fence at end of Don Airstrip
• 1 photo Taken #105-0903

16:00 Data Entry.

T. Smith
S. Caesar

Light Rain +4

115

Aug 27/18

07:00 Tool Box Mtg

07:13 Watershed Flow
136m³ 3m³

08:30 DSI

09:15 Regular Gas Berm
• Changed out Filter
• Changed out Absorbent Pads

15:44 • Data Entry
• Clean office / Truck
- Pack Equipment.

S. Sidhu
N. Falloon

Sept 21 Month Sampling

W3 @ 10:20	
Temp °C	-0.1
DO %	99.9
DO mg/L	14.63
SPC us/cm	445.9
pH	7.63
ORP mV	173.3

W5 @ 10:48	
Temp °C	0.0
DO %	93.8
DO mg/L	13.68
SPC us/cm	634.4
pH	7.72
ORP mV	183.6

SG: 0.588
0.539 @ 10:50

W10 @ 11:18	
Temp °C	-0.1
DO %	90.6
DO mg/L	13.21
SPC us/cm	745.2
pH	7.67
ORP mV	70.7

SG @ 11:20
0.491

Flows could not be completed due to icing in creek

N. Falloon
S. Sidhu

Sept 21 — Monthly Sampling

W56 @	12:23
Temp °C	-0.1
DO %	88.6
DO mg/L	12.95
SPC us/cm	314.9
pH	7.80
ORP mV	153.1

DUP @	12:29
Temp °C	-0.1
DO %	88.6
DO mg/L	12.95
SPC us/cm	314.9
pH	7.80
ORP mV	153.1

E Blank @	12:42
Temp °C	8.5
DO %	64.6
DO mg/L	7.54
SPC us/cm	6.5
pH	8.24
ORP mV	156.7

No Batch date

N. Falloon
S. Sidhu

Sept. 21 — Monthly Sampling

W8 @ 12:30

Too icy to cross creek ∴ no sample

Travel Blank

Batch date 14. Sep. 18

Exp date 14. Dec. 18

Sprung 09V 0473900 6934337

LTF 09V 0473413 6934192

Don S 09V 0473285 6934283 → 09V 0472351 6933987

Tanks Reg 09V 0473190 6934220 → 30 Ft A.S

E Tanks 09V 0472376 6934027

LEVEL

N. Falloon
S. Sidhu

Sept 21 Sampling Monthly

W62 @	11:49
Temp °C	0.0
DO %	96.0
DO mg/L	13.99
SPC us/cm	646.3
pH	7.48
ORP mV	79.4

SGE 11.51
0.498

Ent D5	09V 0473119	→	09V 0473031
	6934466		6934471
Shop -	09V 0473076		
	6934488		
No Limit	09V 6473062		
	6934552		

N. Falloon + S. Sidhu

Oct. 22 SW+GW Sampling

MW07-01 @ 12:47

DTW 3.015 DTB = 8.479 - 5.464 x 6 = 32.78
DTP 33 Bailers

MW07-01 @ 13:14

Temp °C	3.2
DO %	65.1
DO mg/L	8.7
SPC us/cm	290.6
pH	7.54
ORP mV	152.3

DUP @ 13:20

Temp °C	3.2
DO %	65.1
DO mg/L	8.7
SPC us/cm	290.0
pH	7.54
ORP mV	152.3

* could not d/L logger as laptop would not turn on.

S. Sidhu
N. Falloon

(6)

Oct. 22 GW + SW Sampling

*Bull moose → W

MW07-02 @ 13:28

WL =	4.190	DTB =	4.845 = 0.655 x 6 = 3.93

4 Bailers

MW07-02 @ 13:38

Temp °C	22
DO %	79.5
DO mg/L	10.91
SPC us/cm	385.9
pH	7.37
ORP	170.5

* No logger to d/L

MW10-09 @ 13:52

WL =	1.084	DTB = 25	5.419 = 4.135 x 6 = 24.81

Bailers

MW10-09 @ 14:13

Temp °C	2.3
DO %	45.2
DO mg/L	6.16
SPC us/cm	729.5
pH	7.26
ORP mV	21.6

* No logger to d/L

S. Sidhu
N. Falloon

(7)

Oct. 22 GW + SW Sampling

MW10-08 @ 14:46

WL	2.663	DTB	4.888 = 2.225 x 6 = 13.

13 Bailers

MW10-08 @ 14:42

Temp °C	1.8
DO %	84.6
DO mg/L	11.72
SPC us/cm	1130
pH	7.00
ORP mV	138.7

Field Blanke 14:45

Temp °C	15.2
DO %	74.2
DO mg/L	7.42
SPC us/cm	9.6
pH	7.55
ORP mV	186.9

* No batch date

MW07-03 @ 14:54

WL	4.049	DTB	5.708 ~~5.708~~ - 1.659 x 6 = 9.954

10 Bailers

MW07-03 @ 15:10

Temp °C	0.8
DO %	40.5
DO mg/L	5.78
SPC us/cm	713.0
pH	7.29
ORP mV	35.0

* could not d/L logger as laptop would not turn on

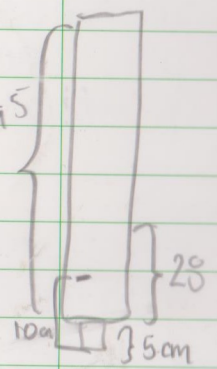
N. Falloon
S. Sidhu

Oct. 22 GW + SW Sampling

W3 @	15:34
Temp	-0.1
DO%	106.6
DO mg/L	15.59
SPC us/cm	453.7
pH	7.79
ORP	88.2

W5 @	15:55
Temp	-0.1
DO%	104.3
DO mg/L	15.26
SPC us/cm	664.3
pH	7.80
ORP	103.7

* removed pipe
pipe = 0.95 cm
logger = 28 cm
exposed = 10 cm



* SG Frozen
* could not survey due to ice conditions @ W5
* due to ice conditions @ W3 + W5 a flow could not be completed safely
* Stop @ 12:12 Oct 23 dlL in office

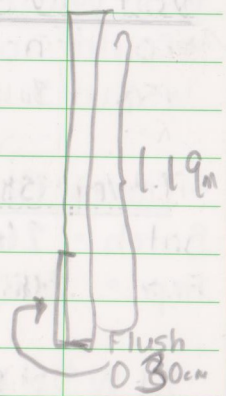
N. Falloon
S. Sidhu

Oct. 23 GW + SW Sampling

W62 @	10:13
Temp °C	0.7
DO%	111.3
DO mg/L	15.88
SPC	698.7
pH	7.93
ORP	57.8

DLE 11:47

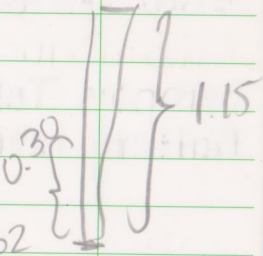
SG: ~~0.432m~~ 0.428m



W10 @	10:40
Temp °C	0.7
DO%	97.8
DO mg/L	13.97
SPC	813.0
pH	7.37
ORP	37.9

SG = 0.246

DLE 12:01 W64 →
DLE 12:20 W10



* Loggers removed @ W10 / W62 could not do survey as too much snow
* condoms intact on W5 + W62

LEVEL

S. Sidhu
N. Falloon

Oct. 23 SW + GW Sampling

W8 + W56 @ 10:00

↳ could not access due to H+S issues

↳ Travel Blank

Batch = 26 Sep 18

Exp = 26 Dec 18

XY WS @ 09:50

Δ'ed Batt + dessicant

Snow ~ 0.09 m

Rain = 0.0

Solar Rad = 0.6 W/m²

Temp = 37.535°C

Baro - 1 - WS - XY @ 09:52

23/10/2018 8:54 Press = 848.9 cm H_2O

Temp = 2.850 Ref

Samples Taken = 4320 / 24000

Battery level = 77.9%

S. Sidhu
N. Falloon

Oct. 23 WS Downloads

KM 90 WS @ 11:01

↳ Δ'ed dess

↳ Batt = 75%

Rain 0.0

Wind Speed 3.81 m/s

Gust Speed 4.57 m/s

Solar Rad 100.6 W/m²

Temperature 0.797 °C

RH 86.200 %

Dew Pt -1.2 °C

Baro = SWS_U2859 @ 11:07

23/10/18 @ 11:07

Pressure = 884.7 cm H_2O

Temp = 2.21 Celcius

Samples Taken = 4448 / 24000

Battery Left = 92%

Snow = 0.03m

LEVEL

N. Falloon
S. Sidhu

Oct. 23 18 WS Downloads

DON WS @ 11:20

↳ Batt level 50%

↳ Δ'ed Batteries = 100%

↳ Δ'ed dessicant

↳ Snow = 0.00m

Solar Rad = 121.9 W/m²

Temp = 3.089 °C

RH = 80.8 %

Dew Point = 0.1 °C

Rain = 0.00 mm

Wind Speed = 0.00 ~~m/s~~ m/s

Gust Speed = 0.00 m/s

Baro 2 WS · DON @ 12:13

23/10/2018 @ 12:14

Pressure 896.2 cm H_2O

Temperature 16.74 C

Samples = 1641 / 24000

Battery Left = 77%

(13)

N. Falloon
S. Sidhu

Nov 16 — Month Sampling

W3 @ 13:29		Dup 1 @ 13:30	
Temp °C	-0.1	Temp °C	-0.1
DO %	81.2	DO %	81.2
DO mg/L	11.68	DO mg/L	11.68
SPC us/cm	~~63~~ 484	SPC us/cm	484
pH	7.49	pH	7.49
ORP mv	207.1	ORP mv	207.1

YSI Time — Salt Flow = W3 1811

Start	16:54	Mass of NaCl	2.6 kg
Stop	17:06	SPC us/cm	484.3
Q =	0.3123 m^3/s		

Run #2

Start	17:06	Mass NaCl	2.6 kg
Stop	17:12	SPC us/cm	= 483.0
Q =	0.3197 m^3/s		

Q Mean = 0.3160 m^3/s RPD % = 2.35 %
=> 316.0 L/s

LEVEL

S. Sidhu
N. Falloon

Nov. 16 18 Month Sampling

W5 @	14:42
Temp °C	-0.1
DO %	67.8
DO mg/L	10.02
SPC uS/cm	6467
pH	7.49
ORP mV	206.7

Field Blank @ 14:43

Temp °C	14.1
DO %	71
DO mg/L	7.29
SPC uS/cm	< 2.0
pH	7.74
ORP mV	318.1

Nov. 16. 18

YST Time — Salt Flow — W5/181

Start = 18:08
Stop 18:10
Q = 0.8887 m^3/s

Mass NaCl = 2.6 kg
SPC uS/cm = 665

Run #2
Start = 18:13
Stop 18:15
Q = 0.8685 m^3/s

Mass of NaCl 2.6 kg
SPC uS/cm = 672

Q Mean = 0.8786 m^3/s RPD % = 2.30 %
=> 878.6 L/s

S. Sidhu
N. Falloon

Nov. 16 18 Month Sampling

W10 @	15:52
Temp °C	-0.1
DO %	109.4
DO mg/L	15.96
SPC uS/cm	985
pH	6.96
ORP mV	56.3

0.3

Salt Flow W10/1811

Start = 19:14
Stop = 19:20
Q = 0.1893 m^3/s

Mass NaCl = 0.600 kg
SPC uS/cm = 993

no duplicate salt flow b/c NaCl sent down first run.

W8 + W56 @ 16:10
Could not access due to H+S

Travel Blank
Oct. 16 2018 Batch date
Jan. 16. 2019 Expirary
-23°C clear

Nov. 17. 18. Weather'd out

(16)

N. Falloon
S. Sidhu

Nov. 18, 2018 Monthly Sampling

W62 @	9:28
Temp °C	0.2
DO %	617.2
DO mg/L	89.28
SPC us/cm	741.6
pH	8.06
ORP mV	85.9

VSI Time

Salt Flow W62 1811

Start @ 12:50
Stop @ 12:51
Q = 0.1365 m^3/s

Mass NaCl = 0.3 kg
SPC us/cm 747

Run #2
Start @ 12:54
Stop @ 12:56
Q = 0.1296 m^3/s

Mass NaCl = 0.3 kg
SPC us/cm 742

Q Mean = 0.1331 m^3/s
= 133.1 L/s

RPD % = 5.25%

+3°C O/C not ppt
@ 09:19 by W10 1 cow moose W

C. Hodinski
S. Sidhu

300
(17)

Dec. 14, 18 Month Sampling

W5 @	13:52
Temp	-0.1
DO %	106.1
DO mg/L	16.60
SPC us/cm	692.3
pH	8.43
ORP	1366

↳ O/C, -26.0

Salt Flow W5 14100

Start @ 13:55
Stop @ 13:58
Q = 0.8516 m^3/s
851.6 L/s

Mass NaCl = 2.5 kg
SPC us/cm 692

The weather was o/c and cloudy. Only one flow could be completed due to visibility and temperature.

C. Hodinski
S. Sidhu

Dec 14 18 Month Sampling

W10 @ 1430		DUP @ 14:31	
Temp °C	-0.1	Temp °C	-0.1
DO %	110.8	DO %	110.8
DO mg/L	16.26	DO mg/L	16.26
SPC us/cm	1001	SPC us/cm	1001
pH	7.75	pH	7.75
ORP mv	10.7	ORP mv	10.7

Salt Flow W10 14100

Start @ 14:32
Stop @ 14:35

Mass = 0.400kg
NaCl
SPC us/cm = 1009

Q = 0.2986 m^3/s
298.6 L/s

The weather was overcast and cloudy. One flow could only be completed due to visibility and temperature

S. Sidhu / C. Hodinski

0.3 Dup

Dec. 14 18 Month Sampling

W62 @ 14:54		Field Blank	14:55
Temp °C	-0.1	Temp °C	12.3
DO %	99.8	DO %	104.8
DO mg/L	14.68	DO mg/L	11.24
SPC us/cm	732.7	SPC us/cm	< RDL
pH	7.64	pH	8.57
ORP mv	40.2	ORP mv	~~137~~ ↓ 140.9

Dec 10 18 Batch

Salt Flow W62 14100

Start @ 14:56
Stop @ 15:01

Mass 0.300 kg
NaCl
SPC us/cm = 750

Q = 0.1055 m^3/s
105.5 L/s

The weather was overcast + cloudy. One flow could only be completed due to vis + temp

W8 + W56 @ 15:15

Travel Blank Batch • 19 Nov 2018
Exp • 19 Feb 2019

S. Sidhu
C. Hodinski

Dec 15, 18

3.00

20

Month Sampling

W3 P	09:29
Temp °C	0.0
DO %	127.6
DO mg/L	18.40
SPC us/cm	470.7
pH	8.29
ORP mv	136.3

Salt Flow W3 14100kg

Start P	09:30
Stop P	09:34
Q =	-2.2995 m^3/s

Mass
NaCl = 3.00kg
SPC us/cm = 520

The weather was overcast and cloudy one flow could be completed due to visibility + extreme cold.

* The flow is inacurrate and may be caused by stream braiding.

Appendix J

2018

Water Quality

2018
Surface Water Quality

SELWYN CHIHONG MINING LTD.

2018 Surface Water Field Parameters

Station Name	Date	Field Temperature (C°)	Field Dissolved Oxygen (%)	Field Dissolved Oxygen (mg/L)	Field Specific Conductance (µS/cm)	Field pH (pH Units)	Field ORP (mV)
W3	27-Jan-18	-0.1	80.7	11.83	524.9	7.32	88
W3	25-Feb-18	-0.1	71.7	10.47	535.0	7.44	160
W3	26-Mar-18	-0.1	79.5	11.65	546.5	7.41	161
W3	28-Apr-18	-0.1	81.2	11.87	535.0	6.75	237
W3	28-May-18	3.1	87.9	11.77	50.1	7.01	134
W3	29-Jun-18	6.7	90.2	10.96	267.7	7.79	111
W3	30-Jul-18	12.8	84.4	8.91	439.4	8.02	165
W3	21-Aug-18	6.7	84.6	10.37	426.5	7.79	150
W3	21-Sep-18	-0.1	99.9	14.63	445.9	7.63	173
W3	22-Oct-18	-0.1	106.6	15.59	453.7	7.79	88
W3	16-Nov-18	-0.1	81.2	11.68	484.0	7.49	207
W3	15-Dec-18	0.0	127.6	18.40	470.7	8.29	136
W5	27-Jan-18	-0.1	98.0	14.27	751.7	7.70	188
W5	25-Feb-18	-0.1	74.9	10.96	764.3	7.76	151
W5	26-Mar-18	-0.1	85.4	12.50	780.0	7.69	167
W5	28-Apr-18	-0.1	86.8	12.68	774.9	7.22	213
W5	28-May-18	2.4	88.4	12.12	383.1	7.27	141
W5	28-Jun-18	5.6	89.2	11.21	349.3	7.44	105
W5	28-Jul-18	9.9	85.5	9.70	581.9	8.00	212
W5	22-Aug-18	6.8	84.3	10.29	549.8	7.74	200
W5	21-Sep-18	-0.1	90.6	13.21	745.2	7.67	71
W5	22-Oct-18	-0.1	104.3	15.26	664.3	7.80	104
W5	16-Nov-18	-0.1	67.8	10.02	646.7	7.49	207
W5	14-Dec-18	-0.1	106.1	16.60	692.3	8.43	137
W10	27-Jan-18	-0.1	98.7	14.34	1088.0	7.98	207
W10	25-Feb-18	-0.1	35.4	4.94	1088.0	7.99	157
W10	26-Mar-18	-0.1	82.9	12.10	1170.0	7.67	145
W10	28-Apr-18	0.0	84.5	12.31	1178.0	7.57	174
W10	28-May-18	2.1	86.0	11.81	436.4	7.17	-12
W10	29-Jun-18	3.9	86.4	11.36	358.8	7.27	34
W10	29-Jul-18	8.4	79.7	9.30	641.4	6.93	49
W10	21-Aug-18	5.2	97.3	12.34	599.0	7.15	52
W10	21-Sep-18	-0.1	90.6	13.21	745.2	7.67	71
W10	23-Oct-18	0.7	97.8	13.97	813.0	7.37	38
W10	16-Nov-18	-0.1	109.4	15.96	985.0	6.96	56
W10	14-Dec-18	-0.1	110.8	16.26	1001.0	7.75	11

* Due to health and safety issues the site could not be accessed.

SELWYN CHIHONG MINING LTD.

2018 Surface Water Field Parameters

Station Name	Date	Field Temperature (C°)	Field Dissolved Oxygen (%)	Field Dissolved Oxygen (mg/L)	Field Specific Conductance (µS/cm)	Field pH (pH Units)	Field ORP (mV)
W62	28-Jan-18	-0.1	6.3	0.91	641.3	81.16	221
W62	25-Feb-18	-0.1	32.6	4.72	793.4	7.96	161
W62	26-Mar-18	-0.1	69.0	8.57	817.4	7.75	159
W62	28-Apr-18	0.1	84.0	12.20	879.0	7.54	175
W62	28-May-18	1.5	84.3	11.78	360.2	7.39	88
W62	28-Jun-18	5.0	85.2	10.86	304.4	7.19	91
W62	30-Jul-18	7.8	80.4	9.55	575.1	7.75	96
W62	20-Aug-18	5.5	80.3	10.11	515.0	7.52	32
W62	21-Sep-18	0.0	96.0	13.99	646.3	7.48	79
W62	23-Oct-18	0.7	111.3	15.88	698.7	7.93	58
W62	18-Nov-18	0.2	617.2	89.28	741.6	8.06	86
W62	14-Dec-18	-0.1	99.8	14.68	732.7	7.64	40
W56	28-Jan-18	*					
W56	25-Feb-18	*					
W56	26-Mar-18	*					
W56	28-Apr-18	*					
W56	28-May-18	0.6	85.6	12.29	260.4	7.53	87
W56	27-Jun-18	6.1	84.5	10.49	228.0	7.43	37
W56	28-Jul-18	12.3	79.9	8.55	374.1	8.19	125
W56	21-Aug-18	10.1	80.1	9.00	333.7	8.03	134
W56	21-Sep-18	-0.1	88.6	12.95	314.9	7.80	153
W56	23-Oct-18	*					
W56	16-Nov-18	*					
W56	14-Dec-18	*					
W8	28-Jan-18	*					
W8	25-Feb-18	*					
W8	26-Mar-18	*					
W8	28-Apr-18	*					
W8	28-May-18	2.9	79.0	10.63	645.8	7.36	27
W8	27-Jun-18	3.0	74.8	10.12	53.1	6.94	19
W8	28-Jul-18	3.0	78.7	10.60	374.8	7.49	32
W8	20-Aug-18	3.0	68.7	9.24	667.2	7.40	21
W8	21-Sep-18	*					
W8	23-Oct-18	*					
W8	16-Nov-18	*					
W8	14-Dec-18	*					

* Due to health and safety issues the site could not be accessed.

SELWYN CHIHONG MINING LTD.

2018 Surface Water
General Parameters

Station Name	Sample Date	Lab Specific Conductance (µS/cm)	Hardness (mg/L)	Lab pH (pH Units)	Total Suspended Solids (mg/L)	Lab Total Dissolved Solids (mg/L)	Total Acidity (mg/L)	Acidity to pH 4.5 (mg/L)	Alkalinity, Bicarbonate (mg/L)	Alkalinity, Carbonate (mg/L)	Alkalinity, Hydroxide (mg/L)	Total Alkalinity (mg/L)	Ammonia (mg/L)	Chloride (mg/L)	Fluoride (mg/L)	Nitrate (mg/L)	Nitrite (mg/L)	D - Orthophosphate (mg/L)	D - Sulphate (mg/L)	Total Anion Sum (meq/L)	Total Cation Sum (meq/L)	Ion Balance	Cyanide, Weak Acid Dissociable (mg/L)	Total Cyanide (mg/L)	Thiocyanate (mg/L)	Dissolved Organic Carbon (mg/L)	Total Organic Carbon (mg/L)
W3	27-Jan-18	501	275	7.92	3.9	323	1.2	<1.0	114	<1.0	<1.0	114		<0.50	0.174	0.08	<0.0010		158	5.58	5.57	-0.1		<0.0050	<0.50	1.13	0.99
W3	25-Feb-18	552	317	7.83	<3.0	345	4.9	<1.0	115	<1.0	<1.0	115	0.0211	2.22	0.174	0.09	0.0910	<0.0010	163	5.75	6.42	5.5	<0.0050	<0.0050	<0.50	1.62	1.03
W3	26-Mar-18	514	302	8.09	105.0	335	1.2	<1.0	108	<1.0	<1.0	108	0.0229	<0.50	0.191	0.09	<0.0010	<0.0010	162	5.55	6.11	4.8	<0.0050	<0.0050	<0.50	1.82	2.69
W3	28-Apr-18	527	276	8.09	8.1	323	1.9	<1.0	115	3.6	<1.0	119	0.0150	<0.50	0.174	0.08	<0.0010	<0.0010	155	5.61	5.58	-0.2	<0.0050	<0.0050	<0.50	1.52	1.03
W3	28-May-18	244	110	8.01	10.5	144	1.9	<1.0	58	<1.0	<1.0	58	<0.0050	<0.10	0.114	0.03	<0.0010	0.0043	66	2.53	2.25	-5.8	<0.0050	<0.0050	0.87	3.92	4.57
W3	29-Jun-18	264	135	7.97	17.7	157	1.6	<1.0	55	<1.0	<1.0	55	<0.0050	<0.50	0.147	0.02	<0.0010	0.0016	74	2.63	2.75	2.2	<0.00050	<0.0050	<0.50	3.65	3.86
W3	30-Jul-18	415	205	8.02	<3.0	259	<1.0	<1.0	90	<1.0	<1.0	90	<0.0050		<0.50	0.19	<0.0050	<0.0010	131	4.55	4.15	-4.6	<0.00050	<0.0050	<0.50	20.00	1.50
W3	23-Aug-18	368	190	8.11	4.4	228	1.1	<1.0	78	<1.0	<1.0	78		<0.50	0.180	0.02	<0.0010	0.0012	115	3.97	3.86	-1.4	<0.00050	<0.0050	<0.50	1.68	
W3	21-Sep-18	437	216	8.16	<3.0	270	<1.0	<1.0	103	<1.0	<1.0	103	<0.00050	<0.50	0.185	<0.005	<0.0010	0.0010	131	4.80	4.38	-4.6	<0.0050	<0.0050	<0.50	1.50	1.43
W3	22-Oct-18	446	231	7.93	5.6	280	1.9	<1.0	106	<1.0	<1.0	106	<0.0050	<0.050	0.181	0.03	<0.0010	<0.0010	135	4.92	4.67	-2.7	<0.0050	<0.0050	<0.50	1.58	1.36
W3	16-Nov-18	473	262	7.88	6.3	304	3.8	<1.0	108	<1.0	<1.0	108	0.0166	<0.50	0.170	0.05	<0.0010	<0.0010	147	5.23	5.29	0.5	<0.0050	<0.0050	<0.50	0.99	0.98
W3	15-Dec-18	511	290	7.97	5.8	320	5.8	<1.0	113	<1.0	<1.0	113	0.0258	<0.50	0.193	0.06	<0.0010	<0.0010	151	5.41	5.86	4.0	<0.0050	<0.0050	<0.50	1.02	1.08
W5	27-Jan-18	709	417	8.16	<3.0	497	<1.0	<1.0	140	<1.0	<1.0	140		<2.5	0.130	0.05	<0.0050		269	8.41	8.39	-0.2		<0.0050	<0.50	1.96	1.00
W5	25-Feb-18	773	459	8.08	<3.0	507	3.6	<1.0	144	<1.0	<1.0	144	<0.0050	<0.50	0.127	0.09	0.0910	<0.0010	262	8.33	9.23	5.1	<0.0050	<0.0050	<0.50	1.16	0.79
W5	26-Mar-18	736	461	8.22	<3.0	510	<1.0	<1.0	140	<1.0	<1.0	140	<0.0050	<0.50	0.133	0.04	<0.0010	0.0014	265	8.32	9.27	5.4	<0.0050	<0.0050	<0.50	0.69	1.54
W5	28-Apr-18	760	420	8.35	<3.0	493	<1.0	<1.0	144	9.2	<1.0	153	<0.0050	<0.50	0.122	0.04	<0.0010	0.0012	256	8.39	8.44	0.3	<0.0050	<0.0050	<0.50	0.81	0.78
W5	29-May-18	368	169	8.13	7.9	225	1.7	<1.0	76	<1.0	<1.0	76	<0.0050	<0.10	0.166	0.05	<0.0010	0.0016	117	3.96	3.44	-7.0	<0.0050	<0.0050	<0.50	2.83	3.06
W5	28-Jun-18	345	180	7.89	45.7	212	3.7	<1.0	59	<1.0	<1.0	59	<0.0050	<0.50	0.130	0.03	<0.0010	<0.0010	112	3.51	3.65	2.0			<0.50	1.60	2.40
W5	28-Jul-18	551	270	8.12	3.3	351	1.2	<1.0	100	<1.0	<1.0	0	<0.50	<0.50	0.168	0.01	<0.0010	<0.0010	197	6.12	5.45	-5.7	<0.0050	<0.0050	<0.50	0.60	0.79
W5	22-Aug-18	495	264	8.11	5.1	324	1.4	<1.0	86	<1.0	<1.0	86		<0.50	0.180	0.04	<0.0010	<0.0010	185	5.54	5.33	-1.7	<0.0050	<0.0050	<0.50	1.68	
W5	21-Sep-18	629	326	8.23	<3.0	406	<1.0	<1.0	126	<1.0	<1.0	126	<0.0050	<0.50	0.181	0.03	<0.0010	<0.0010	217	7.05	6.57	-3.5	<0.0050	<0.0050	<0.50	0.82	0.84
W5	22-Oct-18	651	345	8.02	6.6	428	2.8	<1.0	121	<1.0	<1.0	121	<0.0050	<0.50	0.188	0.03	<0.0010	<0.0010	236	7.34	6.95	-2.7	<0.0050	<0.0050	<0.50	0.88	0.86
W5	16-Nov-18	683	388	8.03	4.9	464	2.2	<1.0	128	<1.0	<1.0	128	<0.0050	<0.50	0.176	0.04	<0.0010	<0.0010	253	7.84	7.81	-0.2	<0.0050	<0.0050	<0.50	0.65	0.69
W5	14-Dec-18	731	452	8.13	5.2	504	4.4	<1.0	135	<1.0	<1.0	135	<0.0050	<2.5	0.170	0.04	<0.0050	<0.0010	268	8.29	9.09	4.6	<0.0050	<0.0050	<0.50	0.71	0.62
W10	27-Jan-18	1040	605	7.88	9.9	788	2.4	<1.0	85	<1.0	<1.0	85		<2.5	0.310	0.08	<0.0050		538	12.90	12.20	-2.8		<0.0050	<0.50	1.52	0.71
W10	25-Feb-18	1130	681	7.98	5.3	827	4.7	<1.0	84	<1.0	<1.0	84	<0.0050	<2.5	0.280	0.08	0.0790	<0.0010	555	13.20	13.70	1.8	<0.0050	<0.0050	<0.50	1.66	0.63
W10	26-Mar-18	1090	687	8.00	5.7	833	1.9	<1.0	88	<1.0	<1.0	88	<0.0050	<2.5	0.240	0.08	0.0750	<0.0010	556	13.40	13.80	1.8	<0.0050	<0.0050	<0.50	<0.50	0.51
W10	28-Apr-18	1150	668	8.05	4.1	831	2.6	<1.0	97	<1.0	<1.0	97	<0.0050	<2.5	0.210	0.07	<0.0050	<0.0010	554	13.50	13.50	-0.1	<0.0050	<0.0050	<0.50	1.19	0.68
W10	28-May-18	410	194	8.02	10.9	262	2.0	<1.0	60	<1.0	<1.0	60	<0.0050	<0.10	0.152	0.06	<0.0010	<0.0010	156	4.46	3.99	-5.5	<0.0050	<0.0050	<0.50	2.30	2.57
W10	29-Jun-18	351	175	7.42	10.7	215	2.3	<1.0	59	<1.0	<1.0	59	<0.0050	<.50	0.071	0.04	<0.0010	0.0043	52	2.28	2.31	0.6	<0.0050	<0.0050	<0.50	0.71	0.80
W10	29-Jul-18	604	290	7.37	14.7	401	5.1	<1.0	41	<1.0	<1.0	41	<0.0050		0.299	0.03	<0.0010	<0.0010	3	6.60	5.94	-5.2	<0.0050	<0.0050	<0.50	<0.50	0.57
W10	21-Aug-18	531	275	7.54	18.2	354	4.1	<1.0	44	<1.0	<1.0	44		<0.50	0.241	0.05	<0.0010	<0.0010	235	5.77	5.61	-1.4	<0.0050	<0.0050	<0.50	0.73	
W10	21-Sep-18	763	395	7.87	16.0	520	2.9	<1.0	63	<1.0	<1.0	63	0.0058	<0.50	0.263	0.05	<0.0010	<0.0010	350	8.57	7.99	-3.5	<0.0050	<0.0050	<0.50	0.67	0.77
W10	23-Oct-18	851	443	7.38	16.0	591	6.5	<1.0	64	<1.0	<1.0	64	0.0082	<0.50	0.328	0.06	<0.0010	<0.0010	404	9.71	8.98	-3.9	<0.0050	<0.0050	<0.50	0.93	0.56
W10	16-Nov-18	954	569	7.36	27.3	713	7.3	<1.0	56	<1.0	<1.0	56	0.0144	<0.50	0.414	0.06	<0.0010	<0.0010	487	11.30	11.70	1.7	<0.0050	<0.0050	<0.50	<0.50	0.79
W10	14-Dec-18	1050	642	7.50	31.4	780	10.2	<1.0	63	<1.0	<1.0	63	0.0133	<2.5	0.500	0.06	<0.0050	<0.0010	528	12.30	13.10	3.4	<0.0050	<0.0050	<0.50	<0.50	0.58
W62	28-Jan-18	787	474	8.10	11.3	583	1.0	<1.0	114	<1.0	<1.0	114		<2.5	0.200	0.09	<0.0050		355	9.69	9.58	-0.6		<0.0050	<0.50	1.40	0.53
W62	25-Feb-18	850	488	8.05	8.0	582	3.2	<1.0	117	<1.0	<1.0	117	<0.0050	<2.0	0.200	0.09	<0.0050	<0.0010	347	9.58	9.85	1.4	<0.0050	<0.0050	<0.50	2.45	0.53
W62	26-Mar-18	827	513	8.16	7.7	594	<1.0	<1.0	114	<1.0	<1.0	114	0.0057	<2.5	0.190	0.09	<0.0050	<0.0010	352	9.63	10.40	3.7	<0.0050	<0.0050	<0.50	1.45	
W62	28-Apr-18	861	480	8.25	5.7	586	<1.0	<1.0	126	4.2	<1.0	131	<0.0050	<2.5	0.170	0.09	<0.0050	<0.0010	346	9.83	9.70	-0.7	<0.0050	<0.0050	<0.50	1.54	0.62
W62	28-May-18	343	161	8.21	6.6	208	1.3	<1.0	88	<1.0	<1.0	89	<0.0050	<0.10	0.082	0.08	<0.0010	0.0017	97	3.78	3.27	-7.3	<0.0050	<0.0050	<0.50	1.78	1.47
W62	29-Jun-18	300	151	7.78	<3.0	179	3.8	<1.0	53	<1.0	<1.0	53	0.0057	<0.50	0.092	0.03	<0.0010	<0.0010	94	3.02	3.08	1.1			<0.50	0.66	0.79
W62	30-Jul-18	541	271	7.86	5.9	351	1.8	<1.0	83	<1.0	<1.0	83	<0.0050	<0.50	0.164	0.02	<0.0010	<0.0010	209	6.02	5.48	-4.7	<0.0050	<0.0050	<0.50	<0.50	<0.50
W62	20-Aug-18	430	226	7.79	15.4	288	3.1	<1.0	67	<1.0	<1.0	67		<0.50	0.167	0.04	<0.0010	<0.0010	165	4.78	5.03	2.6	<0.0050	<0.0050	<0.50	0.69	
W62	21-Sep-18	641	323	7.96	21.0	425	2.8	<1.0	85	<1.0	<1.0	85	<0.050	<0.50	0.202	0.04	<0.0010	<0.0010	264	7.20	6.54	-4.8	<0.0050	<0.0050	<0.50	0.62	0.78
W62	23-Oct-18	689	359	7.83	16.4	463	3.8	<1.0	105	<1.0	<1.0	105	0.0101	<0.50	0.194	0.07	<0.0010	<0.0010	3	7.88	7.28	-4.0	<0.0050	<0.0050	<0.50	0.68	<0.50
W62	18-Nov-18	732	442	7.93	12.5	537	2.8	<1.0	106	<1.0	<1.0	106	0.0072	<0.50	0.196	0.07	<0.0010	<0.0010	302	8.43	8.95	3.0	<0.0050	<0.0050	<0.50	21.20	22.80
W62	14-Dec-18	808	472	8.09	11.8	558	4.3	<1.0	116	<1.0	<1.0	116	0.0183	<2.5	0.210	0.08	<0.0050	<0.0010	329	9.20	9.54	1.8	<0.0050	<0.0050	<0.50	<0.50	<0.50

* Due to health and safety issues the site could not be accessed.

SELWYN CHIHONG MINING LTD.

2018 Surface Water
General Parameters

Station Name	Sample Date	Lab Specific Conductance (µS/cm)	Hardness (mg/L)	Lab pH (pH Units)	Total Suspended Solids (mg/L)	Lab Total Dissolved Solids (mg/L)	Total Acidity (mg/L)	Acidity to pH 4.5 (mg/L)	Alkalinity, Bicarbonate (mg/L)	Alkalinity, Carbonate (mg/L)	Alkalinity, Hydroxide (mg/L)	Total Alkalinity (mg/L)	Ammonia (mg/L)	Chloride (mg/L)	Fluoride (mg/L)	Nitrate (mg/L)	Nitrite (mg/L)	D - Orthophosphate (mg/L)	D - Sulphate (mg/L)	Total Anion Sum (meq/L)	Total Cation Sum (meq/L)	Ion Balance	Cyanide, Weak Acid Dissociable (mg/L)	Total Cyanide (mg/L)	Thiocyanate (mg/L)	Dissolved Organic Carbon (mg/L)	Total Organic Carbon (mg/L)
W56	28-Jan-18													*													
W56	25-Feb-18													*													
W56	26-Mar-18													*													
W56	28-Apr-18													*													
W56	28-May-18	250	118	8.26	20.2	145	1.1	<1.0	82	<1.0	<1.0	82	<0.00050	<0.10	0.063	0.08	<0.0010	0.0068	51	2.72	2.40	-6.2	<0.0050	<0.0050	<0.50	1.60	1.40
W56	27-Jun-18	232	112	8.16	3.5	130	2.5	<1.0	60	<1.0	<1.0	60	0.0066	<0.50	0.071	0.04	<0.0010	0.0039	52	2.29	2.28	-0.3	<0.0050	<0.0050	<0.50	0.69	1.15
W56	28-Jul-18	357	170	8.19	<3.0	214	<1.0	<1.0	97	<1.0	<1.0	97	<0.0050	<0.50	0.092	0.01	<0.0010	0.0043	94	3.90	3.45	-6.1	<0.0050	<0.0050	<0.50	<0.50	0.61
W56	21-Aug-18	300	149	8.19	<3.0179	<1.0	<1.0	<1.0	86	<1.0	<1.0	86		<0.50	0.085	0.02	<0.0010	0.0037	73	3.24	3.02	-3.5	<0.0050	<0.0050	<0.50	0.66	
W56	21-Sep-18	368	184	8.20	<3.0	225	<1.0	<1.0	104	<1.0	<1.0	104	<0.0050	<0.050	<0.50	0.09	<0.0010	0.0041	96	4.08	3.72	-4.6	<0.0050	<0.0050	<0.50	0.70	<0.50
W56	23-Oct-18													*													
W56	16-Nov-18													*													
W56	14-Dec-18													*													
W8	28-Jan-18													*													
W8	25-Feb-18													*													
W8	26-Mar-18													*													
W8	28-Apr-18													*													
W8	28-May-18	605	317	8.45	4.8	383	<1.0	<1.0	210	18.2	<1.0	228	0.0506	<0.10	0.299	0.02	<0.0010	<0.0010	129	7.26	6.45	-5.9	<0.0050	<0.0050	<0.50	<0.5	<0.5
W8	27-Jun-18	595	326	8.30	<3.0	359	<1.0	<1.0	197	8.2	<1.0	205	0.0365	<0.50	0.270	0.01	<0.0010	<0.0010	115	6.51	6.64	1.0	<0.0050	<0.0050	<0.50	<0.5	<0.5
W8	28-Jul-18	571	295	8.20	<3.0	355	1.4	<1.0	225	<1.0	<1.0	225	0.0399	<0.50	0.296	0.01	<0.0010	<0.0010	110	6.81	5.99	-6.4	<0.0050	<0.0050	<0.50	<0.5	<0.5
W8	20-Aug-18	571	319	8.04	<3.0	365	3.4	<1.0	208	<1.0	<1.0	208		<0.50	0.270	0.01	<0.0010	<0.0010	122	6.70	6.50	-1.5	<0.0050	<0.0050	<0.50	<0.50	
W8	21-Sep-18													*													
W8	23-Oct-18													*													
W8	16-Nov-18													*													
W8	14-Dec-18													*													

* Due to health and safety issues the site could not be accessed.

SELWYN CHIHONG MINING LTD.

2018 Surface Water
Total Metals

Station Name	Sample Date	Aluminum (Al) (mg/L)	Antimony (Sb) (mg/L)	Arsenic (As) (mg/L)	Barium (Ba) (mg/L)	Beryllium (Be) (mg/L)	Bismuth (Bi) (mg/L)	Boron (B) (mg/L)	Cadmium (Cd) (mg/L)	Calcium (Ca) (mg/L)	Chromium (Cr) (mg/L)	Cobalt (Co) (mg/L)	Copper (Cu) (mg/L)	Iron (Fe) (mg/L)	Lead (Pb) (mg/L)	Lithium (Li) (mg/L)	Magnesium (Mg) (mg/L)	Manganese (Mn) (mg/L)	Mercury (Hg) (mg/L)	Molybdenum (Mo) (mg/L)	Nickel (Ni) (mg/L)	Phosphorus (P) (mg/L)	Potassium (K) (mg/L)	Selenium (Se) (mg/L)	Silicon (Si) (mg/L)	Silver (Ag) (mg/L)	Sodium (Na) (mg/L)	Strontium (Sr) (mg/L)	Sulphur (S) (mg/L)	Thallium (Tl) (mg/L)	Tin (Sn) (mg/L)	Titanium (Ti) (mg/L)	Uranium (U) (mg/L)	Vanadium (V) (mg/L)	Zinc (Zn) (mg/L)
W3	27-Jan-18	0.197	0.0003	0.0002	0.1270	<0.00010	<0.000050	<0.010	0.0049	66	<0.00010	0.00028	0.00257	0.254	<0.000050	0.0062	23	0.1340	<0.0000050	0.00243	0.0538	<0.050	0.68	0.00240	3.33	<0.000010	0.696	0.218	57	0.000021	<0.00010	<0.00030	0.0029	<0.00050	0.365
W3	25-Feb-18	0.259	0.0003	0.0002	0.1300	<0.000020	<0.000050	<0.010	0.0053	67	0.00017	0.00289	0.00184	0.245	0.00007	0.0094	26	0.1440	<0.0000050	0.00230	0.0557	<0.050	0.73	0.00249	3.35	<0.000010	0.781	0.225	58	0.000023	<0.00010	<0.00030	0.0026	<0.00050	0.477
W3	26-Mar-18	4.770	0.0007	0.0032	0.3290	0.00040	<0.000050	<0.010	0.0126	70	0.00202	0.01480	0.02420	5.400	0.00335	0.0056	27	0.7400	<0.0000050	0.00326	0.0963	0.219	0.93	0.00269	5.33	0.000062	0.735	0.240	57	0.000079	<0.00010	0.00483	0.0076	0.0108	1.050
W3	28-Apr-18	0.179	0.0004	<0.00030	0.1310	<0.000020	<0.000050	<0.010	0.0053	68	0.00011	0.00311	0.00161	0.203	<0.000050	0.0050	27	0.1610	<0.0000050	0.00242	0.0540	<0.050	0.77	0.00222	3.47	<0.000010	0.736	0.221	58	0.000023	<0.00010	<0.00030	0.0027	<0.00050	0.336
W3	28-May-18	0.449	0.0004	0.0006	0.0983	0.00005	<0.000050	<0.010	0.0223	29	0.00030	0.00175	0.00428	0.564	0.00087	0.0033	11	0.8680	0.0000088	0.00159	0.0290	0.052	0.76	0.00098	2.43	0.000019	0.322	0.098	23	0.000003	<0.00010	0.00153	0.0012	0.0025	0.180
W3	29-Jun-18	0.748	0.0004	0.0060	0.1060	0.00010	<0.000050	<0.010	0.0031	30	0.00044	0.00284	0.00789	0.493	0.00072	0.0046	12	0.1140	0.0000089	0.00164	0.0396	<0.050	0.47	0.00112	2.81	0.000015	0.394	0.106	25	0.000024	<0.00010	0.00184	0.0013	0.0030	0.213
W3	30-Jul-18	0.191	0.0003	0.0003	0.1020	<0.000020	<0.000050	<0.010	0.0033	48	0.00011	0.00242	0.00200	0.197	0.00011	0.0055	18	0.0946	<0.0000050	0.00203	0.0404	<0.050	0.48	0.00159	2.45	<0.000010	0.449	0.168	40	0.000021	<0.00010	<0.00030	0.0019	0.0005	0.167
W3	23-Aug-18	0.615	0.0003	0.0004	0.1070	0.00008	<0.000050	<0.010	0.0040	44	0.00043	0.00336	0.00500	0.377	0.00029	0.0053	18	0.1480	<0.0000050	0.00177	0.0502	<0.050	0.48	0.00173	2.88	<0.000010	0.454	0.156	40	0.000019	<0.00010	0.00078	0.0018	0.0009	0.273
W3	21-Sep-18	0.299	0.0003	0.0003	0.1120	0.00004	<0.000050	<0.010	0.0038	58	<0.00010	0.00033	0.00257	0.299	0.00011	0.0050	21	0.1500	<0.00000050	0.00237	0.0484	<0.050	0.51	0.00023	2.99	<0.000010	0.529	0.198	47	0.000017	<0.00010	<0.00030	0.0023	0.0006	0.283
W3	22-Oct-18	0.978	0.0003	0.0003	0.0706	0.00011	<0.000050	<0.010	0.0048	58	0.00016	0.00295	0.00300	0.418	0.00012	0.0047	21	0.1260	<0.0000050	0.00214	0.0494	<0.050	0.53	0.00236	3.10	<0.000010	0.573	0.184	46	0.000019	<0.00010	<0.00030	0.0028	0.0007	0.308
W3	16-Nov-18	0.228	0.0003	0.0002	0.1140	<0.000020	<0.000050	<0.010	0.0041	60	<0.00010	0.00253	0.00184	0.147	0.00007	0.0049	24	0.1190	<0.0000050	0.00218	0.0518	<0.050	0.62	0.00233	3.31	<0.000010	0.685	0.197	50	0.000023	<0.00010	<0.00030	0.0028	<0.00050	0.371
W3	15-Dec-18	0.393	0.0003	0.0003	0.1150	0.00003	<0.000050	<0.010	0.0045	61	0.00013	0.00289	0.00248	0.386	0.00007	0.0045	25	0.1230	<0.0000050	0.00226	0.0525	<0.050	0.63	0.00288	3.20	<0.000010	0.608	0.199	53	0.000021	<0.00010	<0.00030	0.0030	<0.00050	0.347
W5	27-Jan-18	0.118	0.0003	0.0001	0.0789	<0.00010	<0.000050	<0.010	0.0033	98	<0.00010	0.00096	0.00125	0.064	0.00006	0.0054	33	0.0412	<0.0000050	0.00179	0.0553	<0.050	0.60	0.00183	2.72	<0.000010	0.541	0.281	98	0.000014	<0.00010	<0.00030	0.0058	<0.0050	0.380
W5	25-Feb-18	0.156	0.0003	0.0002	0.0795	<0.00010	<0.000050	<0.010	0.0032	101	<0.00010	0.00104	0.00137	0.102	0.00013	0.0044	38	0.0487	<0.0000050	0.00185	0.0546	<0.050	0.62	0.00178	2.67	<0.000010	0.558	0.290	94	0.000014	<0.00010	<0.00030	0.0062	<0.00050	0.364
W5	26-Mar-18	0.071	0.0003	0.0002	0.0796	<0.000020	<0.000050	<0.010	0.0126	105	<0.00010	0.00068	0.00082	0.041	<0.000050	0.0045	41	0.0029	<0.0000050	0.00184	0.0517	<0.050	0.62	0.00163	2.70	<0.000010	0.549	0.298	94	0.000001	<0.00010	<0.00030	0.0060	<0.00050	0.356
W5	28-Apr-18	0.049	0.0030	<0.00030	0.0793	<0.000020	<0.000050	<0.010	0.0029	106	<0.00010	0.00064	0.00080	0.035	<0.000050	0.0047	42	0.0306	<0.0000050	0.00193	0.0512	<0.050	0.72	0.00150	2.73	<0.000010	0.606	0.291	98	0.000011	<0.00010	<0.00030	0.0061	<0.00050	0.333
W5	28-May-18	0.366	0.0002	0.0004	0.0793	0.00005	<0.000050	<0.010	0.0023	46	0.00003	0.00268	0.00345	0.380	0.00076	0.0040	17	0.1340	0.0000111	0.00115	0.0431	<0.050	0.68	0.00111	2.34	0.000013	0.318	0.142	42	0.000021	<0.00010	0.00097	0.0022	0.0015	0.269
W5	28-Jun-18	1.420	0.0006	0.0017	0.2560	0.00019	<0.000050	<0.010	0.0036	40	0.00131	0.00570	0.01290	1.560	0.00296	0.0059	18	0.2550	0.0000209	0.00167	0.0610	0.110	0.70	0.00128	3.15	0.000065	0.341	0.138	39	0.000050	<0.00010	0.00546	0.0024	0.0107	0.384
W5	28-Jul-18	0.265	0.0002	0.0001	0.0688	0.00004	<0.000050	<0.010	0.0038	65	<0.00010	0.00504	0.00319	0.169	0.00009	0.0062	26	0.2170	<0.0000050	0.00135	0.0672	<0.050	0.47	0.00142	2.22	<0.000010	0.402	0.221	65	0.000020	<0.00010	<0.00030	0.0032	<0.00050	0.316
W5	22-Aug-18	1.260	0.0003	0.0006	0.1370	0.00018	<0.000050	<0.010	0.0056	61	0.00048	0.00734	0.01150	0.198	0.00166	0.0065	26	0.3440	<0.0000050	0.00126	0.0860	<0.050	0.57	0.00177	2.83	0.000013	0.424	0.206	64	0.000033	<0.00100	0.00131	0.0003	0.0016	0.551
W5	21-Sep-18	0.256	0.0000	0.0002	0.8380	0.00003	<0.000050	<0.010	0.0044	90	<0.00010	0.00588	0.00283	0.174	0.00008	0.0057	33	0.2530	<0.0000050	0.00171	0.0774	<0.050	0.58	0.00209	2.75	<0.000010	0.502	0.259	80	0.000019	<0.00010	<0.00030	0.0038	<0.00050	0.458
W5	22-Oct-18	0.978	0.0003	0.0003	0.0706	0.00011	<0.000050	<0.010	0.0048	87	0.00028	0.00626	0.00848	1.490	0.00025	0.0055	34	0.1880	<0.0000050	0.00149	0.0798	<0.050	0.55	0.02060	2.77	<0.000010	0.562	0.244	81	0.000021	<0.00010	<0.00030	0.0057	0.0052	0.603
W5	16-Nov-18	0.549	0.0003	0.0015	0.0712	0.00006	<0.000050	<0.010	0.0037	91	0.00025	0.04470	0.00427	0.928	0.00128	0.0054	35	0.1400	<0.0000050	0.00165	0.0729	<0.050	0.58	0.00185	2.83	<0.000010	0.520	0.273	87	0.000020	<0.00010	<0.00030	0.0059	<0.00050	0.535
W5	14-Dec-18	0.443	0.0003	0.0002	0.0709	0.00004	<0.000050	<0.010	0.0039	94	0.00010	0.00458	0.00317	0.876	0.00007	0.0051	37	0.1280	<0.0000050	0.00158	0.0735	<0.050	0.59	0.00239	2.73	<0.000010	0.521	0.269	99	0.000018	<0.00010	<0.00030	0.0058	<0.00050	0.519
W10	27-Jan-18	1.830	0.0004	0.0026	0.0683	0.00027	<0.000050	<0.010	0.0156	116	0.00026	0.01800	0.01920	0.555	0.00021	0.0081	68	0.8080	<0.0000050	0.00157	0.2320	<0.050	0.72	0.00189	3.31	<0.000010	0.710	0.488	202	0.000052	<0.00010	<0.00030	0.0083	<0.00050	1.720
W10	25-Feb-18	1.860	0.0004	0.0004	0.0728	0.00030	<0.000050	<0.010	0.0149	125	0.00038	0.01730	0.02110	0.701	0.00029	0.0066	81	0.8370	<0.0000050	0.00166	0.2380	<0.050	0.72	0.00198	3.25	<0.000010	0.741	0.521	204	0.000044	<0.00010	<0.00030	0.0089	<0.00050	1.590
W10	26-Mar-18	1.100	0.0004	0.0003	0.0660	0.00019	<0.000050	<0.010	0.0132	132	<0.00030	0.01400	0.01290	0.297	0.00015	0.0065	88	0.6560	<0.0000050	0.00160	0.2240	<0.050	0.77	0.00188	3.18	<0.000010	0.753	0.541	203	0.000037	<0.00010	<0.00030	0.0084	<0.00050	1.550
W10	28-Apr-18	0.821	0.0004	<0.00030	0.0620	0.00016	<0.000050	<0.010	0.0128	135	0.00012	0.01180	0.00993	0.146	0.00011	0.0071	92	0.5910	<0.0000050	0.00155	0.2190	<0.050	0.84	0.00164	3.19	<0.000010	0.796	0.539	206	0.000031	<0.00010	<0.00030	0.0084	<0.00050	1.450
W10	28-May-18	0.910	0.0002	0.0003	0.0739	0.00013	<0.000050	<0.010	0.0055	47	0.00029	0.01320	0.00803	1.560	0.00117	0.0044	23	0.4480	<0.0000050	0.00105	0.0949	<0.050	0.71	0.00127	2.49	0.000010	0.336	0.173	47	0.000040	<0.00010	<0.0012	0.0024	<0.00050	0.729
W10	29-Jun-18	1.560	0.0002	0.0003	0.0797	0.00024	<0.000050	<0.010	0.0073	36	0.00027	0.01750	0.02120	1.430	0.00120	0.0069	19	0.5780	<0.0000050	0.00084	0.1070	<0.050	0.45	0.00107	2.40	<0.000010	0.310	0.152	48	0.000039	<0.00010	0.00039	0.0022	<0.00050	0.732
W10	29-Jul-18	2.230	0.0003	0.0002	0.0623	0.00032	<0.000050	<0.010	0.0104	59	0.00054	0.03410	0.03430	3.690	0.00025	0.0091	34	0.9740	<0.0000050	0.00105	0.1820	<0.050	0.48	0.00130	2.55	<0.000010	0.406	0.274	89	0.000620	<0.00010	<0.00030	0.0042	<0.00050	1.180
W10	21-Aug-18	3.100	0.0003	0.0004	0.0956	0.00033	<0.000050	<0.010	0.0011	56	0.00810	0.02690	0.03340	2.430	0.00060	0.0089	32	0.8530	<0.0000050	0.00108	0.1710	<0.050	0.51	0.00176	3.07	<0.000010	0.430	0.233	85	0.000071	<0.00010	<0.00030	0.0036	<0.00050	1.230
W10	21-Sep-18	3.030	0.0004	0.0005	0.0802	0.00042	<0.000050	<0.010	0.0135	91	0.00112	0.02310	0.04010	1.940	0.00042	0.0084	51	0.9960	<0.0000050	0.00142	0.1870	<0.050	0.63	0.00193	3.32	<0.000010	0.530	0.356	133	0.000064	<0.00010	<0.00030	0.0053	<0.00050	1.550
W10	23-Oct-18	3.650	0.0003	0.0003	0.0712	0.00036	<0.000050	<0.010	0.0161	94	0.00007	0.03530	0.03590	3.890	0.00020	0.0079	55	1.1000	<0.0000050	0.00145	0.2280	<0.050	0.63	0.00197	3.24	<0.000010	0.618	0.365	144	0.000087	<0.00010	<0.00030	0.0076	<0.00050	1.910
W10	16-Nov-18	3.680	0.0004	0.0003	0.0697	0.00036	<0.000050	<0.010	0.0153	107	0.00560	0.05400	0.02930	8.470	0.00026	0.0093	67	1.4000	<0.0000050	0.00148	0.2910	<0.050	0.69	0.00201	3.38	<0.00010	0.674	0.443	169	0.000100	<0.00010	<0.00030	0.0089	<0.00050	2.330
W10	14-Dec-18	3.280	0.0004	0.0004	0.0701	0.00032	<0.000050	<0.010	0.0169	127	0.00046	0.05890	0.02600	9.600	0.00019	0.0091	79	1.4300	<0.0000050	0.00165	0.3190	<0.050	0.75	0.00242	3.46	<0.000010	0.738	0.517	204	0.000090	<0.00010	<0.00030	0.0092	<0.00050	2.390
W62	28-Jan-18	2.630	0.0008	0.0005	0.1200	0.00500	<0.000050	<0.010	0.0095	93	0.00067	0.01890	0.03360	1.830	0.00092	0.0040	44	0.9140	<0.0000050	0.00256	0.1560	<0.050	0.69	0.00221	2.90	<0.000010	0.446	0.289	125	0.000107	<0.00010	<0.00030	0.0160	<0.00050	1.440
W62	25-Feb-18	1.980	0.0007	0.0005	0.1130	0.00036	<0.000050	<0.010	0.0075	96	0.00053	0.01960	0.02750	1.130	0.00041	0.0025	52	0.9970	<0.0000050	0.00262	0.1510	<0.050	0.68	0.00236	2.64	<0.000010	0.457	0.284	127	0.000089	<0.00010	<<0.00030	0.0147	<0.00050	1.040
W62	26-Mar-18	1.410	0.0008	0.0003	0.1050	0.00031	<0.000050	<0.010	0.0060	103	0.00053	0.01600	0.02000	0.817	0.00037	0.0026	50	0.7790	<0.0000050	0.00251	0.1310	<0.050	0.68	0.00218	2.56	<0.000010	0.423	0.294	121	0.000075	<0.00010	<<0.00030	0.0143	<0.00050	0.907
W62	28-Apr-18	1.220	0.0008	0.0003	0.1030	0.00027	<0.000050	<0.010	0.0054	106	0.00039	0.01520	0.01890	0.519	0.00028	0.0028	55	0.8040	<0.0000050	0.00257	0.1240	<0.050	0.75	0.00222	2.62	<0.000010	0.480	0.286	125	0.000059	<0.00010	<0.00030	0.0148	<0.00050	0.702
W62	28-May-18	0.429	0.0003	0.0003	0.1130	0.00008	<0.000050	<0.010	0.0024	45	0.00021	0.00368	0.00521	0.355	0.00306	0.0017	16	0.2180	<0.0000050	0.00138	0.0379	<0.050	0.63	0.00142	2.17	<0.000010	0.257	0.111	34	0.000038	<0.000010	0.00051	0.0033	0.0007	0.385
W62	28-Jun-18	0.696	0.0003	0.0003	0.0962	0.00015	<0.000050	<0.010	0.0026	33	0.00024	0.00757	0.01060	0.342	0.00225	0.0031	15	0.4370	<0.0000050	0.00110	0.0510	<0.050	0.40	0.00340	2.20	<0.000010	0.259	0.110	33	0.000037	<0.00010	0.00036	0.0023	0.0006	0.337
W62	30-Jul-18	1.450	0.0005	0.0002	0.1010	0.00033	<0.000050	<0.010	0.0045	59	0.00103	0.01260	0.02070	1.000	0.00041	0.0041	28	0.6880	<0.0000050	0.00166	0.0901	<0.050	0.44	0.00177	2.34	<0.000010	0.333	0.199	67	0.000067	<0.00010	<0.00030	0.0062	<0.00050	0.602
W62	20-Aug-19	3.140	0.0004	0.0004	0.2060	0.00031	<0.000050	<0.010	0.0065	51	0.00107	0.01520	0.02790	1.560	0.00162	0.0048	23	0.6250	<0.0000050	0.00138	0.0992	<0.050	0.48	0.00224	2.69	<0.000010	0.322	0.152	59	0.000093	<0.00010	<0.00030	0.0046	0.0001	0.840
W62	21-Sep-18	3.340	0.0006	0.0005	0.1140	0.00056	<0.000050	<0.010	0.0087	79	0.00239	0.02150	0.04760	3.670	0.00084	0.0039	37	1.0200	<0.0000050	0.00192	0.1360	0.071	0.55	0.00234	2.78	<0.000010	0.363	0.225	96	0.000088	<0.00010	<0.00030	0.0089	<0.00050	1.350
W62	23-Oct-18	2.970	0.0005	0.0003	0.1060	0.00036	<0.000050	<0.010	0.0110	82	0.00118	0.02060	0.03230	1.950	0.00036	0.0035	41	0.8870	<0.0000050	0.00203	0.1530	<0.050	0.62	0.00252	2.78	<0.000010	0.425	0.226	99	0.000115	<0.00010	<0.00030	0.0110	<0.00050	1.690
W62	18-Nov-18	2.680	0.0005	0.0003	0.1040	0.00034	<0.000050	<0.010	0.0093	86	0.00088	0.02070	0.02920	1.610	0.00034	0.0034	43	0.9230	<0.0000050	0.00219	0.1600	<0.050	0.66	0.00236	2.82	<0.000010	0.415	0.205	104	0.000127	<0.00010	<0.00030	0.0121	<0.00050	1.600
W62	14-Dec-18	2.150	0.0006	0.0003	0.1040	0.00032	<0.000050	<0.010	0.0097	96	0.00067	0.02030	0.02520	1.450	0.00031	0.0032	45	0.8600	<0.0000050	0.00213	0.1590	<0.050	0.65	0.00256	2.60	<0.000010	0.407	0.243	113	0.000119	<0.00010	<0.00030	0.0133	<0.00050	1.450

* Due to health and safety issues the site could not be accessed.

SELWYN CHIHONG MINING LTD.

2018 Surface Water
Total Metals

Station Name	Sample Date	Aluminum (Al) (mg/L)	Antimony (Sb) (mg/L)	Arsenic (As) (mg/L)	Barium (Ba) (mg/L)	Beryllium (Be) (mg/L)	Bismuth (Bi) (mg/L)	Boron (B) (mg/L)	Cadmium (Cd) (mg/L)	Calcium (Ca) (mg/L)	Chromium (Cr) (mg/L)	Cobalt (Co) (mg/L)	Copper (Cu) (mg/L)	Iron (Fe) (mg/L)	Lead (Pb) (mg/L)	Lithium (Li) (mg/L)	Magnesium (Mg) (mg/L)	Manganese (Mn) (mg/L)	Mercury (Hg) (mg/L)	Molybdenum (Mo) (mg/L)	Nickel (Ni) (mg/L)	Phosphorus (P) (mg/L)	Potassium (K) (mg/L)	Selenium (Se) (mg/L)	Silicon (Si) (mg/L)	Silver (Ag) (mg/L)	Sodium (Na) (mg/L)	Strontium (Sr) (mg/L)	Sulphur (S) (mg/L)	Thallium (Tl) (mg/L)	Tin (Sn) (mg/L)	Titanium (Ti) (mg/L)	Uranium (U) (mg/L)	Vanadium (V) (mg/L)	Zinc (Zn) (mg/L)
W56	28-Jan-18																		*																
W56	25-Feb-18																		*																
W56	26-Mar-18																		*																
W56	28-Apr-18																		*																
W56	28-May-18	0.356	0.0004	0.0006	0.1710	0.00003	<0.000050	<0.010	0.0026	35	0.00032	0.00068	0.00282	0.405	0.01420	<0.0010	9	0.0386	0.0000075	0.00166	0.0201	0.054	0.62	0.00141	2.40	0.000018	0.210	0.073	18	0.000038	<0.00010	<0.0015	0.0020	0.0023	0.409
W56	27-Jun-18	0.236	0.0003	0.0020	0.1230	0.00003	<0.000050	<0.010	0.0020	29	<0.00010	0.00288	0.00257	0.075	0.00181	0.0011	9	0.1830	<0.0000050	0.00133	0.0256	<0.050	0.45	0.00144	2.10	<0.000010	0.198	0.071	17	0.000023	<0.00010	0.00032	0.0014	0.0005	0.264
W56	28-Jul-18	0.088	0.0004	0.0002	0.1470		<0.000050	<0.010	0.0024	47	0.00011	0.00061	0.00106	0.032	0.00070	0.0014	13	0.0672	<0.0000050	0.00181	0.0237	0.480	0.48	0.00193	2.26	<0.000010	0.227	0.118	31	0.000031	<0.00010	<0.00030	0.0027	<0.00050	0.261
W56	21-Aug-18	0.203	0.0003	0.0002	0.1510	0.00002	<0.000050	<0.010	0.0026	41	0.00013	0.00150	0.00193	0.066	0.00152	0.0013	11	0.1070	<0.0000050	0.00158	0.0256	<0.050	0.49	0.00207	2.44	<0.000010	0.233	0.954	26	0.000030	<0.00010	<0.00030	0.0021	0.0007	0.289
W56	21-Sep-18	0.109	0.0003	0.0002	0.1500	<0.000020	<0.000050	<0.010	0.0030	57	<0.00010	0.00063	0.00115	0.066	0.00205	0.0010	14	0.0553	<0.0000050	0.00199	0.0257	<0.50	0.54	0.00276	2.47	<0.000010	0.243	0.117	34	0.000024	<0.00010	<0.00030	0.0031	0.0006	0.456
W56	23-Oct-18																		*																
W56	16-Nov-18																		*																
W56	14-Dec-18																		*																
W8	28-Jan-18																		*																
W8	25-Feb-18																		*																
W8	26-Mar-18																		*																
W8	28-Apr-18																		*																
W8	28-May-18	<0.0030	0.0074	0.0017	0.0194	0.00006	<0.000050	<0.010	0.0001	97	<0.00010	0.00112	<0.00050	0.157	0.00008	0.0024	23	0.1680	<0.0000050	0.00751	0.0512	<0.050	1.49	<0.000050	2.84	<0.00010	0.399	0.222	46	0.000085	<0.00010	<0.000030	0.0481	<0.00050	1.290
W8	27-Jun-18	<0.0030	0.0078	0.0019	0.0167	0.00005	<0.000050	<0.010	0.0010	90	<0.00010	0.00152	<0.00050	0.119	0.00247	0.0016	21	0.1900	<0.0000050	0.00602	0.0720	<0.050	1.33	<0.000050	2.78	<0.000010	0.354	0.185	41	0.000120	<0.00010	<0.00030	0.0417	<0.00050	1.720
W8	28-Jul-18	<0.0030	0.0066	0.0017	0.0154	0.00004	<0.000050	<0.010	0.0007	88	<0.00010	0.00116	<0.00050	0.119	0.00193	0.0016	19	0.1840	<0.0000050	0.00609	0.0560	<0.050	1.22	<0.000050	2.54	<0.000010	0.315	0.177	38	0.000099	<0.00010	<0.00030	0.0424	<0.00050	1.290
W8	20-Aug-18	<0.0030	0.0080	0.0021	0.0174	0.00006	<0.000050	<0.010	0.0008	91	<0.00010	0.00141	<0.00050	0.185	0.00318	0.0016	21	0.1820	<0.0000050	0.00680	0.0624	<0.050	1.31	<0.000050	2.67	<0.000010	0.320	0.186	43	0.000097	<0.00010	<0.00030	0.0398	<0.00050	1.540
W8	21-Sep-18																		*																
W8	23-Oct-18																		*																
W8	16-Nov-18																		*																
W8	14-Dec-18																		*																

* Due to health and safety issues the site could not be accessed.

SELWYN CHIHONG MINING LTD.

2018 Surface Water
Dissolved Metals

Station Name	Sample Date	Aluminum (Al) (mg/L)	Antimony (Sb) (mg/L)	Arsenic (As) (mg/L)	Barium (Ba) (mg/L)	Beryllium (Be) (mg/L)	Bismuth (Bi) (mg/L)	Boron (B) (mg/L)	Cadmium (Cd) (mg/L)	Calcium (Ca) (mg/L)	Chromium (Cr) (mg/L)	Cobalt (Co) (mg/L)	Copper (Cu) (mg/L)	Iron (Fe) (mg/L)	Lead (Pb) (mg/L)	Lithium (Li) (mg/L)	Magnesium (Mg) (mg/L)	Manganese (Mn) (mg/L)	Mercury (Hg) (mg/L)	Molybdenum (Mo) (mg/L)	Nickel (Ni) (mg/L)	Phosphorus (P) (mg/L)	Potassium (K) (mg/L)	Selenium (Se) (mg/L)	Silicon (Si) (mg/L)	Silver (Ag) (mg/L)	Sodium (Na) (mg/L)	Strontium (Sr) (mg/L)	Sulphur (S) (mg/L)	Thallium (Tl) (mg/L)	Tin (Sn) (mg/L)	Titanium (Ti) (mg/L)	Uranium (U) (mg/L)	Vanadium (V) (mg/L)	Zinc (Zn) (mg/L)
W3	27-Jan-18	0.0151	0.0003	<0.00010	0.1260	<0.00010	<0.000050	<0.010	0.0047	68	<0.000010	0.00243	0.00093	<0.010	<0.000050	0.0048	26	0.1250	<0.0000050	0.00225	0.0511	<0.050	0.64	0.00253	3.19	<0.000010	0.662	0.226	57	0.000021	<0.00010	<0.00030	0.0023	<0.00050	0.361
W3	25-Feb-18	0.0159	0.0003	0.0002	0.1430	<0.000020	<0.000050	0.010	0.0060	78	0.00012	0.00323	0.00124	<0.010	<0.000050	0.0143	30	0.1570	<0.0000050	0.00238	0.0609	<0.050	0.79	0.00286	3.70	<0.000010	0.984	0.260	64	0.000024	<0.00010	<0.00030	0.0024	<0.00050	0.550
W3	26-Mar-18	0.0158	0.0003	0.0001	0.1400	<0.00020	<0.000050	0.010	0.0053	74	<0.00010	0.00296	0.00099	<0.010	<0.000050	0.0051	28	0.1470	<0.0000050	0.00237	0.0571	<0.050	0.80	0.00208	3.35	<0.000010	0.769	0.246	56	0.000023	<0.00010	<0.00030	0.0025	<0.00050	0.385
W3	28-Apr-18	0.0115	0.0002	0.0001	0.1270	<0.00020	<0.000050	<0.010	0.0050	67	<0.00010	0.00285	0.00110	<0.010	<0.000050	0.0046	26	0.1560	<0.0000050	0.00227	0.0524	<0.050	0.76	0.00197	3.17	<0.000010	0.695	0.221	54	0.000022	<0.00010	<0.00030	0.0024	<0.00050	0.332
W3	28-May-18	0.0887	0.0003	<0.00030	0.0753	<0.000020	<0.000050	<0.010	0.0016	27	<0.00010	0.00121	0.00230	0.122	0.000088	0.0031	10	0.0656	<0.0000050	0.00143	0.0257	<0.050	0.70	0.00102	2.01	<0.000010	0.329	0.096	20	0.000013	<0.00010	<0.00030	0.0011	<0.00050	0.128
W3	29-Jun-18	0.1510	0.0003	0.0002	0.0925	0.0000	<0.000050	<0.010	0.0027	32	<0.00010	0.00248	0.00334	0.057	<0.000050	0.0046	13	0.1020	<0.0000050	0.00159	0.0016	<0.0050	0.40	0.00107	2.56	<0.000010	0.389	0.114	23	0.000012	<0.00010	<0.00030	0.0010	<0.00050	0.169
W3	30-Jul-18	0.0668	0.0003	0.0002	0.1100	<0.000020	<0.000050	<0.010	0.0031	51	<0.00010	0.00233	0.00110	0.021	<0.000050	0.0058	19	0.0921	<0.0000050	0.00193	0.0402	<0.0050	0.58	0.00164	2.76	<0.000010	0.514	0.176	42	0.000017	0.00178	<0.00030	0.0019	<0.00050	0.134
W3	23-Aug-18	0.0707	0.0003	0.0001	0.1010	<0.000020	<0.000050	<0.010	0.0034	47	<0.00010	0.00312	0.00178	0.017	<0.000050	0.0054	18	0.1360	<0.0000050	0.00163	0.0479	<0.050	0.49	0.00162	2.75	<0.000010	0.463	0.158	37	0.000015	<0.00010	<0.00030	0.0016	<0.00050	0.188
W3	21-Sep-18	0.0315	0.0003	0.0002	0.1090	<0.000020	<0.000050	<0.010	0.0034	53	<0.00010	0.00315	0.00110	0.011	<0.000050	0.0047	20	0.4600	<0.0000050	0.00206	0.0485	<0.050	0.52	0.00227	2.89	<0.000010	0.512	0.170	45	0.000013	<0.00010	<0.00030	0.0022	<0.00050	0.222
W3	22-Oct-18	0.0287	0.0003	0.0001	0.1120	<0.000020	<0.000050	<0.010	0.0034	58	<0.00010	0.00262	0.00089	<0.010	<0.000050	0.0046	21	0.1160	<0.0000050	0.00148	0.0683	<0.050	0.59	0.00195	2.35	<0.00010	0.506	0.263	78	0.000018	<0.00010	<0.00030	0.0045	<0.00050	0.322
W3	16-Nov-18	0.0112	0.0003	0.0001	0.1190	<0.000020	<0.000050	<0.010	0.0044	64	<0.00010	0.00241	0.00105	<0.0010	<0.000050	0.0054	25	0.1050	<0.0000050	0.00224	0.0526	<0.050	0.64	0.00262	3.21	<0.000010	0.707	0.222	52	0.000022	<0.00010	<0.00030	0.0023	<0.00050	0.365
W3	15-Dec-18	0.0154	0.0003	0.0001	0.1210	<0.000020	<0.000050	<0.010	0.0044	69	<0.00010	0.00286	0.00096	<0.010	<0.000050	0.0051	28	0.1300	<0.0000050	0.00228	0.0547	<0.050	0.69	0.00254	3.29	<0.000010	0.650	0.230	50	0.000019	<0.00010	<0.00030	0.0023	<0.00050	0.340
W5	27-Jan-18	0.0213	0.0003	<0.00010	0.0819	<0.00010	<0.000050	<0.010	0.0032	102	<0.00010	0.00100	0.00084	<0.010	<0.000050	0.0047	40	0.0392	<0.0000050	0.00176	0.0555	<0.050	0.58	0.00188	2.64	<0.000010	0.555	0.299	97	0.000012	<0.00010	<0.00030	0.0054	<0.00050	0.391
W5	25-Feb-18	0.0132	0.0003	<0.00010	0.0818	<0.000020	<0.000050	<0.010	0.0034	113	<0.00010	0.00100	0.00076	<0.010	<0.000050	0.0048	43	0.0450	<0.0000050	0.00182	0.0578	<0.050	0.63	0.00200	2.82	<0.000010	0.609	0.317	101	0.000012	<0.00010	<0.00030	0.0062	<0.00050	0.407
W5	26-Mar-18	0.0142	0.0003	0.0001	0.0845	<0.000020	<0.000050	<0.010	0.0030	116	<0.00010	0.00070	0.00059	<0.010	<0.000050	0.0047	42	0.0291	<0.0000050	0.00196	0.0534	<0.050	0.66	0.00142	2.69	<0.000010	0.580	0.325	91	<0.0000013	<0.00010	<0.00030	0.0063	<0.00050	0.358
W5	28-Apr-18	0.0140	0.0002	0.0001	0.0749	<0.000020	<0.000050	<0.010	0.0027	103	<0.00010	0.00059	0.00062	<0.010	<0.000050	0.0046	40	0.0298	<0.0000050	0.00181	0.0480	<0.050	0.66	0.00161	2.56	<0.000010	0.568	0.286	91	0.000011	<0.00010	<0.00030	0.0058	<0.00050	0.322
W5	28-May-18	0.0761	0.0002	<0.00020	0.0644	<0.000020	<0.000050	<0.010	0.0020	41	<0.00010	0.00232	0.00189	0.071	0.000075	0.0037	16	0.1200	<0.0000050	0.00103	0.0406	<0.050	0.60	0.00103	1.85	<0.000010	0.321	0.131	36	0.000011	<0.00010	<0.00030	0.0020	<0.00050	0.217
W5	28-Jun-18	0.0807	0.0002	<0.00010	0.0803	<0.000020	<0.000050	<0.010	0.0028	43	<0.00010	0.00423	0.00228	0.019	<0.000050	0.0052	18	0.2070	<0.0000050	0.00099	0.0487	<0.050	0.40	0.00110	2.10	<0.000010	0.325	0.141	34	0.000011	<0.00010	<0.00030	0.0014	<0.00050	0.213
W5	28-Jul-18	0.0627	0.0002	<0.00010	0.0685	<0.000020	<0.000050	<0.010	0.0037	66	<0.00010	0.00485	0.00138	<0.010	<0.000050	0.0064	26	0.2090	<0.0000050	0.00130	0.0653	<0.050	0.56	0.00146	2.30	<0.000010	0.429	0.231	62	0.000017	<0.00010	<0.00030	0.0030	<0.00050	0.275
W5	22-Aug-18	0.0656	0.0002	<0.00010	0.0713	<0.000020	<0.000050	<0.010	0.0042	62	0.00011	0.00584	0.00167	<0.010	<0.000050	0.0062	27	0.2790	<0.0000050	0.00117	0.0763	<0.050	0.51	0.00165	2.41	<0.000010	0.421	0.211	60	0.000022	<0.00010	<0.00030	0.0023	<0.00050	0.299
W5	21-Sep-18	0.0302	0.0002	<0.00010	0.0779	<0.000020	<0.000050	<0.010	0.0041	79	<0.00010	0.00556	0.00120	<0.010	<0.000050	0.0054	31	0.2400	<0.0000050	0.00153	0.0758	<0.050	0.59	0.02170	2.60	<0.000010	0.472	0.239	76	0.000018	<0.00010	<0.00030	0.0039	<0.00050	0.376
W5	22-Oct-18	0.0335	0.0002	<0.00010	0.0667	<0.000020	<0.000050	<0.010	0.0033	85	<0.00010	0.00536	0.00077	<0.010	<0.000050	0.0051	32	0.1680	<0.0000050	0.00148	0.0683	<0.050	0.59	0.00195	2.35	<0.000010	0.506	0.263	78	0.000018	<0.00010	<0.00030	0.0044	<0.00050	0.322
W5	16-Nov-18	0.0212	0.0002	<0.00010	0.0773	<0.000020	<0.000050	<0.010	0.0037	95	<0.00010	0.00448	0.00072	0.011	<0.000050	0.0058	37	0.1320	<0.0000050	0.00166	0.0733	<0.050	0.61	0.00211	2.59	<0.000010	0.505	0.292	94	0.000018	<0.00010	<0.00030	0.0045	<0.00050	0.447
W5	14-Dec-18	0.0215	0.0003	<0.00010	0.0732	<0.000020	<0.000050	<0.010	0.0037	108	<0.00010	0.00455	0.00058	<0.010	<0.000050	0.0057	44	0.1360	<0.0000050	0.00176	0.0751	<0.050	0.66	0.00218	2.74	<0.000010	0.533	0.327	94	0.000016	<0.00010	<0.00030	0.0049	<0.00050	0.460
W10	27-Jan-18	0.1130	0.0004	<0.00010	0.0650	<0.00010	<0.000050	<0.010	0.0127	120	<0.00010	0.01630	0.00315	0.022	<0.000050	0.0068	74	0.7300	<0.0000050	0.00148	0.2080	<0.050	0.62	0.00203	2.95	<0.000010	0.665	0.497	200	0.000051	<0.00010	<0.00030	0.0055	<0.00050	1.450
W10	25-Feb-18	0.0611	0.0004	<0.00010	0.0718	<0.000020	<0.000050	<0.010	0.0014	132	<0.00010	0.01700	0.00320	<0.010	<0.000050	0.0072	85	0.0871	<0.0000050	0.00150	0.2340	<0.050	0.71	0.00206	3.11	<0.000010	0.788	0.545	206	0.000044	<0.00010	<0.00030	0.0064	<0.00050	1.500
W10	26-Mar-18	0.0987	0.0004	<0.00010	0.0643	<0.000020	<0.000050	<0.010	0.0122	134	<0.00010	0.01340	0.00331	<0.010	<0.000050	0.0063	86	0.6430	<0.0000050	0.00158	0.2180	<0.050	0.78	0.00161	3.05	<0.000010	0.774	0.538	201	0.000039	<0.00010	<0.00030	0.0069	<0.00050	1.330
W10	28-Apr-18	0.0535	0.0003	<0.00010	0.0562	<0.000020	<0.000050	<0.010	0.0116	132	<0.00010	0.01030	0.00308	<0.010	<0.000050	0.0067	82	0.5440	<0.0000050	0.00148	0.1960	<0.050	0.78	0.00167	2.96	<0.000010	0.716	0.522	200	0.000310	<0.00010	<0.00030	0.0073	<0.00050	1.290
W10	28-May-18	0.1080	0.0002	<0.00020	0.0673	<0.000020	<0.000050	<0.010	0.0050	44	<0.00010	0.01270	0.00328	0.885	<0.000050	0.0042	21	0.4310	<0.0000050	0.00099	0.0914	<0.050	0.65	0.00113	2.06	<0.000010	0.345	0.160	49	0.000032	<0.00010	<0.00030	0.0018	<0.00050	0.628
W10	29-Jun-18	0.0409	0.0002	<0.00010	0.0636	0.0000	<0.000050	<0.010	0.0072	39	<0.00010	0.01720	0.00348	0.497	<0.000050	0.0067	19	0.5910	<0.0000050	0.00761	0.0999	<0.050	0.41	0.00103	2.11	<0.000010	0.293	0.155	41	0.000036	<0.00010	<0.00030	0.0003	<0.00050	0.651
W10	29-Jul-18	0.0181	0.0002	<0.00010	0.0626	<0.000020	<0.000050	<0.010	0.0101	61	<0.00010	0.03500	0.00253	0.848	<0.000050	0.0094	34	0.9370	<0.0000050	0.00787	0.1790	<0.050	0.56	0.00130	2.63	<0.000010	0.440	0.289	92	0.000061	<0.00010	<0.00030	0.0006	<0.00050	1.060
W10	21-Aug-18	0.0325	0.0002	<0.00010	0.0746	<0.000020	<0.000050	<0.010	0.0101	48	0.00011	0.02640	0.00288	0.371	<0.000050	0.0091	32	0.8470	<0.0000050	0.00088	0.1660	<0.050	0.52	0.00167	2.56	<0.000010	0.437	0.234	75	0.000076	<0.00010	<0.00030	0.0005	<0.00050	0.994
W10	21-Sep-18	0.0451	0.0003	<0.00010	0.0688	<0.000020	<0.000050	<0.010	0.0114	81	<0.00010	0.02090	0.00268	0.072	<0.000050	0.0072	47	0.8410	<0.0000050	0.00116	0.1760	<0.050	0.59	0.00180	2.85	<0.000010	0.513	0.323	123	0.000063	<0.00010	<0.00030	0.0018	<0.00050	0.917
W10	23-Oct-18	0.0311	0.0003	<0.00010	0.0684	<0.000020	<0.000050	<0.010	0.0125	92	<0.00010	0.03180	0.00168	0.164	<0.000050	0.0073	52	1.0400	<0.0000050	0.00122	0.2000	<0.050	0.64	0.00172	2.68	<0.000010	0.576	0.380	135	0.000091	<0.00010	<0.00030	0.0019	<0.00050	1.260
W10	16-Nov-18	0.0472	0.0003	<0.00010	0.0722	0.0000	<0.000050	<0.010	0.0152	115	<0.00010	0.05190	0.00273	2.590	<0.000050	0.0097	69	1.3800	<0.0000050	0.00127	0.2890	<0.050	0.70	0.00186	2.83	<0.000010	0.636	0.494	178	0.000095	<0.00010	<0.00030	0.0019	<0.00050	2.050
W10	14-Dec-18	0.0300	0.0003	<0.00010	0.0624	<0.000020	<0.000050	<0.010	0.0133	126	<0.00010	0.05310	0.00168	2.530	<0.000050	0.0091	80	1.5300	<0.000025	0.00131	0.2970	<0.050	0.73	0.00209	2.85	<0.000010	0.674	0.521	176	0.000086	<0.00010	<0.00030	0.0026	<0.00050	2.020
W62	28-Jan-18	0.1050	0.0007	<0.00010	0.1150	<0.00010	<0.000050	<0.010	0.0069	103	<0.00010	0.01840	0.00276	<0.010	<0.000050	0.0031	53	0.9480	<0.0000050	0.00243	0.1470	<0.050	0.68	0.00242	2.48	<0.000010	0.460	0.302	126	0.000100	<0.00010	<0.00030	0.0096	<0.00050	0.860
W62	25-Feb-18	0.0949	0.0006	<0.00010	0.1070	<0.000020	<0.000050	<0.010	0.0146	106	<0.00010	0.01900	0.00275	<0.010	<0.000050	0.0028	54	1.0300	<0.0000050	0.00231	0.1450	<0.050	0.68	0.00246	2.49	<0.000010	0.483	0.303	125	0.000850	<0.00010	<0.00030	0.0105	<0.00050	0.706
W62	26-Mar-18	0.1080	0.0007	<0.00010	0.1130	0.0000	<0.000050	<0.010	0.0057	112	<0.00010	0.01740	0.00299	<0.010	<0.000050	0.0026	57	0.8940	<0.0000050	0.00256	0.1420	<0.050	0.77	0.00205	2.56	<0.000010	0.502	0.318	122	0.000076	<0.00010	<0.00030	0.0119	<0.00050	0.680
W62	28-Apr-18	0.1070	0.0007	<0.00010	0.0980	0.0000	<0.000050	<0.010	0.0045	105	<0.00010	0.01440	0.00340	<0.010	<0.000050	0.0027	53	0.8020	<0.0000050	0.00237	0.1190	<0.050	0.74	0.00221	2.45	<0.000010	0.471	0.289	122	0.000057	<0.00010	<0.00030	0.0125	<0.00050	0.520
W62	28-May-18	0.0505	0.0003	<0.00020	0.0948	<0.000020	<0.000050	<0.010	0.0020	44	<0.00010	0.01270	0.00328	0.885	<0.000050	0.0042	21	0.4310	<0.0000050	0.00099	0.0914	<0.050	0.65	0.00113	2.06	<0.000010	0.345	0.160	49	0.000032	<0.00010	<0.00030	0.0018	<0.00050	0.628
W62	28-Jun-18	0.1340	0.0003	<0.00010	0.0926	0.0000	<0.000050	<0.010	0.0023	35	<0.00010	0.00723	0.00356	<0.010	0.000087	0.0030	15	0.4460	<0.0000050	0.00104	0.0469	<0.050	0.38	0.00108	2.01	<0.000010	0.251	0.114	29	0.000031	<0.00010	<0.00030	0.0014	<0.00050	0.252
W62	30-Jul-18	0.0905	0.0004	<0.00010	0.1090	<0.000020	<0.000050	<0.010	0.0039	63	0.00013	0.01200	0.00284	0.011	<0.000050	0.0043	28	0.6900	<0.0000050	0.00151	0.0871	<0.050	0.51	0.00178	2.41	<0.000010	0.366	0.211	66	0.000061	<0.00010	<0.00030	0.0031	<0.00050	0.350
W62	20-Aug-18	3.1100	0.0004	0.0003	0.1530	0.0003	<0.000050	<0.010	0.0065	63	0.00099	0.01800	0.02690	1.500	0.00112	0.0049	23	0.6080	<0.00000050	0.00135	0.0970	<0.050	0.47	0.00218	2.53	<0.000010	0.315	0.152	52	0.000096	<0.00010	<0.00030	0.0048	<0.00050	0.835
W62	21-Sep-18	0.0567	0.0005	<0.00010	0.1040	0.0000	<0.000050	<0.010	0.0067	70	<0.00010	0.02040	0.00246	0.048	<0.000050	0.0034	36	0.9400	<0.0000050	0.00145	0.1330	<0.050	0.56	0.00232	2.58	<0.000010	0.374	0.208	92	0.000080	<0.00010	<0.00030	0.0026	<0.00050	0.701
W62	23-Oct-18	0.0792	0.0004	<0.00010	0.1020	<0.000020	<0.000050	<0.010	0.0078	82	<0.00010	0.01850	0.00196	0.010	<0.000050	0.0032	38	0.8290	<0.0000050	0.00179	0.1330	<0.050	0.64	0.00216	2.32	<0.000010	0.397	0.226	92	0.000123	<0.00010	<0.00030	0.0050	<0.00050	0.794
W62	18-Nov-18	0.1020	0.0005	<0.00010	0.1120	0.0000	<0.000050	<0.010	0.0089	94	<0.00010	0.02010	0.00273	0.033	<0.000050	0.0037	51	0.8980	<0.0000050	0.00211	0.1560	<0.050	0.70	0.00253	2.42	<0.000010	0.399	0.264	107	0.000129	<0.00010	<0.00030	0.0063	<0.00050	1.090
W62	14-Dec-18	0.0766	0.0006	<0.00010	0.1050	<0.000020	<0.000050	<0.010	0.0076	104	0.00010	0.01920	0.00206	<0.010	<0.000050	0.0034	52	0.9540	<0.000025	0.00226	0.1540	<0.050	0.700	0.00234	2.45	<0.000010	0.414	0.2880	105	0.000115	<0.00010	<0.00030	0.0078	<0.00050	0.903
W56	28-Jan-18	*																																	
W56	25-Feb-18	*																																	
W56	26-Mar-18	*																																	
W56	28-Apr-18	*																																	
W56	28-May-18	0.0448	0.0002	<0.00020	0.1150	<0.000020	<0.000050	<0.010	0.0020	33	<0.00010	0.00045	0.00088	<0.010	0.000485	<0.0010	8	0.0239	<0.0000050	0.00131	0.0170	<0.050	0.52	0.00140	1.87	<0.000010	0.204	0.066	16	0.000017	<0.00010	<0.00030	0.0018	<0.00050	0.304
W56	27-Jun-18	0.1030	0.0024	0.0001	0.1180	<0.000020	<0.000050	<0.010	0.0019	30	<0.00010	0.00272	0.00166	0.015	0.000392	0.0010	9	0.1750	<0.0000050	0.00130	0.0232	<0.050	0.41	0.00137	1.94	<0.000010	0.175	0.071	16	0.000021	<0.00010	<0.00030	0.0012	<0.00050	0.236
W56	28-Jul-18	0.0538	0.0003	0.0002	0.1550	<0.000020	<0.000050	<0.010	0.0025	47	<0.00010	0.00006	0.00075	<0.010	0.0000232	0.0014	13	0.0630	<0.0000050	0.00175	0.0228	<0.050	0.55	0.00197	2.40	<0.000010	0.239	0.122	30	0.000027	<0.00010	<0.00030	0.0027	<0.00050	0.252
W56	21-Aug-18	0.0883	0.0003	0.0001	0.1380	<0.000020	<0.000050	<0.010	0.0024	42	0.00011	0.00142	0.00120	<0.010	0.000229	0.0013	11	0.1020	<0.0000050	0.00144	0.0246	<0.050	0.49	0.00209	2.37	<0.000010	0.238	0.094	3	0.000030	<0.00010	<0.00030	0.0021	<0.00050	0.247
W56	21-Sep-18	0.0277	0.0003	0.0012	0.1420	<0.000020	<0.000050	<0.010	0.0029	52	<0.00010	0.00055	0.00063	<0.010	0.000203	<0.0010	13	0.0514	<0.0000050	0.00182	0.0250	<0.050	0.53	0.00271	2.43	<0.000010	0.249	0.107	33	0.000022	<0.00010	<0.00030	0.0032	<0.00050	0.393
W56	23-Oct-18	*																																	
W56	16-Nov-18	*																																	
W56	14-Dec-18	*																																	

* Due to health and safety issues the site could not be accessed.

SELWYN CHIHONG MINING LTD.

2018 Surface Water
Dissolved Metals

Station Name	Sample Date	Aluminum (Al) (mg/L)	Antimony (Sb) (mg/L)	Arsenic (As) (mg/L)	Barium (Ba) (mg/L)	Beryllium (Be) (mg/L)	Bismuth (Bi) (mg/L)	Boron (B) (mg/L)	Cadmium (Cd) (mg/L)	Calcium (Ca) (mg/L)	Chromium (Cr) (mg/L)	Cobalt (Co) (mg/L)	Copper (Cu) (mg/L)	Iron (Fe) (mg/L)	Lead (Pb) (mg/L)	Lithium (Li) (mg/L)	Magnesium (Mg) (mg/L)	Manganese (Mn) (mg/L)	Mercury (Hg) (mg/L)	Molybdenum (Mo) (mg/L)	Nickel (Ni) (mg/L)	Phosphorus (P) (mg/L)	Potassium (K) (mg/L)	Selenium (Se) (mg/L)	Silicon (Si) (mg/L)	Silver (Ag) (mg/L)	Sodium (Na) (mg/L)	Strontium (Sr) (mg/L)	Sulphur (S) (mg/L)	Thallium (Tl) (mg/L)	Tin (Sn) (mg/L)	Titanium (Ti) (mg/L)	Uranium (U) (mg/L)	Vanadium (V) (mg/L)	Zinc (Zn) (mg/L)
W8	28-Jan-18																	*																		
W8	25-Feb-18																	*																		
W8	26-Mar-18																	*																		
W8	28-Apr-18																	*																		
W8	28-May-18	<0.0010	0.0073	0.0018	0.0202	0.0005	<0.000050	<0.010	0.0006	91	<0.00010	0.00116	<0.00020	0.155	0.000782	0.0022	22	0.1750	<0.0000050	0.00730	0.0517	<0.050	1.48	<0.000050	2.53	<0.000010	0.392	0.210	42	0.000088	<0.00010	<0.00030	0.0496	<0.00050	1.330
W8	27-Jun-18	<0.0010	0.0076	0.0015	0.0171	0.0000	<0.000050	<0.010	0.0010	96	<0.00010	0.00153	<0.00020	0.094	0.00181	0.0015	21	0.1900	<0.0000050	0.00612	0.0685	<0.050	1.36	<0.000050	2.63	<0.000010	0.328	0.190	37	0.000119	<0.00010	<0.00030	0.0421	<0.00050	1.790
W8	28-Jul-18	<0.0010	0.0060	0.0015	0.0151	0.0000	<0.000050	<0.010	0.0006	88	<0.00010	0.00108	<0.00020	0.089	0.000945	0.0015	18	0.1740	<0.0000050	0.00578	0.0534	<0.050	1.25	<0.000050	2.62	<0.000010	0.324	0.183	35	0.000096	<0.00010	<0.00030	0.0417	<0.00050	1.290
W8	20-Aug-18	<0.0010	0.0075	0.0017	0.0174	0.0001	<0.000050	<0.010	0.0008	94	0.00077	0.00142	<0.00020	0.122	0.00189	0.0016	21	0.1810	<0.0000050	0.00635	0.0630	<0.050	1.36	<0.000050	2.62	<0.000010	0.328	0.180	40	0.000106	<0.00010	<0.00030	0.0420	<0.00050	1.660
W8	21-Sep-18																	*																		
W8	23-Oct-18																	*																		
W8	16-Nov-18																	*																		
W8	14-Dec-18																	*																		

* Due to health and safety issues the site could not be accessed.

2018
Groundwater Quality

SELWYN CHIHONG MINING LTD.

2018 Groundwater Field Parameters

Station Name	Date	Groundwater Level (m)	Well Depth (m)	Field Temperature (C°)	Field Dissolved Oxygen (%)	Field Dissolved Oxygen (mg/L)	Field Specific Conductance (µS/cm)	Field pH (pH Units)	Field ORP (mV)
MW07-1	26-Jan-18	3.045	8.495	0.1	29.9	4.36	380.6	7.49	87.6
MW07-1	14-Apr-18	3.519	8.474	10.1	46.0	5.15	290.8	7.37	184.0
MW07-1	28-Jul-18	1.936	8.460	8.6	51.6	6.02	321.8	7.74	158.9
MW07-1	22-Oct-18	3.015	8.479	3.2	65.1	8.70	290.0	7.54	152.3
MW07-2	26-Jan-18	*							
MW07-2	14-Apr-18	4.240	5.840	10.6	58.9	6.49	296.0	7.28	108.4
MW07-2	28-Jul-18	4.040	5.843	5.0	23.5	3.00	338.0	7.47	184.5
MW07-2	22-Oct-18	4.190	5.845	2.2	79.5	10.91	385.9	7.37	170.5
MW07-3	28-Jan-18	3.739	5.699	0.6	32.6	4.56	844.9	7.93	234.8
MW07-3	14-May-18	3.870	5.700	9.1	35.0	3.89	734.0	6.99	188.0
MW07-3	29-Jul-18	3.986	5.708	3.1	46.6	6.23	751.1	7.12	186.9
MW07-3	22-Oct-18	4.049	5.708	0.8	40.5	5.78	713.0	7.29	35.0
MW10-08	28-Jan-18	2.701	4.875	-0.1	52.5	7.57	1242.0	8.09	233.6
MW10-08	14-Apr-18	2.078	5.700	9.1	35.0	3.59	734.0	6.99	188.0
MW10-08	29-Jul-18	2.664	4.884	4.3	65.6	8.45	109.5	6.81	225.7
MW10-08	22-Oct-18	2.663	4.888	1.8	84.6	11.72	1130.0	7.00	138.7
MW10-09	26-Jan-18	1.529	5.428	**					
MW10-09	14-Apr-18	1.565	5.415	13.1	28.0	2.94	1213.0	6.95	200.5
MW10-09	30-Jul-18	1.211	5.425	6.7	21.6	2.63	131.6	7.23	26.4
MW10-09	22-Oct-18	1.284	5.419	2.3	45.2	6.16	729.5	7.26	21.6

*	Well was frozen
**	Parameters could not be taken as YSI froze.

SELWYN CHIHONG MINING LTD.

2018 Groundwater
General Parameters

Station Name	Sample Date	Lab Specific Conductance (µS/cm)	Hardness (mg/L)	Lab pH (pH Units)	Total Suspended Solids (mg/L)	Lab Total Dissolved Solids (mg/L)	Total Acidity (mg/L)	Acidity to pH 4.5 (mg/L)	Alkalinity, Bicarbonate (mg/L)	Alkalinity, Carbonate (mg/L)	Alkalinity, Hydroxide (mg/L)	Total Alkalinity (mg/L)	Ammonia (mg/L)	Chloride (mg/L)	Fluoride (mg/L)	Nitrate (mg/L)	Nitrite (mg/L)	D - Orthophosphate (mg/L)	D - Sulphate (mg/L)	Cyanide, Weak Acid Dissociable (mg/L)	Total Cyanide (mg/L)	Thiocyanate (mg/L)	Dissolved Organic Carbon (mg/L)	Total Organic Carbon (mg/L)
MW07-1	26-Jan-18	266	146	8.20	218	148	<1.0	<1.0	141	<1.0	<1.0	141		<0.50	0.044	0.162	<0.0010		8.7	<0.0050		<0.50	2.44	1.96
MW07-1	14-Apr-18	300	159	8.22	1360	168	<1.0	<1.0	154	7.6	<1.0	162	0.0138	<0.50	0.049	0.093	<0.0010	0.0016	10.6	<0.0050	<0.0050	<0.50	2.11	4.96
MW07-1	28-Jul-18	291	149	8.25	60	161	1.2	<1.0	168	<1.0	<1.0	168	<0.0050	<0.50	<0.020	0.304	<0.0010	0.0064	3.3	<0.0050	<0.0050	<0.50	7.90	1.11
MW07-1	22-Oct-18	275	149	8.11	211	154	3.3	<1.0	151	<1.0	<1.0	151	<0.0050	<0.50	0.023	0.253	<0.0010	0.0082	3.3	<0.0050	<0.0050	<0.50	0.97	2.76
MW07-2	26-Jan-18	No sample taken as well was frozen.																						
MW07-2	14-Apr-18	315	149	8.16	7940	864	2.6	<1.0	1270	<1.0	<1.0	1270	0.0306	<0.50	0.042	0.024	<0.0010	0.0053	17.8	<0.0050	<0.0050	0.97	1.55	26.30
MW07-2	28-Jul-18	301	175	8.10	5150	265	1.3	<1.0	266	<1.0	<1.0	266	0.0206	<0.50	0.039	0.024	<0.0010	<0.0010	17.5	<0.0050	<0.0050	0.78	3.05	20.80
MW07-2	22-Oct-18	375	207	7.99	1930	399	6.9	<1.0	508	<1.0	<1.0	508	0.0076	<0.50	0.024	0.086	<0.0010	0.0018	10.3	<0.0050	<0.0050	<0.50	2.00	3.95
MW07-3	28-Jan-18	740	549	8.04	235	531	1.4	<1.0	312	<1.0	<1.0	312		<2.5	<0.10	0.109	<0.0050		143.0		<0.0050	<0.50	2.42	4.37
MW07-3	14-Apr-18	759	429	8.06	425	476	5.3	<1.0	308	<1.0	<1.0	308	0.0161	<2.5	<0.10	0.109	<0.0050	0.0019	134.0	<0.0050	<0.0050	<0.50	2.47	5.40
MW07-3	29-Jul-18	697	369	8.07	382	441	6.6	<1.0	302	<1.0	<1.0	302	0.0058	<0.50	0.046	0.234	<0.0010	0.0010	117.0	<0.0050	<0.0050	<0.50	2.82	7.40
MW07-3	22-Oct-18	697	409	8.09	702	440	12.5	<1.0	300	<1.0	<1.0	300	0.0313	<0.50	0.063	0.088	0.0013	0.0015	16.0	<0.0050	<0.0050	<0.50	2.78	5.77
MW10-08	28-Jan-18	1310	887	7.41	188	1140	5.2	<1.0	78.1	<1.0	<1.0	78		<2.5	0.160	0.098	<0.0050		775.0		<0.0050	<0.50	2.27	5.45
MW10-08	14-Apr-18	1540	952	7.39	264	1230	1.2	<1.0	93.3	<1.0	<1.0	93	<0.0050	<2.5	0.140	0.113	<0.0050	0.0073	834.0	<0.0050	<0.0050	0.56	2.01	10.00
MW10-08	30-Jul-18	1010	538	7.36	72	726	8.7	<1.0	82.2	<1.0	<1.0	82	<0.0050	<0.50	0.149	0.153	<0.0010	0.0050	481.0	<0.0050	<0.0050	0.56	1.84	4.70
MW10-08	22-Oct-18	1120	669	7.40	199	866	9.7	<1.0	77	<1.0	<1.0	77	<0.0050	<0.50	0.170	0.091	<0.0050	0.0050	575.0	<0.0050	<0.0050	<0.50	2.22	7.25
MW10-09	26-Jan-18	1130	706	7.87	4710	889	2.2	<1.0	189	<1.0	<1.0	189		<2.5	<0.10	<0.025	<0.0050				<0.0050	0.74	0.71	13.80
MW10-09	14-Apr-18	1240	759	7.73	13500	1210	15.1	<1.0	512	<1.0	<1.0	512	0.0619	<2.5	0.100	<0.025	<0.0050	0.0011	611.0	<0.0050	<0.0050	1.15	1.49	37.10
MW10-09	30-Jul-18	1210	697	7.85	3300	988	7.5	<1.0	212	<1.0	<1.0	212	0.0360	<2.5	<0.10	<0.025	<0.0050	<0.0010	549.0	<0.0050	<0.0050	0.83	1.28	69.30
MW10-09	22-Oct-18	1220	756	7.83	2360	985	11.4	<1.0	223	<1.0	<1.0	223	0.0338	<2.5	<0.10	<0.025	<0.0050	<0.0010	568.0	<0.0050	<0.00050	<0.50	1.09	21.50

SELWYN CHIHONG MINING LTD.

2018 Groundwater
Dissolved Metals

Station Name	Sample Date	Aluminum (Al) (mg/L)	Antimony (Sb) (mg/L)	Arsenic (As) (mg/L)	Barium (Ba) (mg/L)	Beryllium (Be) (mg/L)	Bismuth (Bi) (mg/L)	Boron (B) (mg/L)	Cadmium (Cd) (mg/L)	Calcium (Ca) (mg/L)	Chromium (Cr) (mg/L)	Cobalt (Co) (mg/L)	Copper (Cu) (mg/L)	Iron (Fe) (mg/L)	Lead (Pb) (mg/L)	Lithium (Li) (mg/L)	Magnesium (Mg) (mg/L)	Manganese (Mn) (mg/L)	Mercury (Hg) (mg/L)	Molybdenum (Mo) (mg/L)	Nickel (Ni) (mg/L)	Phosphorus (P) (mg/L)	Potassium (K) (mg/L)	Selenium (Se) (mg/L)	Silicon (Si) (mg/L)	Silver (Ag) (mg/L)	Sodium (Na) (mg/L)	Strontium (Sr) (mg/L)	Sulphur (S) (mg/L)	Thallium (Tl) (mg/L)	Tin (Sn) (mg/L)	Titanium (Ti) (mg/L)	Uranium (U) (mg/L)	Vanadium (V) (mg/L)	Zinc (Zn) (mg/L)
MW07-1	26-Jan-18	0.0011	0.00017	0.00460	0.1590	<0.00010	<0.000050	<0.010	0.000081	39	<0.00010	<0.00010	<0.00020	<0.010	0.000061	<0.0010	11.9	0.0017	<0.0000050	0.00293	<0.00050	<0.050	0.37	0.00018	2.37	<0.000010	0.25	0.128	3	0.000010	<0.00010	<0.00030	0.0051	<0.00050	0.0047
MW07-1	14-Apr-18	0.0026	0.00016	0.00061	0.0941	<0.00010	<0.000050	<0.010	0.000127	39	<0.00010	<0.00010	<0.00020	<0.010	0.000085	<0.0010	15.1	0.0066	<0.0000050	0.00356	0.0007	<0.050	0.54	0.00035	2.37	<0.000010	0.32	0.146	4	0.000012	<0.00010	<0.00030	0.0062	<0.00050	0.0072
MW07-1	28-Jul-18	0.0026	0.00012	0.00031	0.2710	<0.00010	<0.000050	<0.010	0.000069	47	0.00028	<0.00010	<0.00020	<0.010	<0.000050	<0.0010	7.9	0.0010	<0.0000050	0.00107	0.0007	<0.050	0.29	0.00014	2.16	<0.000010	0.23	0.117	1	<0.000010	<0.00010	<0.00030	0.0020	<0.00050	0.0042
MW07-1	22-Oct-18	0.0021	0.00013	0.00031	0.1830	<0.00010	<0.000050	<0.010	0.000088	47	0.00015	<0.00010	0.00021	<0.010	0.000053	<0.0010	7.6	0.0010	<0.0000050	0.00137	0.0006	<0.050	0.32	0.00011	2.19	<0.000010	0.30	0.106	1	<0.000010	<0.00010	<0.00030	0.0019	<0.00050	0.0047
MW07-2	26-Jan-18	No sample was taken as the well was frozen.																																	
MW07-2	14-Apr-18	0.0052	<0.00010	0.00126	0.0831	<0.000020	<0.000050	<0.010	0.000023	42	<0.00010	0.00015	<0.00060	<0.010	<0.000050	<0.0010	10.9	0.0116	<0.0000050	0.00584	0.0006	<0.050	0.61	0.00010	2.53	<0.000010	3.72	0.106	6	<0.000010	<0.00010	<0.00030	0.0036	<0.00050	0.0027
MW07-2	28-Jul-18	0.0070	<0.00010	0.00109	0.1020	<0.000020	<0.000050	<0.010	0.000038	56	<0.00010	0.00012	0.00082	0.030	0.000128	<0.0010	8.7	0.0196	<0.0000050	0.00237	0.0010	<0.050	0.52	0.00014	2.46	<0.000010	1.48	0.129	4	<0.000010	<0.00010	<0.00030	0.0024	<0.00050	0.0049
MW07-2	22-Oct-18	0.0035	<0.00010	0.00040	0.1760	<0.000020	<0.000050	<0.010	0.000090	71	<0.00010	<0.00010	0.00052	0.017	0.000081	<0.0010	7.2	0.0012	<0.0000050	0.00255	0.0010	<0.050	0.37	0.00011	2.56	<0.000010	0.96	0.145	3	<0.000010	<0.00010	<0.00030	0.0020	<0.00050	0.0144
MW07-3	28-Jan-18	0.0251	0.00690	0.00038	0.1480	<0.00010	<0.000050	<0.010	0.000944	175	<0.0010	0.00202	0.00031	<0.010	<0.000050	0.0035	40.2	0.0797	<0.0000050	0.00624	0.0086	<0.050	1.13	0.00103	3.38	<0.000010	0.99	0.296	59	0.000023	<0.00010	<0.00030	0.0478	<0.00050	0.0043
MW07-3	24-Apr-18	0.0024	0.00043	0.00026	0.1140	<0.000020	<0.000050	<0.010	0.000019	116	<0.00010	0.00086	<0.00040	<0.010	<0.000050	0.0033	34.2	0.0369	<0.0000050	0.00578	0.0074	<0.050	1.08	0.00054	2.90	<0.000010	0.81	0.243	45	0.000036	<0.00010	<0.00030	0.0437	<0.00050	0.0031
MW07-3	29-Jul-18	0.0037	0.00020	0.00014	0.1800	<0.000020	<0.000050	<0.010	0.000289	109	<0.00010	<0.00010	0.00046	0.010	<0.000050	0.0024	23.4	0.0064	<0.0000050	0.00303	0.0033	<0.050	0.62	0.00184	2.75	<0.000010	0.61	0.202	37	<0.000010	<0.00010	<0.00030	0.0200	<0.00050	0.0047
MW07-3	22-Oct-18	0.0066	0.00043	0.00023	0.1300	<0.000020	<0.000050	<0.010	0.000139	118	<0.00010	0.00048	0.00040	0.039	0.000126	0.0029	27.8	0.0305	<0.00000050	0.00475	0.0048	<0.050	0.89	0.00150	2.69	<0.000010	0.78	0.221	37	0.000022	<0.00010	0.00051	0.0300	<0.00050	0.0061
MW10-08	28-Jan-18	0.0021	0.00056	0.00018	0.0378	<0.00010	<0.000050	<0.010	0.042700	222	<0.00010	<0.00010	0.00155	<0.010	<0.0000050	0.0045	80.6	0.0003	<0.0000050	0.00319	0.2170	<0.050	1.23	0.00130	4.49	<0.000010	0.89	0.713	298	0.000051	<0.00010	<0.00030	0.0100	<0.00050	4.7200
MW10-08	14-Apr-18	0.0023	0.00051	0.00017	0.0321	<0.000020	<0.000050	<0.010	0.044100	232	0.00012	<0.00010	0.00160	<0.010	<0.000050	0.0044	90.2	0.0011	<0.0000050	0.00330	0.2250	<0.050	1.24	0.00120	4.29	<0.000010	0.88	0.756	325	0.000052	<0.00010	<0.00030	0.0152	<0.00050	4.3200
MW10-08	29-Jul-18	0.0026	0.00046	0.00016	0.0305	<0.000020	<0.000050	<0.010	0.026900	139	<0.00010	<0.00010	0.00122	0.011	<0.000050	0.0037	46.1	0.0013	<0.0000050	0.00262	0.1350	<0.050	0.99	0.00176	3.93	<0.000010	0.66	0.460	160	0.000042	<0.00010	<0.00030	0.0064	<0.00050	2.6200
MW10-08	22-Oct-18	0.0028	0.00047	0.00018	0.0325	<0.000020	<0.000050	<0.010	0.032600	177	<0.00010	<0.00010	0.00133	<0.010	<0.000050	0.0042	55.1	0.0006	<0.0000050	0.00277	0.1590	<0.050	1.14	0.00180	4.10	<0.000010	0.82	0.520	191	0.000049	<0.00010	<0.00030	0.0071	<0.00050	3.4000
MW10-09	26-Jan-18	0.0297	0.00031	0.00048	0.0155	<0.00010	<0.000050	<0.010	0.000944	175	<0.00010	0.0007	0.00034	<0.010	0.000058	0.0017	65.4	0.0619	<0.0000050	0.00345	0.0126	<0.050	0.68	0.00152	2.84	<0.000010	0.72	0.274	190	0.000026	<0.00010	<0.00030	0.0240	<0.00050	0.0895
MW10-09	14-Apr-18	<0.0010	0.00035	0.00057	0.0177	<0.000020	<0.000050	<0.010	0.000807	180	<0.00010	0.00076	<0.00060	<0.010	0.000052	0.0018	74.9	0.0387	<0.0000050	0.00330	0.0153	<0.050	0.71	0.00269	2.93	<0.000010	0.65	0.316	202	0.000021	<0.00010	<0.00030	0.0280	<0.00050	0.0995
MW10-09	30-Jul-18	0.0024	<0.00010	0.00080	0.0213	<0.000020	<0.000050	<0.010	0.000873	180	<0.00010	0.00109	<0.00020	0.593	<0.000050	0.0020	60.3	0.1520	<0.0000050	0.00379	0.0123	<0.050	0.75	0.00019	3.07	<0.000010	0.67	0.309	186	0.000019	<0.00010	<0.00030	0.0196	<0.00050	0.1050
MW10-09	22-Oct-18	0.0022	0.00031	0.00072	0.0171	<0.000020	<0.000050	<0.010	0.000754	194	<0.00010	106	0.00030	<0.010	0.000095	0.0020	65.8	0.1020	<0.0000050	0.00390	0.0117	<0.050	0.75	0.00045	2.96	<0.000010	0.74	0.293	193	0.000030	<0.00010	<0.00030	0.0252	<0.00050	0.0939

Appendix K

2018

Sediment and Benthics

TRITON
Environmental Consultants

February 12, 2019

Reference: 5005/V4588

Selwyn Chihong Mining Ltd
2701 – 1055 West Georgia Street,
Vancouver, BC. V6E 0B6

Selwyn Chihong Mining Ltd
205 – 2237 2nd Avenue,
Whitehorse, YT. Y0B 1S0

Attn: Sukie Sidhu

Re: Water Licence Section

Dear Sukie

Sediment and Benthic Invertebrate Sampling

Selwyn Chihong's Water Licence requires annual monitoring of sediment quality and benthic macroinvertebrate community structure. Triton Environmental Consultants Ltd. (Triton) was retained to conduct this monitoring, which was performed from August 21 to 23, 2018. Sampling was conducted in accordance with Selwyn Chihong's Water Licence monitoring requirements, as well as Federal guidance documents (EC, 2012) and Triton's in-house standard operating procedures (SOPs).

The annual monitoring occurs at three sites along Don Creek: W5, W10, and W56. The W5 site is located on Middle Don Creek (9V 0474869E, 6935397N), the furthest downstream of the three sites. W10 is located downstream of the XY Camp and the XY Laydown area (9V 0486164E, 6928041N). The W56 site on Upper Don Creek is located upstream of all historic and current activities (9V 0488367E, 6926021N). The 2018 data have been compared with previous years' data at each of these three locations to identify and discuss any noted variance from previous years.

Sediments were analyzed for particle size distribution, total organic carbon, and metal concentrations. Benthic macroinvertebrate (BMI) samples were identified down to lowest practical taxonomic level, allowing various metrics to be calculated (richness, diversity, dissimilarity). With these parameters, we can better determine the state of the benthos and water quality, as well as any variance and trends with respect to previous years' results.

Of the samples collected in 2018, most of each of the sediment samples were composed of sand (63 µm to 2 mm), followed by large proportions of gravel sized (2 mm to 64 mm) particles (Table 1). Sand constituted 86.7% to 87.7% of the sample by weight, while gravel contributed 7.2% to 9.3% of the sample by weight. Silt (4 µm to 63 µm) was the next most abundant particle class, ranging from 1.6% to 4.4%. Clay (<4 µm) made up the least common particle size found among the samples, ranging from 0.8% to 1.5%. These results are quite consistent with particle sizes from 2010 to 2017; sand

and gravel have consistently contributed the largest proportion of the sediment samples, with silt and clay consistently making up a small fraction.

Metal concentrations in the sediment were compared to the Canadian Council of Ministers of the Environment's (CCME, 2018) guidelines for freshwater sediments; also, Selenium concentrations in the sediment were compared to BC guidelines for the protection of aquatic life (BC MOE, 2018). Background metal concentrations in the sediments from all three water licence sites exceeded the Probable Effect Level (PEL) for Arsenic, Cadmium, and Zinc (Table 2). PELs were also exceeded for Chromium and Copper in W5, and Lead in W56. The Interim Sediment Quality Guidelines (ISQG) were exceeded by Chromium and Copper within W5 and W10, with Lead exceeded within sites W10 and W56. BC MOE guidelines for the protection of aquatic life were exceeded for Selenium at all sites. The sediment chemistry results from 2018 are consistent with the results from years past, with the noted exception of Chromium. Chromium had not previously exceeded the CCME's Probable Effects Limits; Chromium concentrations have consistently increased over all years across all sites, including the reference site W56. Copper and Lead concentrations have fluctuated around the PEL across the monitoring sites over the course all years of the sediment monitoring. Mercury concentrations did not exceed the ISQG as had been observed over several past years (2006, 2013-2015). No samples were found to contain greater than 2.0% (by weight) total organic carbon, similar as all past years of monitoring this parameter.

The BMI community metrics for 2018 were very low for all three sites. Compared to previous years, most metrics' values are the lowest recorded to date (Table 3); metrics were comparatively low across sites including the reference site W56. Considerably low values in BMI metrics are not uncommon, as the years 2014 and 2017 experienced similar drops; these sites display considerable year to year variability. Density of individuals in 2018 ranged from an average of 3.0/m^2 to 209.8/m^2, while taxonomic richness ranged from an average of 1.0 to 9.0. The Simpson's Diversity index values were zeros for site W10 due to those captured taxonomic categories were represented by only one individual.

The abundant BMI taxonomic groups were fairly consistent within sites; however, they were highly variable across sites. The Plecopteran genus *Suwallia* was the dominantly most abundant in site W56, while the Dipteran genus *Rhabdomastix* was the most abundant in site W5. No taxa could be considered dominant in W10, due to the very low abundance of BMIs. The Ephemeroptera, *Plecoptera*, and *Trichoptera* (EPT) taxa groups are frequently relied upon for assessments of the water quality as these groups are more sensitive to disturbances and pollution (Plafkin, 1989). The average number of EPT taxa within these three sites ranged from 0.3 to 5.3, which is also low relative to previous years.

Any comments or questions concerning the information presented herein may be directed to the undersigned.

Triton Environmental Consultants Ltd.

Adam Goodwin, M.Sc., R.P.Bio
Fisheries Biologist

John Rithaler, R.P.Bio (BC), P.Biol (AB)
Sr. Environmental Scientist / Project Manager

Table 1. Summary table of sediment composition for each site and each year

Site	*Year*	*Total Organic Carbon*	*Gravel* <64mm, >2mm	*Sand* <2mm, >63µm	*Silt* <63µm, >4µm	*Clay* <4µm
W5	2006	-	83	17	0	0
	2010	-	54	40	6	1
	2013	-	0.8	92.4	4.7	2.1
	2014	0.45	59.3	37.8	1.7	1.2
	2015	0.55	2.8	96.3	0.6	0.3
	2016	1.10	11.9	85.2	1.9	0.9
	2017	1.52	19.6	78.5	1.3	0.6
	2018	1.05	9.93	87.7	1.59	0.82
W10	2010	-	76	21	3	1
	2013	-	20.7	71.1	5.8	2.5
	2014	0.34	50.3	48.6	0.7	0.5
	2015	0.22	57.0	42.3	0.5	0.2
	2016	1.71	6.3	85.1	5.6	2.9
	2017	0.94	39.7	58.1	1.3	0.8
	2018	1.00	9.34	86.7	2.98	1.00
W56	2010	-	60	38	1	1
	2013	-	24.5	58	13.5	4
	2014	0.42	57.2	41.4	1.0	0.3
	2015	0.66	44.9	48.8	4.1	2.3
	2016	1.11	17.7	78.4	2.4	1.6
	2017	1.28	22.1	69.5	5.5	2.9
	2018	1.19	7.21	86.9	4.39	1.48

Note: All values are averages of percentage by weight.

Table 2. Summary table of each average metal concentration at each monitoring site for each year

Site	*2006*	*2007*	*2010*	*2013*	*2014*	*2015*	*2016*	*2017*	*2018*
Arsenic (As)									
W5	**22.6**	**22**	**22.3**	**20.8**	**25**	**34.8**	**20.9**	**22.3**	**29.4**
W10	-	**22.3**	**43.4**	**62.4**	**35.4**	**66.4**	**31.6**	**38.3**	**38.0**
W56	-	-	**20.5**	**23.7**	**21.9**	**24.3**	**21**	**26.7**	**25.0**
Cadmium (Cd)									
W5	**20.2**	**10.7**	**20.3**	**14.2**	**21.6**	**27.1**	**11.7**	**14.3**	**15.8**
W10	-	**15**	**21.6**	**21.9**	**23.7**	**20**	**18**	**9.9**	**13.6**
W56	-	-	**14.9**	**13.5**	**91.8**	**18.5**	**15**	**15.5**	**14.4**
Chromium (Cr)									
W5	15	11.7	12	12.6	15	20	**55.3**	**75.7**	**101.3**
W10	-	8.6	11	11.7	17	22.5	**45**	**48**	**62.3**
W56	-	-	13	13.7	17.6	23.3	**40**	**43**	**51.7**
Copper (Cu)									
W5	**107**	**71.8**	**112**	**76.9**	**282.7**	**191**	**70.5**	**75.1**	**468.0**
W10	-	**104**	**142**	**170.8**	**336.4**	**244**	**120.3**	**85.1**	**144.7**
W56	-	-	**59.5**	**72.6**	**243.2**	**139.9**	**63.7**	**82.2**	**79.9**
Lead (Pb)									
W5	**69**	**50.2**	**58.2**	**58.9**	**88.5**	**180.3**	**57.9**	**82.6**	**78.6**
W10	-	**106**	**231**	27.7	**245**	**204**	**152**	**342**	**91.1**
W56	-	-	**231**	**413.2**	**132.6**	**585**	**344.3**	**454**	**409.3**
Mercury (Hg)									
W5	**0.17**	0.14	0.15	0.15	**0.23**	**0.27**	0.12	0.14	0.15
W10	-	0.15	0.12	**0.19**	**0.22**	0.13	0.1	0.15	0.12
W56	-	-	0.1	0.12	0.16	0.16	0.09	0.15	0.13
Selenium (Se)									
W5	**4.3**	**3.3**	1.9	**2.88**	**3.63**	**4.13**	**2.87**	**3.7**	**3.13**
W10	-	**2.9**	**3.8**	**5.35**	**3.52**	**3.2**	**2.57**	**2.7**	**3.73**
W56	-	-	**4.2**	**3.79**	**3.82**	**3.6**	**3.03**	**3.87**	**3.70**
Zinc (Zn)									
W5	**2,940**	**1,423**	**2,890**	**1,836**	**3,240**	**3,393**	**1,623**	**1,727**	**1,977**
W10	-	**2,159**	**2,890**	**1,790**	**3,882**	**3,055**	**2,467**	**1,293**	**1,707**
W56	-	-	**2,700**	**2,618**	**9,754**	**3,090**	**2,977**	**2,993**	**2,720**

Each value is in units of parts per million (µg/g); values which are in **bold** exceed the CCME ISQG, values which are in **red** exceed the CCME PEL.

Bold Selenium values are ones which are in exceedance with BC's Water Quality Guidelines for Aquatic life (BCMOE, 2018).

Table 3. Summary table of average benthic macroinvertebrate community metrics for each site, across all years

Site	Year	Density (#/m²)	Abundance	AFDM* (mg/m²)	Taxa Richness	EPT Richness	Shannon Diversity	Simpson's Diversity	Dominant Taxa
W5	2006	554.0			8.4			0.680	Chironomidae
	2007	707.0			10.2			0.600	Chironomidae
	2010	1,247.0			16.0			0.800	Chironomidae
	2013	1,771.3	757.2	6.70	26.5	7.3	2.27	0.780	*Orthocladius sp.*
	2014	1,069.0	457.0	13.3	23.7	7.7	1.70	0.662	*Orthocladius sp.*
	2015	899.2	384.4		26.3	9.0	2.88	0.902	*Orthocladiinae spp.*
	2016	269.0	115.0	0.75	18.7	6.3	2.81	0.924	*Diamesa sp.*
	2017	31.1	13.3	3.31	5.7	3.3	1.68	0.142	*Rhyacophila sp.*
	2018	18.7	8.0	0.01	4.0	2.3	1.04	0.463	*Rhabdomastix sp.*
W10	2007	97.0			2.8			0.340	Chironomidae
	2010	247.0			8.0			0.800	Chironomidae
	2013	1,318.2	563.5	17.9	11.0	1.7	0.77	0.300	*Diamesa sp.*
	2014	55.4	23.7	8.00	11.7	3.3	2.28	0.912	*Gonomyodes* sp.
	2015	557.5	238.3		26.7	8.3	3.22	0.939	*Orthocladiinae spp.*
	2016	1,568.5	670.5	10.71	26.0	10.0	2.56	0.876	*Diamesa sp.*
	2017	14.0	6.0	0.26	3.7	1.3	1.34	0.071	*Diamesa sp.*
	2018	3.0	1.3	0.78	1.0	0.3	0.46	0.000	*n/a*
W56	2010	2,150.0			15.0			0.790	Chloroperlidae
	2013	3,153.9	1348.3	45.5	19.0	7.3	2.30	0.850	*Zapada oregonensis* gr.
	2014	94.6	40.4	11.7	12.7	4.0	2.25	0.825	*Orthocladius* sp.
	2015	8,433.5	3605.3		17.7	5.7	2.24	0.810	*Orthocladiinae spp.*
	2016	5,097.5	2179.2	151.2	18.3	7.0	2.15	0.835	Chironomidae
	2017	526.3	225	12.16	8.3	4.3	1.11	0.429	*Diamesa sp.*
	2018	209.8	89.7	6.18	9.0	5.3	1.34	0.471	*Suwallia sp.*

- *Ash Free Dry Mass (mg/m²)*

References:

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Appendix L

Watercourse Monitoring

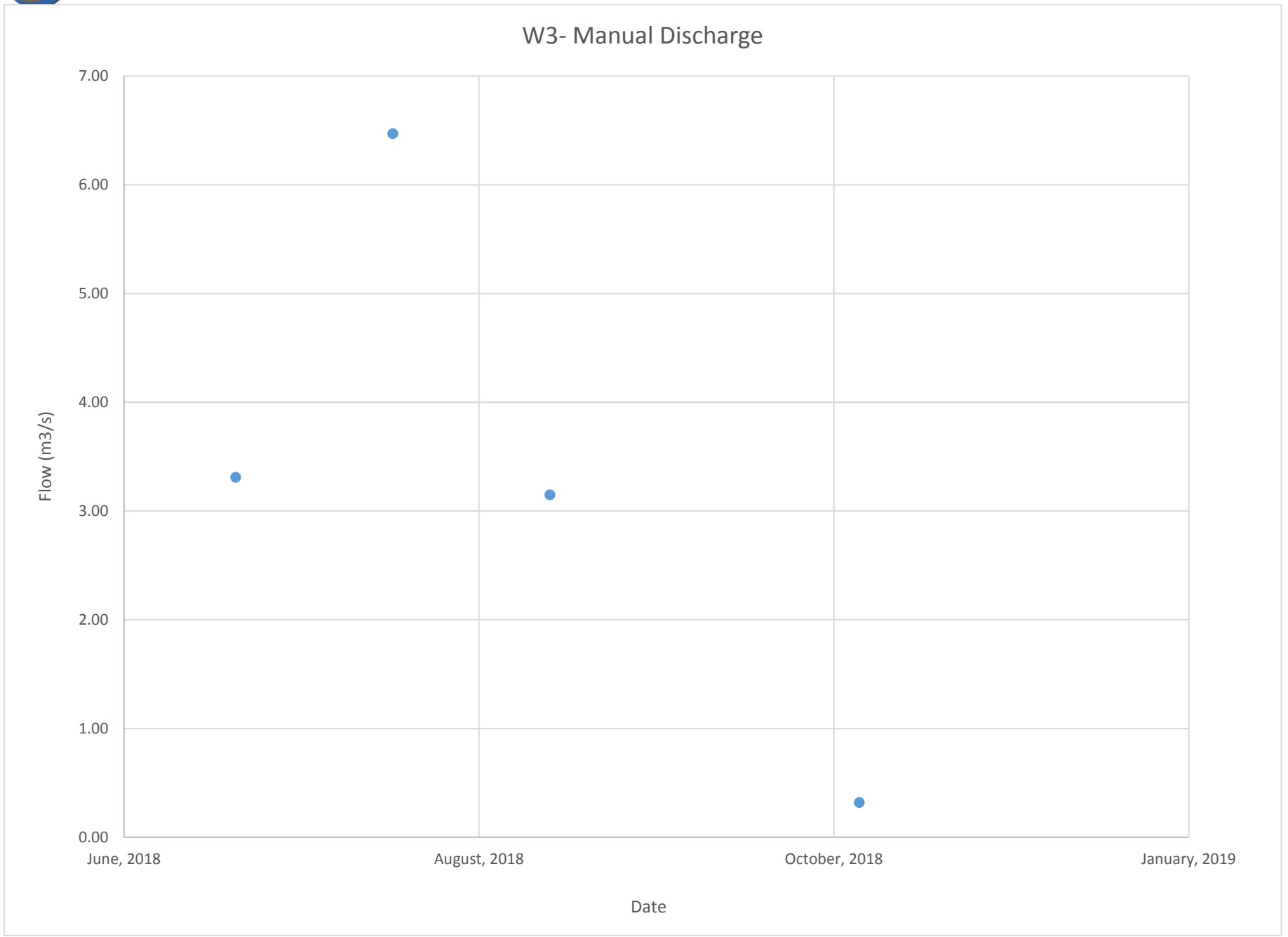
And

Groundwater Parameters

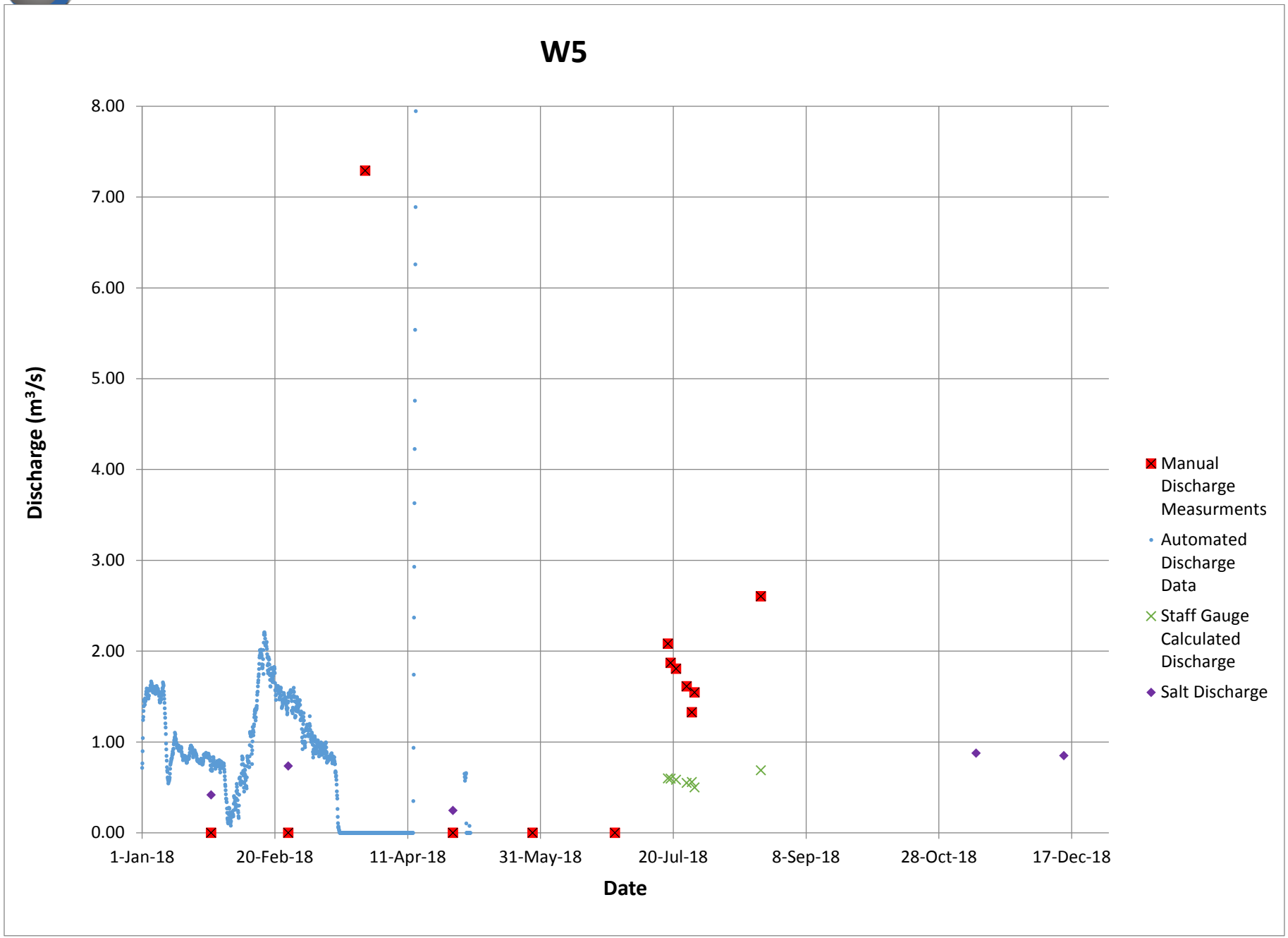
Appendix M

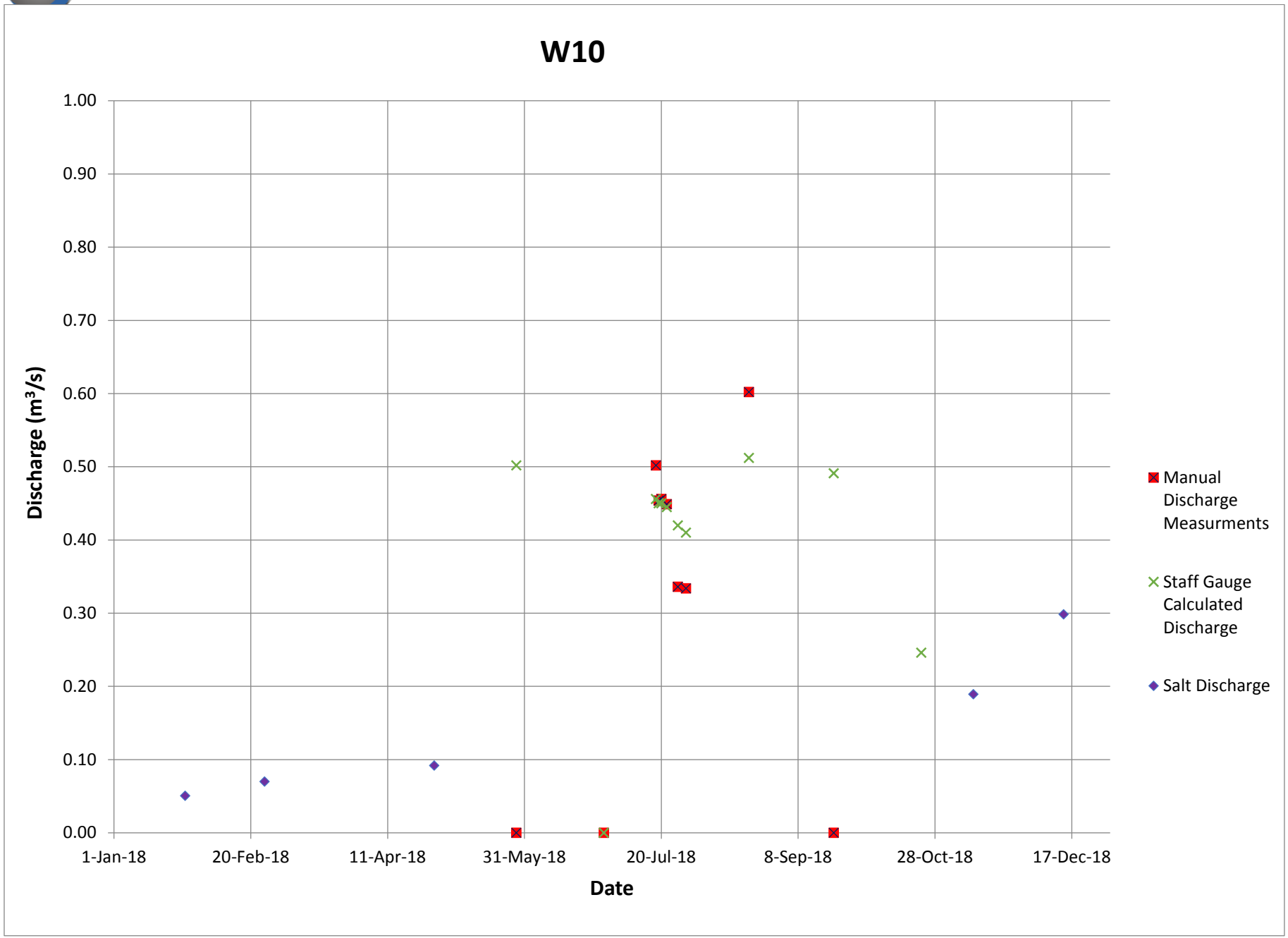
Watercourse Monitoring

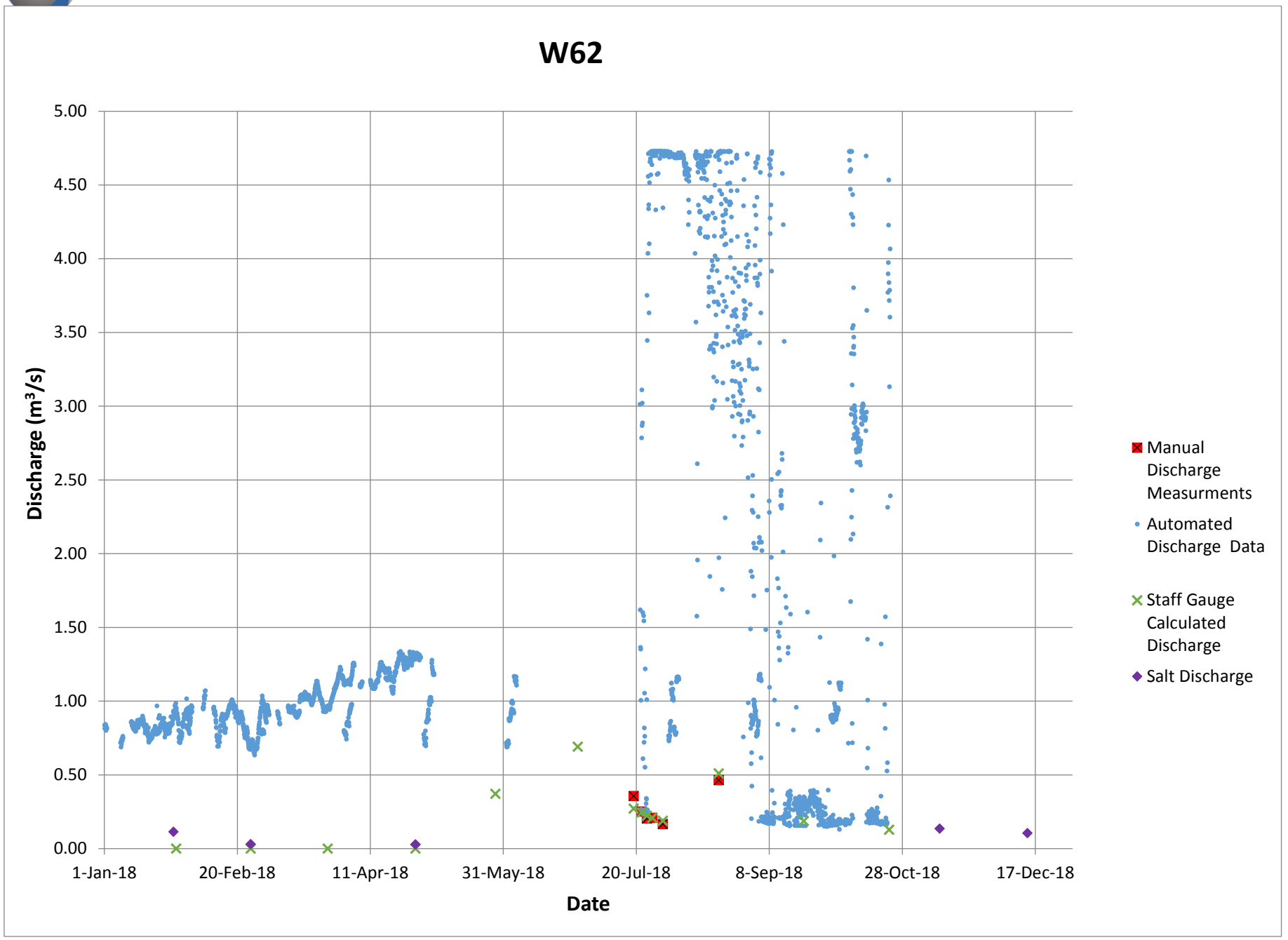
SELWYN CHIHONG MINING LTD.



SELWYN CHIHONG MINING LTD.




W10
1.00
0.90
0.80
0.70
0.60
0.50
0.40
0.30
0.20
0.10
0.00
Discharge (m³/s)
1-Jan-18
20-Feb-18
11-Apr-18
31-May-18
20-Jul-18
8-Sep-18
28-Oct-18
17-Dec-18
Date
Manual Discharge Measurments
Staff Gauge Calculated Discharge
Salt Discharge


W62
Discharge (m³/s)
5.00
4.50
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
1-Jan-18
20-Feb-18
11-Apr-18
31-May-18
20-Jul-18
8-Sep-18
28-Oct-18
17-Dec-18
Date
Manual Discharge Measurments
Automated Discharge Data
Staff Gauge Calculated Discharge
Salt Discharge

SELWYN CHIHONG MINING LTD.

Appendix L

Groundwater Parameters

SELWYN CHIHONG MINING LTD.

Compliance Monitoring Wells
2018 Field Parameters

Well ID	Date	Time (24 hr)	DTW-TOP (m)	DTB-TOP (m)	Temp (*c)	pH	Conductivity (uS/cm)	DO (%)	DO (mg/L)	ORP (mV)	Bailer Volume Purged
MW07-01	26-Jan-18	14:37	3.045	8.495	0.1	7.49	381	30	4.36	88	33
MW07-01	14-Apr-18	14:00	3.519	8.474	10.1	8.00	291	46	5.15	184	30
MW07-01	28-Jul-18	13:30	1.936	8.460	8.6	7.74	322	52	6.01	159	39
MW07-01	22-Oct-18	13:14	3.015	8.479	3.2	7.54	290	65	8.70	152	33
MW07-02	26-Jan-18	15:00	The well was frozen at 4.181.								
MW07-02	14-Apr-18	14:35	4.240	5.840	10.6	7.28	296	59	6.49	108	10
MW07-02	28-Jul-18	12:32	4.040	5.843	5.0	7.47	338	24	3.00	185	11
MW07-02	22-Oct-18	13:38	4.190	5.845	2.2	7.37	386	80	10.91	171	10
MW10-09	26-Jan-18	15:24	1.529	5.428	Parameters could not be taken as the field meter froze.						
MW10-09	14-Apr-18	15:02	1.565	5.415	13.1	6.95	1213	28	2.94	201	23
MW10-09	29-Jul-18	9:16	1.211	5.708	6.7	7.23	1316	22	2.63	26	25
MW10-09	22-Oct-18	14:13	1.284	5.419	2.3	7.26	730	45	6.16	22	25
MW10-08	28-Jan-18	12:04	2.701	4.875	-0.1	7.57	1242	53	7.57	234	13
MW10-08	14-Apr-18	15:31	2.078	4.880	10.1	6.86	1539	82	9.19	218	17
MW10-08	29-Jul-18	11:06	2.664	4.884	4.3	6.81	1095	66	8.45	226	13
MW10-08	22-Oct-18	14:42	2.663	4.888	1.8	7.00	1130	85	11.72	139	13
MW07-03	28-Jan-18	11:19	3.739	5.699	0.6	7.93	845	33	4.56	235	12
MW07-03	14-Apr-18	15:55	3.870	5.700	9.1	6.99	734	35	3.89	35	11
MW07-03	29-Jul-18	9:16	3.986	5.708	3.1	7.12	751	47	6.23	187	10
MW07-03	22-Oct-18	15:10	4.049	5.708	0.8	7.29	713	41	5.78	35	10

DTW= Depth to water (m)

DTB = Depth to bottom (m)

pH= Field Measurement

Conductivity = Field Measurement

DO %= Dissolved Oxygen Percent - Field Measurement

DO=Dissolved Oxyen mg/L - Field Measurement

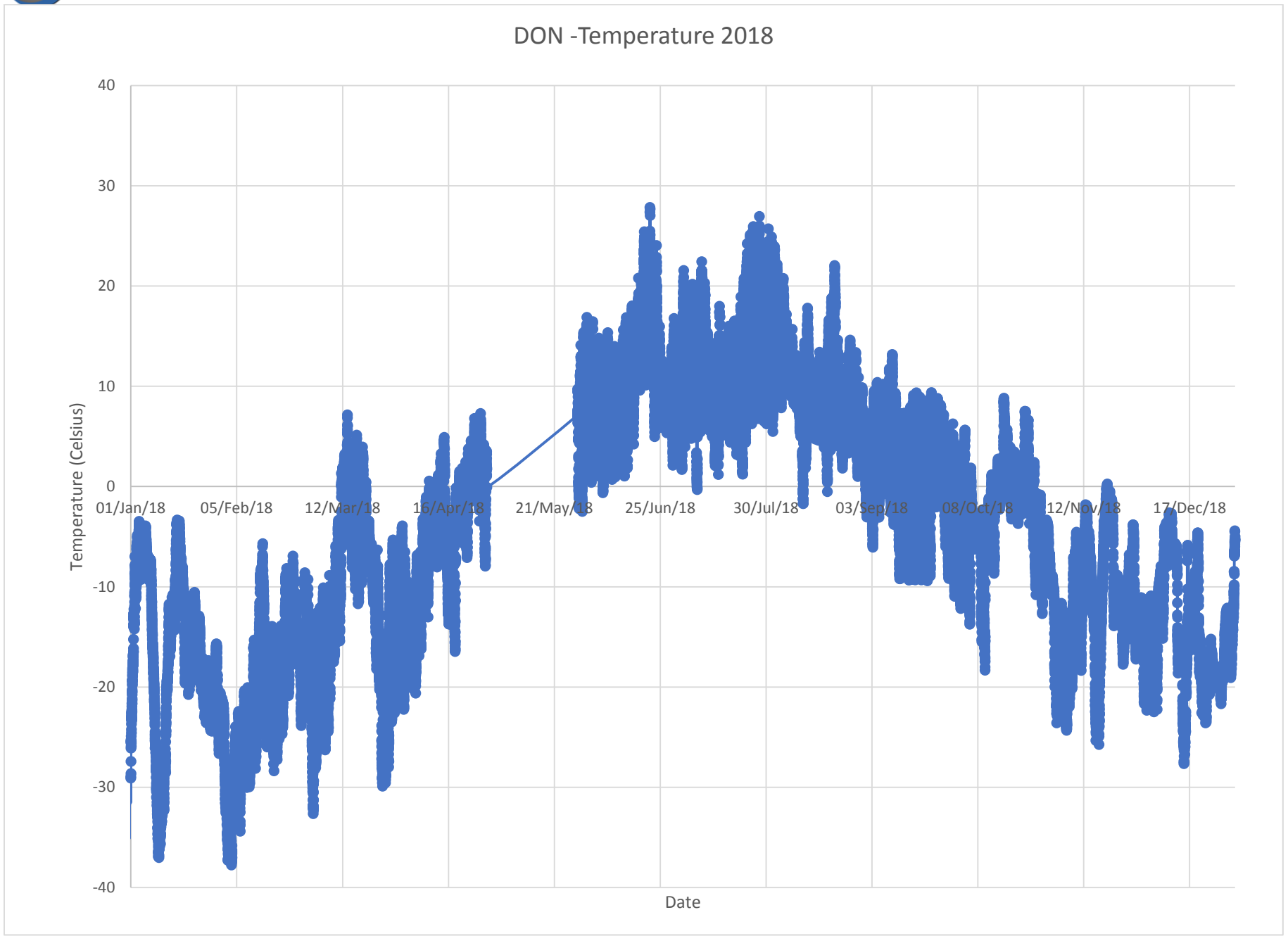
ORP = Oxidation Reduction Potential - Field Measurement

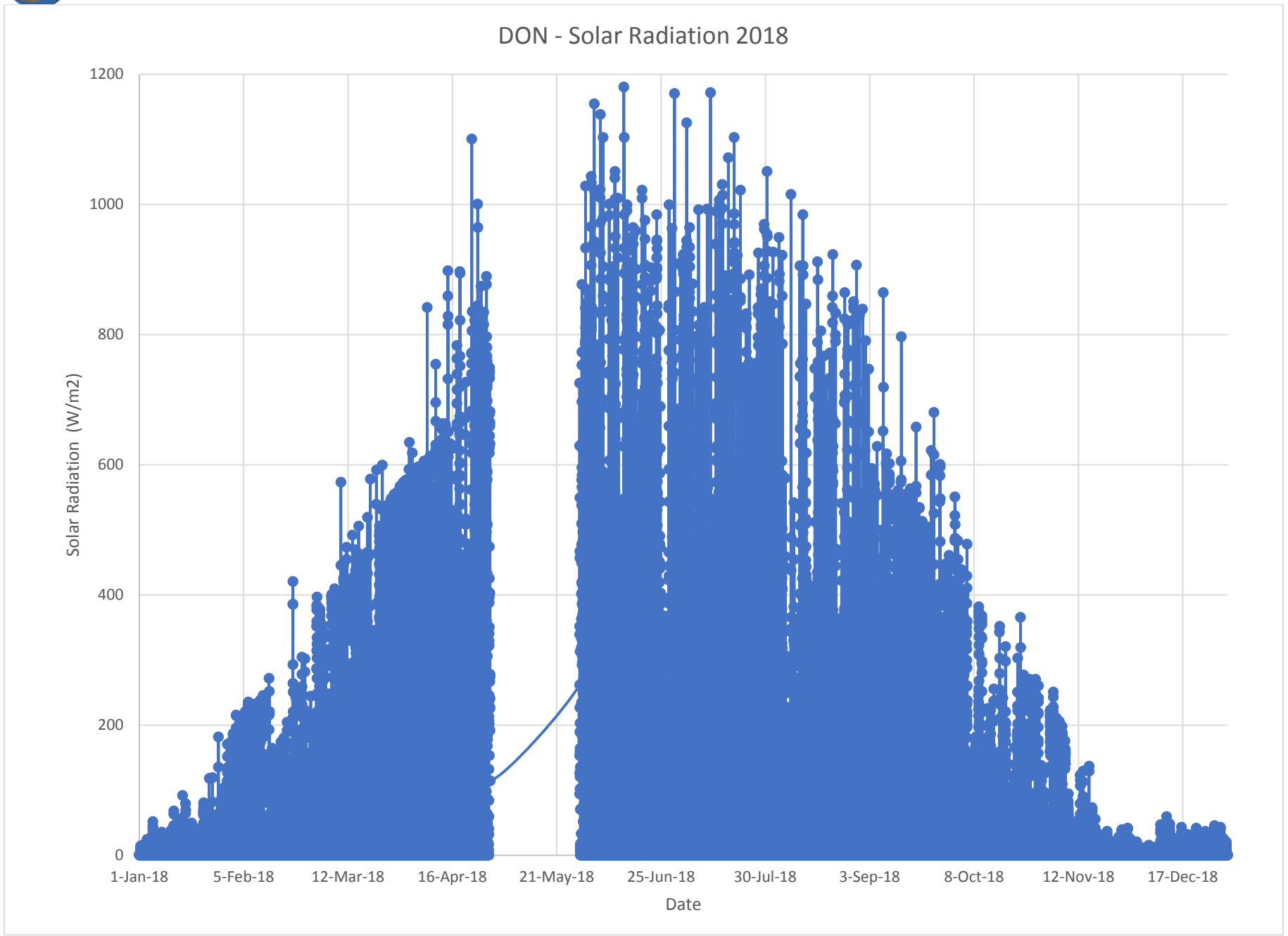
Appendix M

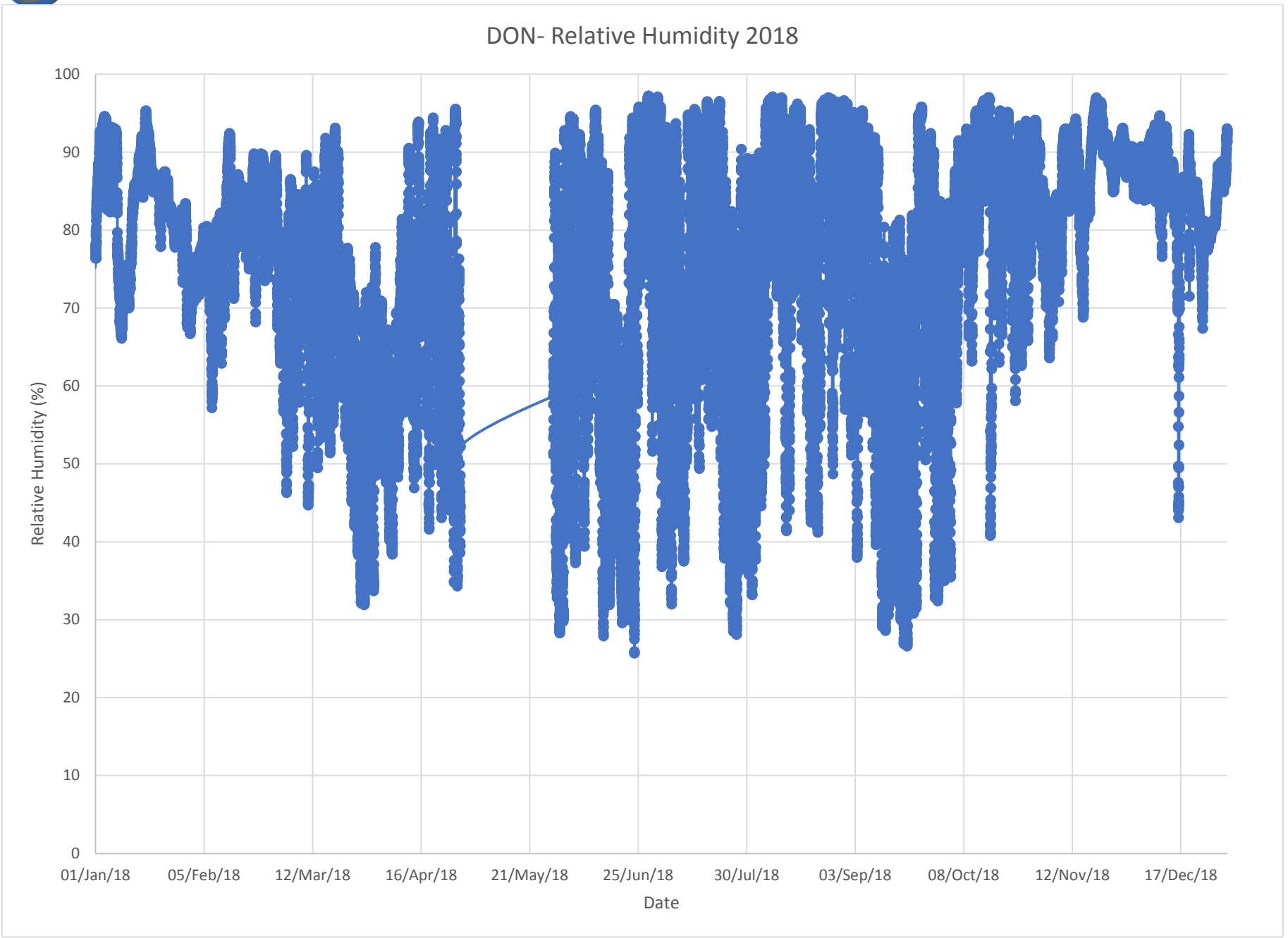
Climate Stations

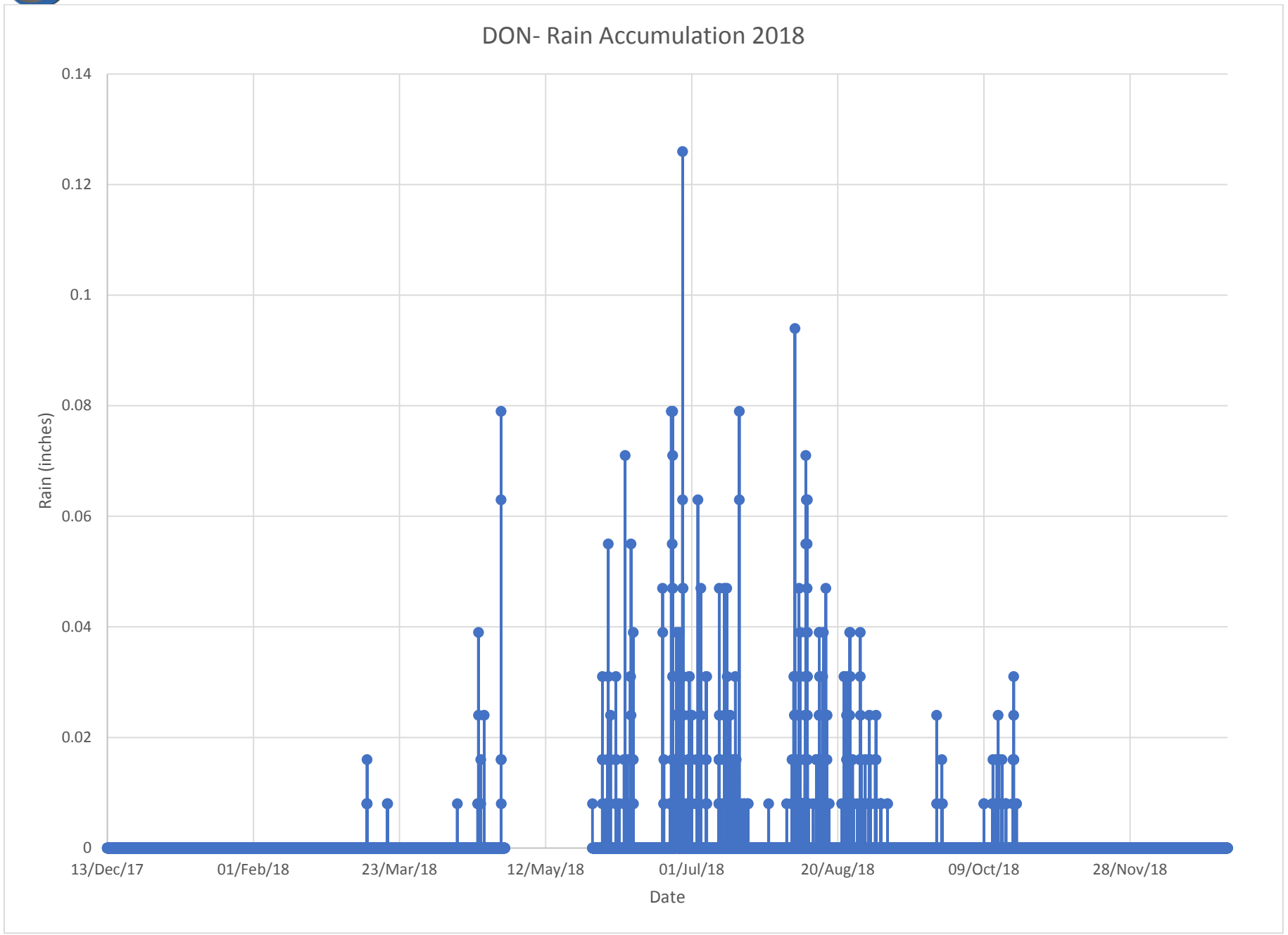
DON
Climate Station

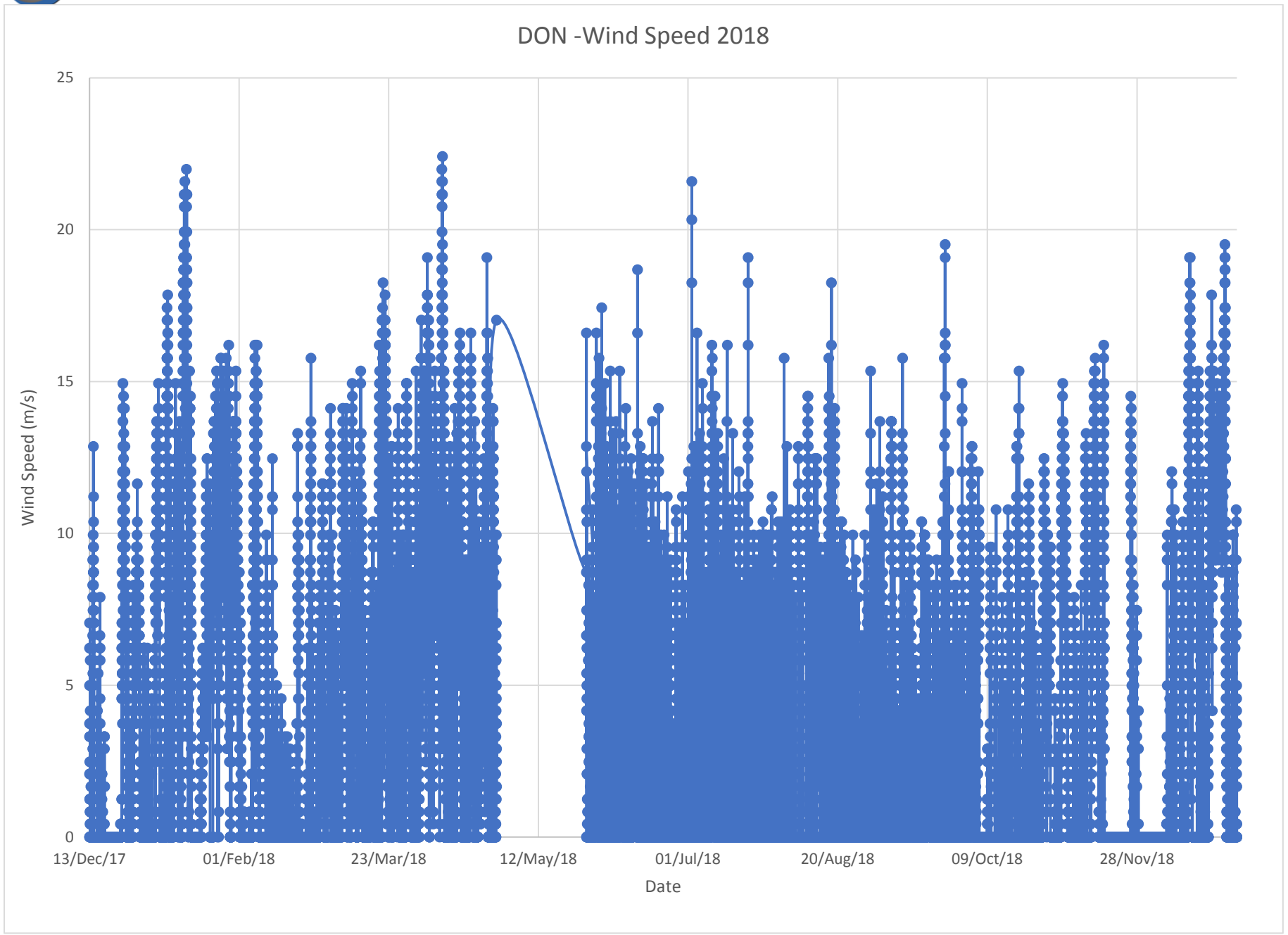
SELWYN CHIHONG MINING LTD.

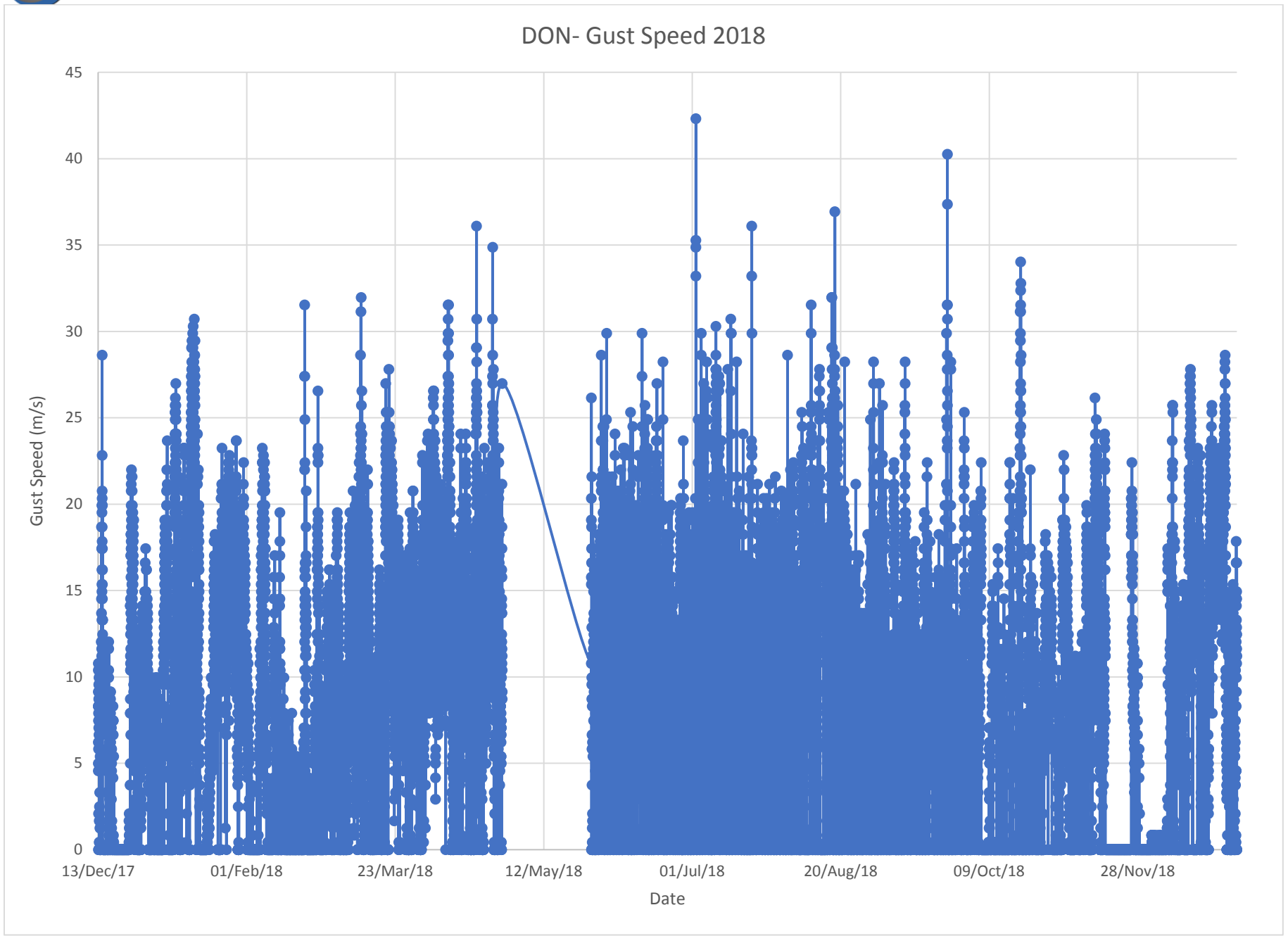



DON - Solar Radiation 2018
Solar Radiation (W/m2)
1200
1000
800
600
400
200
0
1-Jan-18
5-Feb-18
12-Mar-18
16-Apr-18
21-May-18
25-Jun-18
30-Jul-18
3-Sep-18
8-Oct-18
12-Nov-18
17-Dec-18
Date


DON- Relative Humidity 2018
Relative Humidity (%)
100
90
80
70
60
50
40
30
20
10
0
01/Jan/18
05/Feb/18
12/Mar/18
16/Apr/18
21/May/18
25/Jun/18
30/Jul/18
03/Sep/18
08/Oct/18
12/Nov/18
17/Dec/18
Date


DON- Rain Accumulation 2018
0.14
0.12
0.1
0.08
0.06
0.04
0.02
0
Rain (inches)
13/Dec/17
01/Feb/18
23/Mar/18
12/May/18
01/Jul/18
20/Aug/18
09/Oct/18
28/Nov/18
Date


DON -Wind Speed 2018
Wind Speed (m/s)
25
20
15
10
5
0
13/Dec/17
01/Feb/18
23/Mar/18
12/May/18
01/Jul/18
20/Aug/18
09/Oct/18
28/Nov/18
Date

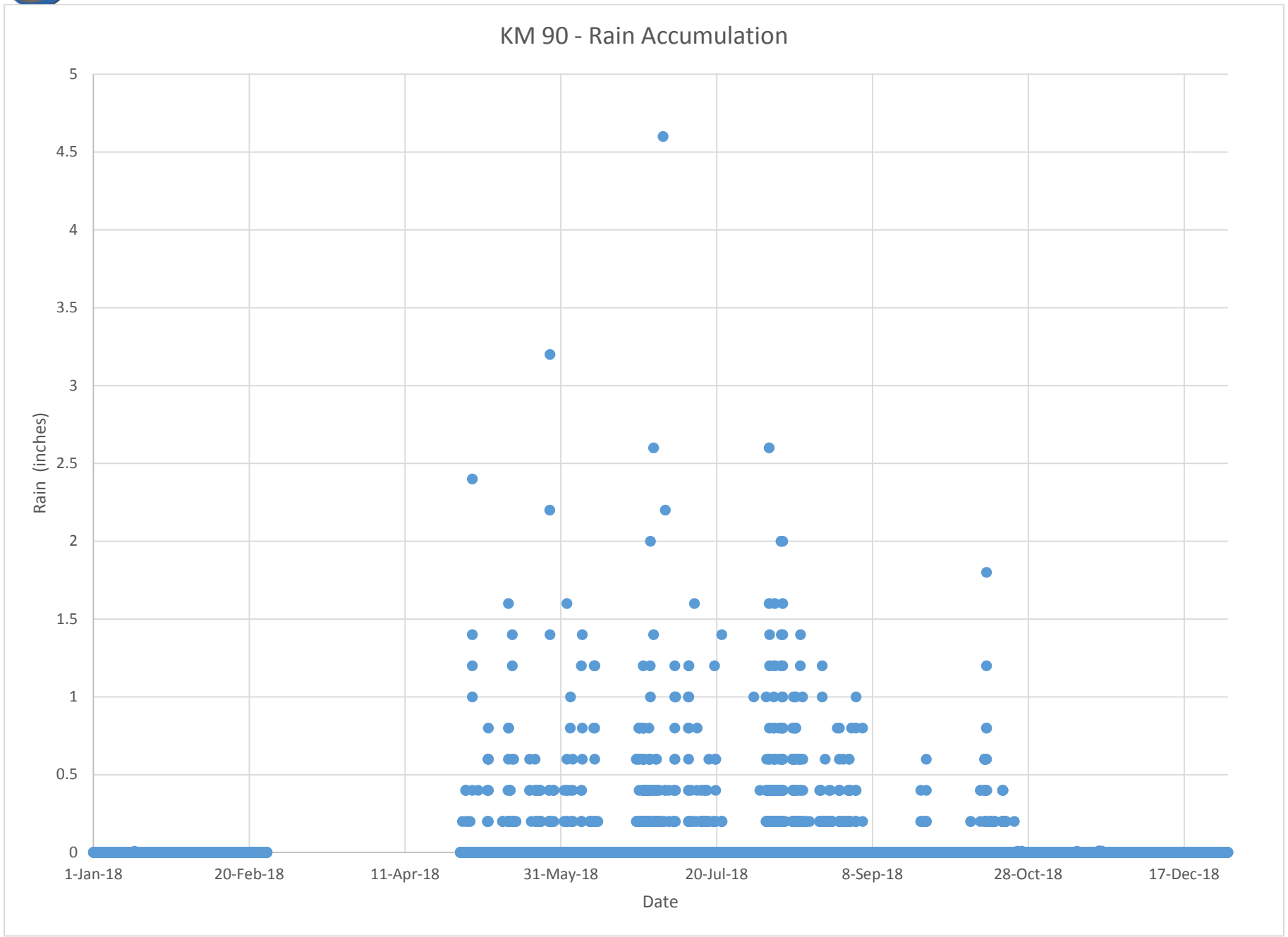

DON- Gust Speed 2018
Gust Speed (m/s)
45
40
35
30
25
20
15
10
5
0
13/Dec/17
01/Feb/18
23/Mar/18
12/May/18
01/Jul/18
20/Aug/18
09/Oct/18
28/Nov/18
Date

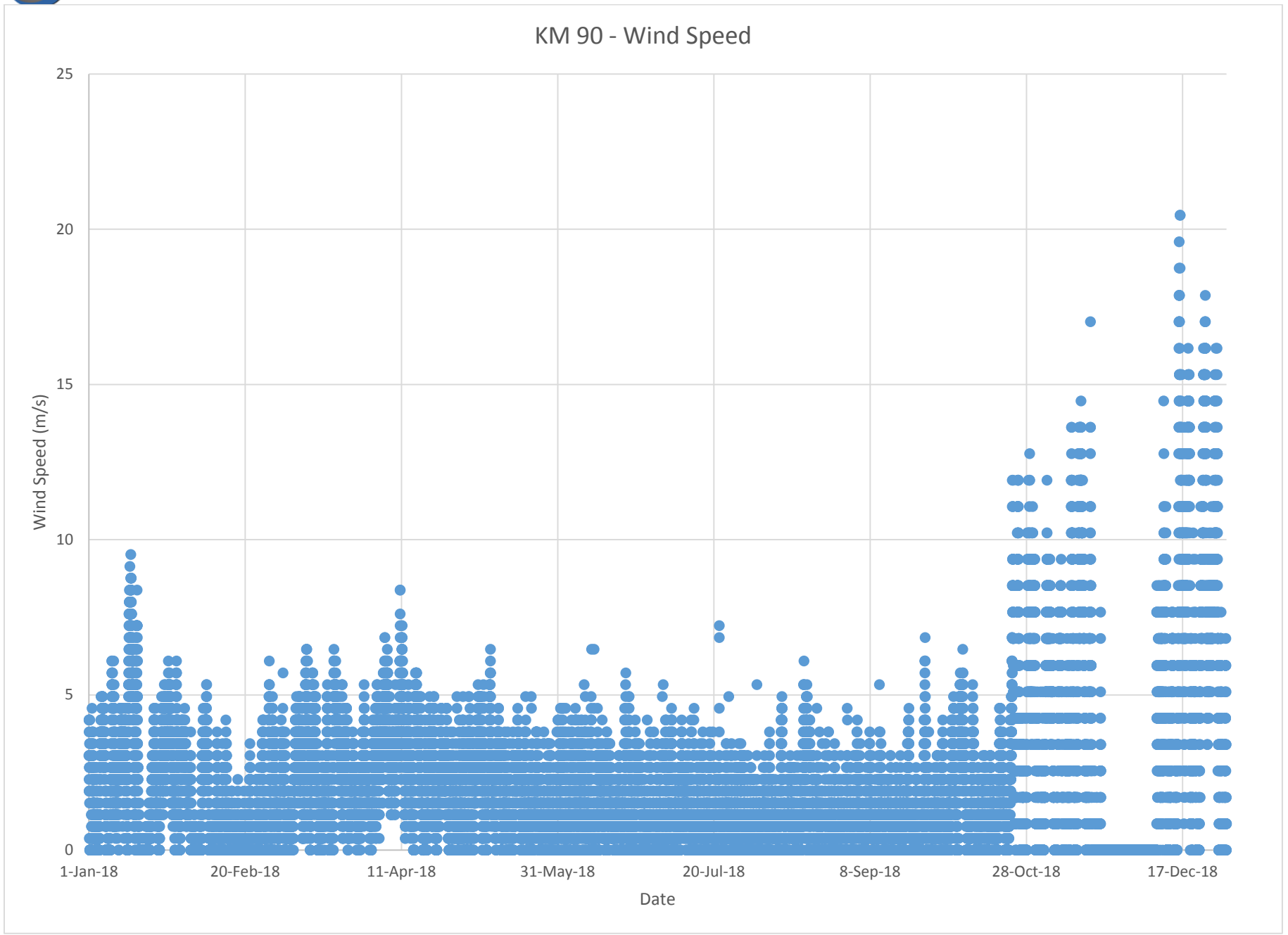
SELWYN CHIHONG MINING LTD.

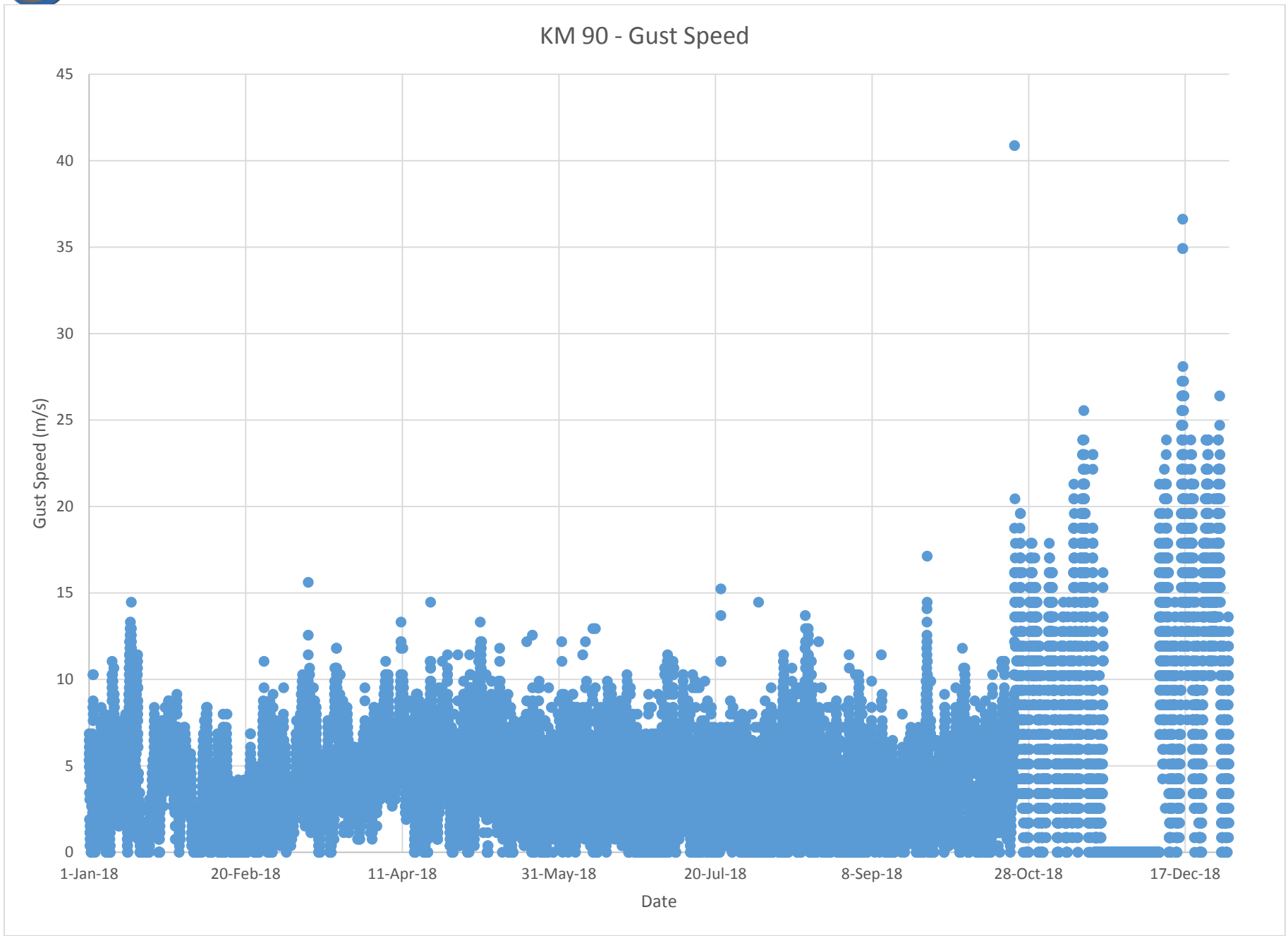
Appendix M

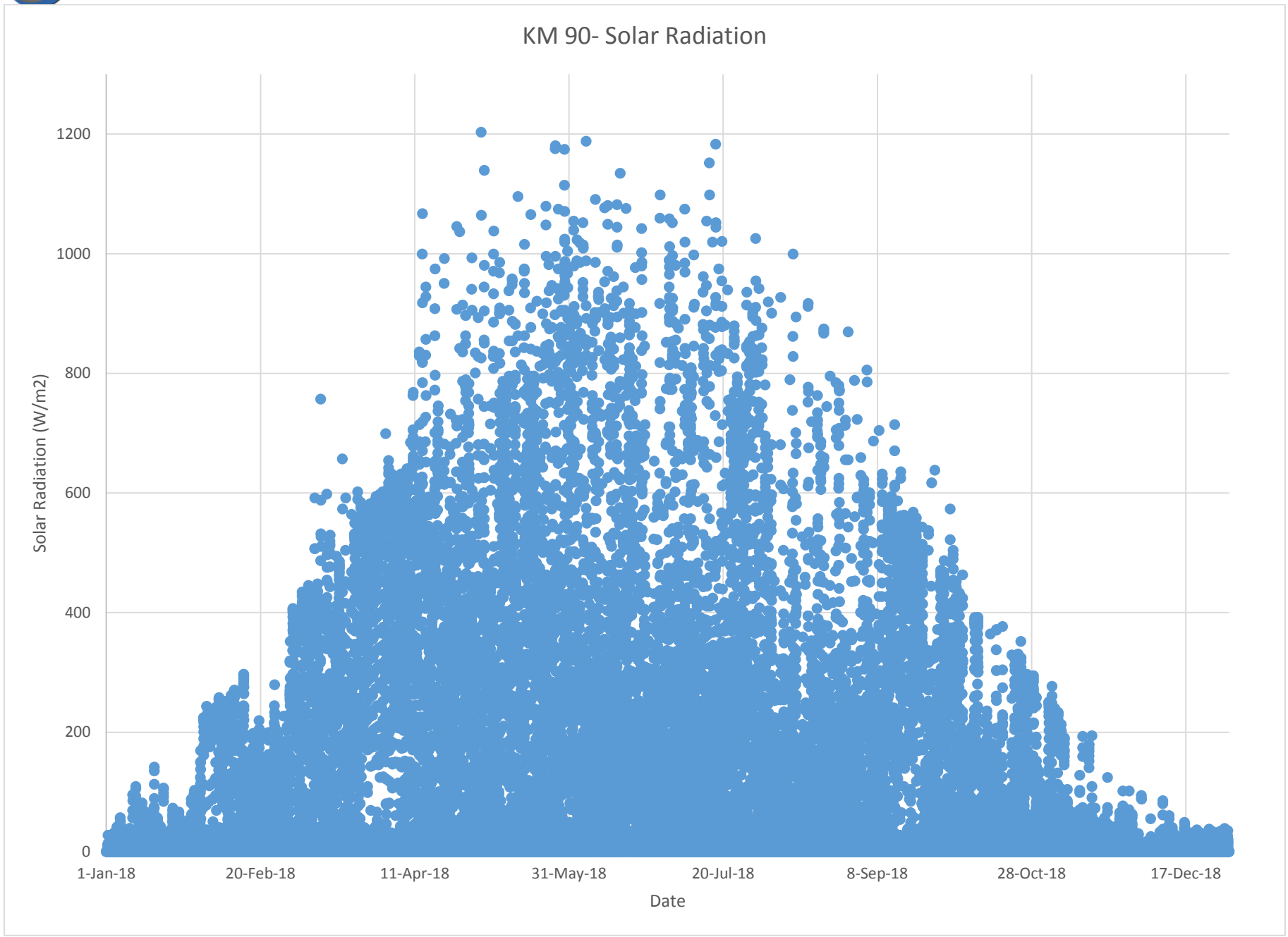
KM 90
Climate Station

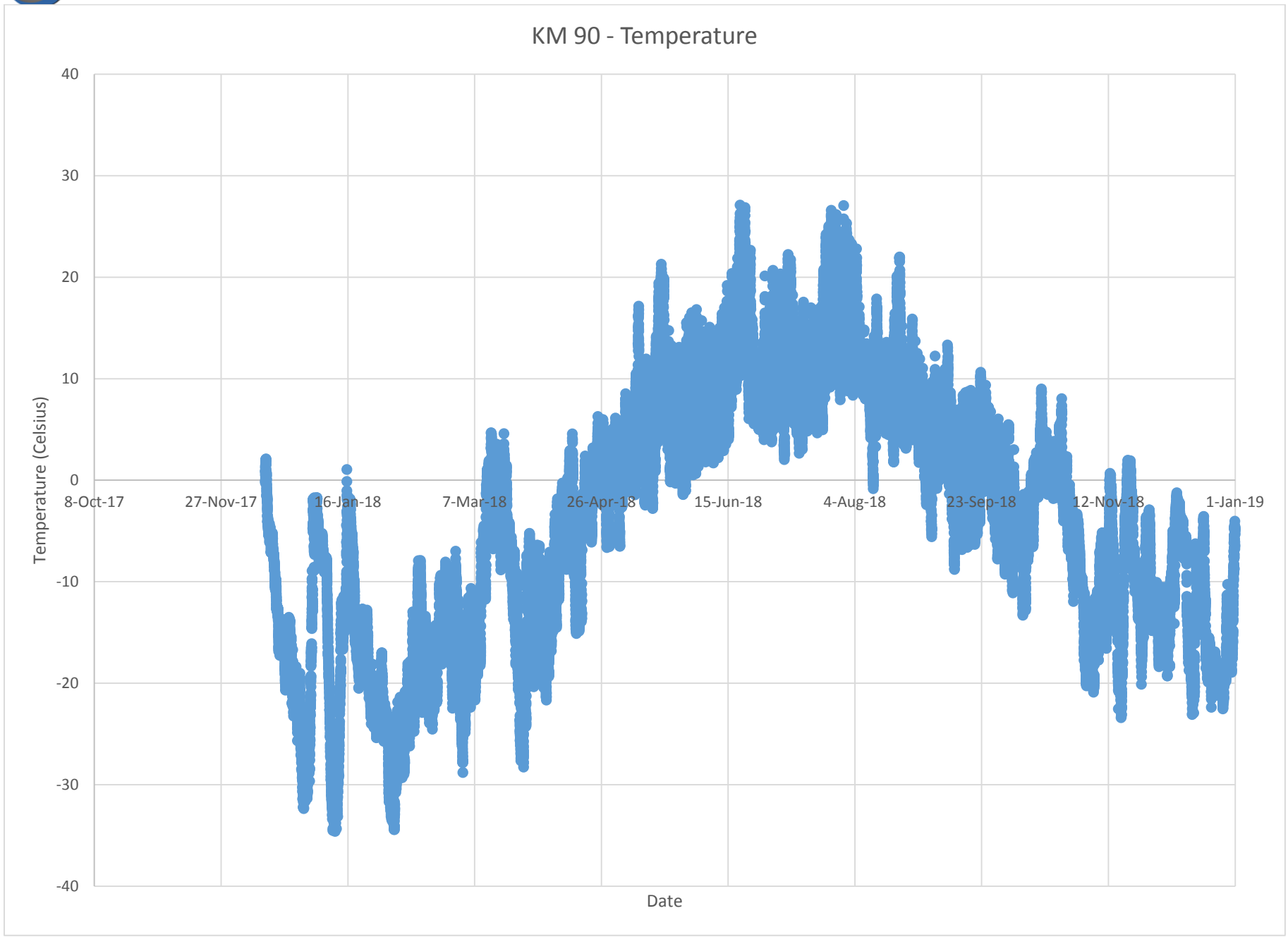
SELWYN CHIHONG MINING LTD.

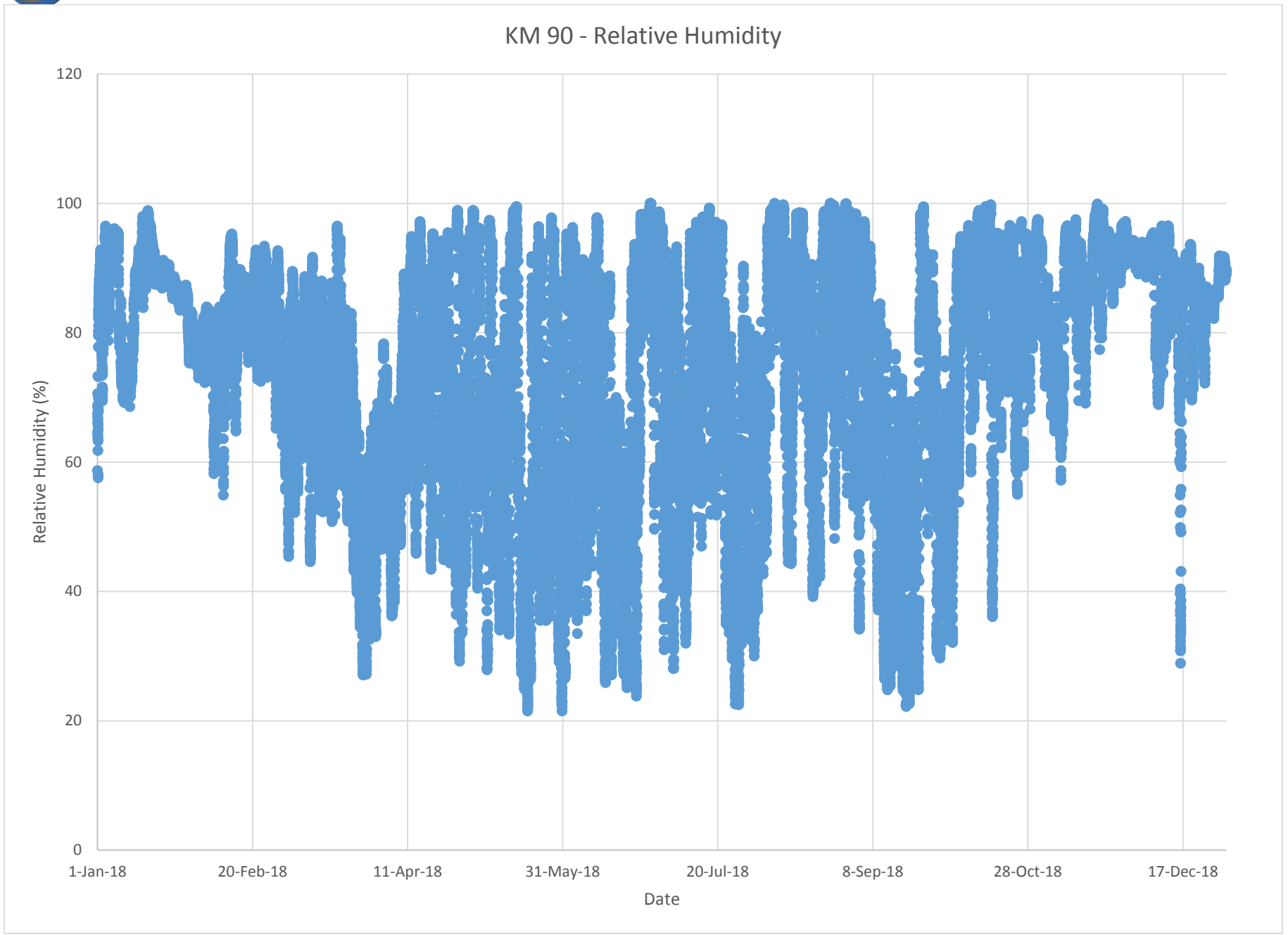



KM 90 - Wind Speed
Wind Speed (m/s)
25
20
15
10
5
0
1-Jan-18
20-Feb-18
11-Apr-18
31-May-18
20-Jul-18
8-Sep-18
28-Oct-18
17-Dec-18
Date


KM 90 - Gust Speed
Gust Speed (m/s)
45
40
35
30
25
20
15
10
5
0
1-Jan-18
20-Feb-18
11-Apr-18
31-May-18
20-Jul-18
8-Sep-18
28-Oct-18
17-Dec-18
Date

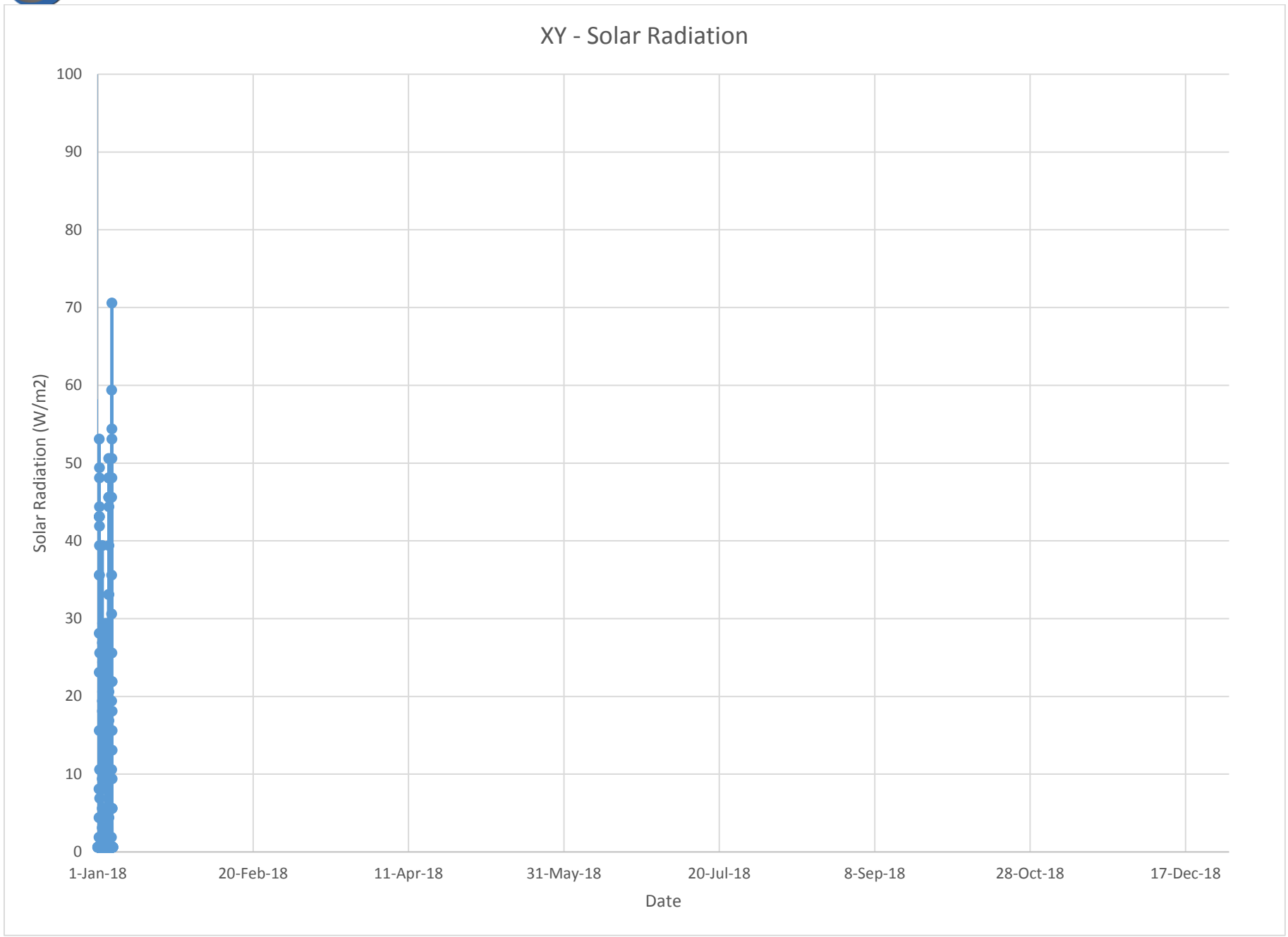

KM 90- Solar Radiation
Solar Radiation (W/m2)
1200
1000
800
600
400
200
0
1-Jan-18
20-Feb-18
11-Apr-18
31-May-18
20-Jul-18
8-Sep-18
28-Oct-18
17-Dec-18
Date


KM 90 - Temperature
40
30
20
10
0
-10
-20
-30
-40
Temperature (Celsius)
8-Oct-17
27-Nov-17
16-Jan-18
7-Mar-18
26-Apr-18
15-Jun-18
4-Aug-18
23-Sep-18
12-Nov-18
1-Jan-19
Date

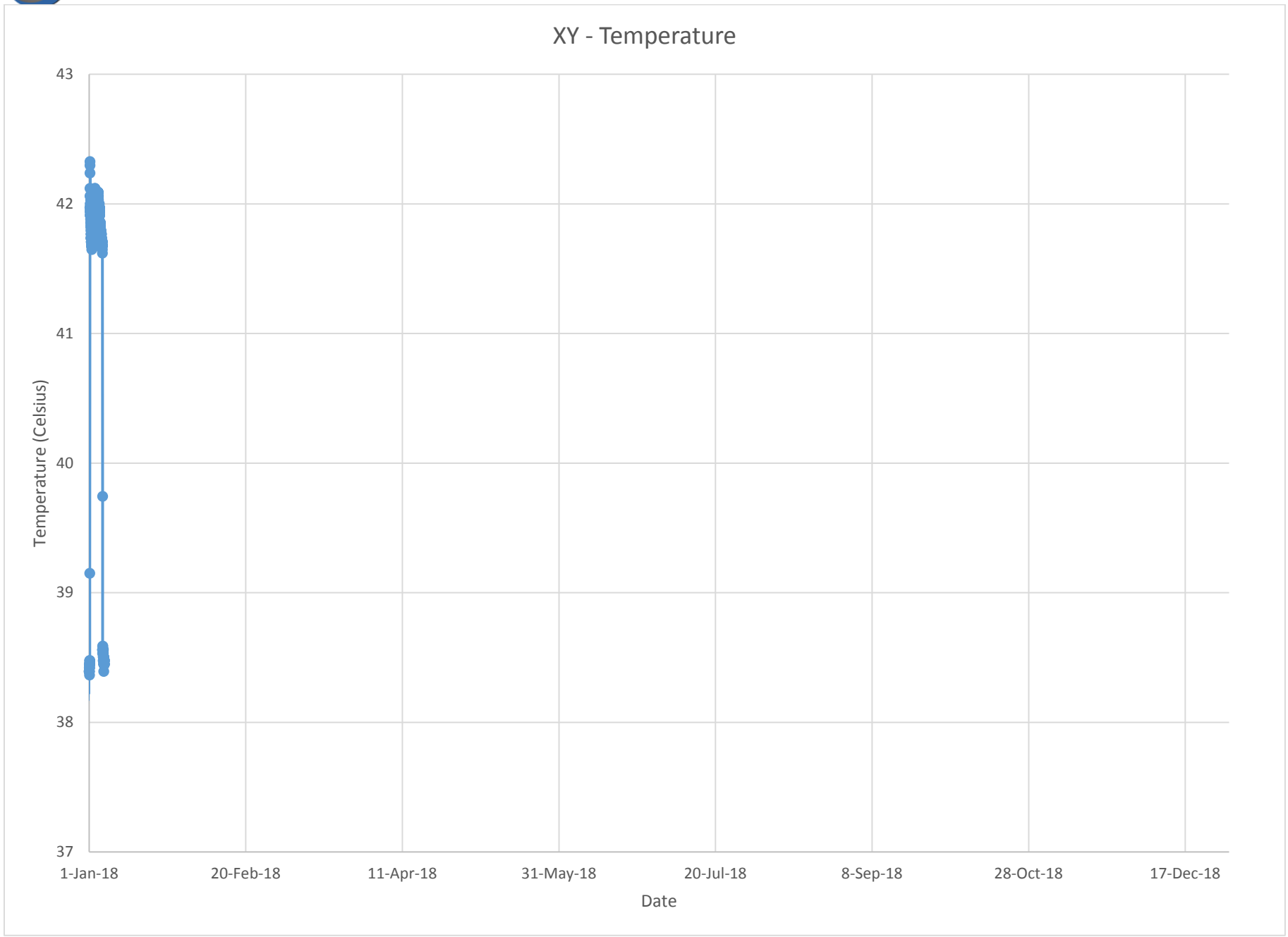

KM 90 - Relative Humidity
120
100
80
60
40
20
0
Relative Humidity (%)
1-Jan-18
20-Feb-18
11-Apr-18
31-May-18
20-Jul-18
8-Sep-18
28-Oct-18
17-Dec-18
Date

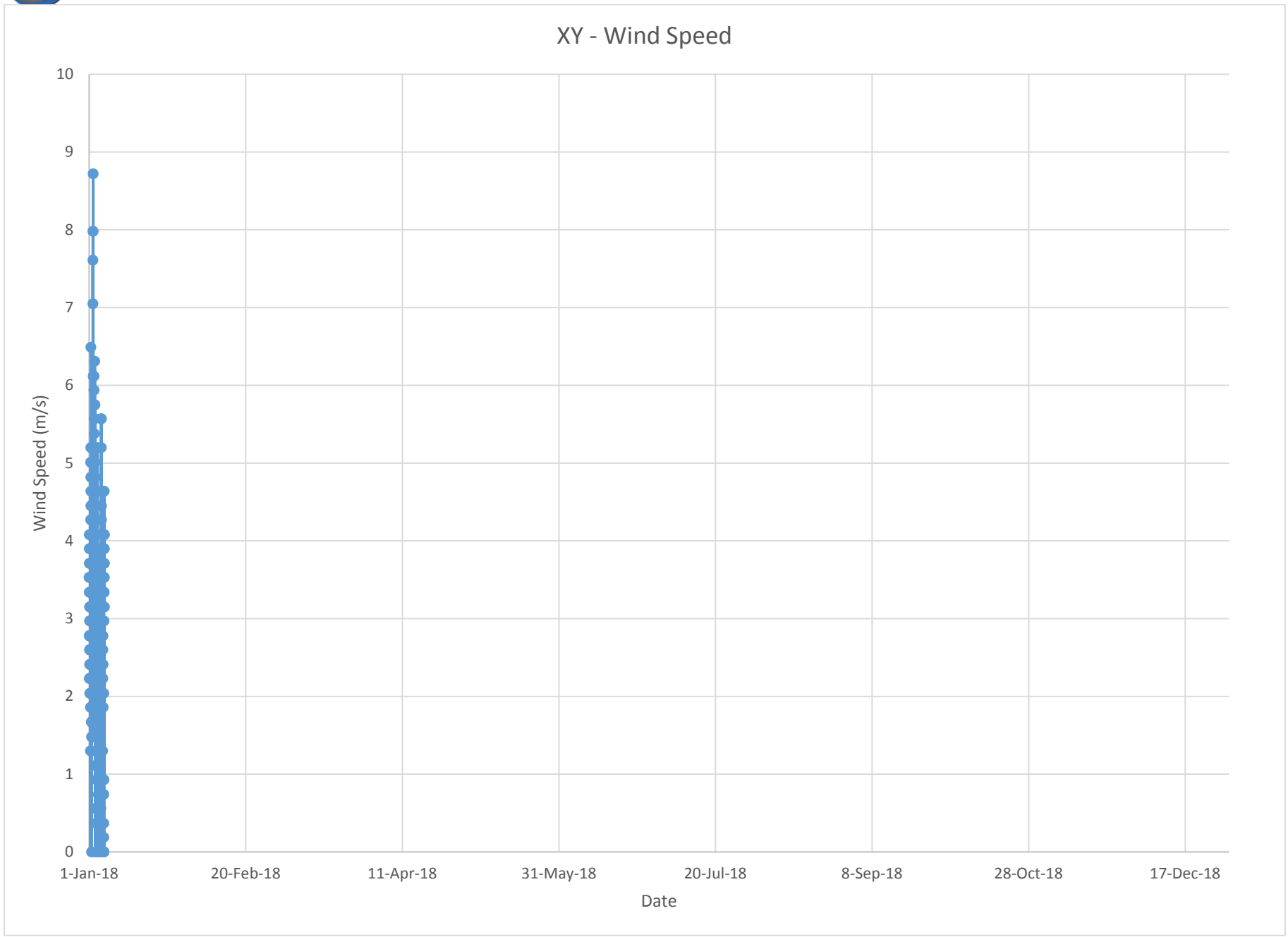
XY
Climate Station

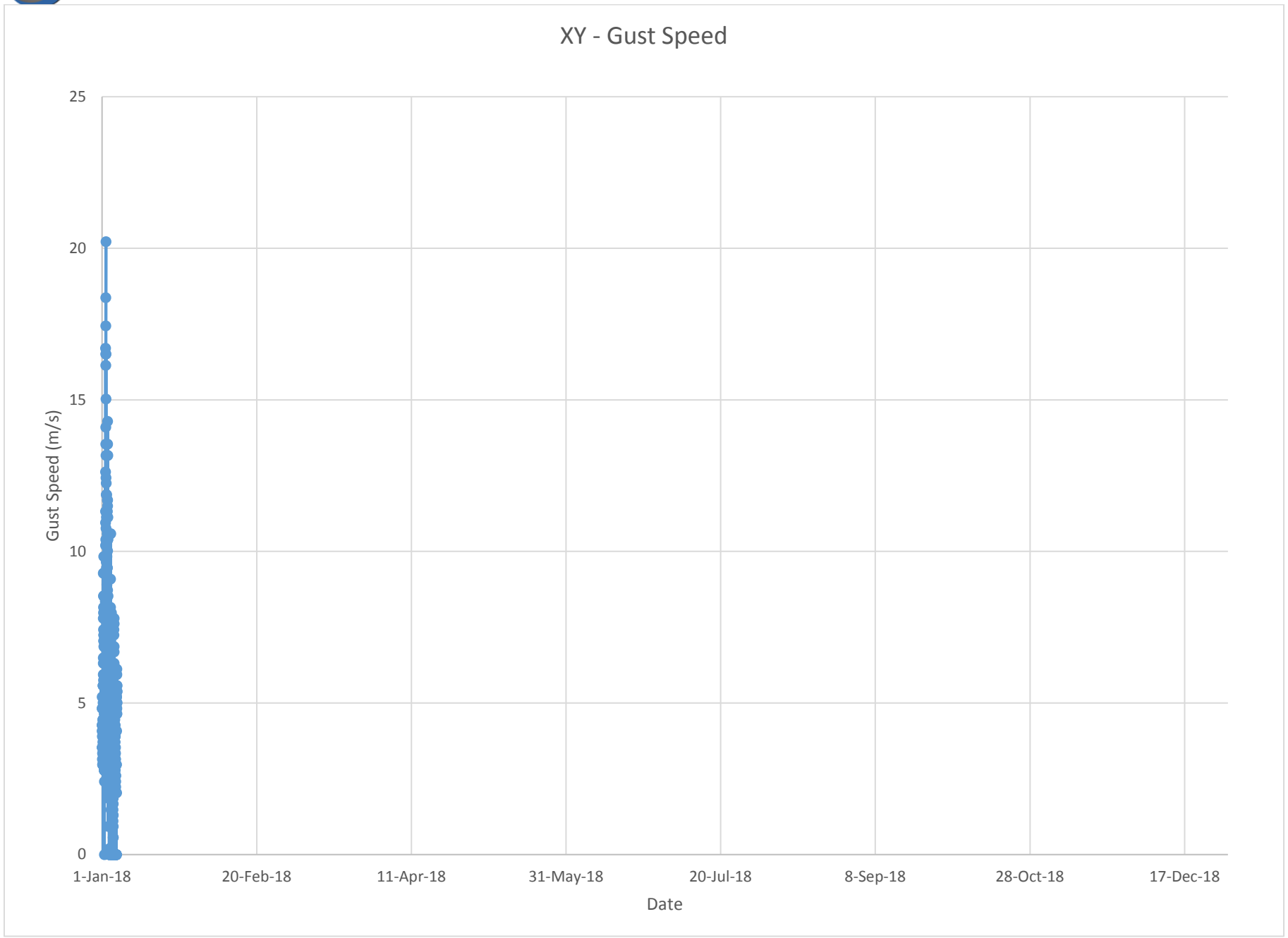
SELWYN CHIHONG MINING LTD.



SELWYN CHIHONG MINING LTD.




XY - Wind Speed
Wind Speed (m/s)
10
9
8
7
6
5
4
3
2
1
0
1-Jan-18
20-Feb-18
11-Apr-18
31-May-18
20-Jul-18
8-Sep-18
28-Oct-18
17-Dec-18
Date


XY - Gust Speed
25
20
15
10
5
0
Gust Speed (m/s)
1-Jan-18
20-Feb-18
11-Apr-18
31-May-18
20-Jul-18
8-Sep-18
28-Oct-18
17-Dec-18
Date

Appendix N

Potable Water Results

Potable Water
Analytical Results

SELWYN CHIHONG MINING LTD.
ATTN: Sukie Sidhu
920 - 700 west Pender Street
Vancouver BC V6C 1G8

Date Received: 11-JUN-18
Report Date: 06-JUL-18 10:39 (MT)
Version: FINAL

Client Phone: 778-847-0880

Certificate of Analysis

Lab Work Order #: L2110259

Project P.O. #: NOT SUBMITTED
Job Reference:
C of C Numbers: 17-653172
Legal Site Desc:

Amber Springer, B.Sc
Account Manager

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L2110259-1	L2110259-2	L2110259-3		
	Description					
	Sampled Date	11-JUN-18	11-JUN-18	11-JUN-18		
	Sampled Time	08:24	08:26	08:28		
	Client ID	HOLDING TANK # 1 TANK STORAGE WATER	HOLDING TANK # 2 TANK STORAGE WATER	HOLDING TANK # 3 TANK STORAGE WATER		
Grouping	**Analyte**					
WATER						
Physical Tests	Conductivity (uS/cm)	378	380	378		
	Hardness (as CaCO3) (mg/L)	205 HTC	308 HTC	213 HTC		
	pH (pH)	8.42	8.30	8.33		
	Total Suspended Solids (mg/L)	<3.0	10.1	88.3		
	TDS (Calculated) (mg/L)	223	266	228		
Anions and Nutrients	Acidity (as CaCO3) (mg/L)	<1.0	<1.0	<1.0		
	Acidity to pH 4.5 (as CaCO3) (mg/L)	<1.0	<1.0	<1.0		
	Alkalinity, Bicarbonate (as CaCO3) (mg/L)	159	168	164		
	Alkalinity, Carbonate (as CaCO3) (mg/L)	7.6	<1.0	3.6		
	Alkalinity, Hydroxide (as CaCO3) (mg/L)	<1.0	<1.0	<1.0		
	Alkalinity, Total (as CaCO3) (mg/L)	167	168	168		
	Bromide (Br) (mg/L)	<0.050	<0.050	<0.050		
	Chloride (Cl) (mg/L)	2.60	3.07	2.96		
	Fluoride (F) (mg/L)	0.164	0.167	0.167		
	Nitrate and Nitrite (as N) (mg/L)	2.51	2.56	2.52		
	Nitrate (as N) (mg/L)	2.51	2.56	2.52		
	Nitrite (as N) (mg/L)	<0.0010	<0.0010	<0.0010		
	Orthophosphate-Dissolved (as P) (mg/L)	<0.0010	<0.0010	<0.0010		
	Sulfate (SO4) (mg/L)	34.9	35.5	35.4		
	Anion Sum (meq/L)	4.32	4.37	4.36		
	Cation Sum (meq/L)	4.20	6.31	4.37		
	Cation - Anion Balance (%)	-1.4	18.2	0.1		
Cyanides	Cyanide, Weak Acid Diss (mg/L)	<0.0050	<0.0050	<0.0050		
	Cyanide, Total (mg/L)	<0.0050	<0.0050	<0.0050		
Total Metals	Aluminum (Al)-Total (mg/L)	<0.0030	0.0063	<0.0030		
	Antimony (Sb)-Total (mg/L)	<0.00010	0.00024	<0.00010		
	Arsenic (As)-Total (mg/L)	0.00010	0.00022	<0.00010		
	Barium (Ba)-Total (mg/L)	0.124	0.147	0.124		
	Beryllium (Be)-Total (mg/L)	<0.000020	<0.000020	<0.000020		
	Bismuth (Bi)-Total (mg/L)	<0.000050	<0.000050	<0.000050		
	Boron (B)-Total (mg/L)	<0.010	<0.010	<0.010		
	Cadmium (Cd)-Total (mg/L)	0.000143	0.000706	0.000150		
	Calcium (Ca)-Total (mg/L)	53.6	93.3	56.7		
	Chromium (Cr)-Total (mg/L)	0.00014	0.00061	<0.00010		
	Cobalt (Co)-Total (mg/L)	<0.00010	0.00016	<0.00010		
	Copper (Cu)-Total (mg/L)	<0.00050	0.00141	<0.00050		
	Iron (Fe)-Total (mg/L)	0.135	0.791	0.120		

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L2110259-1	L2110259-2	L2110259-3		
	Description					
	Sampled Date	11-JUN-18	11-JUN-18	11-JUN-18		
	Sampled Time	08:24	08:26	08:28		
	Client ID	HOLDING TANK # 1 TANK STORAGE WATER	HOLDING TANK # 2 TANK STORAGE WATER	HOLDING TANK # 3 TANK STORAGE WATER		
Grouping	**Analyte**					
WATER						
Total Metals	Lead (Pb)-Total (mg/L)	<0.000050	0.000469	<0.000050		
	Lithium (Li)-Total (mg/L)	0.0036	0.0037	0.0036		
	Magnesium (Mg)-Total (mg/L)	17.2	18.2	17.4		
	Manganese (Mn)-Total (mg/L)	0.00772	0.0379	0.00909		
	Mercury (Hg)-Total (mg/L)	<0.0000050	0.0000073	<0.0000050		
	Molybdenum (Mo)-Total (mg/L)	0.000981	0.000828	0.00103		
	Nickel (Ni)-Total (mg/L)	0.00143	0.00186	0.00146		
	Phosphorus (P)-Total (mg/L)	<0.050	<0.050	<0.050		
	Potassium (K)-Total (mg/L)	1.14	1.19	1.16		
	Selenium (Se)-Total (mg/L)	0.00507	0.00492	0.00512		
	Silicon (Si)-Total (mg/L)	3.20	3.35	3.16		
	Silver (Ag)-Total (mg/L)	<0.000010	<0.000010	<0.000010		
	Sodium (Na)-Total (mg/L)	1.73	1.88	1.74		
	Strontium (Sr)-Total (mg/L)	0.233	0.265	0.238		
	Sulfur (S)-Total (mg/L)	11.7	11.7	11.3		
	Thallium (Tl)-Total (mg/L)	<0.000010	<0.000010	<0.000010		
	Tin (Sn)-Total (mg/L)	<0.00010	<0.00010	<0.00010		
	Titanium (Ti)-Total (mg/L)	<0.00030	<0.00030	<0.00030		
	Uranium (U)-Total (mg/L)	0.00328	0.00376	0.00345		
	Vanadium (V)-Total (mg/L)	<0.00050	<0.00050	<0.00050		
	Zinc (Zn)-Total (mg/L)	<0.0030	0.0057	<0.0030		
	Zirconium (Zr)-Total (mg/L)	<0.00030	<0.00030	<0.00030		

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

Reference Information

QC Samples with Qualifiers & Comments:

QC Type Description	Parameter	Qualifier	Applies to Sample Number(s)
Certified Reference Material	Acidity to pH 4.5 (as CaCO3)	LCS-H	L2110259-1, -2, -3
Method Blank	Silver (Ag)-Total	MB-LOR	L2110259-1, -2, -3
Matrix Spike	Barium (Ba)-Total	MS-B	L2110259-1, -2, -3
Matrix Spike	Calcium (Ca)-Total	MS-B	L2110259-1, -2, -3
Matrix Spike	Magnesium (Mg)-Total	MS-B	L2110259-1, -2, -3
Matrix Spike	Manganese (Mn)-Total	MS-B	L2110259-1, -2, -3
Matrix Spike	Sodium (Na)-Total	MS-B	L2110259-1, -2, -3
Matrix Spike	Strontium (Sr)-Total	MS-B	L2110259-1, -2, -3

Qualifiers for Individual Parameters Listed:

Qualifier	Description
HTC	Hardness was calculated from Total Ca and/or Mg concentrations and may be biased high (dissolved Ca/Mg results unavailable).
LCS-H	Lab Control Sample recovery was above ALS DQO. Non-detected sample results are considered reliable. Other results, if reported, have been qualified.
MB-LOR	Method Blank exceeds ALS DQO. Limits of Reporting have been adjusted for samples with positive hits below 5x blank level.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
ACY-4.5-PCT-VA	Water	Acidity by Automated Titration to pH 4.5	APHA 2310 Acidity

This analysis is carried out using procedures adapted from APHA Method 2310 "Acidity". Acidity is determined by potentiometric titration to a specified endpoint.

ACY-PCT-VA	Water	Acidity by Automatic Titration	APHA 2310 Acidity

This analysis is carried out using procedures adapted from APHA Method 2310 "Acidity". Acidity is determined by potentiometric titration to a specified endpoint.

Samples of industrial wastes, acid mine drainage, or other solutions that contain appreciable amounts of hydrolyzable metal ions such as aluminum, iron, and manganese may require hot peroxide treatment to ensure oxidation and hydrolysis of reduced forms of polyvalent cations. Acidity results may be highly variable if this procedure is not followed. Results in this report for 'Acidity (as CaCO3)' have not been peroxide treated.

ALK-TITR-VA	Water	Alkalinity Species by Titration	APHA 2320 Alkalinity

This analysis is carried out using procedures adapted from APHA Method 2320 "Alkalinity". Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.

ANIONS-N+N-CALC-VA	Water	Nitrite & Nitrate in Water (Calculation)	EPA 300.0

Nitrate and Nitrite (as N) is a calculated parameter. Nitrate and Nitrite (as N) = Nitrite (as N) + Nitrate (as N).

BE-T-L-CCMS-VA	Water	Total Be (Low) in Water by CRC ICPMS	EPA 200.2/6020A (mod)

Water samples are digested with nitric and hydrochloric acids, and analyzed by CRC ICPMS.

BR-L-IC-N-VA	Water	Bromide in Water by IC (Low Level)	EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

CL-IC-N-VA	Water	Chloride in Water by IC	EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

CN-T-CFA-VA	Water	Total Cyanide in water by CFA	ISO 14403:2002

This analysis is carried out using procedures adapted from ISO Method 14403:2002 "Determination of Total Cyanide using Flow Analysis (FIA and CFA)". Total or strong acid dissociable (SAD) cyanide is determined by in-line UV digestion along with sample distillation and final determination by colourimetric analysis. Method Limitation: This method is susceptible to interference from thiocyanate (SCN). If SCN is present in the sample, there could be a positive interference with this method, but it would be less than 1% and could be as low as zero.

CN-WAD-CFA-VA	Water	Weak Acid Diss. Cyanide in water by CFA	APHA 4500-CN CYANIDE

This analysis is carried out using procedures adapted from APHA Method 4500-CN I. "Weak Acid Dissociable Cyanide". Weak Acid Dissociable (WAD) cyanide is determined by in-line sample distillation with final determination by colourimetric analysis.

EC-PCT-VA	Water	Conductivity (Automated)	APHA 2510 Auto. Conduc.

This analysis is carried out using procedures adapted from APHA Method 2510 "Conductivity". Conductivity is determined using a conductivity electrode.

EC-SCREEN-VA	Water	Conductivity Screen (Internal Use Only)	APHA 2510

Reference Information

Qualitative analysis of conductivity where required during preparation of other tests - e.g. TDS, metals, etc.

F-IC-N-VA	Water	Fluoride in Water by IC	EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

HARDNESS-CALC-VA	Water	Hardness	APHA 2340B

Hardness (also known as Total Hardness) is calculated from the sum of Calcium and Magnesium concentrations, expressed in CaCO3 equivalents. Dissolved Calcium and Magnesium concentrations are preferentially used for the hardness calculation.

HG-T-CVAA-VA	Water	Total Mercury in Water by CVAAS or CVAFS	EPA 1631E (mod)

Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS or CVAFS.

IONBALANCE-VA	Water	Ion Balance Calculation	APHA 1030E

Cation Sum, Anion Sum, and Ion Balance (as % difference) are calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Because all aqueous solutions are electrically neutral, the calculated ion balance (% difference of cations minus anions) should be near-zero.

Cation and Anion Sums are the total meq/L concentration of major cations and anions. Dissolved species are used where available. Minor ions are included where data is present. Ion Balance is calculated as:

Ion Balance (%) = [Cation Sum-Anion Sum] / [Cation Sum+Anion Sum]

MET-T-CCMS-VA	Water	Total Metals in Water by CRC ICPMS	EPA 200.2/6020A (mod)

Water samples are digested with nitric and hydrochloric acids, and analyzed by CRC ICPMS.

Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.

NO2-L-IC-N-VA	Water	Nitrite in Water by IC (Low Level)	EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

NO3-L-IC-N-VA	Water	Nitrate in Water by IC (Low Level)	EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

PH-PCT-VA	Water	pH by Meter (Automated)	APHA 4500-H pH Value

This analysis is carried out using procedures adapted from APHA Method 4500-H "pH Value". The pH is determined in the laboratory using a pH electrode

It is recommended that this analysis be conducted in the field.

PO4-DO-COL-VA	Water	Diss. Orthophosphate in Water by Colour	APHA 4500-P Phosphorus

This analysis is carried out using procedures adapted from APHA Method 4500-P "Phosphorus". Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter.
Samples with very high dissolved solids (i.e. seawaters, brackish waters) may produce a negative bias by this method. Alternate methods are available for these types of samples.

Arsenic (5+), at elevated levels, is a positive interference on colourimetric phosphate analysis.

SO4-IC-N-VA	Water	Sulfate in Water by IC	EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

TDS-CALC-VA	Water	TDS (Calculated)	APHA 1030E (20TH EDITION)

This analysis is carried out using procedures adapted from APHA 1030E "Checking Correctness of Analyses".
The Total Dissolved Solids result is calculated from measured concentrations of anions and cations in the sample.

TSS-VA	Water	Total Suspended Solids by Gravimetric	APHA 2540 D - GRAVIMETRIC

This analysis is carried out using procedures adapted from APHA Method 2540 "Solids". Solids are determined gravimetrically. Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, TSS is determined by drying the filter at 104 degrees celsius.
Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.

** 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
VA	ALS ENVIRONMENTAL - VANCOUVER, BRITISH COLUMBIA, CANADA

Reference Information

Chain of Custody Numbers:

17-653172

GLOSSARY OF REPORT TERMS

Surrogate - A compound that is similar in behaviour to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.
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 of sample.
mg/L - milligrams per litre.
< - Less than.
D.L. - The reported Detection Limit, also known as the Limit of Reporting (LOR).
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.

Chain of Custody (COC) / Analytical Request Form

ALS Environmental
www.alsglobal.com

Canada Toll Free: 1 800 668 9878

L2110259-COFC

COC Number: 17 - 653172

Page of

Report To	Contact and company name below will appear on the final report
Company:	Selwyn Chihong mining
Contact:	Sukie Sidhu
Phone:	867-332-0641
	Company address below will appear on the final report
Street:	205-2237 2nd ave
City/Province:	Whitehorse Y-T
Postal Code:	Y1A 0K7
Invoice To	Same as Report To ☑ YES ☐ NO
	Copy of Invoice with Report ☑ YES ☐ NO
Company:	Selwyn Chihong mining
Contact:	

Report Format / Distribution

Select Report Format: ☑ PDF ☑ EXCEL | | EDD (DIGITAL)
Quality Control (QC) Report with Report ☐ YES ☐ NO
☐ Compare Results to Criteria on Report - provide details below if box checked
Select Distribution: ☐ EMAIL | | MAIL ☐ FAX
Email 1 or Fax SSidhu@chihongmining.com
Email 2
Email 3

Invoice Distribution

Select Invoice Distribution: ☐ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax
Email 2

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] ☒ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days)
- 4 day [P4-20%] ☐
- 3 day [P3-25%] ☐
- 2 day [P2-50%] ☐

EMERGENCY
- 1 Business day [E-100%] ☐
- Same Day, Weekend or Statutory holiday [E2-200% (Laboratory opening fees may apply)] ☐

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Project Information

ALS Account # / Quote #: 042086
Job #:
PO / AFE:
LSD:

Oil and Gas Required Fields (client use)

AFE/Cost Center: PO#
Major/Minor Code: Routing Code:
Requisitioner:
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	General #1 (P)	Cyanide (P)	total metals (P)	total mercury (P)	SAMPLES ON HOLD	Sample is hazardous (please provide further details)	NUMBER OF CONTAINERS
	Holding tank #1 tank Storage water	11/06/18	8:24								4
	Holding tank #2 tank Storage water	11/06/18	8:26								4
	Holding tank #3 tank Storage water	11/06/18	8:28								4

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

Are samples taken from a Regulated DW System?
☐ YES ☐ NO
Are samples for human consumption/ use?
| | YES | | NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐
Ice Packs ☑ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐
Cooling Initiated ☑

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
10.0			9				

SHIPMENT RELEASE (client use)

Released by: E. John Date: June 11 2018 Time: 9:00

INITIAL SHIPMENT RECEPTION (lab use only)

Received by: E/HF Date: 11 June 2018 Time: 17:30

FINAL SHIPMENT RECEPTION (lab use only)

Received by: HA Date: 6/13 Time: 1pm

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

JULY 2017 FRONT

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.**

Potable Water
Bacteriological Results

Yukon
Health and Social Services
Santé et Affaires sociales
Environmental Health Services
Service d'hygiène du milieu

BACTERIOLOGICAL ANALYSIS OF DRINKING WATER
ANALYSE BACTÉRIOLOGIQUE DE L'EAU POTABLE

#2 Hospital Road, Whitehorse, Yukon Y1A 3H8
phone : (867) 667-8391 fax : (867) 667-8322
Toll free: 1-800-661-0408 ext.8391

2 Hospital Road, Whitehorse (Yukon) Y1A 3H8
Tél. : 867-667-8391 Téléc. : 867-667-8322
Sans frais au Yukon : 1-800-661-0408, poste 8391

Contact Information · *Coordonnées de la personne ressource*

Contact Person / *Personne ressource*: Sukie Sidhu
Phone / *Téléphone*: 867-332-0841
Mailing address / *Adresse postale*: 205-2237 2nd Ave
Fax / *Télécopieur*:
Postal code / *Code postal*: Y1A-0K7
Whitehorse Y.T
First Nation, Municipal or Business Name / *Nom de la Première nation, de la municipalité ou de l'entreprise*: Selwyn Chihong
Agent / *Agent*:
Fax / *Télécopieur*:

Sampling Location · *Lieu de la prise d'échantillon*

Municipal Address / *Adresse municipale*: Dan Comp
Subdivision / *Lotissement*:
Legal Description Lot / *Désignation officielle Lot*:
Quad / *Quadrilatère*:
Plan no. / *Plan n°*:
Other Information (e.g., Location, Business / Building Name) / *Autres renseignements (ex. : emplacement, nom de l'entreprise, nom de l'édifice)*:

Sample Collection / *Prélèvement de l'échantillon*

Sample Collected By / *Échantillon prélevé par*: E. John
Date / *Date* (YY/MM/DD · AA/MM/JJ): 2018/06/11
Time / *Heure*: 8:00 am (pm)
Sampling Site (e.g., kitchen tap) / *Point d'échantillonnage (ex. : robinet de cuisine)*: Kitchen Sink
Is this a Resample from a Previous Test? / *Est-ce un deuxième échantillon d'un test antérieur?*: [X] Yes / *Oui* [ ] No / *Non*
Previous Sample Number / *Numéro de l'échantillon précédent*:

Sample Supply / *Source d'approvisionnement en eau*

[X] Public Supply / *Municipal – par canalisation*
[ ] Bulk Water Distributor / *Municipal – par camion*
[ ] Business / *Privé – entreprise*
[ ] Private Residence / *Privé – résidence*

Sample Source / *Provenance de l'échantillon*

[ ] Dug Well / *Puits creusé*
[ ] Driven Well / *Puits tubulaire*
[X] Drilled Well / *Puits foré à la sondeuse*
Depth of Well / *Profondeur du puits*:
[X] Water Holding Tank / *Réservoir d'eau*
[ ] Other (explain) / *Autre (précisez)*:

Water Treatment / *Traitement de l'eau*

Is the Water Chlorinated? / *L'eau contient-elle du chlore?*: [ ] Yes / *Oui* [X] No / *Non*
Free Available Chlorine / *Chlore libre disponible*: ppm / mg/L
Other Treatment Systems (e.g., UV, softener, filter) / *Autre dispositif de traitement (ex. : désinfection aux rayons UV, adoucisseur d'eau, filtre)*: UV light / filters

For Laboratory Use Only / *À l'usage du laboratoire seulement*

Receipt of Sample / *Réception de l'échantillon*
Date / *Date* (YY/MM/DD · AA/MM/JJ): 18/06/11
Time / *Heure*: 1345 am (pm)
By / *Par*: EH

Condition of Sample / *État de l'échantillon*
[✓] Satisfactory / *Satisfaisant* [ ] Unsatisfactory / *Non satisfaisant*
Details / *Précisez*: 10°C

Incubation / *Incubation*
Date / *Date* (YY/MM/DD · AA/MM/JJ): 180611
Time / *Heure*: 4:00 am (pm)
By / *Par*:
Incubator / *Incubateur*: 2

Analysis Completed / *Analyse terminée*
Date / *Date* (YY/MM/DD · AA/MM/JJ): 180612
Time / *Heure*: 4:20 am (pm)
By / *Par*:

Results (See Reverse Side for Interpretation) per 100 ml
Résultats (Voir au verso l'interprétation des résultats)

Total Coliforms/*Coliformes totaux*	E. coli/*E. coli*
[ ] Present / *Présence*	[ ] Present / *Présence*
[✓] Absent / *Absence*	[✓] Absent / *Absence*

Comments / *Commentaires*

Report Authorized By / *Rapport autorisé par*:
Position / *Poste*: WHI
Date / *Date* (YY/MM/DD · AA/MM/JJ): 180612

Distribution / *Distribution :*
White - Chain of Custody / *Blanc - Chaîne de possession*
Yellow - Lab Copy / *Jaune - Laboratoire*
Pink - Client Copy / *Rose - Client*

YG(4649)NC3 Rev.03/2013

Sample Number / ***Numéro de l'échantillon*** : 65519

Yukon
Health and Social Services
Santé et Affaires sociales
Environmental Health Services
Service d'hygiène du milieu

BACTERIOLOGICAL ANALYSIS OF DRINKING WATER
ANALYSE BACTÉRIOLOGIQUE DE L'EAU POTABLE

#2 Hospital Road, Whitehorse, Yukon Y1A 3H8
phone : (867) 667-8391 fax : (867) 667-8322
Toll free: 1-800-661-0408 ext.8391

2 Hospital Road, Whitehorse (Yukon) Y1A 3H8
Tél. : 867-667-8391 Téléc. : 867-667-8322
Sans frais au Yukon : 1-800-661-0408, poste 8391

Contact Information · *Coordonnées de la personne ressource*

Contact Person / *Personne ressource*: Sukie Sidhu
Phone / *Téléphone*: 867-332-0841
Mailing address / *Adresse postale*: 205-2287 2nd ave
Fax / *Télécopieur*:
Whitehorse Y.T
Postal code / *Code postal*: Y1A-0K7
First Nation, Municipal or Business Name / *Nom de la Première nation, de la municipalité ou de l'entreprise*: Selwyn Chihong
Agent / *Agent*:
Fax / *Télécopieur*:

Sampling Location · *Lieu de la prise d'échantillon*

Municipal Address / *Adresse municipale*: Dan Comp
Subdivision / *Lotissement*:
Legal Description Lot / *Désignation officielle Lot*:
Quad / *Quadrilatère*:
Plan no. / *Plan n°*:
Other Information (e.g., Location, Business / Building Name) / *Autres renseignements (ex. : emplacement, nom de l'entreprise, nom de l'édifice)*:

Sample Collection / *Prélèvement de l'échantillon*

Sample Collected By / *Échantillon prélevé par*: E. John
Date / *Date*: 2018/06/11 (YY/MM/DD - AA/MM/JJ)
Time / *Heure*: 7:56
Sampling Site (e.g., kitchen tap) / *Point d'échantillonnage (ex. : robinet de cuisine)*: holding tank
Is this a Resample from a Previous Test? / *Est-ce un deuxième échantillon d'un test antérieur?*: [X] Yes / *Oui* [ ] No / *Non*
Previous Sample Number / *Numéro de l'échantillon précédent*:

Sample Supply / *Source d'approvisionnement en eau*

[ ] Public Supply / *Municipal – par canalisation*
[ ] Bulk Water Distributor / *Municipal – par camion*
[ ] Business / *Privé – entreprise*
[ ] Private Residence / *Privé – résidence*

Sample Source / *Provenance de l'échantillon*

[ ] Dug Well / *Puits creusé*
[ ] Driven Well / *Puits tubulaire*
[X] Drilled Well / *Puits foré à la sondeuse*
Depth of Well / *Profondeur du puits*:
[X] Water Holding Tank / *Réservoir d'eau*
[ ] Other (explain) / *Autre (préciser)*:

Water Treatment / *Traitement de l'eau*

Is the Water Chlorinated? / *L'eau contient-elle du chlore?*: [ ] Yes / *Oui* [X] No / *Non*
Free Available Chlorine / *Chlore libre disponible*: ____ ppm / mg/L
Other Treatment Systems (e.g., UV, softener, filter) / *Autre dispositif de traitement (ex. : désinfection aux rayons UV, adoucisseur d'eau, filtre)*: UV light / Filter

For Laboratory Use Only / *À l'usage du laboratoire seulement*

Receipt of Sample / *Réception de l'échantillon*: Date / *Date*: 18/06/11 (YY/MM/DD - AA/MM/JJ) Time / *Heure*: 13:45 By / *Par*: EH

Condition of Sample / *État de l'échantillon*: [✓] Satisfactory / *Satisfaisant* [ ] Unsatisfactory / *Non satisfaisant* Details / *Précisez*: 10°C

Incubation / *Incubation*: Date / *Date*: 18 06 11 (YY/MM/DD - AA/MM/JJ) Time / *Heure*: 4:00 AM/PM By / *Par*: [illegible] Incubator / *Incubateur*: 2

Analysis Completed / *Analyse terminée*: Date / *Date*: 18 06 12 (YY/MM/DD - AA/MM/JJ) Time / *Heure*: 9:00 AM/PM By / *Par*: [illegible]

Results (See Reverse Side for Interpretation) per 100 ml / *Résultats (Voir au verso l'interprétation des résultats)*

Total Coliforms / *Coliformes totaux*	E. coli / *E. coli*
[ ] Present / *Présence* [✓] Absent / *Absence*	[ ] Present / *Présence* [✓] Absent / *Absence*

Comments / *Commentaires*

Report Authorized By / *Rapport autorisé par*: [signature]
Position / *Poste*: [illegible]
Date / *Date*: 18 06 12 (YY/MM/DD - AA/MM/JJ)

Distribution: / *Distribution :* White - Chain of Custody / *Blanc - Chaîne de possession* Yellow - Lab Copy / *Jaune - Laboratoire* Pink - Client Copy / *Rose - Client*

YG/4649/NC3 Rev.03/2013

Sample Number / *Numéro de l'échantillon*: 65522

Yukon
Health and Social Services
Environmental Health Service
Santé et Affaires sociales
Service d'hygiène du milieu

BACTERIOLOGICAL ANALYSIS OF DRINKING WATER
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Tél. : 867-667-8391 Téléc. : 867-667-8322
Sans frais au Yukon : 1-800-661-0408, poste 8391

Contact Information • *Coordonnées de la personne ressource*

Contact Person / *Personne ressource*: Sukie Sidhu
Phone / *Téléphone*: 867.332.084
Mailing address / *Adresse postale*: 205 - 2237 Waterfront Stadium
Fax / *Télécopieur*:
Whitehorse Yukon
Postal code / *Code postal*:
First Nation, Municipal or Business Name / *Nom de la Première nation, de la municipalité ou de l'entreprise*: SCML
Agent / *Agent*:
Fax / *Télécopieur*:

Sampling Location • *Lieu de la prise d'échantillon*

Municipal Address / *Adresse municipale*:
Subdivision / *Lotissement*:
Legal Description / *Désignation officielle*: Lot / *Lot*: Quad / *Quadrilatère*: Plan no. / *Plan n°*:
Other Information (e.g., Location, Business / Building Name) / *Autres renseignements (ex. : emplacement, nom de l'entreprise, nom de l'édifice)*:

Sample Collection / *Prélèvement de l'échantillon*

Sample Collected By / *Échantillon prélevé par*: T. Smith
Date / *Date*: 18/07/17 (YY/MM/DD • AA/MM/JJ)
Time / *Heure*: 09:47 am / pm
Sampling Site (e.g., kitchen tap) / *Point d'échantillonnage (ex. : robinet de cuisine)*: Don Camp Kitchen Sink
Is this a Resample from a Previous Test? / *Est-ce un deuxième échantillon d'un test antérieur?*: ☐ Yes / *Oui* ☒ No / *Non*
Previous Sample Number / *Numéro de l'échantillon précédent*:

Sample Supply / *Source d'approvisionnement en eau*

☒ Public Supply / *Municipale – par canalisation*
☐ Bulk Water Distributor / *Municipale – par camion*
☒ Business / *Privée – entreprise*
☐ Private Residence / *Privée – résidence*

Sample Source / *Provenance de l'échantillon*

☐ Dug Well / *Puits creusé*
☐ Driven Well / *Puits tubulaire*
☒ Drilled Well / *Puits foré à la sondeuse*
Depth of Well / *Profondeur du puits*:
☐ Water Holding Tank / *Réservoir d'eau*
☐ Other (explain) / *Autre (précisez)*:

Water Treatment / *Traitement de l'eau*

Is the Water Chlorinated? / *L'eau contient-elle du chlore?*: ☐ Yes / *Oui* ☒ No / *Non*
Free Available Chlorine / *Chlore libre disponible*: ppm / mg/L
Other Treatment Systems (e.g., UV, softener, filter) / *Autre dispositif de traitement (ex. : désinfection aux rayons UV, adoucisseur d'eau, filtre)*: UV, Filter

For Laboratory Use Only / *À l'usage du laboratoire seulement*

Receipt of Sample / *Réception de l'échantillon*: Date / *Date*: 2018/07/17 (YY/MM/DD • AA/MM/JJ) Time / *Heure*: 12:30 am / pm By / *Par*: SK

Condition of Sample / *État de l'échantillon*: ☒ Satisfactory / *Satisfaisant* ☐ Unsatisfactory / *Non satisfaisant* Details / *Précisez*: 12.4

Incubation / *Incubation*: Date / *Date*: 180717 (YY/MM/DD • AA/MM/JJ) Time / *Heure*: 13:50 am / pm By / *Par*: EH Incubator / *Incubateur*: 2

Analysis Completed / *Analyse terminée*: Date / *Date*: 180718 (YY/MM/DD • AA/MM/JJ) Time / *Heure*: 14:20 am / pm By / *Par*: EH Verified / *Vérifié*: EH

Results (See Reverse Side for Interpretation) per 100 ml
Résultats par 100 ml (voir au verso l'interprétation des résultats)

Total Coliforms / *Coliformes totaux*	E.coli / *E.coli*
☐ Present / *Présence* ☒ Absent / *Absence*	☐ Present / *Présence* ☒ Absent / *Absence*

Comments / *Commentaires*

Report Authorized By / *Rapport autorisé par*: Edendes
Position / *Poste*: WLT
Date / *Date*: 180718 (YY/MM/DD • AA/MM/JJ)

Distribution: / *Distribution :*
White - Chain of Custody / *Blanc - Chaîne de possession*
Yellow - Lab Copy / *Jaune - Laboratoire*
Pink - Client Copy / *Rose - Client*

YG(4649)NC3 Rev.12/2016

Sample Number: 76683

Yukon
Health and Social Services
Environmental Health Service
Santé et Affaires sociales
Service d'hygiène du milieu

BACTERIOLOGICAL ANALYSIS OF DRINKING WATER
ANALYSE BACTÉRIOLOGIQUE DE L'EAU POTABLE

47 Hospital Road, Whitehorse, Yukon Y1A 3H8
phone / (867) 667-8391 fax / (867) 667-8322
Toll free / 1-800-661-3666 ext 8391

2 Hospital Road, Whitehorse (Yukon) Y1A 3H8
tél. : 867-667-8391 télec. : 867-667-8322
Sans frais au Yukon : 1-800-661-3666, poste 8391

Contact Information • Coordonnées de la personne ressource

Contact Person / Personne ressource: Suksie Sidhu
Tel / Téléphone: 867 322-0841
Mailing Address / Adresse postale: 205-2237 2nd Ave
Fax / Télécopieur:
Postal Code / Code postal: Y1A 0K7
Project / Projet:
Agent / Agent:
Fax / Télécopieur:

Sampling Location • Lieu de la prise d'échantillon

Municipal Address / Adresse municipale: Den Camp Kitchen Sink
Subdivision / Lotissement:
Lot / Lot:
Block / Bloc:
Parcel / Parcelle:
Legal Description / Description officielle:
Direct Normal Intake / Prise directe: Lake and Stream / Building Supply / Lac et cours d'eau / Approvisionnement du bâtiment
Sample Collection Point / Point de prélèvement:

Sample Collection / Prélèvement de l'échantillon

Sample Collected By / Échantillon prélevé par: T. Smith
Date: 18/08/08 (DD/MM/YYYY)
Time / Heure: 09:34 am/pm
Sampling Site / Point de prélèvement: Kitchen Sink
Is this a routine follow-up sample? / Est-ce un échantillon de contrôle régulier? Yes / Oui: X No / Non:
Last Sample Taken / Dernier échantillon prélevé:

Sample Supply / Source d'approvisionnement en eau

Water Supply / Approvisionnement en eau: Municipal / Municipal; Bulk Water / Eau livrée par camion; Cistern / Citerne; Well / Puits; Other / Autre:

Sample Source / Provenance de l'échantillon

Dug Well / Puits ordinaire; Drilled Well / Puits foré; Spring Fed / Source; Lake / Lac; Stream / Cours d'eau; Other / Autre:

Water Treatment / Traitement de l'eau

Is the Water Chlorinated? / Est-ce que l'eau est chlorée? Yes / Oui; No / Non
If Yes, Chlorine Residual / Si oui, résidu de chlore: ppm
Other Treatment (Specify) / Autre traitement (Spécifier): UV

For Laboratory Use Only / À l'usage du laboratoire seulement

Receipt of Sample / Réception de l'échantillon: Date 20/08/08 Time / Heure 3:00pm SK
Condition of Sample / Etat de l'échantillon: Satisfactory / Satisfaisant; Unsatisfactory / Non satisfaisant
Temperature / Température: Date / Date 180808 Time / Heure 9:00 am/pm Date of Release / Date de remise 15° Released / Remise
Analysis Completed / Analyse terminée: Date / Date 180809 Time / Heure 4:00 am/pm Checked / Vérifié

Results (See Reverse Side for Interpretation) per 100 ml
Résultats par 100 ml (voir au verso l'interprétation des résultats)

Total Coliforms / Coliformes totaux	E.coli / E.coli
Present / Présents	Present / Présents
Absent / Absents	Absent / Absents

Comments / Commentaires

Report Authorized By / Rapport autorisé par:
Position / Poste: EHO
Date / Date: 180809
Total Coliforms / Coliformes totaux
E.coli / E.coli
Water Supply / Approvisionnement en eau
Water Treatment / Traitement de l'eau

Sample Number: 73912

Appendix O

Wildlife Log

And

Wildlife Maps

Wildlife Logs

Selwyn Project
2018 Wildlife Log

Date (d/m/y)	Time (24hr)	Observers Initial	Location	Wildlife							Weather			Comments
				Species	Total no. Animals	Number of Adults			Juvenile	Wildlife Activity	Temp (°C)	Wind	Precip	
						Female	Male	Unknown						
28-May-18	11:25	N.F & S.S	0.5 KM away from W3	Caribou	1		X			F	10	5mph	No	Hail and wind
28-May-18	11:45	N.F & S.S	Wetlands near Don	Swan	1			X		S				
28-May-18	11:45	N.F & S.S	Wetlands near Don	Ducks	20			X		S				
28-May-18	13:50	N.F & S.S	W56	Ptarmagin	1			X		S				
6-Jun-18	17:20	J.H	Meadow East of camp	Caribou	2		X		X	F	10	5mph	No	
6-Jun-18	17:45	T.S & E.J	KM 96	Moose	1		X		X	W	10	No	No	
6-Jun-18	17:00	J.H	North of camp	Moose	1			X		W	18	15	Yes	
6-Jun-18	11:30	K.M	KM3	Wolverine	1			X		W	10		No	
8-Jun-18	19:30	J.H	Camp Office	Porcupine	1			X						
12-Jun-18	14:42	S.C & E.J	Km 90	Moose	1	X				F	10		No	
12-Jun-18	14:30	S.C & E.J	KM 88	Caribou	3	X	X			R	10		No	
13-Jun-18	13:30	S.C	KM 96	Grizzly Bear	2		X			F	10		No	
16-Jun-18	14:36	S.C & M.L	KM 96	Caribou	2		X			W	8		No	

Selwyn Project
2018 Wildlife Log

Date (d/m/y)	Time (24hr)	Observers Initial	Location	Wildlife							Weather			Comments
				Species	Total no. Animals	Number of Adults			Juvenile	Wildlife Activity	Temp (°C)	Wind	Precip	
						Female	Male	Unknown						
17-Jun-18	15:10	S.C	KM 98	Moose	1		X			W	10		No	Walking on Road
17-Jun-18	14:30	J.H	XY	Caribou	1	X				R	13		No	Resting on Grass
17-Jun-18	15:00	J.H	KM 88	Caribou	1			X	X	R	13		No	Running across Road
17-Jun-18	15:10	S.C	Km 99	Moose	1		X			W	2		No	Walking on Road
20-Jun-18	9:14	A.R & K.B.	No Limit Junction	Grizzly	1		X			W	15	No	No	Walking on Road
20-Jun-18	9:30	A.R & K.B.	HC Junction	Grizzly	2		X			W	15	No	No	Walking on Road
20-Jun-18	11:48	S.C & T.S	KM 99	Grizzly	2	X			X	W	15	No	No	Walking on Road
20-Jun-18	9:10	E.C.	Across the creek from camp	Grizzly	1			X		W	15	No	No	Running
20-Jun-18	15:00	E.C.	Dump	Martin	1			X		W	29	No	No	Running
21-Jun-18	15:00	S.C & T.S	Above KM 82 Bridge	Caribou	6	X	5			F	29	No	No	Feeding
25-Jun-18	13:20	E.C & M.C	No Limit Junction	Moose	1		X		X	W	5	Yes	No	Walking on Road
26-Jun-18	9:42	T.S & S.C	KM 100	Moose	1		X		X	W	2	Yes	No	Walking on Road
27-Jun-18	18:30	A.R	KM 90	Moose	1	X			X					
29-Jun-18	13:50	S.C & P.H	Flying to W3	Moose	4			X		F	10	No	No	Flying to W3

Selwyn Project
2018 Wildlife Log

Date (d/m/y)	Time (24hr)	Observers Initial	Location	Wildlife							Weather			Comments
				Species	Total no. Animals	Number of Adults			Juvenile	Wildlife Activity	Temp (°C)	Wind	Precip	
						Female	Male	Unknown						
1-Jul-18	8:00	K.M & KB	KM 82	Moose	1		X				5			Feeding along Don Road
8-Jul-18	9:00	D.L.D	East of Don Kitchen	Moose	3	1			2	F	6	No	No	Feeding in swamp
9-Jul-18	8:05	T.L	KM 94	Caribou	1			X	X	W				Walking on Road
10-Jul-18	14:00	S.S & T.S	KM 82	Caribou	1				X	W	10		Yes	Walking in the valley
12-Jul-18	10:00	S.S & G.L	Don Creek Viewed from Dump	Moose	1		X			F/R	10	Yes	No	Feeding and then resting
13-Jul-18	9:36	S.S & G.L	Land Treatment Facility	Woodpecker	1									The bird could be heard pecking on trees, but could not be seen.
15-Jul-18	10:30	S.S	Behind Maintenance Shop	Moose	1	X				W	12	No	No	
15-Jul-18	13:23	K.M & S.S	Across from KM 87 above Don Creek	Moose	1		X			F	12	No	No	
18-Jul-18	9:45	T.S & S.C	Above W-62 from Work Site	Grizzly Bear	1		X			F	4	Yes	Yes	
19-Jul-18	10:53	T.S & S.C	KM 89	Caribou	12	X			X	R	5	No	No	
20-Jul-18	9:43	T.S. & S.C	Between Consumable Yard and Waste Facility	Wolf	1			X	X	R	8	No	No	
22-Jul-18	14:00	T.S & S.C	KM 84	Cougar	1			X		R	15	No	No	
22-Ju-18	14:14	T.S. & S.C	XY Camp	Grizzly Bear	3	X			X	R	15	No	No	
23-Jul-18	13:22	T.S & S.C	KM 96	Moose	1		X			F	15	No	No	

Selwyn Project
2018 Wildlife Log

Date (d/m/y)	Time (24hr)	Observers Initial	Location	Wildlife							Weather			Comments
				Species	Total no. Animals	Number of Adults			Juvenile	Wildlife Activity	Temp (°C)	Wind	Precip	
						Female	Male	Unknown						
25-Jul-18	21:15	T.L	Camp	Moose	2	X			X	F	10	No	No	
26-Jul-18	7:30	S.C	Camp - Behind Kitchen	Moose	2	X			X	F	10	No	No	
28-Jul-18	8:30	J.H	Beside Don Air Strip Parking Lot	Moose	1		X			F	10	No	No	
31-Jul-18	14:30	S.S & T.S	XYC 304	Caribou	1		X			F/W	25	No	No	
31-Jul-18	15:00	S.S & T.S	XY Node	Caribou	1		X		X	F/W	25	No	No	
1-Aug-18	7:45	S.S & T.S	Don Road near Don Dump	Black Bear	1			X		W	10	No	No	
1-Aug-18	11:45	S.S & T.S	XY Node	Caribou	1		X	X	X	W/F	20	No	No	
2-Aug-18	7:30	S.S & T.S	Don Consumable Yard	Caribou	1		X			W	10	No	No	
3-Aug-18	8:00	J.H	Don Camp	Moose	3	X			2	F	10			
3-Aug-18	15:00	J.H	XY	Caribou	1			X	X	F	20	No	No	
6-Aug-18	8:00	J.H	Don Camp	Grizzly	1		X			S	10	No	No	
6-Aug-18	10:00	T.S & S.S	KM 91	Caribou	3		3		2	W	10	No	L/R	
6-Aug-18	11:01	T.S & S.S	XY Airstrip	Caribou	1		X		X	W	10	No	L/R	
6-Aug-18	10:00	K.M	Beaver pond Km 73	Grizzly	1		X			F	10			

Selwyn Project
2018 Wildlife Log

Date (d/m/y)	Time (24hr)	Observers Initial	Location	Wildlife							Weather			Comments
				Species	Total no. Animals	Number of Adults			Juvenile	Wildlife Activity	Temp (°C)	Wind	Precip	
						Female	Male	Unknown						
6-Aug-18	11:00	K.M	Km 89	Caribou	1		X			R	15	No	No	
6-Aug-18	12:00	K.M	Km 9	Moose	1		X			F	15	No	No	
8-Aug-18	8:30	K.M	Km 99	Moose	1	X				F	10	No	Yes	
11-Aug-18	11:25	T.S & R.C	W 10	Moose	1		X			F	10	No	No	
12-Aug-18	6:30	T.S	Across creek from Don Camp	Moose	2	X			X	F	5	No	Yes	
13-Aug-18	8:26	R.C & T.S	Km 92	Moose	2		X		X	F	4	No	Yes	
14-Aug-18	8:09	R.C & T.S	KM 91	Moose	1		X			F	6	No	Yes	
15-Aug-18	8:38	S.C & T.S	KM 93 No Limit Junction	Moose	2	X	X			Standing by road	6	No	No	
16-Aug-18	9:37	S.C & T.S	KM 86	Moose	1		X			F	5	No	No	
17-Aug-18	16:10	S.C & T.S	KM 89	Moose	1		X			F	5	No	Yes	
18-Aug-18	8:08	S.C & T.S	KM 96	Moose	1		X			Standing below road	6	No	No	
18-Aug-18	12:30	S.C & T.S	Km 90	Moose	2	X			X	F	6	No	No	
19-Aug-18	14:00	K.M	Out meadow from camp	Moose	2	X			X	F	15	Yes	No	
22-Aug-18	10:00	J.H	KM 96	Moose	3	X			XX	F	10	No	No	

Selwyn Project
2018 Wildlife Log

Date (d/m/y)	Time (24hr)	Observers Initial	Location	Wildlife							Weather			Comments
				Species	Total no. Animals	Number of Adults			Juvenile	Wildlife Activity	Temp (°C)	Wind	Precip	
						Female	Male	Unknown						
23-Aug-18	9:30	T.S	Don Camp Below Kitchen	Moose	1		X			W	6	No	Yes	
25-Aug-18	11:15	S.C & T.S	Km 99	Moose	3	X			XX	F	3	No	No	
25-Aug-18	14:45	S.C & T.S	Km 90	Moose	1		X			F	10	Yes	Yes	
25-Aug-18	15:30	S.C & T.S	XY Camp	Grizzly	1		X			F	10	Yes	Yes	
25-Aug-18	15:53	S.C & T.S	XY Camp	Caribou	1			X		F	10	Yes	Yes	
18-Nov-18	9:45	N.F & S.S	Near W62	Moose	6		X			R	-15			

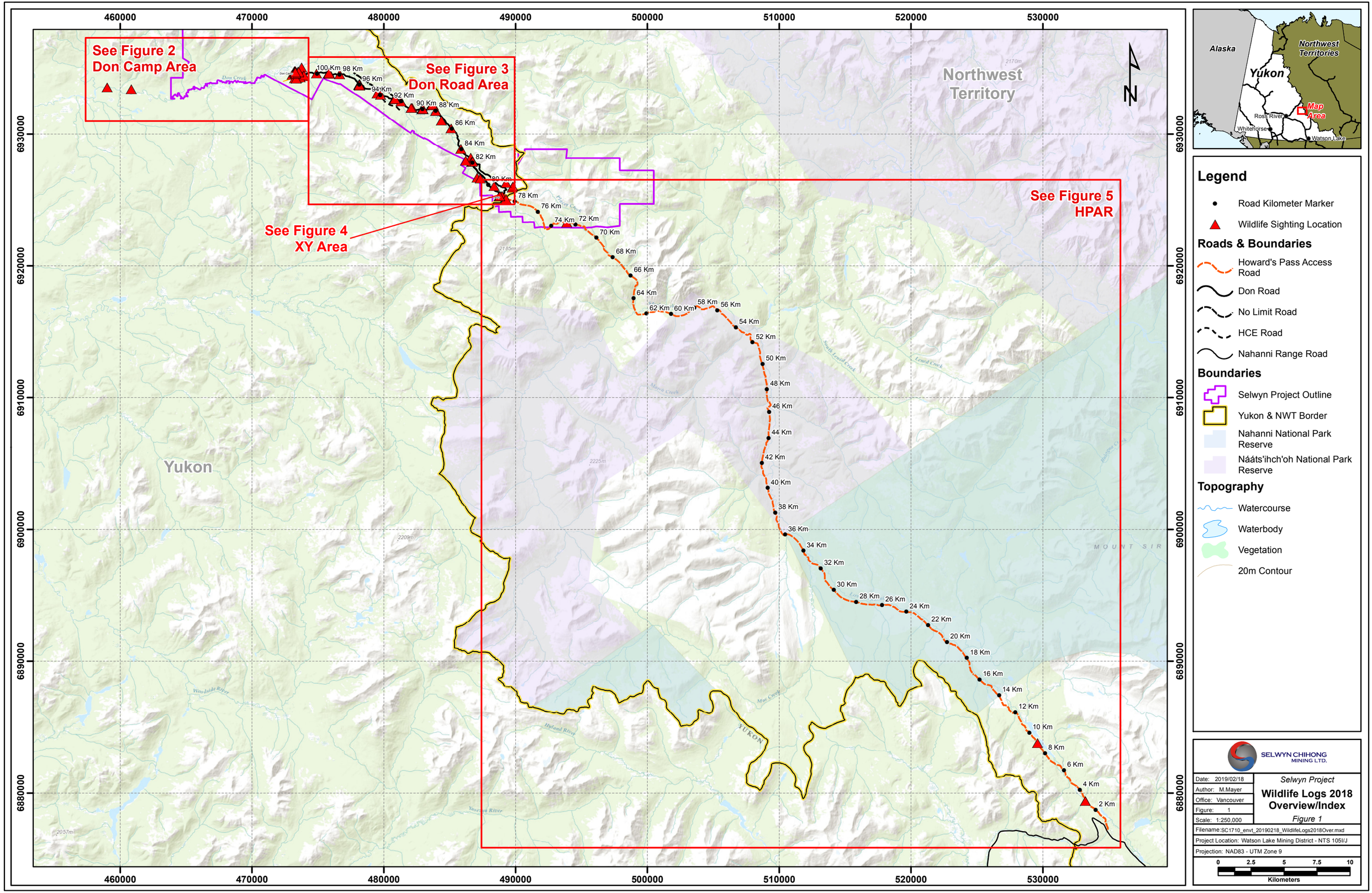
Location: GPS coordinate, KM along road or site infrastructure (tailings facility, mill site)

Weather Codes - Wind: N= None, L=Light, M= Moderate, S= Strong; Precipitation - N=None, M= Misty Rain, LR=Light Rain, HR=Heavy Rain, S= Snow

Comments - What type of environment was the animal seems, animals behavior, reaction to disturbance (did the animal runaway), or other useful information.

Wildlife Activity Code - W= Walking, R=Running, F=feeding, S= Swimming, R=Resting or bedded down, FL= Flying, N/D=on nest or in den, O= other activity to be specified in the comments.

Wildlife Maps


See Figure 2
Don Camp Area
See Figure 3
Don Road Area
See Figure 4
XY Area
See Figure 5
HPAR
Northwest Territory
Yukon
100 Km
98 Km
96 Km
94 Km
92 Km
90 Km
88 Km
86 Km
84 Km
82 Km
80 Km
78 Km
76 Km
74 Km
72 Km
70 Km
68 Km
66 Km
64 Km
62 Km
60 Km
58 Km
56 Km
54 Km
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6920000
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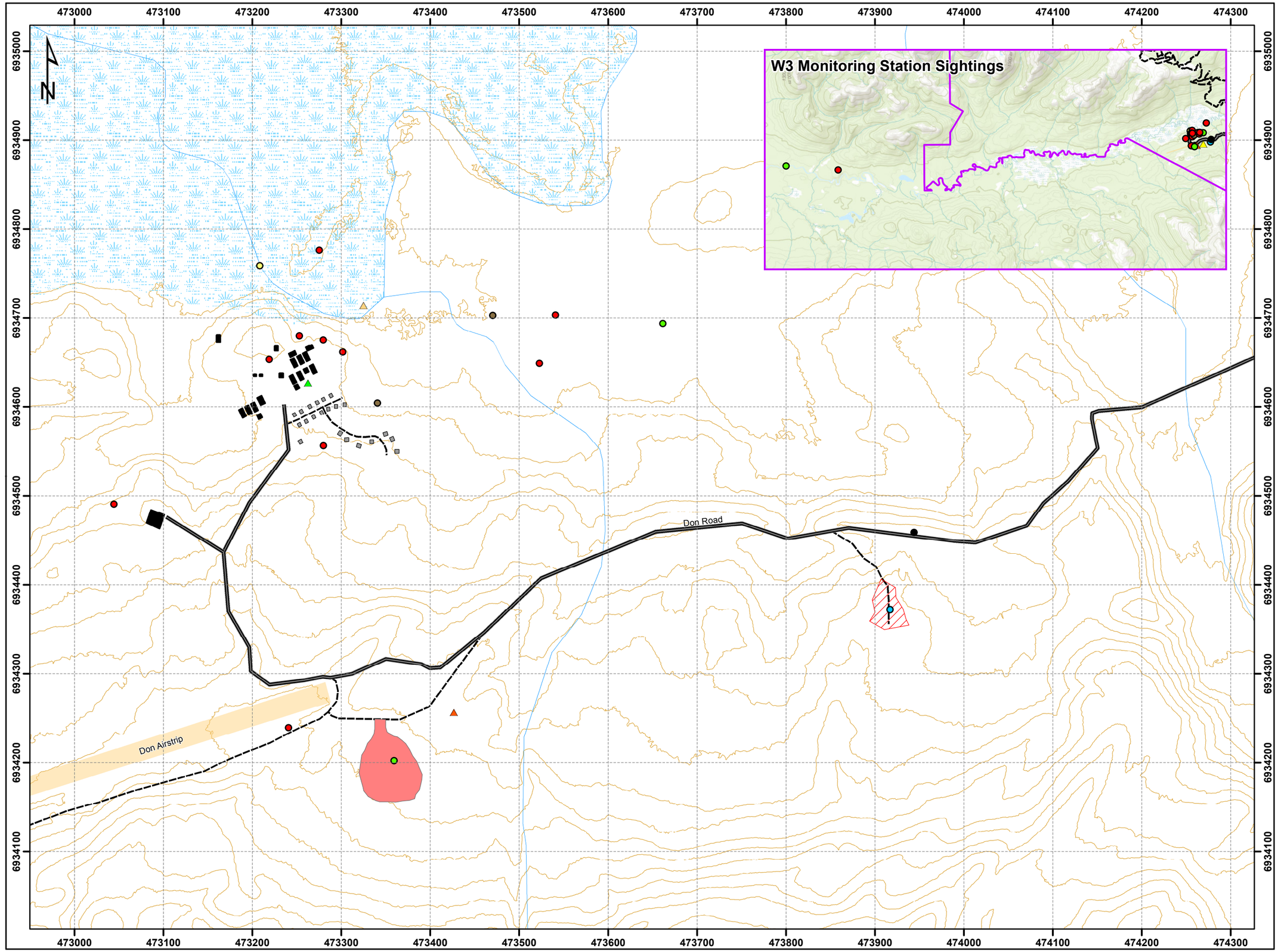
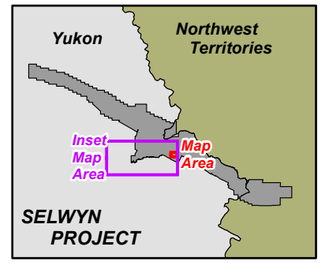
6890000
6880000
N
Alaska
Northwest Territories
Yukon
Map Area
Ross River
Whitehorse
Watson Lake
Legend
Road Kilometer Marker
Wildlife Sighting Location
Roads & Boundaries
Howard's Pass Access Road
Don Road
No Limit Road
HCE Road
Nahanni Range Road
Boundaries
Selwyn Project Outline
Yukon & NWT Border
Nahanni National Park Reserve
Nááts'ihch'oh National Park Reserve
Topography
Watercourse
Waterbody
Vegetation
20m Contour
SELWYN CHIHONG MINING LTD.
Date: 2019/02/18
Author: M.Mayer
Office: Vancouver
Figure: 1
Scale: 1:250,000
Selwyn Project
Wildlife Logs 2018 Overview/Index
Figure 1
Filename:SC1710_envt_20190218_WildlifeLogs2018Over.mxd
Project Location: Watson Lake Mining District - NTS 105I/J
Projection: NAD83 - UTM Zone 9
0
2.5
5
7.5
10
Kilometers





Legend

Species Sighted

- Black Bear
- Caribou
- Ducks
- Grizzly Bear
- Martin
- Moose
- Porcupine
- Swan
- Woodpecker

Boundaries

- Selwyn Project Outline

Infrastructure

- Don Road
- Road/Trail
- Don
- Building
- Sleeper Tent
- Don Waste Facility
- Consumables Yard

Topography

- Stream
- Wetland
- 5m Contour

SELWYN CHIHONG MINING LTD.

Date: 2019/02/18	*Selwyn Project*
Author: M.Mayer	**Wildlife Logs 2018**
Office: Vancouver	**Don Camp Area**
Figure: 2	*Figure 2*
Scale: 1:4,000	
Filename: SC1710_envt_20190218_WildlifeLogs2018Don.mxd	
Project Location: Watson Lake Mining District - NTS 105I/J	
Projection: NAD83 - UTM Zone 9	

0 25 50 75 100
Meters

476000 478000 480000 482000 484000 486000 488000

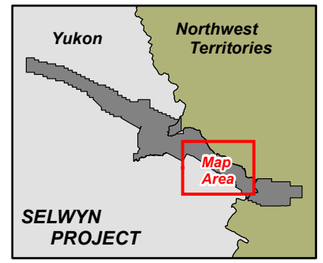
6936000 6934000 6932000 6930000 6928000 6926000

Northwest Territory

Yukon

100 Km
98 Km
96 Km
94 Km
92 Km
90 Km
88 Km
86 Km
84 Km
82 Km
80 Km

NORTHWEST TERRITORIES TERRITOIRES DU NORD-OUEST



Legend

- Road Kilometer Marker

Species Sighted

- Black Bear
- Caribou
- Cougar
- Ducks
- Grizzly Bear
- Martin
- Moose
- Porcupine
- Ptarmagin
- Swan
- Wolf
- Wolverine
- Woodpecker

Project Roads

- Don Road
- No Limit Road
- HCE Road

Boundaries

- Selwyn Project Outline
- Yukon & NWT Border

Topography

- Watercourse
- Waterbody
- Vegetation
- 20m Contour

SELWYN CHIHONG MINING LTD.

Date: 2019/02/18	*Selwyn Project*
Author: M.Mayer	**Wildlife Logs 2018 Don Road Area**
Office: Vancouver	*Figure 3*
Figure: 3	
Scale: 1:45,000	
Filename:SC1710_envt_20190218_WildlifeLogs2018DonRd.mxd	
Project Location: Watson Lake Mining District - NTS 105I/J	
Projection: NAD83 - UTM Zone 9	

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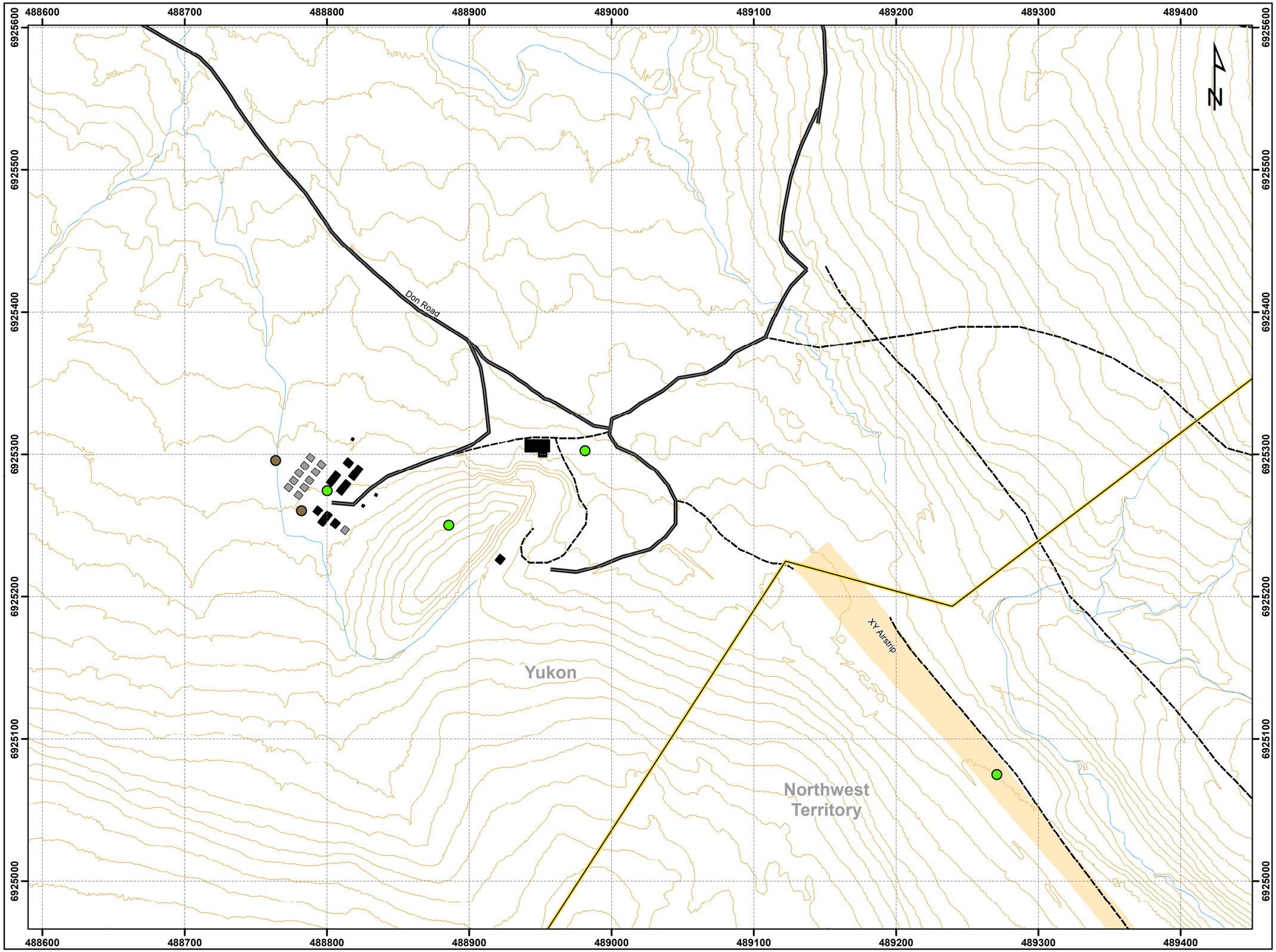
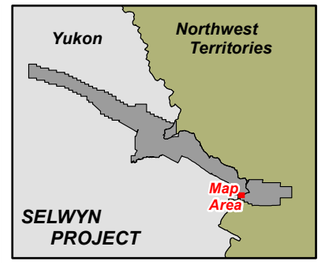
Kilometers





Legend

Species Sighted

- Caribou
- Grizzly Bear

Boundaries

- Yukon & NWT Border

Infrastructure

- Don Road
- Road/Trail
- XY Airstrip
- Building
- Sleeper Tent

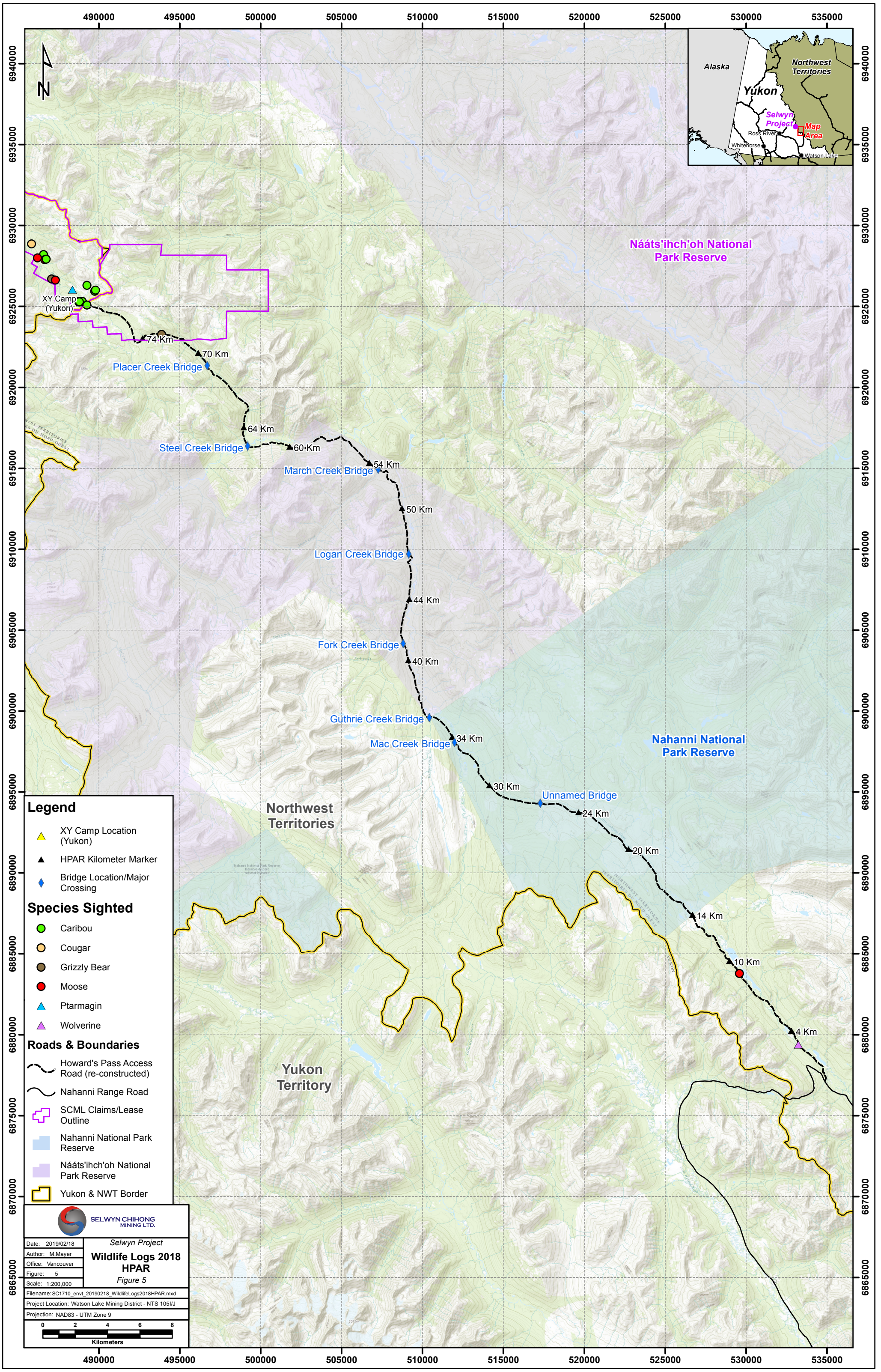
Topography

- Stream
- 2m Contour

SELWYN CHIHONG MINING LTD.

Date: 2019/02/18	*Selwyn Project*
Author: M.Mayer	**Wildlife Logs 2018**
Office: Vancouver	**XY Area**
Figure: 4	*Figure 4*
Scale: 1:2,500	
Filename: SC1710_envt_20190218_SpillCont_XY.mxd	
Project Location: Watson Lake Mining District - NTS 105I/J	
Projection: NAD83 - UTM Zone 9	

0 25 50 75 100
Meters


490000
495000
500000
505000
510000
515000
520000
525000
530000
535000
6940000
6935000
6930000
6925000
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6915000
6910000
6905000
6900000
6895000
6890000
6885000
6880000
6875000
6870000
6865000
N
Alaska
Northwest Territories
Yukon
Selwyn Project
Map Area
Ross River
Whitehorse
Watson Lake
Náàts'ihch'oh National Park Reserve
XY Camp (Yukon)
74 Km
70 Km
Placer Creek Bridge
64 Km
Steel Creek Bridge
60 Km
54 Km
March Creek Bridge
50 Km
Logan Creek Bridge
44 Km
Fork Creek Bridge
40 Km
Guthrie Creek Bridge
34 Km
Mac Creek Bridge
30 Km
Unnamed Bridge
24 Km
20 Km
14 Km
10 Km
4 Km
Nahanni National Park Reserve
Northwest Territories
Yukon Territory
Legend
XY Camp Location (Yukon)
HPAR Kilometer Marker
Bridge Location/Major Crossing
Species Sighted
Caribou
Cougar
Grizzly Bear
Moose
Ptarmagin
Wolverine
Roads & Boundaries
Howard's Pass Access Road (re-constructed)
Nahanni Range Road
SCML Claims/Lease Outline
Nahanni National Park Reserve
Náàts'ihch'oh National Park Reserve
Yukon & NWT Border
SELWYN CHIHONG MINING LTD.
Date: 2019/02/18
Author: M.Mayer
Office: Vancouver
Figure: 5
Scale: 1:200,000
Selwyn Project
Wildlife Logs 2018 HPAR
Figure 5
Filename: SC1710_envt_20190218_WildlifeLogs2018HPAR.mxd
Project Location: Watson Lake Mining District - NTS 105I/J
Projection: NAD83 - UTM Zone 9
0 2 4 6 8
Kilometers

Appendix P

2018 Spill Log

SELWYN CHIHONG MINING LTD.

2018
Reportable and Non-Reportable Spill Log

Report Log Number	Reported By	Date/Time	Location (Description and GPS)	Substance	Quantity	Distance to nearest watercourse	Incident/Remedial Measure Taken	Pictures Taken ?	Investigated by	Comments
060918A	E.John and T.Smith	09/06/2018 13:10	09V 0527750 6886095	Diesel	1 Litre	400m to Don Creek	Absorbent pads were placed on the spill	Yes	E.John T.Smith	It is an old spill from last year. Old gator on was identified on the spill and pictures from last season (2017) were located on the field computer.
61518	J. Haggett	15/06/2018 11:20	09V 0473244 6934658	Diesel	<0.250 L	50m to Don Creek	Used Gator	Yes	S.Caesar	Took 2 Pictures and used gator to cover spill
61918	T.Smith S.Caesar	19/06/2018 11:33	09 V0473100 6934471	Oil	1 Litre	100m to Don Creek	Used Fresh Gravel	Yes	S.Caesar	Oil Spill in front of Maintenance Shop. Photo Taken #105-0655 #105-0656
62918	S.Caesar	29/06/2018 15:30	Enviro Tank	Diesel	1 Litre	400m to Don Creek	Used Gator	Yes	S.Caesar	Diesel Spill while transferring fuel to Enviro Tanks.
71518	T. Smith	05/07/2018 8:30	Don Waste Facility	Diesel	1 Litre	450m to Don Creek	Removed contaminated soil into labelled buckets and placed gator on spill.	Yes	T. Smith	Fuel was leaking from parked packer.
71018	K. McKay	07/10/1813:00	Don Waste Facility	Diesel	< 1 L	450m to Don Creek	Absorbent pads were placed on the spill	No	S. Sidhu	The dozer was being filled from a tidy tank.
71418	S. Sidhu	14/07/2018 13:30	Don Waste Facility Red Seacan	Mixed Flammable Waste	10 L	450m to Don Creek	Absorbent pads were placed on the spill	Yes	S. Sidhu	A crushed diesel barrel was wraped in a bag and placed into a berm in the red seacan. The bag had a hole and residual diesel leaked out. This berm also housed spent absorbent pads and residual fluids from the pads leaked into the berm.

Spill Record
Non-Reportable

Selwyn Chihong Mining

Log # SP-06/15/18

Howards Pass	Date of Spill	Date Reported	Date of Investigation if required
	15-Jun-18	15-Jun-18	

Reported By	Reported To	Time of Spill	Time Reported	Date Submitted
J. Haggett	E. John	11:20 AM	11:29 AM	15-Jun-18

Reportable to Spill Line - Yes/No: NO

Yukon Spill Line 24/7 - 867-667-7244 NT Spill Line - (867) 920-8130

TYPE OF MISHAP Multiple Selections Possible

Spill Incident

Spill Type (mark with an X, those that apply)		Location of Spill	Volume Spilled (L)	Remedial Action (check all that apply)		Pictures	GPS Coordinates
DIESEL	X	Behind the drillers dry		GATOR	X		09 V 0473244
JET A				ABSPORB PADS (diapers)			6934658
GAS				SCRAPPING (record in box below were contaminated soil was relocated.		Weather During Spill (Fill in box below)	
OIL				OTHER (describe below)			
OTHER (describe below)						Sunny +8	

Distance to closest water source	50m	OCCUPATION of person who reported spill:	Camp Manager	YRS OF EXPERIENCE IN OCCUPATION:	10

ESCRIBE HOW THE SPILL OCCURRED; Include what the person(s) was doing, trying to do and anything unusual. If it is an old spill, ensure to state as suc

The diesel barrel hose was being changed.

PREVENTATIVE ACTION IMPLEMENTED OR TO BE IMPLEMENTED:	PERSON RESPONSIBLE	DATE TO BE COMPLETED	DATE COMPLETED
In the future, make sure to put absorbent pads down prior to changing hoses from diesel barrels.			

COMMENTS	SIGNATURE	TITLE	DATE
	E. John	Senior Environmental Monitor	15-Jun-18

Note: All areas shaded red, must be filled in. If a report is required this page must be attached.
Fill in with much information as possible.
If additional pages are required ensure to attached them digitally and physically.
All spills must be remediated. **DO NOT FILL OUT REPORT IF THE SPILL HAS NOT BEEN REMEDIATED!**
Attach all photographs when forwarded to supervisors.

Spill Record
Non-Reportable

Selwyn Chihong Mining

Log # SP-06/19/18

Howards Pass	Date of Spill	Date Reported	Date of Investigation if required
	19-Jun-18	19-Jun-18	

Reported By	Reported To	Time of Spill	Time Reported	Date Submitted
Unknown	T. Smith and S.Caesar	19-Jun-18	19-Jun-18	19-Jun-18

Reportable to Spill Line - Yes/No: NO

Yukon Spill Line 24/7 - 867-667-7244 NT Spill Line - (867) 920-8130

TYPE OF MISHAP Multiple Selections Possible

Spill Incident

Spill Type (mark with an X, those that apply)		Location of Spill	Volume Spilled (L)	Remedial Action (check all that apply)		Pictures	GPS Coordinates
DIESEL		In front of Mainentance Shop	1 Litre	GATOR		X	09 V 0473100
JET A				ABSPORB PADS (diapers)			6934471
GAS				SCRAPPING (record in box below were contaminated soil was relocated.		Weather During Spill (Fill in box below)	
OIL	X			OTHER (describe below)			
OTHER (describe below)				Used Fresh Gravel		Clear and Sunny +18	

Distance to closest water source	100m	OCCUPATION of person who reported spill:	Environmental Monitor	YRS OF EXPERIENCE IN OCCUPATION:	2

ESCRIBE HOW THE SPILL OCCURRED; Include what the person(s) was doing, trying to do and anything unusual. If it is an old spill, ensure to state as suc

The oil was leaking from the piece of equipment while the oil filter was being changed.

PREVENTATIVE ACTION IMPLEMENTED OR TO BE IMPLEMENTED:	PERSON RESPONSIBLE	DATE TO BE COMPLETED	DATE COMPLETED
Put absorbent pads under equipment while changing any fluids.			

COMMENTS	SIGNATURE	TITLE	DATE
	T.Smith	Environmental Monitor	19-Jun-18

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Attach all photographs when forwarded to supervisors.

Spill Record
Non-Reportable

Selwyn Chihong Mining

Log # SP-06/29/18

Howards Pass	Date of Spill	Date Reported	Date of Investigation if required
	29-Jun-18	29-Jun-18	

Reported By	Reported To	Time of Spill		Date Submitted
D. Dickson	S. Caesar	3:30 PM	29-Jun-18	29-Jun-18

Reportable to Spill Line - Yes/No: NO

Yukon Spill Line 24/7 - 867-667-7244 NT Spill Line - (867) 920-8130

TYPE OF MISHAP Multiple Selections Possible

Spill Incident

Spill Type (mark with an X, those that apply)		Location of Spill	Volume Spilled (L)	Remedial Action (check all that apply)		Pictures	GPS Coordinates
DIESEL	X	Don Air Strip; Enviro Tanks	1L	GATOR	X	X	
JET A				ABSPORB PADS (diapers)			
GAS				SCRAPPING (record in box below were contaminated soil was relocated.		Weather During Spill (Fill in box below)	
OIL				OTHER (describe below)			
OTHER (describe below)						Cloudy/Partly Sunny +5	

Distance to closest water source	400m	OCCUPATION of person who reported spill:	Camp Tech	YRS OF EXPERIENCE IN OCCUPATION:	4

ESCRIBE HOW THE SPILL OCCURRED; Include what the person(s) was doing, trying to do and anything unusual. If it is an old spill, ensure to state as suc

Transferring diesel to diesel Enviro Tank, while doing so the hose from the pump became loose. From my observation, it was either from air lock, or not shut properly.

PREVENTATIVE ACTION IMPLEMENTED OR TO BE IMPLEMENTED:	PERSON RESPONSIBLE	DATE TO BE COMPLETED	DATE COMPLETED
Make sure the hose, to the pump, is tight while transferring fuel or use duct tape to secure hose to pump as a secondary measure.			

COMMENTS	SIGNATURE	TITLE	DATE
	S. Caesar	Environmental	29-Jun-18

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Attach all photographs when forwarded to supervisors.

Spill Record
Non-Reportable

Selwyn Chihong Mining

Log # SP-07/05/18

Howards Pass	Date of Spill	Date Reported	Date of Investigation if required
	05-Jul-18	05-Jul-18	05-Jul-18

Reported By	Reported To	Time of Spill	Time Reported	Date Submitted
T. Smith	T. Smith	8:30 AM	8:30 AM	14-Jul-18

Reportable to Spill Line - Yes/No: NO

Yukon Spill Line 24/7 - 867-667-7244 NT Spill Line - (867) 920-8130

TYPE OF MISHAP Multiple Selections Possible

Spill Incident

Spill Type (mark with an X, those that apply)		Location of Spill	Volume Spilled (L)	Remedial Action (check all that apply)		Pictures	GPS Coordinates
DIESEL	X	The spill occurred at the Don Waste Facility, where a parked packer was leaking fuel.	1 L	GATOR	X	X	09V 0473933
JET A				ABSPORB PADS (diapers)	X		6934386
GAS				SCRAPPING (record in box below were contaminated soil was relocated.	X	Weather During Spill (Fill in box below)	
OIL				OTHER (describe below)			
OTHER (describe below)				The soil was placed into labelled buckets and stored at the Don Waste Facility.			

Distance to closest water source	450 m Don Creek	OCCUPATION of person who reported spill:	Environmental Monitor	YRS OF EXPERIENCE IN OCCUPATION:	2

ESCRIBE HOW THE SPILL OCCURRED; Include what the person(s) was doing, trying to do and anything unusual. If it is an old spill, ensure to state as suc

There was a fuel leak from the packer that was parked at the Don Waste Facility.

PREVENTATIVE ACTION IMPLEMENTED OR TO BE IMPLEMENTED:	PERSON RESPONSIBLE	DATE TO BE COMPLETED	DATE COMPLETED
Any machinery which is to be parked over an hour should have absorbent pads and/or a drip tray beneath it.			

COMMENTS	SIGNATURE	TITLE	DATE

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Fill in with much information as possible.
If additional pages are required ensure to attached them digitally and physically.
All spills must be remediated. **DO NOT FILL OUT REPORT IF THE SPILL HAS NOT BEEN REMEDIATED!**
Attach all photographs when forwarded to supervisors.

Spill Record
Non-Reportable

Selwyn Chihong Mining

Log # SP-MM/DD/YR

Howards Pass	Date of Spill	Date Reported	Date of Investigation if required
	10-Jul-18	10-Jul-18	10-Jul-18

Reported By	Reported To	Time of Spill	Time Reported	Date Submitted
K. McKay	S. Sidhu	1:00 PM	1:00 PM	14-Jul-18

Reportable to Spill Line - Yes/No: NO

Yukon Spill Line 24/7 - 867-667-7244 NT Spill Line - (867) 920-8130

TYPE OF MISHAP Multiple Selections Possible

Spill Incident

Spill Type (mark with an X, those that apply)		Location of Spill	Volume Spilled (L)	Remedial Action (check all that apply)		Pictures	GPS Coordinates
DIESEL	X	The spill occurred next to the sprung structure	Less than 1 L	GATOR		No	
JET A				ABSPORB PADS (diapers)	X		
GAS				SCRAPPING (record in box below were contaminated soil was relocated.		Weather During Spill (Fill in box below)	
OIL				OTHER (describe below)			
OTHER (describe below)						Unsure	

Distance to closest water source	450 m to Don Creek	OCCUPATION of person who reported spill:	HEO Supervisor	YRS OF EXPERIENCE IN OCCUPATION:	2

ESCRIBE HOW THE SPILL OCCURRED; Include what the person(s) was doing, trying to do and anything unusual. If it is an old spill, ensure to state as suc

The dozer was being refulled. When the fuelling has ceased and the hose was being returned to its housing on the tidy tank, residual fuel from the nozzle leaked onto the ground.

PREVENTATIVE ACTION IMPLEMENTED OR TO BE IMPLEMENTED:	PERSON RESPONSIBLE	DATE TO BE COMPLETED	DATE COMPLETED
Ensure the hose is drained prior to returing it to is craddle.			

COMMENTS	SIGNATURE	TITLE	DATE
	S. Sidhu	Senior Environmental Scientist.	14-Jul-18

Note: All areas shaded red, must be filled in. If a report is required this page must be attached.
Fill in with much information as possible.
If additional pages are required ensure to attached them digitally and physically.
All spills must be remediated. **DO NOT FILL OUT REPORT IF THE SPILL HAS NOT BEEN REMEDIATED!**
Attach all photographs when forwarded to supervisors.

Spill Record
Non-Reportable

Selwyn Chihong Mining

Log # SP-07/14/2018

Howards Pass		Date of Spill: Unknown	Date Reported: 14-Jul-18	Date of Investigation if required: 14-Jul-18
Reported By: S. Sidhu	Reported To: S. Sidhu	Time of Spill: Unknown	Time Reported: 1:30 PM	Date Submitted: 14-Jul-18
		Reportable to Spill Line - Yes/No: NO		

Yukon Spill Line 24/7 - 867-667-7244 NT Spill Line - (867) 920-8130

TYPE OF MISHAP Multiple Selections Possible

Spill Incident

Spill Type (mark with an X, those that apply)		Location of Spill	Volume Spilled (L)	Remedial Action (check all that apply)		Pictures	GPS Coordinates
DIESEL		The spill was located in the red seacan at the Don Waste Facility	Approx. - 10 L	GATOR		Yes	
JET A				ABSPORB PADS (diapers)	X		
GAS				SCRAPPING (record in box below were contaminated soil was relocated.		Weather During Spill (Fill in box below)	
OIL				OTHER (describe below)			
OTHER (describe below)							
Mixed Flammable Waste						Overcast	

Distance to closest water source	450m to Don Creek	OCCUPATION of person who reported spill:	Senior Environmental Scientist	YRS OF EXPERIENCE IN OCCUPATION:	3

ESCRIBE HOW THE SPILL OCCURRED; Include what the person(s) was doing, trying to do and anything unusual. If it is an old spill, ensure to state as suc

A crushed diesel barrel was wrapped in a bag and placed into a berm in the red seacan. The bag had a hole and residual diesel leaked out. This berm also housed spent absorbent pads and residual fluids from the pads leaked into the berm.

PREVENTATIVE ACTION IMPLEMENTED OR TO BE IMPLEMENTED:	PERSON RESPONSIBLE	DATE TO BE COMPLETED	DATE COMPLETED
Absorbent pads were placed on the berm. Currently, they are still there and will be checked on 15-July-18 to ensure the mixed flammable waste has been absorbed by the pads.	S. Sidhu	15-Jul-18	
The crushed barrel should have had the residual diesel drained into a better barrel and/or the waste fuel burner located at the Don Shop. Leaving it in a bag resulted in a large mess.			

COMMENTS	SIGNATURE	TITLE	DATE

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