

FINAL REPORT

**PHASE I
ENVIRONMENTAL SITE ASSESSMENT**

**Joeyaska IR # 2,
Lower Nicola Indian Band
Merritt, British Columbia**

Prepared for

Lower Nicola Indian Band
181 Nawishaskin Lane
Merritt, B.C. V1K 0A7

Submitted by

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RR#2, Site 55, Compartment 10
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Project No: 10-0374
April, 2011





COLUMBIA
ENVIRONMENTAL

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Penticton, BC. V2A 6J7

April 30, 2011

Lower Nicola Indian Band
181 Nawishaskin Lane
Merritt, B.C. V1K 0A7

Attention: John Keating and Sharon Parsons, LNIB Lands and Leasing Office

Subject: Final Phase I Environmental Site Assessment (ESA) of the Joeyaska Indian Reserve # 2, Lower Nicola Indian Band, Merritt, BC.

We trust that this final report meets your present needs. Two hard copies of the final report and a CD-ROM including the source files and an Adobe pdf version will be provided upon receipt of your review. Please do not hesitate to call if you have any questions or comments, or if you require anything further.

Yours truly,

Columbia Environmental Consulting Ltd.

Per: _____
Dwight Shanner, R.P.Bio
Project Manager

EXECUTIVE SUMMARY

Columbia Environmental Consulting Ltd. (Columbia) was contracted by the Lower Nicola Indian Band (LNIB) on behalf of Indian and Northern Affairs Canada (INAC) to conduct a Phase I Environmental Site Assessment (ESA) of the Joeyaska Indian Reserve #2, herein referred to as the “Site”.

The first step in site characterization is to conduct a Phase I ESA. During this phase, information is gathered about site layout and previous activities and/or operations that may have caused contamination at the Site.

The Phase I ESA consisted of the following:

- records review;
- interviews with regulatory officials and personnel knowledgeable about the Site;
- site reconnaissance; and
- information evaluation and preparation of the report provided herein.

The Phase I ESA was conducted as per the requirements of the CSA document *Z768-01 Phase I Environmental Site Assessment, April 2003*. The Phase 1 ESA focused on preliminary areas of interest identified through historical document review, and interviews. In general, all residential structures were excluded unless information was gathered to suggest contamination or external visual observations indicated potential contamination. Specific residential structures listed for inspection at the request of the First Nation or INAC require the permission from the First Nation and the Certificate of Possession holder.

Joeyaska IR #2 is an irregular rectangle like reserve in shape and is 320 acres in size. Coordinates for the Site are zone 10 660416.3E, 5551365.4N on topographic NTS map sheet 092I02. The majority of land use in the area is residential with agricultural sections. There are 15 houses on the Site with electric heat and individual septic fields. Godey Creek runs through the north portion of the reserve, which is a tributary of the Coldwater River located west of the Site. Right of ways for Highway 97C and an oil pipeline crosses the northern portion of the Reserve.

Three (3) areas of potential environmental concern (APECs) were identified within the Site based on historical information, interviews and on-site visual observations. The on-site APECs include the Lot 9 and 6 Residential Dumps, and the Lot 9 burnt house. A summary table of the APECs and their associated contaminants of potential concern (COPC) is provided below.

Table A. Areas of Potential Environmental Concern (APECs)

APEC	Description of Contamination or Risk	COPC
APEC 1 Joeyaska IR 2 Lot 9 Residential Dump	Dump contains abandoned vehicles, empty oil containers, automotive parts, metal debris, domestic waste, furniture, and building materials.	<ul style="list-style-type: none"> • Metals • PAH • PHC • VOC
APEC 2 Joeyaska IR 2 Lot 9 Burnt House	Limited scattered debris including appliances, an abandoned AST, and burnt building materials remain on the Site.	<ul style="list-style-type: none"> • Metals • PAH • PHC • VOC
APEC 3 Joeyaska IR 2 Lot 6 Residential Dump	Dump contains abandoned vehicles, metal debris, automotive parts, appliances, propane tanks, furniture, domestic waste, and building materials.	<ul style="list-style-type: none"> • Metals • PAH • PHC • VOC
Off Site APEC 4 Oil Pipeline	Kinder Morgan operates a 61 mm oil transmission pipeline on a right of way adjacent to the Site. The LNIB has environmental concerns for leaks and spills.	<ul style="list-style-type: none"> • PAH • PHC • VOC
Off Site APEC 5 Godey Gravel Pit	Gravel pit contains various aggregates, asphalt, culverts, concrete, settling pond, and used road salt pile.	<ul style="list-style-type: none"> • NA+ • CL- • PAH • VOC's

PAH = Polycyclic Aromatic Hydrocarbons

VOC = Volatile Organic Compounds

PHC = Petroleum Hydrocarbons including F1, F2, F3 and F4 fractions, Benzene, Toluene, Ethylbenzene and Xylenes (BTEX).

A diesel fuel spill is located 0.5km north of the Site, on the east side of Highway 5, and was remediated to Industrial land use standards (Levelton 2011). The ditch line at the accident site is sloped north away from the reserve. As such, the diesel spill is not retained as an off site APEC.

A Phase 2 ESA is recommended to determine the presence or absence of COPCs at concentrations greater than the applicable criteria at the APECs identified by this assessment.

TABLE OF CONTENTS

1.0 INTRODUCTION.....	1
1.1 OBJECTIVE	1
1.2 SITE BACKGROUND	1
2.0 SCOPE OF WORK.....	2
3.0 METHODOLOGY	2
3.1 RECORDS REVIEW	2
3.2 INTERVIEWS	2
3.3 SITE VISIT	3
4.0 HISTORICAL RECORDS REVIEW.....	3
4.1 RECORDS REVIEW	3
4.2 AGENCY REVIEW	4
4.3 PREVIOUS ENVIRONMENTAL INVESTIGATIONS.....	6
4.4 INTERVIEWS	7
5.0 SITE DESCRIPTION.....	8
5.1 GENERAL PROPERTY DESCRIPTION	8
5.2 TOPOGRAPHY	9
5.3 GEOLOGY	9
5.4 SURFACE DRAINAGE.....	10
5.5 CLIMATE DATA	10
5.6 UTILITIES.....	10
5.7 ADACENT PROPERTIES	11
5.8 VALUED ECOSYSTEM COMPONENTS (VECs)	11
5.9 WATER WELLS	12
5.10 HISTORICAL LAND USE	13
5.11 REGULATORY HISTORY	13
6.0 FINDINGS	13
6.1 FUEL / CHEMICAL HANDLING AND STORAGE	13
6.2 SOLID WASTE MATERIALS	13
6.3 SPILLS AND STAIN AREAS.....	14
6.4 WASTEWATER DISCHARGE.....	14
6.5 AIR DISCHARGES.....	14
6.6 POLYCHLORINATED BIPHENYLS (PCB).....	15
6.7 ASBESTOS.....	15
6.8 HEAVY METALS.....	15
6.9 OZONE DEPLETING SUBSTANCES (ODS)	15
6.10 NOISE.....	15

7.0 AREAS OF POTENTIAL ENVIRONMENTAL CONCERN	16
8.0 RECOMMENDATIONS.....	16
9.0 REPORT USE AND LIMITATIONS.....	17
10.0 PROFESSIONAL STATEMENT	18
11.0 REFERENCES.....	19

FIGURES

Figure 1	Site Location
Figure 2	Joeyaska IR2 Lot 9 Residential Dump
Figure 3	Joeyaska IR2 Lot 9 Burnt House
Figure 4	Joeyaksa IR2 Lot 6 Residential Dump
Figure 5	Ministry of Transport Godey Gravel Pit

TABLES (in report)

Table A. Air Photo Review Summary	4
Table B. Summary of Information Obtained from Interviewees	7
Table C. Site Area Summary	8
Table D. Climate Values for 1971-2000.....	10
Table E. Precipitation Values for 1971-2000	10
Table F. Water Well Search Results	12
Table G. Fuel and Chemical Details	13
Table H. Solid Waste Summary for the Site.....	14

APPENDICES

Appendix A	Figures
Appendix B	BC Online Site Registry Search Results
Appendix C	Correspondence
Appendix D	Aerial Photographs
Appendix E	Potential Species at Risk
Appendix F	Photographic Documentation
Appendix G	Historical Reports

1.0 INTRODUCTION

Columbia Environmental Consulting Ltd. (Columbia) was commissioned by the Lower Nicola Indian Band (LNIB) on behalf of Indian and Northern Affairs Canada (INAC) to conduct a Phase I Environmental Site Assessment (ESA) of the Joeyaska Indian Reserve #2, herein referred to as the “Site”.

The Site is located directly west of the junction between Highway 97C and Highway 5 approximately 3 km southwest of the city of Merritt B.C, on 1:50,000 NTS mapsheet 092102. The Site’s geographic position relative to the surrounding features is shown on Figure 1 included in Appendix A.

The Phase I ESA follows procedures outlined in the Canadian Standards Association (CSA) document *Z768-01 Phase I Environmental Site Assessment, April 2003*. This report will be used in making decisions concerning whether further investigation and or remediation is necessary. John Keating and Sharon Parsons (LNIB Lands and Leasing Office) provided written authorization for the project.

1.1 OBJECTIVE

The objective of this Phase I ESA is to identify and document any actual or potential human health or environmental risks associated with the Site and provide recommendations for further assessment and/or risk management. The “Areas of Potential Environmental Concern” (APECs), with their associated “Contaminants of Potential Concern” (COPC), and the person or agencies that may be responsible for causing the contamination define these risks.

1.2 SITE BACKGROUND

The Joeyaska IR#2 is comprised of approximately 320 acres on one reserve. The reserve is an irregular rectangle shape and it occupies portions of the relatively flat grasslands 1 km east of Coldwater Creek. The Site is located 3 km southeast of Merritt City center and less than a kilometer north of the Nicola River. The right of way for an oil and gas pipeline and Highway 97C is situated in the north section of the reserve. More than 10 residences are located on the Site.

2.0 SCOPE OF WORK

The first step in site characterization is to conduct a Phase I ESA. During this phase, information is gathered about site layout and previous activities and/or operations which may have caused contamination at the Site.

The Phase I ESA consisted of the following:

- records review;
- interviews with regulatory officials and personnel knowledgeable about the Site;
- site reconnaissance; and
- information evaluation and preparation of the report provided herein.

The Phase I ESA was conducted as per the requirements of the CSA document *Z768-01 Phase I Environmental Site Assessment, April 2003*.

The Phase 1 ESA focused on preliminary areas of interest identified prior to the site visit, through historical document review, and interviews. A list of these areas is included in Section 5.1.1. It is the responsibility of the First Nation to provide the Assessor with access to the identified area of interest. In general, all residential structures were excluded unless information was gathered to suggest contamination or external visual observations indicated potential contamination. Specific residential structures listed for inspection at the request of the First Nation or INAC require the permission from the First Nation and the Certificate of Possession holder.

3.0 METHODOLOGY

3.1 RECORDS REVIEW

Records included a search for previous environmental reports, historical aerial photographs, city directories, fire insurance maps, federal and provincial agency review, Lower Nicola Indian Band records, and regional district records. The applicable search distance for the records review included properties immediately adjacent to the Site, and other properties (as identified by aerial photographs, etc.) where the potential for environmental contamination to impact the Site was apparent (i.e. petroleum product storage in the immediate area). A reference of personal communications is included at the end of this report in Section 11.0.

3.2 INTERVIEWS

Interviews with persons knowledgeable about the Site were carried out to obtain or confirm information on the environmental characteristics of the property and historical use. Information provided by interviewees is detailed in Section 5, and included throughout the report. Dwight Shanner and Carmen Marshall from Columbia Environmental conducted the interviews on September 14, 2010.

3.3 SITE VISIT

The site visit was conducted by Summer Zawacky, B.Sc., and Carmen Marshall, B.Sc. from Columbia Environmental and Marvin Shuter from LNIB on September 30th, 2010. A site inventory was completed and the subject property was examined for evidence of actual or potential environmental contamination. All areas of the reserve and structures were accessible during the site visit, and GPS coordinates were taken at each point of interest using a hand held Garmin GPS Map 60Cx as UTM's in the NAD 83 datum. All locations were accessible to Columbia personnel. Selected photographs are included in Appendix F.

4.0 HISTORICAL RECORDS REVIEW

4.1 RECORDS REVIEW

An outline of the history of land use on the subject property and adjacent properties was compiled through the review of the variety of information sources. These typically include historical records and a review of files retained by regulatory agencies, however, the following standard sources of information were not available:

- Fire insurance drawings;
- City/Business directories; and
- Historical Title search.

For the historical uses of the property, aerial photographs dating back to 1948, interviews, web searches, archives, and previous reports supplied by INAC and the provided important information. A list of sources and references for the records review is provided in Section 11. The BC online Site Registry search results are found in Appendix B. Correspondence can be found in Appendix C and examples of historical aerial photographs can be found in Appendix D. A list of Species At Risk potentially in the Site area can be found in Appendix E. Previous environmental reports can be located in Appendix G.

4.1.1 REVIEW OF AERIAL PHOTOGRAPHS

Aerial photographs dated 1948 and 1972 from the University of British Columbia's Geographic Information Centre (UBC GIC) as well as 2005 (Google Earth) were reviewed for information about land use at the subject property and adjacent lands. Copies of representative aerial photographs are included in Appendix D. Site details from the aerial photograph interpretation are briefly described below in the following table:

Table B. Air Photo Review Summary

Aerial photo Year	Description
1948	<i>Subject Property:</i> No visible development on Joeyaska IR # 2.
	<i>Adjacent Lands:</i> A road in the location of Highway 5 is present to the east of the Site. Coldwater Creek is visible in its natural form west of the Site. The adjacent north and south properties are undeveloped. The residential and agricultural usage of land can be observed in Merritt, northwest of the Site.
1972	<i>Subject Property:</i> A road is visible on the Site running north-south. The oil pipeline right of way is visible.
	<i>Adjacent Lands:</i> A zig-zag pattern of a road is visible to the east of the Site. No additional changes are noted.
2005	<i>Subject Property:</i> Highway 97C almost bisects the reserve from southeast to northwest. A road is visible on the Site running north-south with 3 side roads to 14 houses and associated garages or farm buildings.
	<i>Adjacent Lands:</i> Two residential blocks are visible adjacent to the north west of the reserve. West of the reserve acreages are visible adjacent to the reserve. South of the reserve is Antko 21 Reserve that is undeveloped and the highway gravel pit. East of the reserve is Highway 5 and Highway 97C interchange with wild lands beyond the highways.

4.1.2 CITY DIRECTORIES

The Merritt Public Library was contacted in regards to any business directories. They did not have records of City/Business directories for the reserve.

4.1.3 MERRITT FIRE DEPARTMENT

The Merritt Fire Department was contacted regarding any historical information. No fire records were identified for the Joeyaska IR # 2.

4.1.4 HISTORICAL TITLE SEARCH

A historical title search was not considered relevant for this project, as the subject property has remained in the authority of the federal government since its inception.

4.2 AGENCY REVIEW

Columbia contacted federal, provincial, regional, and municipal agencies to identify actual or potential environmental contamination issues on or near the subject Site. The following sections of the report present the findings of the regulatory review conducted for the subject property.

4.2.1 LOWER NICOLA INDIAN BAND

LNIB maintains a file with the original surveys of the lot boundaries and utilities serviced to each lot. Records of surveys were requested through the housing department although we have not received the records at the time of this report.

4.2.2 FEDERAL GOVERNMENT

The INAC Environmental Management System database, IEMS (formerly ESSIMS), had no reports or recorded sites for this reserve.

The Treasury Board of Canada Contaminated Sites Action Plan site registry did not have any registered sites within the database for this reserve.

4.2.3 MINISTRY OF TOURISM

The Ministry of Tourism's archeology branch was contacted regarding any archeological records for the Site. Two site's with archeological significance were found, one on the Site and the other off the Site adjacent to the southeast corner. The records were labeled as areas of high potential of unrecorded archeological materials. A map of the locations is provided by the Ministry of Tourism in Appendix C.

4.2.4 BC MINISTRY OF ENVIRONMENT – SITE REGISTRY

The contaminated sites provisions under the *Environmental Management Act* (Formerly the *Waste Management Act*) and *Contaminated Sites Regulations*, effective April 1997, require the Province to provide public information about site investigations and cleanups. The Site Registry has been established to meet this requirement. The Site Registry documents milestones in the site assessment process and provides public access to this information. It contains information regarding which sites have been investigated and/or remediated since MoE began recording this activity. The Site Registry is not a registry of only contaminated sites; it also includes sites for which a Site Profile has been submitted.

The online version of the Site Registry database searches for records of sites within a 1.0 kilometer radius of the subject property. The Site Registry has been collecting data only since its inception in April 1997, and not all sites of known or potential contamination within the search area may have been captured. Therefore, the searches cannot be considered a definitive method of identifying all sites of potential contamination within the search area. The Site Registry search results are presented in Appendix B and are summarized below:

Subject Property

According to the BC Online search there were no records in the Site Registry for the subject property.

Adjacent Properties

According to the BC Online search there were no records in the Site Registry for the adjacent properties when two 1.0 km radius searches were completed using the center of the reserve in the north and south section as the search centers.

4.2.5 TOWN OF MERRITT

Sean O’Flaherty of the City of Merritt was contacted requesting any information regarding environmental or contamination issues or building permits for the lands of LNIB. The city has no records regarding the subject property and adjacent lands, and do not maintain any such records for facilities operating on Reserve Lands.

4.2.6 MERRITT MUSEUM & ARCHIVES

The Museum of Merritt was contacted via phone. The Museum did a search within LNIB lands and no records were found pertaining to Joeyaska IR # 2.

4.2.7 THOMPSON NICOLA REGIONAL DISTRICT

Peter Hughs of the environmental department with the Thompson Nicola Regional District (TNRD) was contacted requesting any information regarding environmental issues on or near LNIB. Mr. Hughs stated that the district has no records regarding the subject property and do not maintain any such records for facilities operating on reserve lands.

4.2.8 TERASEN (FORMERLY BC GAS)

Toni Melliore of Terasen Gas was contacted regarding service connections to the subject property including any current or historical issues that are likely to have resulted in environmental impacts on the Reserve. Terasen has no record of environmental issues that may have occurred on the subject property or adjacent properties. Terasen does not keep records pertaining to service initiation and decommissions as a standard company policy.

4.2.9 FORTIS BC (FORMERLY BC HYDRO)

Louise Ouelett of Transmission Distribution and Environment at Fortis BC was contacted regarding the presence of service connections to the subject property including any current or historical issues that are likely to have resulted in environmental impacts on the reserve. Fortis has no record of environmental issues or transformer locations (possibly containing PCBs) that may have occurred on the subject property or adjacent properties.

4.3 PREVIOUS ENVIRONMENTAL INVESTIGATIONS

In 1999, Klohn-Crippen Consultants Ltd (Klohn-Crippen) completed a Phase I and II ESA for Mameet IR# 1, Joeyaska IR# 2, Pipeul IR # 3, Zoht IR #4 and Speous IR #8 on behalf of First Nations Emergency Services Society of BC (FNESS). The report focused on the assessment, removal and replacement of fuel storage tanks. Joeyaska IR #2 was found to

have no environmental concerns therefore a site visit was not deemed necessary at that time. The report identified, through conversation with LNIB members, that 11 residences occupied the Site with wood/electric heating and that heating oil furnaces and their associated fuel tanks were never used on the Site.

In 2005 Bovar-Concord Environmental completed a Phase II ESA on behalf of Indian and Northern Affairs Canada (INAC). The Godey gravel pit located adjacent to Joeyaska IR #2 was an area that was presented as a concern during consultation with the Band siting large amount of salt deposits with the potential to leach and migrate onto reserve lands. Following an inspection, the Site did not appear to have any major environmental concerns. The previous environmental reports can be found in Appendix G.

4.4 INTERVIEWS

Interviewees included: Marvin Shuter, Willie Basil, Francis Shuter, Delia Shuter, Ira Sterling, Maggie Shuter Harold Joe. Interviews with LNIB members identified the following concerns:

Table C. Summary of Information Obtained from Interviewees

Area of Concern	Location	Description
Joeyaska #2	Highway 5 and Highway 97C	Roads that run parallel with the reserve are sprayed with pesticides and salts. MOT salt shed is adjacent to the reserve. Contact Dave Schlep has Salt Investigation Report.
	Kinder Morgan Oil Pipeline	The LNIB has environmental concerns for leaks and spills
	North section of Site on Lot 9	Residential dump & burnt residence
	Southwest section of the Site on Lot 6	Residential dump
	South adjacent to the Site	Godey Gravel pit that may contain salt
	Located approx 0.5 km from the North east corner of the reserve	Diesel spill

5.0 SITE DESCRIPTION

5.1 GENERAL PROPERTY DESCRIPTION

The Lower Nicola Indian Band is comprised of ten reserves that total 17,500 acres. Joeyaska IR #2 is an irregular rectangle like reserve in shape and is 320 acres in size. Coordinates for the Site are zone 10 660416.3E, 5551365.4N on topographic NTS map sheet 092I02. The majority of land use in the area is residential with agricultural portions. Godey Creek runs through the north portion of the reserve, which is a tributary of the Coldwater River located west of the Site. Right of ways for Highway 97C and an oil pipeline are within the northern portion of the Reserve.

5.1.1 SITE DETAILS

Based on the information identified in the interviews and historical review, the Site was divided into the following areas which were the focus of the site visit:

- Off Reserve Fuel Spill
- Joeyaska IR 2 Lot 9 Residential Dump
- Joeyaska IR 2 Lot 9 Burnt House
- Joeyaska IR 2 Lot 6 Residential Dump
- Off Reserve Godey Gravel Pit

The table below summarizes the major features, former and current land uses of each area, and any other relevant information that pertains to this study.

Table D. Site Area Summary

Area ID (UTM Zone 10)	Potential Environmental Concerns	Structures Present	Historical Land Use	Current land Use
Off Reserve Fuel Spill 661050E 5552021N	<ul style="list-style-type: none"> • Diesel Spill from an 18 wheel truck that has been remediated • Soil is disturbed with one stain of 1m diameter remaining • Hydrocarbon adsorbing booms remain across concrete culvert outlet 	<ul style="list-style-type: none"> • Concrete Culvert 	Wildlands/ Highway	Wildlands/ Highway
Joeyaska IR 2 Lot 9 Residential Dump 660734E 5551700N	<ul style="list-style-type: none"> • Residential dump within a shallow surface depression (8m x 35m) • Contains metals, plastic, glass, and domestic/ automotive debris 	<ul style="list-style-type: none"> • No structures 	Wild lands/ Agricultural	Wild lands/ Agricultural
Joeyaska IR 2 Lot 9 Burnt House 660712E 5551669N	<ul style="list-style-type: none"> • Concrete foundation (7m x 9m) • Scattered debris within/surrounding the footprint includes fridge, abandoned empty AST, hot water tank, bathtub, 3 rubber tires, and a burnt pile of bricks 	<ul style="list-style-type: none"> • Concrete Foundation • Fireplace 	Wild lands/ Residential	Wild lands/ Agricultural
Joeyaska IR 2 Lot 6 Residential Dump 660319E 5550583N	<ul style="list-style-type: none"> • Residential dump (12m x 8m) containing domestic and automotive debris. • Scattered debris in an area of (28m x 6m) 	<ul style="list-style-type: none"> • No structures 	Wild lands/ Residential	Wild lands/ Residential

Area ID (UTM Zone 10)	Potential Environmental Concerns	Structures Present	Historical Land Use	Current land Use
Off Reserve Godey Gravel Pit 660398E 5550456N	<ul style="list-style-type: none"> Gravel pit containing various aggregates, asphalt, culverts, concrete, settling pond, and used road salt pile 	<ul style="list-style-type: none"> Settling Pond Paved Road Salt Area with Drains to Pond 	Wildlands	Industrial

5.1.2 ON-SITE STRUCTURES INVENTORY

Private residences were noted on the north and south section of the Site. The details and assessment of each residence with no environmental concerns was not within the Phase 1 scope of work, therefore no structural details were noted as the focus of this investigation was on previously identified contaminated site issues, ASTs, waste materials and potential contamination sources.

Of the three (3) areas of potential environmental concern (APECs) identified within the reserve, only the burnt house has structures which consist of a concrete foundation (7m x 9m), and a brick fireplace.

5.2 TOPOGRAPHY

The Site is situated in the relatively flat floodplain at the confluence of the Coldwater River and Godey Creek. The Reserve is gently sloped to the northwest at an elevation of approximately 640m above sea level. Relief on the property is approximately 50m ranging from 670m in the southeast to 620m in the northwest. The Site is located on the north edge of Iron Mountain, and is gently sloped down toward the Coldwater River to the northwest. The Coldwater River is located to the west of the Site, and drains into Nicola Lake. Godey Creek drains from Iron Mountain through the reserve to the northwest into the Coldwater River.

5.3 GEOLOGY

The Site is located within the Princeton Group and the Nicola Group - Western Volcanic Facies and consists of the Quesnel and Overlap Terranes within the intermontane belt. The Princeton Group covers the majority of the Site and consists of undivided sedimentary rocks including sandstone, conglomerate, argillite, and coal (including the Coldwater Beds and the Allenby Formation). The Nicola Group occurs along the southern portion of the Reserve and consists of undivided volcanics including mafic to felsic pyroclastic rocks & flows, argillite, sandstone, and local carbonates. Surficial materials overlying the bedrock consist of fine grained glaciolacustrine deposits and a till veneer of varying thickness. These surficial materials are generally made up of unconsolidated compositions of silt, sand, gravel, and cobbles. Surface soils within the reserve are classified as eutric brunisols, which typically develop on coarse textured fluvioglacial deposits (Ministry of Energy, Mines, & Resources, 2010).

5.4 SURFACE DRAINAGE

Surface drainage at the Site is anticipated to be primarily infiltration into the underlying soils. Surface runoff is anticipated to drain toward the center of the Reserve toward Godey Creek, and ultimately northwest through the Site toward the Coldwater River.

5.5 CLIMATE DATA

The tables below provide climate values and monthly precipitation values as collected at Merritt B.C. Metrological Station, based on data from 1971 to 2000¹. The average annual precipitation is 322.2 mm.

Table E. Climate Values for 1971-2000

Meteorological Station Elevation:	609.0m
Daily Mean Temperature:	7.4°C
Annual Rainfall:	238.9mm
Annual Precipitation:	322.2mm
Highest Monthly Average Precipitation:	Dec, 39.6mm
Lowest Monthly Average Precipitation:	April, 14.5mm

Table F. Precipitation Values for 1971-2000

Month	Average Precipitation (mm)	Month	Average Precipitation (mm)	Month	Average Precipitation (mm)
January	37.2	May	26.8	September	23.6
February	23.6	June	34.1	October	23.5
March	16.6	July	25.8	November	34.7
April	14.5	August	22.1	December	36.9

5.6 UTILITIES

Residential properties on the Site are serviced by underground water and overhead electrical power. The Public and Capital Works Clerk at the LNIB provided the Site utility information. The Site has 14 houses on community water, all on individual septic systems and are heated by electricity. There is one house on an individual water well, individual septic and is heated by propane or electricity. Water and power lines are located adjacent to the roadways to access individual lots. No houses are serviced by natural gas or oil furnace.

¹ www.climate.weatheroffice.ec.gc.ca

5.7 ADJACENT PROPERTIES

The adjacent lands to the east are utilized for agricultural purposes. Highway 5 is adjacent along the eastern boundary of the Site. The south is bordered by Antko IR#21 and the Ministry of Transportation Godey Gravel Pit. The adjacent lands to the northeast are residential properties of Merritt. The town of Merritt is comprised of agricultural, residential, and industrial use properties. Highway 97C runs through the reserve in a northwest/southeast direction.

An oil pipeline right of way through the reserve has been in operation since 1953 for the Trans Mountain Oil Pipe Line Company (Kinder-Morgan). The oil pipeline varies from 24-36' diameter and transports heavy crude, light crude, distillates, and gasoline. The pipeline moves 48,000 m³/day². The pipeline at the right of way section has a 61 cm diameter pipe and has no scheduled replacement time but routine safety inspections are planned. Kinder Morgan was contacted to request environmental records for the oil pipeline right of way adjacent to the reserve. Kinder Morgan responded that the company has no spills or environmental records for the area adjacent to the Joyaska 2 reserve.

The Godey Gravel Pit has been in operation under Ministry of Transport since 1972 as noted from aerial photographs. The gravel pit occupies a footprint of approximately 8.3 ha, and is located south of the reserve along Highway 5. The gravel pit slopes gently down from the southwest entrance to the northwest. A pile of recycled asphalt, approximately 288 m³, is located adjacent the reserve boundary near the northeast entrance. A used road salt pile is located in the southwest corner on top of a paved roadway. The salt pile is lined on three sides (south, west, and east) by interlocking blocks forming a concrete wall with the land sloped toward a concrete lined depression to the north. The depression has two drains where salt impacted water may be piped to a settling pond observed in the northwest corner of the property. The settling pond was fenced and approximately 40 m south of the reserve boundary. No pump houses or pumps were noted near the settling pond at the time of the site visit, however a large water tank was observed on the southeast corner of the settling pond, outside of the fenced area. No salt staining or evidence of pond overflow were noted on soil berms surrounding the settling pond. Two monitoring wells were noted on the property, one north of the used road salt pile, and one adjacent to the settling pond. Culverts and concrete road dividers were stored along the northwest corner of the gravel pit property.

5.8 VALUED ECOSYSTEM COMPONENTS (VECs)

The Site is located on the floodplain of Coldwater River, in Bunchgrass and Interior Douglas Fir (IDF) biogeoclimatic zones. Representative trees in this ecosystem include Douglas fir, trembling aspen, lodgepole pine, ponderosa pine, hybrid spruce, Rocky Mountain juniper. Shrubs for the area include species such as snowberry, common juniper, Saskatoon, Kinnikinnik, red osier dogwood, black gooseberry, prickly rose and false box. Herbs common to the area include bluebunch wheatgrass, pinegrass, wheatflower, bunchberry, yarrow, sedges (spp) and spike rushes to name a few (Ministry of Forests 1991).

² Referenced from Kinder Morgan: <http://www.kne.com/business/canada/transmountain.cfm>

A list of species from the BC Conservation Data Center (CDC) search, indicating species found within the area has been included in Appendix E. Characteristic wildlife in the region (CDC) include, but is not limited to, moose, mule deer, black bear, cougar, elk, grizzly, eagle, big horn sheep, badger, coyote, wolf, marmot, raven, spruce grouse, and various waterfowl.

A number of species considered Species at Risk by COSEWIC³ are potentially present on the Site and if present would receive special protection for critical habitats. Provincially, red listed (being considered for designation as threatened or endangered) or blue listed (considered vulnerable) species, by the BC Ministry of the Environment, means that they require special management attention.

The semi-pristine natural lands within the area of the Site are favorable for Species at Risk Act (SARA) listed species habitat. A biological inventory would be required to further investigate the potential presence of Species at Risk.

5.9 WATER WELLS

On January 4, 2011, the BC MoE water well database⁴ was searched in a 0.5 km radius from the center of the Site. There are two wells located within the Reserve. Well 49859, labeled as private domestic use, is located 200 southwest of the center coordinate in the central portion of Lot 6, down-gradient from the residential developments on Lot 6. Well 22042, labeled as unknown well use, is located in the northwest corner of the reserve 200m south from the intersection of Highway 97C and the oil pipeline.

Thirty (30) wells were located within 0.5km distance of the reserve boundary within the vicinity of the township of Merritt BC, and to the east of the Site. The majority of these wells are of unknown use, with some used for private/domestic purposes. Well details for on-reserve wells are summarized in the table below.

Table G. Water Well Search Results

Well Tag Number	Well Depth (m)	Drill Date	Direction to Site	Distance from Site	Owner	Major Geology Encountered (m)
49859	85.3	January 1982	SW of Center of Reserve on Lot 6	200m	Nicola Valley Const.	0.0-4.5 Boulders & Gravel 4.5-13.7 Brown Sand 13.7-41.1 Till 41.1-81.7 Clay & Fine Sand 81.7-85.3 Coarse Sand
22042	28.9	January 1969	W of Center of Reserve along Highway	580m	Indian Reserve #2	Unknown

³ COSEWIC means the Committee on the Status of Endangered Wildlife in Canada

⁴ Ministry of Environment. 2010. Water Resource Atlas Web Mapping Application http://www.env.gov.bc.ca/wsd/data_searches/wrbc/index.html

5.10 HISTORICAL LAND USE

Joeyaska IR #2 has historically been utilized for residential and agricultural land use. Hunting, fishing and gathering were and are traditional uses of the Reserve. One current and one former residence are located on the north part of the Reserve. The south portion has more than ten residences on the Site. No on-site industrial use was noted in the site visit, interviews, or historical review.

5.11 REGULATORY HISTORY

Two (2) previous Phase I ESAs were found from regulatory authorities for the subject property and have been detailed in Section 4.3 above.

6.0 FINDINGS

6.1 FUEL / CHEMICAL HANDLING AND STORAGE

No evidence of current or former underground storage tanks (USTs) were identified during this assessment. One abandoned AST and an empty 205L drum are present on the Site. Details of the two tanks are provided in the table below. Empty 1L and 20L plastic oil containers were noted within the residential dumps. As most of the containers are empty and no staining or odor was noted in the area, the potential impact from these materials are considered low.

Table H. Fuel and Chemical Details

AST #	Location (Site ID)	Capacity	Contents	Active	Condition
1	AST-Lot 9 Burnt House	~750L	Unknown	No	AST on its side, is not in use, is empty and no visible stains or odors were noted.
N/A	Drum in Lot 6 Residential Dump	205L	Unknown	No	Partially full with no odor

6.2 SOLID WASTE MATERIALS

Solid waste was observed at the Site in the two residential dumps (Lot 9 and 6), and in limited quantities surrounding the burnt building footprint. Waste found within the burnt building generally included household appliances and building materials. Waste found within the Lot 9 and Lot 6 residential dumps generally included abandoned cars and automotive parts, metal wastes, appliances, rubber tires, domestic waste, limited furniture, and building materials.

Table I. Solid Waste Summary for the Site

Location (Site ID)	Description of Hazardous Materials
Joeyaska IR 2 Lot 9 Residential Dump	<ul style="list-style-type: none">• Residential dump is within a shallow surface depression• Dump measures 8m x 35m• Contains 3 engine blocks, 3 cars, metal chairs, bike frame, tire rims, empty oil containers, domestic waste, animal carcasses, 4 rubber tires, mattress springs, couch, glass, spackle board, barbwire, plastics, and a car bumper.
Joeyaska IR 2 Lot 9 Burnt House	<ul style="list-style-type: none">• Concrete foundation remains (7m x 9m)• Surrounding area contains abandoned AST, fridge, hot water tank, oven, bathtub, 3 rubber tires, wire fencing material, and a 3m diameter pile of burnt bricks.
Joeyaska IR 2 Lot 6 Residential Dump	<ul style="list-style-type: none">• Concentrated debris area measures 8m x 12m• Scattered debris over 32m x 28m area• Contains 40 rubber tires, metal frames, car parts, fridge, 2 engine blocks, propane tanks, dishwasher, truck canopies, tv, domestic waste, carpet and padding, partially full 205L drum, automobile gas tank, 3 abandoned vehicles, cooler, and scattered car parts.

6.3 SPILLS AND STAIN AREAS

Minor spills associated with the former heating oil, drums, and vehicle maintenance/abandonment are assumed. Spotty soil staining was observed within the soils at the Lot 6 Residential Dump. Soils within the Lot 9 Residential Dump were not observed due to the concentrated debris covering the soils. No other spills or stains were noted at the Site.

An off-site Diesel spill occurred on Highway 5 right of way 5 km north of the Site. The right of way is 20 m wide from the highway to the reserve boundary. The ditch line at the accident location is sloped north away from the reserve. The spill and soil were remediated and a monitoring well was installed. ICBC paid for the remediation (Levelton 2011) and the consulting report for the remediation was received from ICBC (Appendix C). The diesel spill is not retained as an APEC.

6.4 WASTEWATER DISCHARGE

No concerns with regard to wastewater discharge were noted at the Site during this investigation.

6.5 AIR DISCHARGES

No concerns with regard to air quality discharge were identified during the interview process or site visit.

6.6 POLYCHLORINATED BIPHENYLS (PCB)

There were no records of PCB containing transformers or capacitors on the Site. No environmental concerns regarding PCBs were determined during this investigation. BC Hydro has an inventory of transformers that have >50 ppm and are in the process of decommissioning any of these transformers within their network.

6.7 ASBESTOS

The use of friable asbestos as a building material was banned in the U.S. in the mid 1970s. The manufacture of building materials containing asbestos was generally phased out in North America by the mid 1980s. The current residence are of recent construction, therefore the potential presence of asbestos is low.

The presence of asbestos has not been confirmed, but it is possible that asbestos may be present in such materials as insulation, cement products, grouts, plaster, compressed papers and boards, linoleum, floor tiles, duct tapes, sealants and protective coatings. Asbestos within the private residence is unlikely but not confirmed, otherwise material resembling friable asbestos was not observed during the site reconnaissance. If demolition or renovation of structures is considered, the identification and safe removal or containment of asbestos is regulated under Section 20.112 of the OHSR. When these materials are in use they are not waste materials; however, following removal it is recommended that they be managed in accordance with the *Hazardous Waste Regulation* and the *Environmental Management Act*.

6.8 HEAVY METALS

There is the potential for localized metals impacts to surface soils due to the presence of metal debris and other wastes. The metal debris within the residential dumps are an area of potential concern (APEC).

6.9 OZONE DEPLETING SUBSTANCES (ODS)

No evidence to suggest environmental contamination by ODS were identified.

6.10 NOISE

No environmental issues concerning noise were noted during this investigation.

7.0 AREAS OF POTENTIAL ENVIRONMENTAL CONCERN

Three (3) areas of potential environmental concern (APECs) were identified within the Site based on historical information, interviews and on-site visual observations. The on-site APECs include the Lot 9 and 6 Residential Dumps, and the Lot 9 burnt house. A summary table of the APECs and their associated contaminants of potential concern (COPC) is provided below.

Table J. Areas of Potential Environmental Concern (APECs)

APEC	Description of Contamination or Risk	COPC
APEC 1 Joeyaska IR 2 Lot 9 Residential Dump	Dump contains abandoned vehicles, empty oil containers, automotive parts, metal debris, domestic waste, furniture, and building materials.	<ul style="list-style-type: none"> • Metals • PAH • PHC • VOC
APEC 2 Joeyaska IR 2 Lot 9 Burnt House	Limited scattered debris including appliances, an abandoned AST, and burnt building materials remain on the Site.	<ul style="list-style-type: none"> • Metals • PAH • PHC • VOC
APEC 3 Joeyaska IR 2 Lot 6 Residential Dump	Dump contains abandoned vehicles, metal debris, automotive parts, appliances, propane tanks, furniture, domestic waste, and building materials.	<ul style="list-style-type: none"> • Metals • PAH • PHC • VOC
Off-site APEC 4 Oil Pipeline	Kinder Morgan operates a 61 mm oil transmission pipeline on a right of way adjacent to the Site. The LNIB has environmental concerns for leaks and spills.	<ul style="list-style-type: none"> • PAH • PHC
Off-site APEC 5 Godey Gravel Pit	Gravel pit contains various aggregates, asphalt, culverts, concrete, settling pond, and used road salt pile.	<ul style="list-style-type: none"> • NA+ • CL- • PAH

PAH = Polycyclic Aromatic Hydrocarbons

VOC = Volatile Organic Compounds

PHC = Petroleum Hydrocarbons including F1, F2, F3 and F4 fractions, Benzene, Toluene, Ethylbenzene and Xylenes (BTEX).

8.0 RECOMMENDATIONS

A Phase 2 ESA is recommended to determine the presence or absence of COPCs at concentrations greater than the applicable criteria at the APECs identified by this assessment.

9.0 REPORT USE AND LIMITATIONS

This Phase I ESA report has been prepared for the exclusive use of Indian and Northern Affairs Canada (INAC), and it is intended to provide INAC with an understanding of the potential for environmental contamination by hazardous materials at the property assessed. The scope of services performed in execution of this investigation may not be appropriate to satisfy the needs of other users, and any use or re-use of this document or the findings, conclusions, or recommendations presented herein is at the sole risk of said user. The findings and recommendations in this report are based upon data and information obtained during Site visits by Columbia and INAC personnel to the Site identified herein and the condition of the Site on the dates of such visits, supplemented by information and data obtained by Columbia described herein.

The findings and recommendations contained in this report are based on the expertise and experience of Columbia in conducting similar site assessments. In assessing the Site, Columbia has also relied upon representations and information furnished by individuals noted in the report with respect to existing operations and property conditions and the historical uses of the properties to the extent that the information obtained has not been contradicted by data obtained from other sources. Accordingly, Columbia accepts no responsibility for any deficiency, misstatements or inaccuracy contained in this report as a result of misstatements, omissions, misrepresentations or fraudulent information provided by others.

It should be recognized that this study was not intended to be a definitive investigation of contamination at the Site. Given that the limited scope of services for this assessment as stated in the Terms of Reference for the Phase I ESA, it is possible that currently unrecognized contamination may exist at the Site and, if present, that the levels of contamination may vary across the Site. Opinions and recommendations presented herein apply to site conditions existing at the time of our assessment and those reasonably foreseeable. Should environmentally significant changes to the Site or additional information become available, Columbia should be provided the opportunity to review this information/data and amend our opinions, as appropriate. Fungi, mycotoxins, bioaerosols and other indoor air quality issues were not included in the scope of work.

Columbia's objective is to perform our work with care, exercising the customary thoroughness and competence of earth science, environmental, and engineering consulting professionals, in accordance with the standard for professional services at the time and location those services are rendered. It is important to recognize that even the most comprehensive scope of services may fail to detect environmental liability on a particular site. Therefore, Columbia cannot act as insurers and cannot "certify" or "underwrite" that a site is free of environmental contamination, and no expressed or implied representation or warranty is included or intended in our reports, except that our work was performed, within the limits prescribed by our client, with the customary thoroughness and competence of our profession.

10.0 PROFESSIONAL STATEMENT

The information compiled for this document has been prepared in accordance with the requirements of the INAC Scope of Work.

Columbia certifies that the persons signing this document have demonstrable experience in the assessment of commercial and industrial sites. The work has been performed by Columbia staff under the guidance and supervision of the signatories below.

Report prepared by:

COLUMBIA ENVIRONMENTAL CONSULTING LTD.

Summer Zawacky, B.Sc.
Field Supervisor

Carmen Marshall, B.Sc.
Field Assessor

Dave Diplock, P.Eng.
Report Review

Dwight Shanner, R.P.Bio.
Project Manager

11.0 REFERENCES

- Aerial Photographs dated 1948, 1951, 1960, 1972 and 1991 from the University of British Columbia's Geographic Information Center (UBC GIC)
- BC Online Site Registry Search 1. 1km radius from the center of the reserve.
- Bovar-Concord Environmental. 1995. Phase II Environmental Issues Inventory Lower Nicola Indian Band.
- Canadian Standards Association. 2001. Z768-01 Phase I Environmental Site Assessment
- CCME. 2001 Canada Wide Standards (CWS) for Petroleum Hydrocarbons (PHC) in Soil. Winnipeg, Manitoba.
- CCME. 2004. Canadian Environmental Quality Guideline. Winnipeg, Manitoba.
- Conservation Data Center (CDC). 2011. BC Species and Ecosystems Explorer. BC Ministry of Environment, Victoria, BC. <http://srmapps.gov.bc.ca/apps/eswp/> Accessed January 2011.
- Environment Canada. 2010. National Climate Archive. www.climate.weatheroffice.ec.gc.ca Accessed January 2011.
- Klohn-Crippen. 1999. UST Removal and Replacement Program. First Nations Emergency Services.
- Levelton Consultants Ltd. 2011. Spill Response-1.3Km North of Hwy 97C on Hwy 5, Merritt, BC. Surrey, B.C.
- Lower Nicola Indian Band. 2011. Community Profile. <http://www.lnib.net/communityprofile.htm>. Accessed January 2011.
- Meidinger, D. and Pojar, J. 1991. Ecosystems of British Columbia. British Columbia Ministry of Forests. 330 pp. <http://www.for.gov.bc.ca/hfd/pubs/Docs/Srs/SRseries.htm>
- Ministry of Environment. 2010. Habitat Wizard. http://webmaps.gov.bc.ca/imf5/imf.jsp?site=moe_habwiz. Accessed January 2011.
- Ministry of Environment, 1986. Soil Landscapes of British Columbia. Resource Analysis Branch, Victoria, BC
- Ministry of Energy, Mines and Resources. iMap web mapping application & surficial geology mapping application. Accessed October 2010.
- NTS 1:50000 Map Sheet 092I02.
- Valentine, K.W.G. & A.B. Dawson. 2008. The Soils Landscapes of BC. Ministry of Sustainable Resource Management, Victoria, B.C. <http://srmwww.gov.bc.ca/soils/landscape/part3.html> Accessed August 2010.

WRBC. 2008. BC Water Resource Atlas. http://www.env.gov.bc.ca/wsd/data_searches/wrbc/index.html. Accessed January 2011.

Personal Communications

Bob Alexanruck. Division Manager. Ministry of Transportation. Merritt B.C. Regarding Diesel spill and gravel pit on Highway 5.

Dave Shlepee. Ministry of Transportation. Kamloops B.C. Requesting the salt investigation report.

Lorill Bradsen. Commercial Claims Examiner. ICBC.

Louise Ouelett. Environmental and Transmission and Distribution Department. Fortis BC. Vancouver B.C. Regarding records and locations of transformers and service dates.

Peter Hughs. Director of Environmental Services. Thompson Nicola Regional District. Regarding Environmental Records.

Sean O'Flaherty. Development Services Officer. City of Merritt. Merritt B.C. Regarding building permits on reserve or environmental issues.

Toni Melliére. Environmental Division. Terasen Gas. Vancouver B.C. Requesting Environmental records and service dates for LNIB.

APPENDIX A

FIGURES



LEGEND

- RESERVE FOOTPRINT
- RESERVE BOUNDARY

NOTES:

Airphoto taken from Google Earth,
December 2010

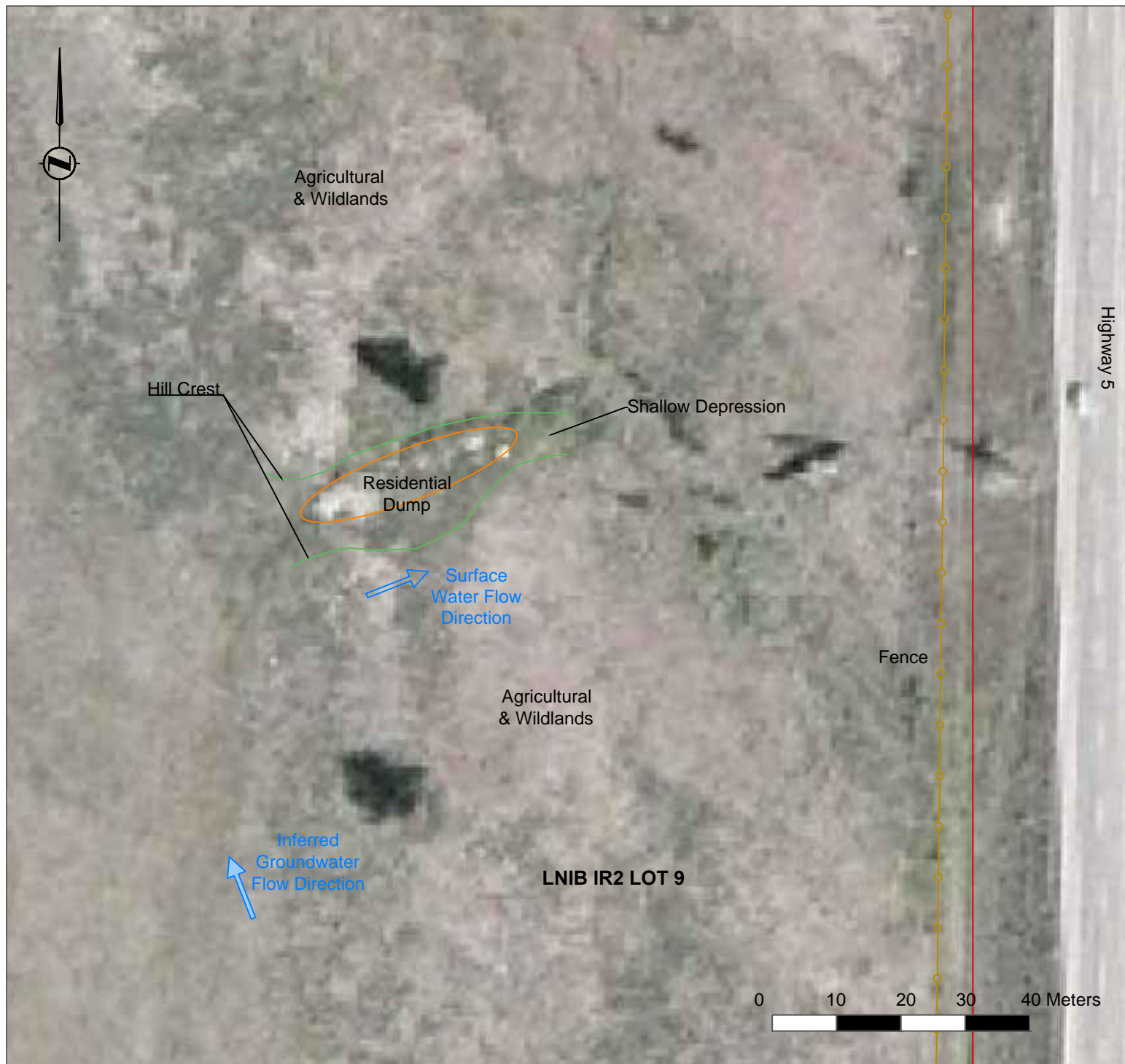
No.	Revision/Issue	Date



Figure 1
Site Location

LNIB / INAC
Phase I
Environmental Site Assessment
Joeyaska IR #2

Project	10-0374	Sheet
Date	January, 2011	
Drawn By:	SZ	Checked By:
		DS/DD



LEGEND

- SURFACE DEBRIS
- HILL CREST / TOE
- FENCE
- RESERVE BOUNDARY
- ↗ SURFACE / GROUNDWATER FLOW DIRECTION

NOTES:

All elevations in metres (m)

Locations of site features were taken from:

1. Aerial photographs
2. GPS data points,
3. Visual observations / adjustments of GPS waypoints and site features
4. Natural Resources Canada Lot Boundaries

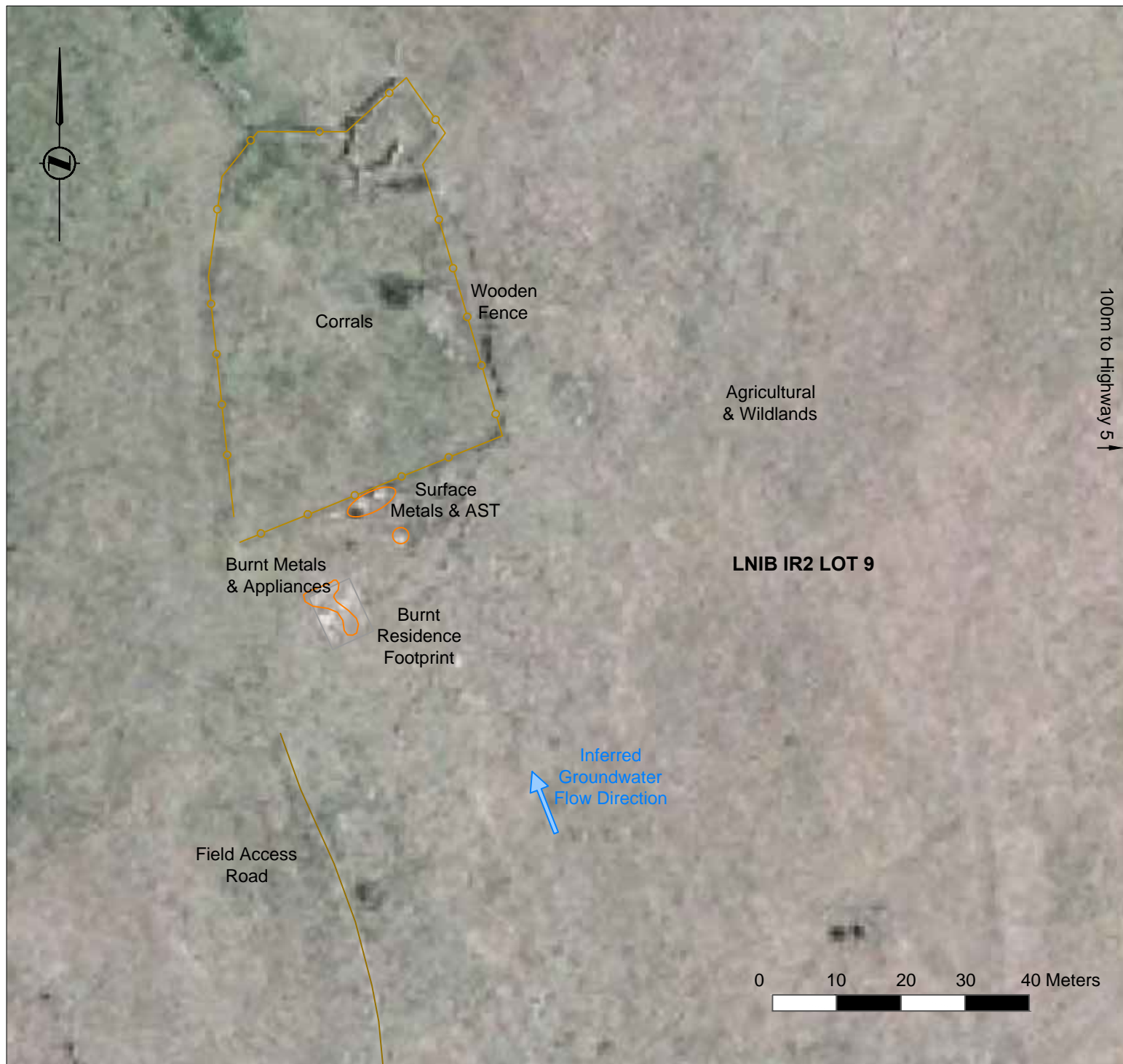
No.	Revision/Issue	Date



Figure 2
Joeyaska IR#2
Lot 9 Residential Dump

LNIB / INAC
 Phase I
 Environmental Site Assessment
 Joeyaska IR #2

Project	10-0374	Sheet
Date	January, 2011	
Drawn By: SZ	Checked By: DS/DD	



LEGEND

- BURNT BUILDING FOOTPRINT
- SURFACE DEBRIS
- FENCE
- GRAVEL ROAD
- SURFACE / GROUNDWATER FLOW DIRECTION

NOTES:

All elevations in metres (m)

Locations of site features were taken from:

1. Aerial photographs
2. GPS data points,
3. Visual observations / adjustments of GPS waypoints and site features,
4. Natural Resources Canada Lot Boundaries

No.	Revision/Issue	Date








Figure 3
Joeyaska IR#2
Lot 9 Burnt House

LNIB / INAC
Phase I
Environmental Site Assessment
Joeyaska IR #2

Project	10-0374	Sheet
Date	January, 2011	
Drawn By:	SZ	Checked By:
		DS/DD



LEGEND

-  BUILDING FOOTPRINT
-  SURFACE DEBRIS
-  FENCE
-  RESERVE BOUNDARY
-  SURFACE / GROUNDWATER FLOW DIRECTION

NOTES:

All elevations in metres (m)

Locations of site features were taken from:

1. Aerial photographs
2. GPS data points,
3. Visual observations / adjustments of GPS waypoints and site features,
4. Natural Resources Canada Lot Boundaries

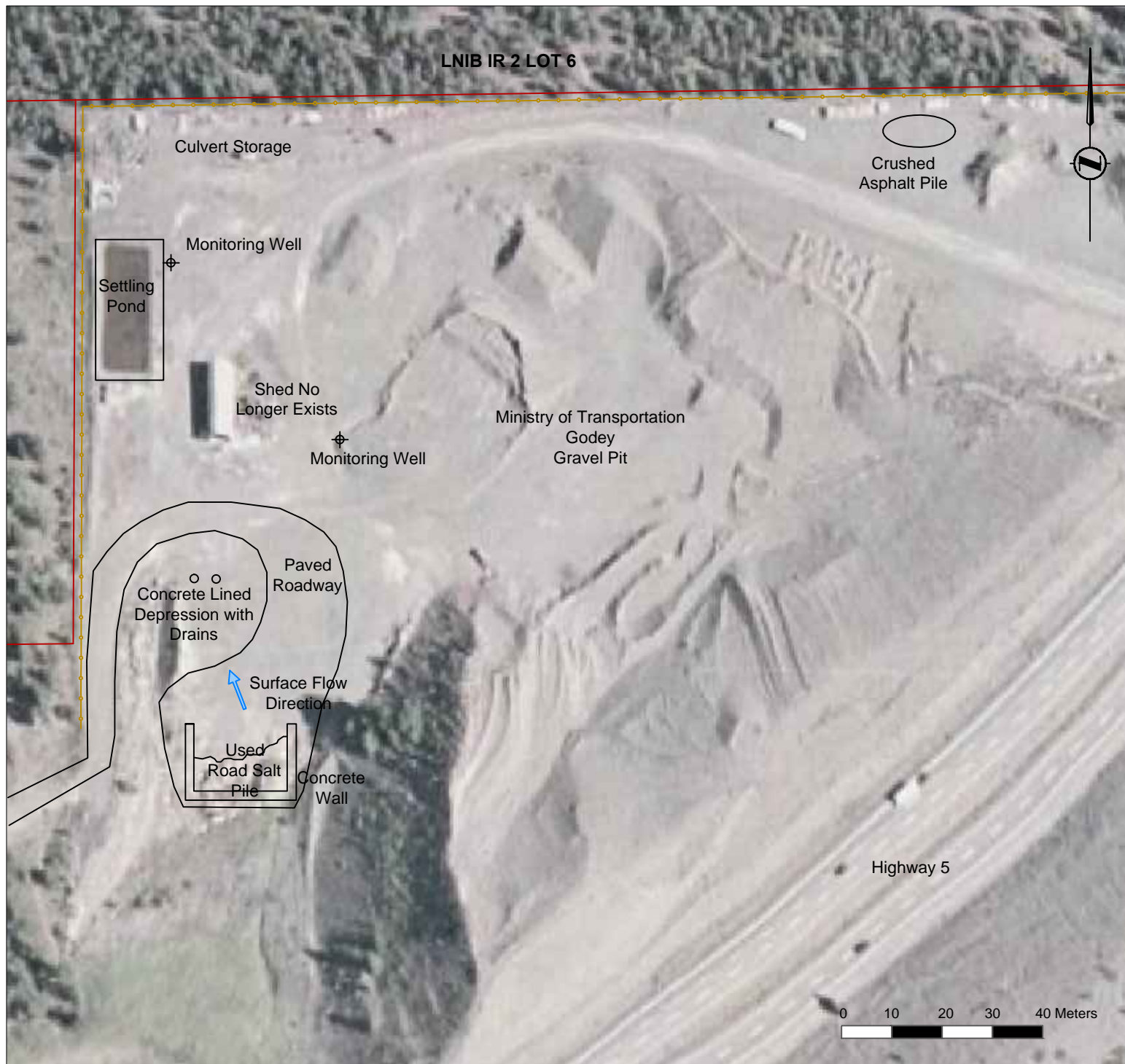
No.	Revision/Issue	Date



Figure 4
Joeyaska IR#2
Lot 6 Residential Dump

LNIB / INAC
Phase I
Environmental Site Assessment
Joeyaska IR #2

Project	10-0374	Sheet
Date	January, 2011	
Drawn By:	SZ	
Checked By:	DS/DD	



LEGEND

- BUILDING FOOTPRINT
- SURFACE DEBRIS
- FENCE
- RESERVE BOUNDARY
- ➔ SURFACE / GROUNDWATER FLOW DIRECTION

NOTES:

All elevations in metres (m)

Locations of site features were taken from:

1. Aerial photographs
2. GPS data points,
3. Visual observations / adjustments of GPS waypoints and site features,
4. Natural Resources Canada Lot Boundaries

No.	Revision/Issue	Date



Figure 5
Ministry of Transport
Godey Gravel Pit

LNIB / INAC
Phase I
Environmental Site Assessment
Joeyaska IR #2

Project	10-0374	Sheet
Date	January, 2011	
Drawn By:	SZ	
Checked By:	DS/DD	

APPENDIX B

BC ONLINE SITE REGISTRY RESULTS

Site Registry

For: [PA95213] [COLUMBIA ENVIRONMENTAL CONSULTING LTD]

As Of: JAN 02, 2011

[Check for Prints](#)[Main Menu](#)[Return](#)[Print](#)[Help ?](#)**Nil Search**

Jan 04, 2011

04:22:51 PM

Folio:

Area Nil Search

As of JAN 02, 2011, no records from Site Registry
fall within 0.5 kilometers of coordinates
Latitude 50 degrees, 05 minutes, 45.2 seconds, and
Longitude 120 degrees, 45 minutes, 17.2 seconds.

You have been charged for this information.

Sites may be revealed by searching with alternate search methods. For example, a site not revealed in an Area search may be revealed by searching with another piece of information such as PID, PIN, Address or Crown Lands File Number.

Site Registry

For: [PA95213] [COLUMBIA ENVIRONMENTAL CONSULTING LTD]

As Of: JAN 02, 2011

Nil Search

Jan 04, 2011

04:24:13 PM

Folio:

Area Nil Search*J. Jeyakumar*

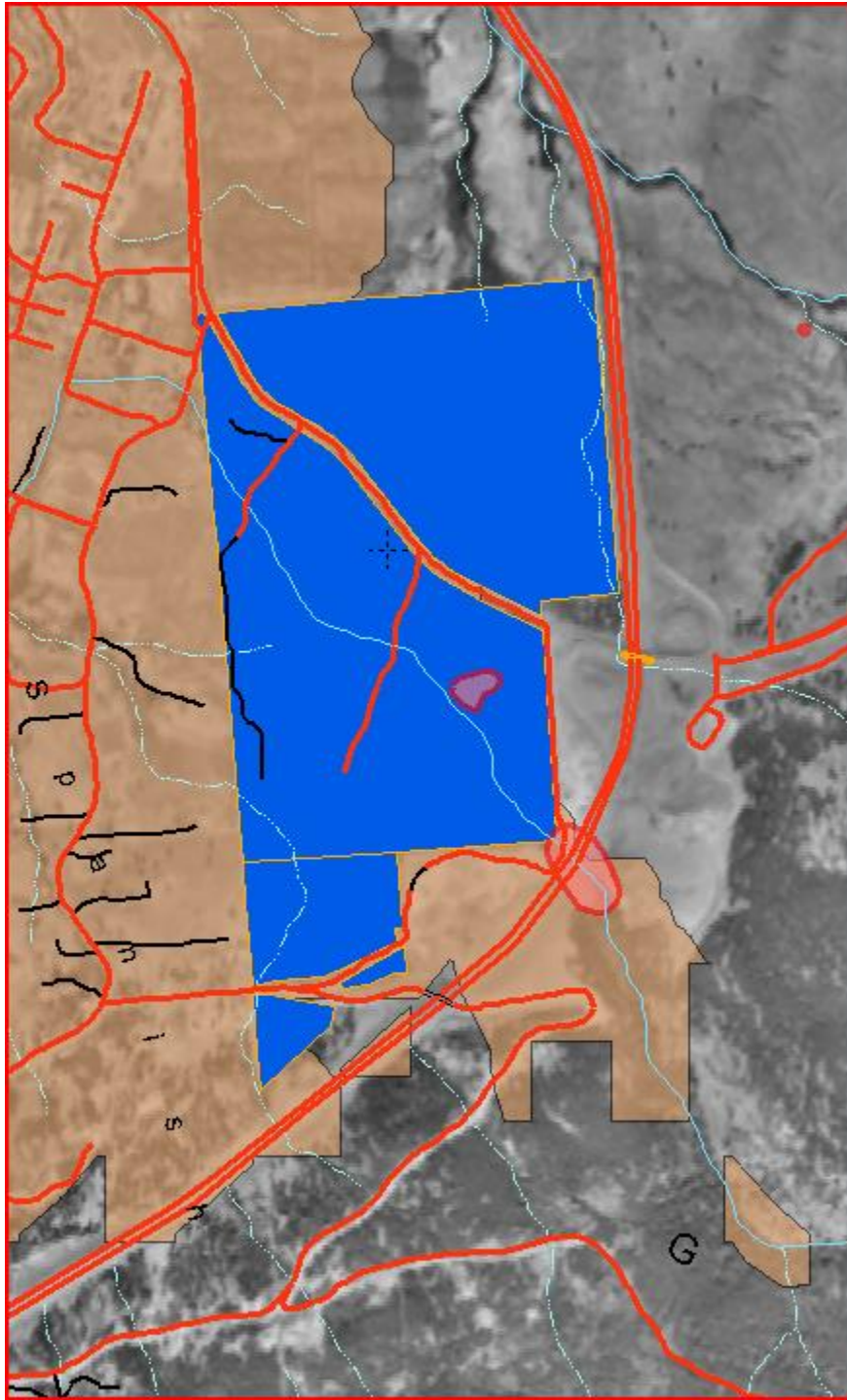
As of JAN 02, 2011, no records from Site Registry
fall within 0.5 kilometers of coordinates
Latitude 50 degrees, 05 minutes, 28.5 seconds, and
Longitude 120 degrees, 45 minutes, 33.4 seconds.

You have been charged for this information.

Sites may be revealed by searching with alternate search methods. For example, a site not revealed in an Area search may be revealed by searching with another piece of information such as PID, PIN, Address or Crown Lands File Number.

APPENDIX C
CORRESPONDENCE

Joeyaska IR#2 (Center 660406.62 5551342.64) 2 archaeological sites, areas of high potential for unrecorded archaeological materials:





24 January 2011
File No.: FV10-1597-00
ICBC Claim No.: P126381.2

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Construction Materials

Building Science

Geotechnical

Corrosion Prevention

Metallurgy

Environmental

Analytical Chemistry

Physical Testing

ICBC Corporate Services
c/o Mr. Lorill Bradsen
8470 Commerce Court
Burnaby, British Columbia
V5A 4T4

Dear Ms. Bradsen,

Re: **SPILL RESPONSE; APPROXIMATELY 1.3 KM NORTH OF HIGHWAY 97C
ON HIGHWAY 5, MERRITT, BRITISH COLUMBIA (HEREIN REFERRED
TO AS "SITE")**

1.0 INTRODUCTION & BACKGROUND

Mr. Lorill Bradsen of ICBC Corporate Services (ICBC) retained Levelton Consultants Ltd. (Levelton) to respond and remediate a spill that occurred due to a motor vehicle accident on 6 September 2010, approximately 1.3 Km north of Highway 97C on Highway 5, Merritt, British Columbia (herein referred to as "Site").

On 6 September 2010 a south bound semi-truck crossed the median of Highway 5 and came to the rest in the eastern ditch. The semi-truck was registered to Ms. Joy Lee and was hauling scrap metal for Richmond Steel. According to Mr. Reid Lee, the driver of the semi-truck, the tanks should have held approximately 150 gallons of diesel at the time of the accident. According to the flagging staff with Merritt Mountain Towing, approximately 25 gallons of fuel was recovered from the passenger side fuel tank. Due to the severity of the accident, both saddle tanks were breached. Significant damage also occurred to the engine area, thereby causing a spill of motor oil as well.

This letter report outlines the steps taken to remove the impacted soil from the accident area and the results of the remediation.

2.0 APPLICABLE STANDARDS

As the Site is the shoulder of a highway, the CSR Industrial (IL) standards would apply to the Site. Table 1 summarizes the Site-specific factors that apply to the Site.

Table 1: Applicable Site-Specific Factors

SITE-SPECIFIC FACTORS	APPLICABILITY	RATIONALE
Intake of Contaminated Soil	Yes	Applicable at all sites.
Toxicity to soil invertebrates and plants	Yes	Applicable at all sites.
Groundwater used for drinking water	No	There are no registered water wells or water licence points within 500m of the Site. Also, According to the BC Water Resource map, the Site is not over an aquifer nor is one within 500m of the Site.
Groundwater flow to surface water used by freshwater aquatic life	Yes	Surface water receptors within 1 Km of the Site. In fact, the Site is within a dry stream bed that contains water during the rainy season.
Groundwater flow to surface water used by marine aquatic life	No	No marine surface water receptor within 1Km of the Site.
Groundwater used for livestock watering	No	See the above notation for drinking water.
Groundwater used for irrigation	No	See the above notation for drinking water.

Therefore, the following standards apply to the Site:

Soil

- CSR IL standards;
Site Specific factors include:
 - Intake of contaminated soil;
 - Toxicity to soil invertebrates and plants;
 - Groundwater flow to surface water used by freshwater aquatic life;

2.1 FIELD WORK DESCRIPTION

Ms. Gail Schultze, B.Sc., BIT and Mr. Hemanth Srinivas M.A.Sc of Levelton attended the Site on 8 September 2010 to review the condition of the Site with Tibar Construction Ltd. of Merritt, BC (Tibar). Levelton retained Tibar Construction Ltd. of Merritt, BC (Tibar) to supply the excavator and trucks. At the time of the Site visit the semi-truck and trailer had been removed, however Merritt Mountain Towing was still removing metal debris from the Site. Levelton performed an emergency BC One Call on the evening of 7 September 2010 April 2010 to determine if there were any underground utilities in the area.

Excavation commenced on 9 September 2010 and was completed the same day. Prior to excavating the impacted soil, the boulders and rocks used as erosion control in the dry streambed were removed and placed to the side with minimal disturbance to the soil below. The excavation commenced near where the engine of the semi-truck came to rest and where there was visible oil staining. The

excavation continued south and was irregular in shape. The approximate final dimension of the excavation were 13m long, by 3.05m wide at the south end and 4.4m wide at the north end and 1.92m deep at the south end and 0.5m deep at the north end. Detailed figures outlining the dimensions of the excavation and the location of the confirmation soil samples are appended. Confirmation soil samples were collected from the all faces and the base of the excavation.

VSA Highway Maintenance Ltd. agreed with re-sloping the soil berm between the Site and Highway 5 to backfill the excavation. Therefore no backfill soil sample was required as we used nearby existing soil to fill the excavation.

Grab soil samples were transferred into laboratory-supplied pre-cleaned jars and plastic bags. The plastic bag containing the sample was allowed to equilibrate with the ambient temperature after which Levelton monitored soil-gas using an Eagle™ RKI Gastech. This aided Levelton in determining the limits of the excavation. The laboratory-supplied pre-cleaned glass jars bore Teflon lids. Indelible markers were used for marking the lids of the soil jars with the appropriate sample identification number or reference. Levelton's field staff donned new vinyl or nitrile powder-free gloves prior to collecting each soil sample. All confirmation samples were submitted for LEPH, HEPH (light and heavy extractable petroleum hydrocarbons) and PAH (polycyclic aromatic hydrocarbons) analyse.

From previous experience, Levelton was confident that a Gastech reading of 100ppm or less would indicate that the soil would meet the CSR IL standards. Therefore Levelton continued to remediate until the Gastech readings for the confirmation soil samples met this criterion. Below is a table summarizing the results of the Gastech readings for the confirmatory soil samples collected.

Sample	Gastech Reading (ppm)	Sample	Gastech Reading (ppm)	Sample	Gastech Reading (ppm)
10-NW1	25	10-WW2	ND	10-Base1	75
10-NW2	ND	10-WW3	15	10-Base2	95
10-SW1	10	10-WW4	ND	10-Base3	10
10-SW2	ND	10-WW5	ND	10-Base4	ND
10-SW3	ND	10-EW1	ND	10-Base5	75
10-WW1	20	10-EW2	10	10-Base6	15

Note: ND – Not detectable

The excavation of this area generated approximately 5 dump truck and 2 trailer loads of contaminated soil that was transported to Envirogreen Technologies Ltd., Princeton, BC, for disposal. According to Envirogreen's scale tickets, 78.91 metric tons of contaminated soil were transported to their facilities for disposal. Copies of the Waste Manifests are appended.

The excavation was left open until the confirmatory results were received. Following the receipt and review of the results, Levelton instructed Tibar to backfill the excavation with the soil from the nearby berm and replace the boulders and rocks used for erosion control. Backfilling and rock replacement was completed on 17 September 2010.

Following the backfilling of the excavation, adsorbent booms were placed at the mouth of the culvert immediately downgradient to the Site. These were placed in case petroleum hydrocarbons should be mobilized during future rain events that would cause water to flow through the dry stream bed. These booms were removed and disposed of on 21 January 2011 by Tibar.

Selected photographs taken during the excavation activities are appended.

2.2 RESULTS

Analytical data for the 18 confirmation soil samples revealed that all the soil samples were below the laboratory detection limits, and therefore less than the CSR IL Standards for LEPH, HEPH, and PAHS with the exception of LEPH (1000µg/L), HEPH (810µg/L) and pyrene (0.18µg/L) in 10-NW1 and LEPH (610µg/L) in 10-Base5. However, while these concentrations were detectable, they did not exceed the CSR IL standards for LEPH (2000µg/L), HEPH (5000µg/L) or pyrene (100µg/L).

Copies of the Chain of Custodies and Laboratory Certificates are appended.

2.3 SOIL DISPOSAL

Approximately 78.9 metric tons of soil were removed from the Site and disposed of as Hazardous Waste at Envirogreen Technologies Ltd. remediation centre, Lela, Lot 401, Similco Mine Site, Princeton, BC.

The signed waste manifests and scale tickets from Envirogreen are appended.

3.0 CONCLUSIONS

All soil confirmation samples met the CSR IL standards therefore it is Levelton's opinion that the Site has been remediated to the applicable CSR IL standards and no further work is required at this time.

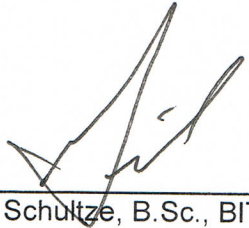
We hope this meets your needs at this time. If you have any questions, please call the undersigned at (604) 533-2992. Thank you for the opportunity to be of service you.

Respectfully Submitted,
Levelton Consultants Ltd.

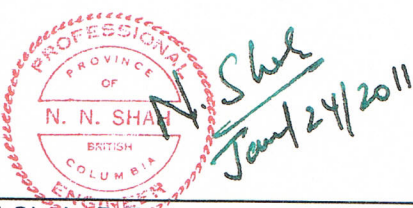
Prepared By:

Reviewed By:

Per:

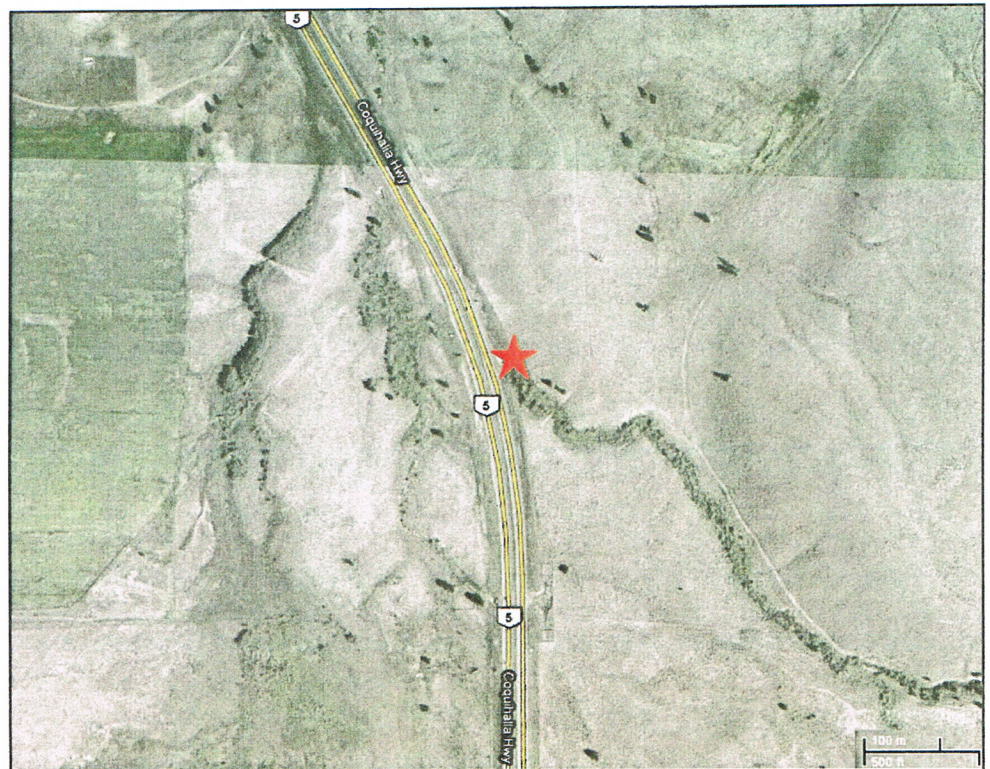

Gail Schultze, B.Sc., BIT
Project Manager
Environmental Scientist

Per:


Neil Shah, P.Eng.
Principal

cc: Dennis J. Redford, Senior Environmental Emergency Response Officer, Ministry of Environment

Appended: Figures
 Photographs
 Tables
 Waste Manifests
 Chain of Custody
 Laboratory Certificate
 Standard Limitations



LEGEND

★ - SUBJECT SITE



LEVELTON

LEVELTON CONSULTANTS LTD.

11-19292 60th Avenue Tel: 604 533-2992
Surrey, B.C. Fax: 604 533-0768

TITLE:

Site Location Map

PROJECT:

Spill Response

1.3km North of Hwy 97C on Hwy 5, Merritt, BC

CLIENT:

ICBC

DES.

DR. JL

CH.

SCALE AS SHOWN

APP.

DATE DEC 2010

FILE NO.

FV10-1597-00

DWG. NO.

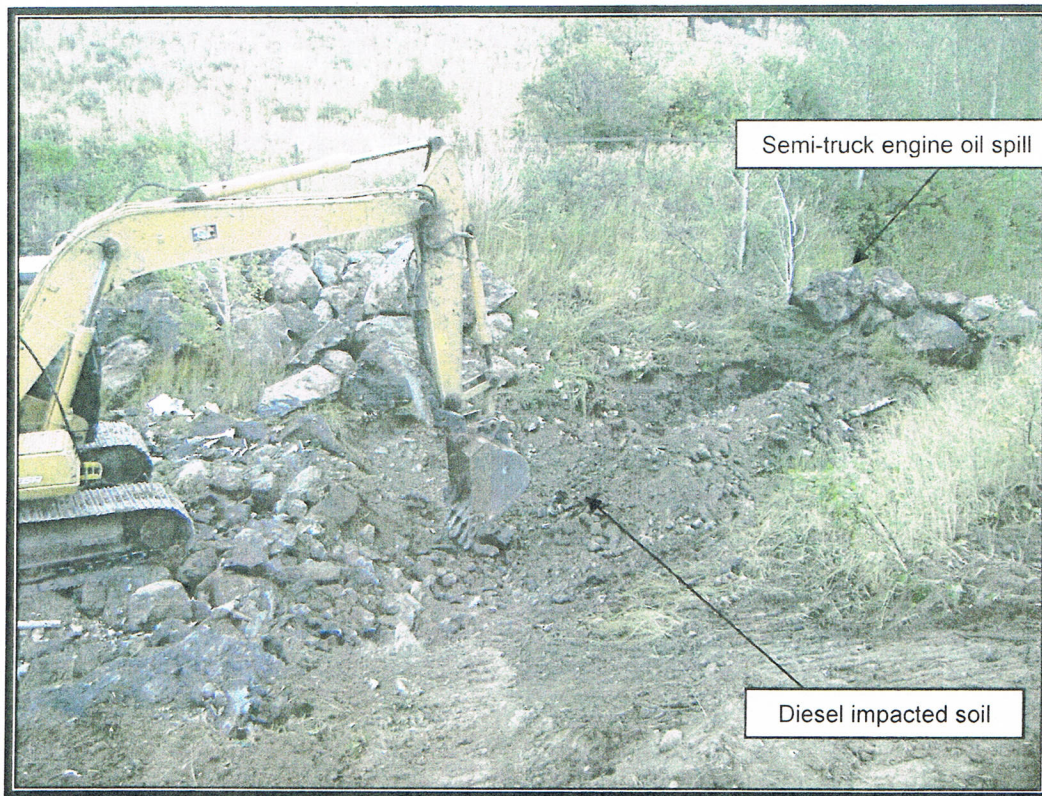
FIGURE 1



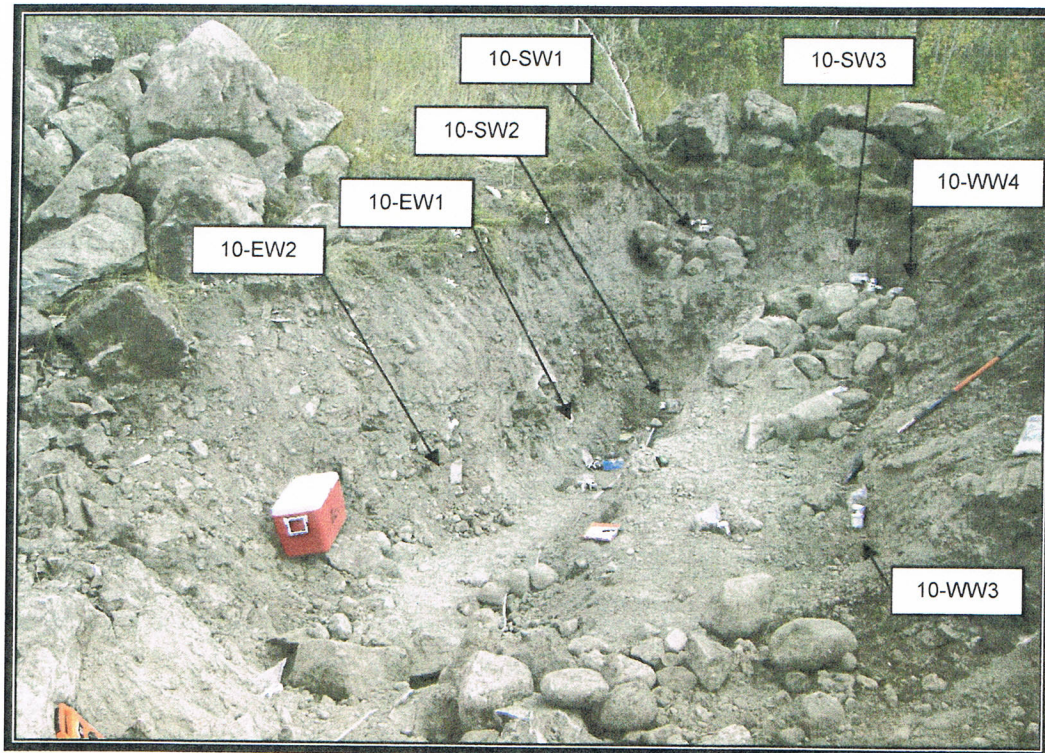
Photograph 1: Metal debris being removed by Merritt Mountain Towing and Richmond Steel (8 Sept. 2010).



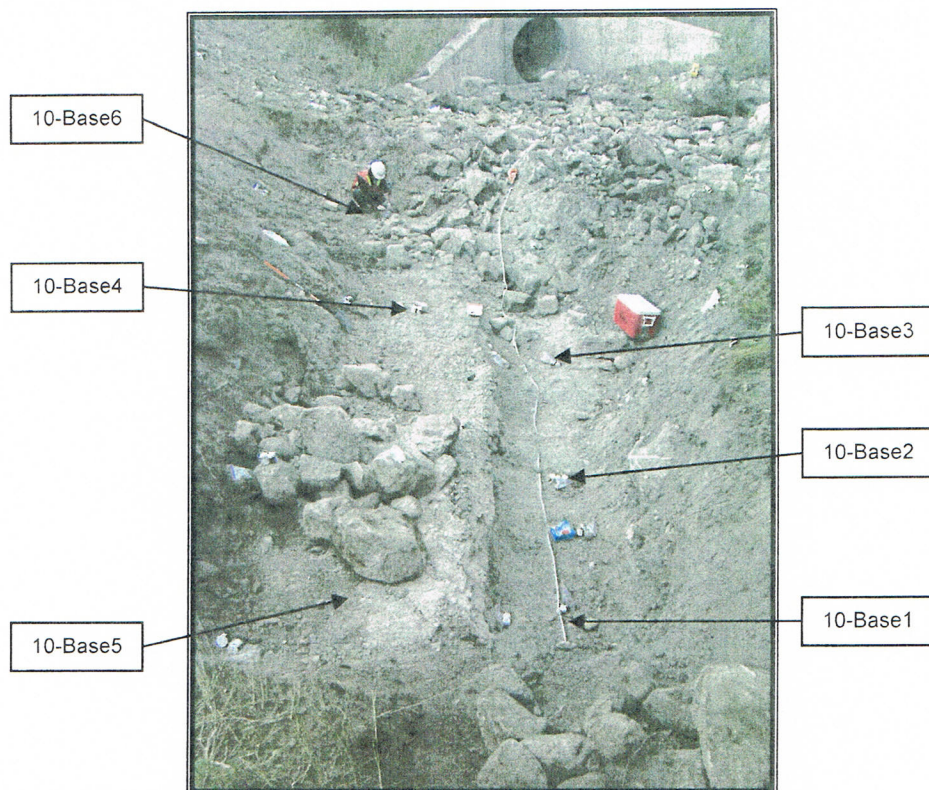
Photograph 2: Location of semi-truck motor oil spill where the excavation commenced (8 Sept 10).



Photograph 3: Removal of boulder and rock erosion control prior to remedial excavation (9 Sept 2010).



Photograph 4: Final excavation limit, facing north (9 Sept 2010).



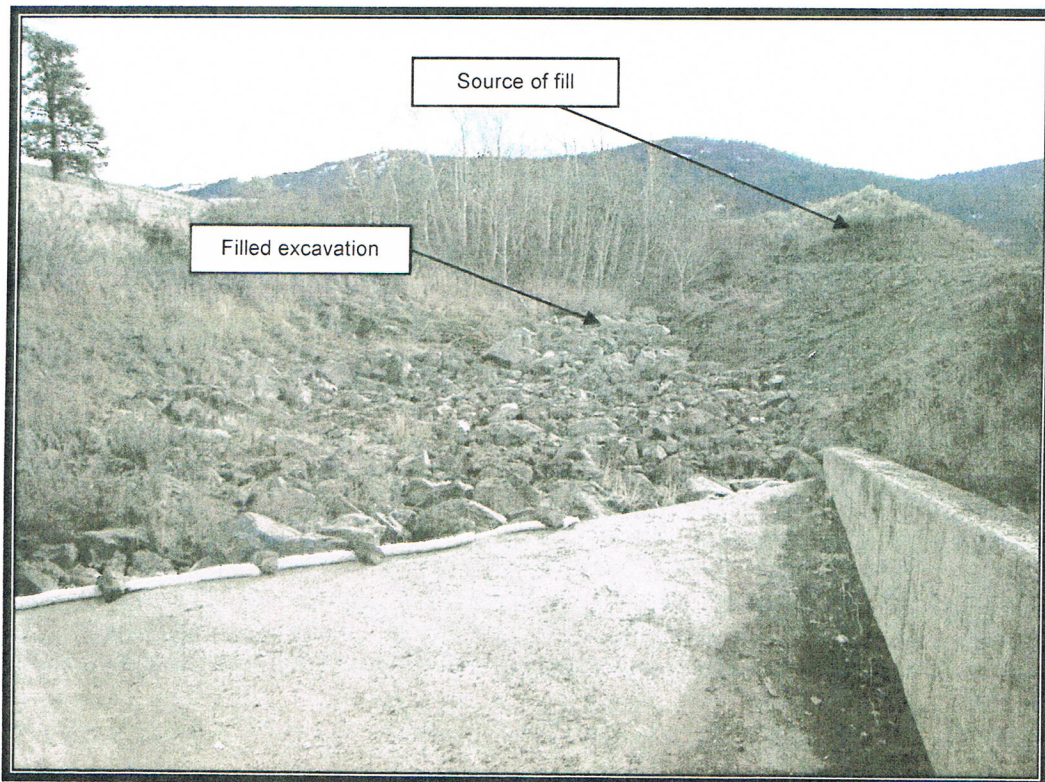
Photograph 5: Final excavation limit, facing south (9 Sept 2010).



Photograph 6: Loading the trucks for offsite disposal of the contaminated material (9 Sept 2010).



Photograph 7: Absorbent booms placed at the mouth of the culvert (21 Sept 2010).



Photograph 8: Filled excavation with replaced bolder rip-rap (17 Jan 2011).

Table 1
Results of Confirmation Soil Samples
Petroleum Hydrocarbon Analyses
Page 1 of 4

PARAMETERS	10-NW1		10-NW2		10-SW1		10-Dup 2		RPD %	10-SW2		CSR IL Standards (1)
	09-Sep-10		09-Sep-10		09-Sep-10		09-Sep-10			09-Sep-10		
Sample Date												
EPHw (10-19)	1000		<250		<250		<250		-	<250		~2000
EPHw (19-32)	810		<250		<250		<250		-	<250		~5000
HEPH	810		<250		<250		<250		-	<250		5000
LEPH	1000		<250		<250		<250		-	<250		2000
Total PAH	0.18		<0.10		<0.10		<0.10		-	<0.10		NS

NOTES

Results reported in µg/g dry (ppm) unless otherwise stated

"-" - Not analyzed

NS indicates that no standard applies

1 - CSR Schedule 4, Generic Numerical Soil Standard unless noted otherwise

2 - CSR Schedule 5, Matrix Numerical Soil Standards (Groundwater flow to surface water used by freshwater aquatic life and livestock watering)

3 - CSR Schedule 10, Generic Numerical Soil Standards, Industrial Soil Standards

RPD - Relative Percentage Difference

BOLD Sample concentration exceeds the applicable standard or criteria.

BOLD RPD values exceed 20%

Table 1
Results of Confirmation Soil Samples
Petroleum Hydrocarbon Analyses
Page 2 of 4

PARAMETERS	10-SW3		10-WW1		10-WW2		10-WW3		10-WW4		10-WW5		CSR IL Standards (1)
	09-Sep-10		09-Sep-10		09-Sep-10		09-Sep-10		09-Sep-10		09-Sep-10		
EPHw (10-19)	<250		<250		<250		<250		<250		<250		~2000
EPHw (19-32)	<250		<250		<250		<250		<250		<250		~5000
HEPH	<250		<250		<250		<250		<250		<250		5000
LEPH	<250		<250		<250		<250		<250		<250		2000
Total PAH	<0.10		<0.10		<0.10		<0.10		<0.10		<0.10		NS

NOTES

Results reported in µg/g dry (ppm) unless otherwise stated

"-" - Not analyzed

NS indicates that no standard applies

1 - CSR Schedule 4, Generic Numerical Soil Standard unless noted otherwise

2 - CSR Schedule 5, Matrix Numerical Soil Standards (Groundwater flow to surface water used by freshwater aquatic life and livestock watering)

3 - CSR Schedule 10, Generic Numerical Soil Standards, Industrial Soil Standards

RPD - Relative Percentage Difference

BOLD Sample concentration exceeds the applicable standard or criteria.

BOLD RPD values exceed 20%

Table 1
Results of Confirmation Soil Samples
Petroleum Hydrocarbon Analyses
 Page 3 of 4

PARAMETERS	10-EW1	10-EW2	10-Base 1	10-Base 2	10-Dup 1	RPD %	CSR IL Standards (1)
	09-Sep-10	09-Sep-10	09-Sep-10	09-Sep-10	09-Sep-10		
EPHw (10-19)	<250	<250	<250	<250	<250	-	~2000
EPHw (19-32)	<250	<250	<250	<250	<250	-	~5000
HEPH	<250	<250	<250	<250	<250	-	5000
LEPH	<250	<250	<250	<250	<250	-	2000
Total PAH	<0.10	<0.10	<0.10	<0.10	<0.10	-	NS

NOTES

Results reported in µg/g dry (ppm) unless otherwise stated

"-" - Not analyzed

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2 - CSR Schedule 5, Matrix Numerical Soil Standards (Groundwater flow to surface water used by freshwater aquatic life and livestock watering)

3 - CSR Schedule 10, Generic Numerical Soil Standards, Industrial Soil Standards

RPD - Relative Percentage Difference

BOLD Sample concentration exceeds the applicable standard or criteria.

BOLD RPD values exceed 20%

Table 1
Results of Confirmation Soil Samples
Petroleum Hydrocarbon Analyses
Page 4 of 4

PARAMETERS	10-Base 3	10-Base 4	10-Base 5	10-Base 6	CSR IL Standards (1)
	09-Sep-10	09-Sep-10	09-Sep-10	09-Sep-10	
EPHw (10-19)	<250	<250	610	<250	~2000
EPHw (19-32)	<250	<250	<250	<250	~5000
HEPH	<250	<250	<250	<250	5000
LEPH	<250	<250	610	<250	2000
Total PAH	<0.10	<0.10	<0.10	<0.10	NS

NOTES

Results reported in µg/g dry (ppm) unless otherwise stated

"-" - Not analyzed

NS indicates that no standard applies

1 - CSR Schedule 4, Generic Numerical Soil Standard unless noted otherwise

2 - CSR Schedule 5, Matrix Numerical Soil Standards (Groundwater flow to surface water used by freshwater aquatic life and livestock watering)

3 - CSR Schedule 10, Generic Numerical Soil Standards, Industrial Soil Standards

RPD - Relative Percentage Difference

BOLD

Sample concentration exceeds the applicable standard or criteria.

BOLD RPD values exceed 20%

Table 2
Results of Confirmation Soil Samples
PAH Analyses
 Page 1 of 4

PARAMETERS Sample Date	10-NW1 09-Sep-10	10-NW2 09-Sep-10	10-SW1 09-Sep-10	10-Dup 2 09-Sep-10	RPD %	10-SW2 09-Sep-10	CSR IL Standards (1)
Acenaphthene	<0.10	<0.10	<0.10	<0.10	-	<0.10	NS
Acenaphthylene	<0.10	<0.10	<0.10	<0.10	-	<0.10	NS
Anthracene	<0.10	<0.10	<0.10	<0.10	-	<0.10	NS
Benzo (a) anthracene	<0.10	<0.10	<0.10	<0.10	-	<0.10	10
Benzo (a) pyrene	<0.10	<0.10	<0.10	<0.10	-	<0.10	10 (2)
Benzo (b) fluoranthene	<0.10	<0.10	<0.10	<0.10	-	<0.10	10
Benzo (g,h,i) perylene	<0.10	<0.10	<0.10	<0.10	-	<0.10	NS
Benzo (k) fluoranthene	<0.10	<0.10	<0.10	<0.10	-	<0.10	10
Chrysene	<0.10	<0.10	<0.10	<0.10	-	<0.10	NS
Dibenz (a,h) anthracene	<0.10	<0.10	<0.10	<0.10	-	<0.10	10
Fluoranthene	<0.10	<0.10	<0.10	<0.10	-	<0.10	NS
Fluorene	<0.10	<0.10	<0.10	<0.10	-	<0.10	NS
Indeno (1,2,3-cd) pyrene	<0.10	<0.10	<0.10	<0.10	-	<0.10	10
Naphthalene	<0.10	<0.10	<0.10	<0.10	-	<0.10	50
Phenanthrene	<0.10	<0.10	<0.10	<0.10	-	<0.10	50
Pyrene	0.18	<0.10	<0.10	<0.10	-	<0.10	100

NOTES

Results reported in µg/g dry (ppm) unless otherwise stated

NS indicates that no standard applies

RPD Relative percent difference

1 - CSR Schedule 4, Generic Numerical Soil Standard unless noted otherwise

2 - CSR Schedule 5, Matrix Numerical Soil Standards (Groundwater flow to surface water used by freshwater aquatic life and livestock watering)

3 - CSR Schedule 10, Generic Numerical Soil Standards, Industrial Soil Standards

RPD - Relative Percentage Difference

BOLD Sample concentration exceeds the applicable standard or criteria.

BOLD RPD values exceed 20%

Table 2
Results of Confirmation Soil Samples
PAH Analyses
 Page 2 of 4

PARAMETERS	10-SW3		10-WW1		10-WW2		10-WW3		10-WW4		10-WW5		CSR IL Standards (1)
	Sample Date	09-Sep-10	09-Sep-10	09-Sep-10	09-Sep-10	09-Sep-10	09-Sep-10	09-Sep-10	09-Sep-10	09-Sep-10	09-Sep-10	09-Sep-10	
Acenaphthene		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	NS
Acenaphthylene		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	NS
Anthracene		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	NS
Benzo (a) anthracene		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	NS
Benzo (a) pyrene		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	10
Benzo (b) fluoranthene		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	10(2)
Benzo (g,h,i) perylene		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	10
Benzo (k) fluoranthene		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	NS
Chrysene		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	10
Dibenz (a,h) anthracene		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	NS
Fluoranthene		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	10
Fluorene		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	NS
Indeno (1,2,3-cd) pyrene		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	NS
Naphthalene		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	10
Phenanthrene		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	50
Pyrene		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	50
		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	100

NOTES

Results reported in µg/g dry (ppm) unless otherwise stated

NS indicates that no standard applies

RPD Relative percent difference

1 - CSR Schedule 4, Generic Numerical Soil Standard unless noted otherwise

2 - CSR Schedule 5, Matrix Numerical Soil Standards (Groundwater flow to surface water used by freshwater aquatic life and livestock watering)

3 - CSR Schedule 10, Generic Numerical Soil Standards, Industrial Soil Standards

RPD - Relative Percentage Difference

BOLD Sample concentration exceeds the applicable standard or criteria.

BOLD RPD values exceed 20%

Table 2
Results of Confirmation Soil Samples
PAH Analyses
 Page 3 of 4

PARAMETERS	10-EW1	10-EW2	10-Base 1	10-Base 2	10-Dup 1	RPD %	CSR IL Standards (1)
	09-Sep-10	09-Sep-10	09-Sep-10	09-Sep-10	09-Sep-10		
Acenaphthene	<0.10	<0.10	<0.10	<0.10	<0.10	-	NS
Acenaphthylene	<0.10	<0.10	<0.10	<0.10	<0.10	-	NS
Anthracene	<0.10	<0.10	<0.10	<0.10	<0.10	-	NS
Benzo (a) anthracene	<0.10	<0.10	<0.10	<0.10	<0.10	-	10
Benzo (a) pyrene	<0.10	<0.10	<0.10	<0.10	<0.10	-	10 (2)
Benzo (b) fluoranthene	<0.10	<0.10	<0.10	<0.10	<0.10	-	10
Benzo (g,h,i) perylene	<0.10	<0.10	<0.10	<0.10	<0.10	-	NS
Benzo (k) fluoranthene	<0.10	<0.10	<0.10	<0.10	<0.10	-	10
Chrysene	<0.10	<0.10	<0.10	<0.10	<0.10	-	NS
Dibenz (a,h) anthracene	<0.10	<0.10	<0.10	<0.10	<0.10	-	10
Fluoranthene	<0.10	<0.10	<0.10	<0.10	<0.10	-	NS
Fluorene	<0.10	<0.10	<0.10	<0.10	<0.10	-	NS
Indeno (1,2,3-cd) pyrene	<0.10	<0.10	<0.10	<0.10	<0.10	-	NS
Naphthalene	<0.10	<0.10	<0.10	<0.10	<0.10	-	10
Phenanthrene	<0.10	<0.10	<0.10	<0.10	<0.10	-	50
Pyrene	<0.10	<0.10	<0.10	<0.10	<0.10	-	50
						-	100

NOTES

Results reported in µg/g dry (ppm) unless otherwise stated

NS indicates that no standard applies

RPD Relative percent difference

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RPD - Relative Percentage Difference

BOLD Sample concentration exceeds the applicable standard or criteria.

BOLD RPD values exceed 20%

Table 2
Results of Confirmation Soil Samples
PAH Analyses
Page 4 of 4

PARAMETERS Sample Date	10-Base 3	10-Base 4	10-Base 5	10-Base 6	CSR IL Standards (1)
	09-Sep-10	09-Sep-10	09-Sep-10	09-Sep-10	
Acenaphthene	<0.10	<0.10	<0.10	<0.10	NS
Acenaphthylene	<0.10	<0.10	<0.10	<0.10	NS
Anthracene	<0.10	<0.10	<0.10	<0.10	NS
Benzo (a) anthracene	<0.10	<0.10	<0.10	<0.10	10
Benzo (a) pyrene	<0.10	<0.10	<0.10	<0.10	10 (2)
Benzo (b) fluoranthene	<0.10	<0.10	<0.10	<0.10	10
Benzo (g,h,i) perylene	<0.10	<0.10	<0.10	<0.10	NS
Benzo (k) fluoranthene	<0.10	<0.10	<0.10	<0.10	10
Chrysene	<0.10	<0.10	<0.10	<0.10	NS
Dibenz (a,h) anthracene	<0.10	<0.10	<0.10	<0.10	10
Fluoranthene	<0.10	<0.10	<0.10	<0.10	NS
Fluorene	<0.10	<0.10	<0.10	<0.10	NS
Indeno (1,2,3-cd) pyrene	<0.10	<0.10	<0.10	<0.10	10
Naphthalene	<0.10	<0.10	<0.10	<0.10	50
Phenanthrene	<0.10	<0.10	<0.10	<0.10	50
Pyrene	<0.10	<0.10	<0.10	<0.10	100

NOTES

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3 - CSR Schedule 10, Generic Numerical Soil Standards, Industrial Soil Standards

RPD - Relative Percentage Difference

BOLD Sample concentration exceeds the applicable standard or criteria.
BOLD RPD values exceed 20%

Envirogreen Technologies Ltd.

Phone (250) 295-6634 Permit# PA13075

Ticket#: 020698

Customer 36

(Hwy) 70 3000 100 20

Date: 08/09/15
Time: 10:00
Site: 0001

Truck: 70

Work Order: 10-0000

Manifest: 2057000-7

Site of Loading: 100

Route: RTB

TIGER CONSTRUCTION

Price: 20910

Time: 12390

Net: 8520

Signature



MANIFEST - MANIFESTE

This Manifest conforms to all Federal and Provincial transport and environmental legislation currently in effect.
Ce manifeste est conforme aux législations fédérale et provinciale sur l'environnement et le transport, requérant un manifeste.

Manifest Reference No.
N° de référence du manifeste

2067269-7

A Consignor (Generator) Expéditeur (Producteur)

Company name / Nom de l'entreprise: _____

Mailing address / Adresse postale: City / Ville: _____ Province: _____ Postal code / Code postal: _____

Shipping site address / Origine de l'expédition: _____

City / Ville: _____ Province: _____ Postal code / Code postal: _____

Intended consignee / Destinataire prévu: _____

Address / Adresse: _____

Receiving site address / Destination de l'expédition: _____

City / Ville: _____ Province: _____ Postal code / Code postal: _____

Provincial ID No. / No d'id. provincial: _____

B Carrier Transporteur

Company name / Nom de l'entreprise: _____

Address / Adresse: _____

City / Ville: _____ Province: _____ Postal code / Code postal: _____

Vehicle / Véhicule: _____

Trailer/Rail Car No. 1: _____

Trailer/Rail Car No. 2: _____

Point of entry / Point d'entrée: _____

Point of exit / Point de sortie: _____

Carrier Certification: I declare that I have received waste as offered by the consignor in Part A for delivery to the intended consignee and that the information contained in Part B is complete and correct. / Déclaration du transporteur: J'atteste avoir reçu les déchets offerts par l'expéditeur dans la partie A en vue de leur livraison au destinataire choisi et que les renseignements inscrits à la partie B sont exacts et complets.

Year / Année: _____ Month / Mois: _____ Day / Jour: _____

Name of authorized person (print) / Nom de l'agent autorisé (caractères d'imprimerie): _____

Signature: _____

Tel. no. / N° de tél.: _____

C Consignee (Receiver) Destinataire (Receptionnaire)

Company name / Nom de l'entreprise: _____

Address / Adresse: _____

City / Ville: _____ Province: _____ Postal code / Code postal: _____

Receiving site address / Destination de l'expédition: _____

City / Ville: _____ Province: _____ Postal code / Code postal: _____

Provincial ID No. / No d'id. provincial: _____

Consignee information same as intended Consignee in Part A
L'information à fournir par le destinataire est la même qu'en A

☒ Yes / Oui ☐ No, complete the boxed area below
Non, compléter la boîte ci-dessous

Date received / Date de réception: Year / Année: 10 08 09 Month / Mois: 09 Day / Jour: 09 Time / Heure: 11:25 AM ☐ PM ☒

Quantity received / Quantité reçue: _____

Units / L or kg / unités: _____

Identify any shipment discrepancies. Attach addendum if necessary. / Indiquer toute différence relative à l'expédition. Annexer une feuille au besoin.

Handling code / Code de manutention: _____

Packaging / Containments: _____

Decontamination / Décontamination: _____

Vehicle / Véhicule: _____

Provincial ID No. / No d'id. provincial: _____

If handling code "Other" (specify) / Si code de manutention "divers", spécifier: _____

If waste to be transferred, specify intended company name / Si les déchets doivent être transférés, préciser le nom du destinataire: _____

Address / Adresse: _____

City / Ville: _____

Prov.: _____

Signature: _____

Tel. no. / N° de tél.: _____

Consignee Certification: I declare that the information contained in Part C is correct and complete. / Déclaration du destinataire: Je déclare que tous les renseignements à la partie C sont veridiques et complets.

Name of authorized person (print) / Nom de l'agent autorisé (caractères d'imprimerie): _____

Signature: _____

Tel. no. / N° de tél.: _____

A Consignor (Generator) Expéditeur (Producteur)

Company name / Nom de l'entreprise: _____

Mailing address / Adresse postale: City / Ville: _____ Province: _____ Postal code / Code postal: _____

Shipping site address / Origine de l'expédition: _____

City / Ville: _____ Province: _____ Postal code / Code postal: _____

Intended consignee / Destinataire prévu: _____

Address / Adresse: _____

Receiving site address / Destination de l'expédition: _____

City / Ville: _____ Province: _____ Postal code / Code postal: _____

Provincial ID No. / No d'id. provincial: _____

B Carrier Transporteur

Company name / Nom de l'entreprise: _____

Address / Adresse: _____

City / Ville: _____ Province: _____ Postal code / Code postal: _____

Vehicle / Véhicule: _____

Trailer/Rail Car No. 1: _____

Trailer/Rail Car No. 2: _____

Point of entry / Point d'entrée: _____

Point of exit / Point de sortie: _____

Carrier Certification: I declare that I have received waste as offered by the consignor in Part A for delivery to the intended consignee and that the information contained in Part B is complete and correct. / Déclaration du transporteur: J'atteste avoir reçu les déchets offerts par l'expéditeur dans la partie A en vue de leur livraison au destinataire choisi et que les renseignements inscrits à la partie B sont exacts et complets.

Year / Année: _____ Month / Mois: _____ Day / Jour: _____

Name of authorized person (print) / Nom de l'agent autorisé (caractères d'imprimerie): _____

Signature: _____

Tel. no. / N° de tél.: _____

C Consignee (Receiver) Destinataire (Receptionnaire)

Company name / Nom de l'entreprise: _____

Address / Adresse: _____

City / Ville: _____ Province: _____ Postal code / Code postal: _____

Receiving site address / Destination de l'expédition: _____

City / Ville: _____ Province: _____ Postal code / Code postal: _____

Provincial ID No. / No d'id. provincial: _____

Consignee information same as intended Consignee in Part A
L'information à fournir par le destinataire est la même qu'en A

☒ Yes / Oui ☐ No, complete the boxed area below
Non, compléter la boîte ci-dessous

Date received / Date de réception: Year / Année: 10 08 09 Month / Mois: 09 Day / Jour: 09 Time / Heure: 11:25 AM ☐ PM ☒

Quantity received / Quantité reçue: _____

Units / L or kg / unités: _____

Identify any shipment discrepancies. Attach addendum if necessary. / Indiquer toute différence relative à l'expédition. Annexer une feuille au besoin.

Handling code / Code de manutention: _____

Packaging / Containments: _____

Decontamination / Décontamination: _____

Vehicle / Véhicule: _____

Provincial ID No. / No d'id. provincial: _____

If handling code "Other" (specify) / Si code de manutention "divers", spécifier: _____

If waste to be transferred, specify intended company name / Si les déchets doivent être transférés, préciser le nom du destinataire: _____

Address / Adresse: _____

City / Ville: _____

Prov.: _____

Signature: _____

Tel. no. / N° de tél.: _____

Consignee Certification: I declare that the information contained in Part C is correct and complete. / Déclaration du destinataire: Je déclare que tous les renseignements à la partie C sont veridiques et complets.

Name of authorized person (print) / Nom de l'agent autorisé (caractères d'imprimerie): _____

Signature: _____

Tel. no. / N° de tél.: _____

Envirogreen Technologies Ltd.
Phone (250) 295-6634 Permit# PA13075

Ticket#: 020699


Outpost 35
HEBERTY SPILL MAY 30

Date: 08/08/05
Time In: 13:02
Time Out: 13:10

Person: CIB
Work Order: 16-2232
Permit: 2067270-5
Type of Finding: N/A
Score: 52

Event: 37730
Time: 16780
Date: 20050808

Signature



MANIFEST - MANIFESTE

This Manifest conforms to all Federal and Provincial transport and environmental legislation requiring manifesting. Ce manifeste est conforme aux législations fédérale et provinciale sur l'environnement et le transport, requérant un manifeste.

Manifest Reference No.
No de référence du manifeste

2067270-5

**A Consignor (Generator)
Expéditeur (Producteur)**

Company name / Nom de l'entreprise

Mailing address / Adresse postale City / Ville Province Postal code / Code postal

Shipping site address / Origine de l'expédition

City / Ville Province Postal code / Code postal

Intended consignee
Destinataire prévu

Address / Adresse City / Ville Province Postal code / Code postal

Receiving site address / Destination de l'expédition

City / Ville Province Postal code / Code postal

**B Carrier
Transporteur**

Company name / Nom de l'entreprise

Address / Adresse

City / Ville Province Postal code / Code postal

Vehicle / Véhicule

Trailer/Rail Car No. 1

1st remorque - wagon

Trailer/Rail Car No. 2

2nd remorque - wagon

Point of entry

Point of exit

Carrier Certification: I declare that I have received waste as offered by the consignor in Part A for delivery to the intended consignee and that the information contained in Part B is complete and correct. / Déclaration du transporteur: J'atteste avoir reçu les déchets offerts par l'expéditeur dans la partie A en vue de leur livraison au destinataire choisi et que les renseignements inscrits à la partie B sont exacts et complets.

Year / Année Month / Mois Day / Jour Name of authorized person (print)
Nom de l'agent autorisé (caractères d'imprimerie)

Signature

Tel. no. / No de tél.

Physical state
État physique

Shipping name of waste
Appellation réglementaire du déchet

Provincial No. / No
(Quebec-Ontario only)
(Québec-Ontario seul)

Waste identification
Identification du déchet

TDGAPIN
LTMD/NIP

Quantity shipped
Quantité expédiée

Units
L or
ou kg
unités

Packaging
Groupes
d'emballage

Codes
No.
int.
ext.

Special handling/Emergency instructions
Manutention spéciale/instructions d'urgence

☐ Attached
CI-jointes

☐ Below
CI-dessous

Circulation no. - Québec only
No de circulation - Réservée au Québec

Date shipped / Date d'expédition

Year / Année Month / Mois Day / Jour

Time / Heure

☐ A.M. ☐ P.M.

Scheduled arrival date / Date d'arrivée prévue

Year / Année Month / Mois Day / Jour

Consignor Certification: I declare that the information contained in Part A is correct and complete. / Déclaration de l'expéditeur: Je déclare que tous les renseignements à la partie A sont véritables et complets.

Name of authorized person (print)
Nom de l'agent autorisé (caractères d'imprimerie)

Signature

Tel. no. / No de tél.

**C Consignee (Receiver)
Destinataire
(Réceptionnaire)**

Provincial ID No. / No d'id. provincial

Consignee information same as Intended Consignee in Part A
L'information à fournir par le destinataire est la même qu'en A

☐ Yes / Oui ☐ No, complete the boxed area below
Non, compléter la boîte ci-dessous

Company name / Nom de l'entreprise

Address / Adresse

City / Ville Province Postal code / Code postal

Receiving site address / Destination de l'expédition

City / Ville Province Postal code / Code postal

Date received / Date de réception

Year / Année Month / Mois Day / Jour

Time / Heure

Identify any shipment
discrepancy problems.
Attach addendum if
necessary. / Indiquer
toute différence relative à
l'expédition. Annexer
une feuille au besoin

Units
L or
ou kg
unités

Quantity received
Quantité reçue

Handling
code
Code de
manutention

Packaging
Code
Contenants

Decontamination
Décontamination

Vehicle
Véhicule

Yes
Oui

No
Non

Provincial ID No. / No d'id. provincial

If handling code "Other" (specify)
Si code de manutention "divers", spécifier

If waste to be transferred, specify intended
company name / Si les déchets doivent être
transférés, préciser le nom du destinataire

Address / Adresse

City / Ville

Prov.

Consignee Certification: I declare that the information contained in Part C is correct and complete. / Déclaration du l'expéditeur: Je déclare que tous les renseignements à la partie C sont véritables et complets.

Name of authorized person (print) / Nom de l'agent autorisé (caractères d'imprimerie)

Signature

Tel. no. / No de tél.

Envirogreen Technologies Ltd.
Phone (250) 295-6634 Permit# PA13075

Ticket#: 020700

Customer: MERRITT SPILL RAY DA

Date: 10/22/95
Time: 14:57
Time: 15:50

Track: 70 TUBS CONSTRUCTION
Work Order: 14-2050
Manifest: 8057071-3
Bill of Lading: N/A
Bin#: RT5

Draw: 26580
Tare: 12300
Net: 14280

Signature



Envirogreen Technologies Ltd.

Phone (250) 295-6634 Permit# PA13075

Ticket# : 020701

Customer: 01
PERMIT SHALL PAY IS

Date: 12/19/12
Time In: 08:45
Time Out: 23:50

Truck: 210
Work Order: 12-2032
Manifest: 8867272-1
Bill of Lading: N/A
Sign: 68

11908 COMPTON
Gross: 41510
Tare: 16800
Net: 24680

Signature



MANIFEST - MANIFESTE

This Manifest conforms to all Federal and Provincial transport and environmental legislation requiring manifesting.
Ce manifeste est conforme aux législations fédérale et provinciale sur l'environnement et le transport, requérant un manifeste.

Manifest Reference No.
N° de référence du manifeste

2067272-1

A Consignor (Generator) Expéditeur (Producteur)		Provincial ID No. / N° d'id. provincial	
Company name / Nom de l'entreprise		City / Ville Province Postal code / Code postal	
Mailing address / Adresse postale		City / Ville Province Postal code / Code postal	
Shipping site address / Origine de l'expédition			
City / Ville		Province Postal code / Code postal	
Intended consignee Destinataire prévu		Provincial ID No. / N° d'id. provincial	
Address / Adresse		City / Ville Province Postal code / Code postal	
Receiving site address / Destination de l'expédition			
City / Ville		Province Postal code / Code postal	

B Carrier Transporteur		Provincial ID No. / N° d'id. provincial	
Company name / Nom de l'entreprise		City / Ville Province Postal code / Code postal	
Address / Adresse		City / Ville Province Postal code / Code postal	
Vehicle / Véhicule		Registration No. / N° d'immatriculation	
Trailer/Rail Car No. 1 1 ^{er} remorque - wagon		Prov.	
Trailer/Rail Car No. 2 2 ^e remorque - wagon		Prov.	
Point of entry Point d'entrée		Point of exit Point de sortie	
<p>Carrier Certification: I declare that I have received waste as offered by the consignor in Part A for delivery to the intended consignee and that the information contained in Part B is complete and correct. / Déclaration du transporteur: J'atteste avoir reçu les déchets offerts par l'expéditeur dans la partie A en vue de leur livraison au destinataire choisi et que les renseignements inscrits à la partie B sont exacts et complets.</p>			
Year / Année Month / Mois Day / Jour		Name of authorized person (print) Nom de l'agent autorisé (caractères d'imprimerie)	
Signature		Tel. no. / N° de tél.	

C Consignee (Receiver) Destinataire (Receptionnaire)		Provincial ID No. / N° d'id. provincial	
Company name / Nom de l'entreprise		City / Ville Province Postal code / Code postal	
Address / Adresse		City / Ville Province Postal code / Code postal	
Receiving site address / Destination de l'expédition		City / Ville Province Postal code / Code postal	
<p>Consignee information same as Intended Consignee in Part A L'information à fournir par le destinataire est la même qu'en A <input checked="" type="checkbox"/> Yes / Oui <input type="checkbox"/> No, complete the boxed area below Non, compléter la boîte ci-dessous</p>			

Physical state État physique	Shipping name of waste Appellation réglementaire du déchet	Provincial No. / N° (Quebec-Ontario only) (Québec-Ontario seul)	Waste identification Identification du déchet	Quantity shipped Quantité expédiée	Units L or kg unités	Packaging Group d'emballage	Codes Int. ext.	Circulation no. - Québec only N° de circulation - Réservée au Québec	Special handling/Emergency instructions Manutention spéciale/instructions d'urgence	<input type="checkbox"/> Attached Ci-joints <input type="checkbox"/> Below Ci-dessous	Scheduled arrival date / Date d'arrivée prévue Year / Année Month / Mois Day / Jour
<p>Consignor Certification: I declare that the information contained in Part A is correct and complete. Déclaration de l'expéditeur: Je déclare que tous les renseignements à la partie A sont veridiques et complets.</p>											
<p>Name of authorized person (print) Nom de l'agent autorisé (caractères d'imprimerie)</p>											
<p>Signature</p>											
<p>Tel. no. / N° de tél.</p>											

Quantity received Quantité reçue	Units L or kg unités	Identify any shipment Attaché, if necessary, / Indiquer toute différence relative à l'expédition. Annexer une feuille au besoin.	Handling code de manutention	Packaging Contenants	Decontamination Décontamination	Vehicle Véhicule	Provincial ID No. / N° d'id. provincial
<p>Consignee Certification: I declare that the information contained in Part C is correct and complete. Déclaration du l'expéditeur: Je déclare que tous les renseignements à la partie C sont veridiques et complets.</p>							
<p>Name of authorized person (print) Nom de l'agent autorisé (caractères d'imprimerie)</p>							
<p>Signature</p>							
<p>Tel. no. / N° de tél.</p>							

Date received / Date de réception		Time / Heure	
Year / Année	Month / Mois	Day / Jour	Hour / Heure
Signature		Tel. no. / N° de tél.	

MANIFEST - MANIFESTE

This Manifest conforms to all Federal and Provincial transport and environmental legislation requiring manifesting.
Ce manifeste est conforme aux législations fédérale et provinciale sur l'environnement et le transport, requérant un manifeste.

Manifest Reference No.
N° de référence du manifeste

2067273-9

**A Consignor (Generator)
Expéditeur (Producteur)**

**B Carrier
Transporteur**

**C Consignee (Receiver)
Destinataire (Réceptionnaire)**

Company name / Nom de l'entreprise
Mailing address / Adresse postale City / Ville Province Postal code / Code postal
Shipping site address / Origine de l'expédition
City / Ville Province Postal code / Code postal

Company name / Nom de l'entreprise
Address / Adresse
City / Ville Province Postal code / Code postal
Vehicle / Véhicule
Trailer/Rail Car No. 1
1^{er} remorque - wagon
Trailer/Rail Car No. 2
2^e remorque - wagon
Point of entry
Point d'entrée
Point of exit
Point de sortie
Registration No. / N° d'immatriculation
Prov.

Provincial ID No. / N° d'id. provincial
Consignee information same as Intended Consignee in Part A
L'information à fournir par le destinataire est la même qu'en A
No. complete the boxed area below
Non, compléter la boîte ci-dessous
Company name / Nom de l'entreprise
Address / Adresse
City / Ville Province Postal code / Code postal
Receiving site address / Destination de l'expédition
City / Ville Province Postal code / Code postal

Intended consignee
Destinataire prévu
Address / Adresse City / Ville Province Postal code / Code postal
Receiving site address / Destination de l'expédition
City / Ville Province Postal code / Code postal

Signature
Year / Année Month / Mois Day / Jour
Name of authorized person (print)
Nom de l'agent autorisé (caractères d'imprimerie)
Tel. No. / N° de tél.

Date received / Date de réception
Year / Année Month / Mois Day / Jour
Time / Heure
A.M. P.M.

Physical state
État physique
Shipping name of waste
Appellation réglementaire du déchet
Provincial No. / N° (Quebec-Ontario only)
(Québec-Ontario seul)
Waste identification
Identification du déchet
TDGAPIN
LTMDINP
Quantity shipped
Quantité expédiée
Units
L or
ou kg
unités
Packaging
Contenants
Codes
int. -
ext.

Units
L or
ou kg
unités
Packaging
Group
Classification
Codes
int. -
ext.

Identify any shipment
discrepancy problems.
Attach address label if
there is a difference relative à
toute différence relative à
l'expédition. Annexer
une feuille au besoin.
Handling
code
Code de
manutention
Decontamination
Décontamination
Vehicle
Véhicule
Yes
Oui
No
Non

Special handling/Emergency instructions
Manutention spéciale/instructions d'urgence
Attached
Ci-jointes
Below
Ci-dessous
Scheduled arrival date / Date d'arrivée prévue
Year / Année Month / Mois Day / Jour

Circulation no. - Quebec only
N° de circulation - Réservée au Québec

If handling code "Other" (specify)
Si code de manutention "divers", spécifier
If waste to be transferred, specify intended
company name / Si les déchets doivent être
transférés, préciser le nom du destinataire
Provincial ID No. / N° d'id. provincial

Consignor Certification: I declare that the information contained in Part A is correct and complete.
Déclaration de l'expéditeur: Je déclare que tous les renseignements à la partie A sont véridiques et complets.
Name of authorized person (print)
Nom de l'agent autorisé (caractères d'imprimerie)
Signature
Tel. no. / N° de tél.

Consignee Certification: I declare that the information contained in Part C is correct and complete.
Déclaration du destinataire: Je déclare que tous les renseignements à la partie C sont véridiques et complets.
Name of authorized person (print)
Nom de l'agent autorisé (caractères d'imprimerie)
Signature
Tel. no. / N° de tél.

Signature
Tel. no. / N° de tél.

CLIENT NAME:			
ADDRESS:			
CITY:	Surrey	PROV:	B.C.
CONTACT:	Gail St Hemmings	POSTAL CODE:	
TEL:	604-308-1484	FAX:	

REPORTING: MAIL COPY (REPORT) INVOICE OTHER	NAME/E-MAIL:	NEW/CHANGED	TURNOVER TIME		
			1 Day*	2 Day*	Routine (4-7 Days)
<input type="checkbox"/>	<input checked="" type="checkbox"/> INVOICE <input type="checkbox"/> EDD <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
NAME/E-MAIL:	*Contact Lab To Confirm. Surcharge May Apply				

CLIENT SAMPLE ID	MATRIX	#CONTAINERS	SAMPLING		TIME	COMMENTS
	SOIL WATER OTHER	DATE				
10-BASE 1	X	2	Sept 10 PM			Gasech (ie, flow/volume media ID/notes) PPM
10-BASE 2	X	1				75
10-BASE 3	X	1				95
10-BASE 4	X	1				10 ND
10-BASE 5	X	1				75
10-BASE 6	X	1				15
10-DPI	X	1				-
10-DPA	X	1				-

APPLICABLE REGULATORY LIMITS	SPECIAL INSTRUCTIONS:
<input type="checkbox"/> CANADIAN DRINKING WATER QUALITY GUIDELINES <input type="checkbox"/> BC DRINKING WATER PROTECTION ACT/REG. <input type="checkbox"/> BCMOE CSR (RL CL IL) <input type="checkbox"/> CCME <input type="checkbox"/> OTHER: _____	

CERTIFICATE OF ANALYSIS

**CLIENT****Levelton Consultants Ltd. - Hazmat Surrey**

#301 - 19292 - 60th Avenue

Surrey BC

V3S 8E5

TEL (604) 533-2992

FAX (604) 533-0768

ATTENTION**Gail Schultze****RECEIVED / TEMP**

Sep-10-10 11:12 / 12.0 °C

REPORTED

Sep-15-10

COC #(s)

22188, 22189

WORK ORDER

R009169

PROJECT

FV10-1597-00

PROJECT INFO

Joy Lee Spill

General Comments:

CARO Analytical Services employs methods which are based on those found in "Standard Methods for the Examination of Water and Wastewater", 21st Edition, 2005, published by the American Public Health Association (APHA); US EPA protocols found in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846", 3rd Edition; and protocols published by the British Columbia Ministry of Environment (BCMOE).

Methods not described in these publications are conducted according to procedures accepted by appropriate regulatory agencies, and/or are done in accordance with recognized professional standards using accepted testing methodologies and quality control efforts except where otherwise agreed to by the client.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety. CARO is not responsible for any loss or damage resulting directly or indirectly from error or omission in the conduct of testing. Liability is limited to the cost of analysis. Samples will be disposed of 30 days after the test report has been issued unless otherwise agreed to in writing.

- All solids results are reported on a dry weight basis unless otherwise noted
- Units:
 - mg/kg = milligrams per kilogram, equivalent to parts per million (ppm)
 - mg/L = milligrams per litre, equivalent to parts per million (ppm)
 - ug/L = micrograms per litre, equivalent to parts per billion (ppb)
 - ug/g = micrograms per gram, equivalent to parts per million (ppm)
 - ug/m3 = micrograms per cubic meter of air
- "RDL" Reported detection limit
- "<" Less than reported detection limit
- "AO" Aesthetic objective
- "MAC" Maximum acceptable concentration (health-related guideline)
- "LAB" RMD = CARO - Richmond location, KEL = CARO - Kelowna location, SUB = Subcontracted

Please contact CARO if more information is needed.

CARO Analytical Services

A handwritten signature in blue ink, appearing to read "Patrick Novak", is written over a horizontal line.

Final Review Per:

Patrick Novak, B.Sc., PChem
Business Manager

CARO Analytical Services (Richmond)

120 - 12791 Clarke Place Richmond, BC Canada V6V 2H9

Tel: (604) 279-1499 Fax: (604) 279-1599 Web: www.caro.ca

SAMPLE DATA



CLIENT
PROJECT

Levelton Consultants Ltd. - Hazmat Surrey
FV10-1597-00

WORK ORDER #
REPORTED

R009169
Sep-15-10

Analyte	Result	RDL	Units	Analyzed	Method	Lab	Notes
General Parameters							
10-NW1 (R009169-01) Matrix: Soil Sampled: Sep-09-10 12:00							
Moisture	7.1	0.1	%	Sep-14-10	Dry @105C	RMD	
10-NW2 (R009169-02) Matrix: Soil Sampled: Sep-09-10 12:00							
Moisture	16.2	0.1	%	Sep-14-10	Dry @105C	RMD	
10-SW1 (R009169-03) Matrix: Soil Sampled: Sep-09-10 12:00							
Moisture	7.6	0.1	%	Sep-14-10	Dry @105C	RMD	
10-SW2 (R009169-04) Matrix: Soil Sampled: Sep-09-10 12:00							
Moisture	5.7	0.1	%	Sep-14-10	Dry @105C	RMD	
10-SW3 (R009169-05) Matrix: Soil Sampled: Sep-09-10 12:00							
Moisture	7.4	0.1	%	Sep-14-10	Dry @105C	RMD	
10-WW1 (R009169-06) Matrix: Soil Sampled: Sep-09-10 12:00							
Moisture	5.8	0.1	%	Sep-14-10	Dry @105C	RMD	
10-WW2 (R009169-07) Matrix: Soil Sampled: Sep-09-10 12:00							
Moisture	6.8	0.1	%	Sep-14-10	Dry @105C	RMD	
10-WW3 (R009169-08) Matrix: Soil Sampled: Sep-09-10 12:00							
Moisture	5.0	0.1	%	Sep-14-10	Dry @105C	RMD	
10-WW4 (R009169-09) Matrix: Soil Sampled: Sep-09-10 12:00							
Moisture	9.7	0.1	%	Sep-14-10	Dry @105C	RMD	
10-WW5 (R009169-10) Matrix: Soil Sampled: Sep-09-10 12:00							
Moisture	7.0	0.1	%	Sep-14-10	Dry @105C	RMD	
10-EW1 (R009169-11) Matrix: Soil Sampled: Sep-09-10 12:00							
Moisture	7.9	0.1	%	Sep-14-10	Dry @105C	RMD	
10-EW2 (R009169-12) Matrix: Soil Sampled: Sep-09-10 12:00							
Moisture	7.3	0.1	%	Sep-14-10	Dry @105C	RMD	
10-Base 1 (R009169-13) Matrix: Soil Sampled: Sep-09-10 12:00							
Moisture	6.9	0.1	%	Sep-14-10	Dry @105C	RMD	
10-Base 2 (R009169-14) Matrix: Soil Sampled: Sep-09-10 12:00							
Moisture	6.9	0.1	%	Sep-14-10	Dry @105C	RMD	
10-Base 3 (R009169-15) Matrix: Soil Sampled: Sep-09-10 12:00							
Moisture	4.9	0.1	%	Sep-14-10	Dry @105C	RMD	
10-Base 4 (R009169-16) Matrix: Soil Sampled: Sep-09-10 12:00							
Moisture	5.3	0.1	%	Sep-14-10	Dry @105C	RMD	
10-Base 5 (R009169-17) Matrix: Soil Sampled: Sep-09-10 12:00							
Moisture	4.1	0.1	%	Sep-14-10	Dry @105C	RMD	

SAMPLE DATA

CLIENT
PROJECT

Levelton Consultants Ltd. - Hazmat Surrey
FV10-1597-00

WORK ORDER #
REPORTED

R009169
Sep-15-10

Analyte	Result	RDL	Units	Analyzed	Method	Lab	Notes
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General Parameters, Continued

10-Base 6 (R009169-18) Matrix: Soil Sampled: Sep-09-10 12:00

Moisture	6.4	0.1	%	Sep-14-10	Dry @105C	RMD	
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10-Dup 1 (R009169-19) Matrix: Soil Sampled: Sep-09-10 12:00

Moisture	7.0	0.1	%	Sep-14-10	Dry @105C	RMD	
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10-Dup 2 (R009169-20) Matrix: Soil Sampled: Sep-09-10 12:00

Moisture	8.4	0.1	%	Sep-14-10	Dry @105C	RMD	
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Aggregate Organic Parameters

10-NW1 (R009169-01) Matrix: Soil Sampled: Sep-09-10 12:00

EPHs (10-19)	1000	250	mg/kg dry	Sep-14-10	EPA 3570/BCMOE	RMD	
LEPHs	1000	250	mg/kg dry	Sep-14-10	BCMOE	RMD	
EPHs (19-32)	810	250	mg/kg dry	Sep-14-10	EPA 3570/BCMOE	RMD	
HEPHs	810	250	mg/kg dry	Sep-14-10	BCMOE	RMD	
Total PAH	0.18	0.10	mg/kg dry	Sep-14-10	BCMOE	RMD	

10-NW2 (R009169-02) Matrix: Soil Sampled: Sep-09-10 12:00

EPHs (10-19)	<250	250	mg/kg dry	Sep-14-10	EPA 3570/BCMOE	RMD	
LEPHs	<250	250	mg/kg dry	Sep-14-10	BCMOE	RMD	
EPHs (19-32)	<250	250	mg/kg dry	Sep-14-10	EPA 3570/BCMOE	RMD	
HEPHs	<250	250	mg/kg dry	Sep-14-10	BCMOE	RMD	
Total PAH	<0.10	0.10	mg/kg dry	Sep-14-10	BCMOE	RMD	

10-SW1 (R009169-03) Matrix: Soil Sampled: Sep-09-10 12:00

EPHs (10-19)	<250	250	mg/kg dry	Sep-14-10	EPA 3570/BCMOE	RMD	
LEPHs	<250	250	mg/kg dry	Sep-14-10	BCMOE	RMD	
EPHs (19-32)	<250	250	mg/kg dry	Sep-14-10	EPA 3570/BCMOE	RMD	
HEPHs	<250	250	mg/kg dry	Sep-14-10	BCMOE	RMD	
Total PAH	<0.10	0.10	mg/kg dry	Sep-14-10	BCMOE	RMD	

10-SW2 (R009169-04) Matrix: Soil Sampled: Sep-09-10 12:00

EPHs (10-19)	<250	250	mg/kg dry	Sep-14-10	EPA 3570/BCMOE	RMD	
LEPHs	<250	250	mg/kg dry	Sep-14-10	BCMOE	RMD	
EPHs (19-32)	<250	250	mg/kg dry	Sep-14-10	EPA 3570/BCMOE	RMD	
HEPHs	<250	250	mg/kg dry	Sep-14-10	BCMOE	RMD	
Total PAH	<0.10	0.10	mg/kg dry	Sep-14-10	BCMOE	RMD	

10-SW3 (R009169-05) Matrix: Soil Sampled: Sep-09-10 12:00

EPHs (10-19)	<250	250	mg/kg dry	Sep-14-10	EPA 3570/BCMOE	RMD	
LEPHs	<250	250	mg/kg dry	Sep-14-10	BCMOE	RMD	
EPHs (19-32)	<250	250	mg/kg dry	Sep-14-10	EPA 3570/BCMOE	RMD	
HEPHs	<250	250	mg/kg dry	Sep-14-10	BCMOE	RMD	
Total PAH	<0.10	0.10	mg/kg dry	Sep-14-10	BCMOE	RMD	

10-WW1 (R009169-06) Matrix: Soil Sampled: Sep-09-10 12:00

EPHs (10-19)	<250	250	mg/kg dry	Sep-14-10	EPA 3570/BCMOE	RMD	
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SAMPLE DATA



CLIENT Levelton Consultants Ltd. - Hazmat Surrey
PROJECT FV10-1597-00

WORK ORDER # R009169
REPORTED Sep-15-10

Analyte	Result	RDL	Units	Analyzed	Method	Lab	Notes
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Aggregate Organic Parameters, Continued

10-WW1 (R009169-06) Matrix: Soil Sampled: Sep-09-10 12:00, Continued

LEPHs	<250	250	mg/kg dry	Sep-14-10	BCMOE	RMD	
EPHs (19-32)	<250	250	mg/kg dry	Sep-14-10	EPA 3570/BCMOE	RMD	
HEPHs	<250	250	mg/kg dry	Sep-14-10	BCMOE	RMD	
Total PAH	<0.10	0.10	mg/kg dry	Sep-14-10	BCMOE	RMD	

10-WW2 (R009169-07) Matrix: Soil Sampled: Sep-09-10 12:00

EPHs (10-19)	<250	250	mg/kg dry	Sep-14-10	EPA 3570/BCMOE	RMD	
LEPHs	<250	250	mg/kg dry	Sep-14-10	BCMOE	RMD	
EPHs (19-32)	<250	250	mg/kg dry	Sep-14-10	EPA 3570/BCMOE	RMD	
HEPHs	<250	250	mg/kg dry	Sep-14-10	BCMOE	RMD	
Total PAH	<0.10	0.10	mg/kg dry	Sep-14-10	BCMOE	RMD	

10-WW3 (R009169-08) Matrix: Soil Sampled: Sep-09-10 12:00

EPHs (10-19)	<250	250	mg/kg dry	Sep-14-10	EPA 3570/BCMOE	RMD	
LEPHs	<250	250	mg/kg dry	Sep-14-10	BCMOE	RMD	
EPHs (19-32)	<250	250	mg/kg dry	Sep-14-10	EPA 3570/BCMOE	RMD	
HEPHs	<250	250	mg/kg dry	Sep-14-10	BCMOE	RMD	
Total PAH	<0.10	0.10	mg/kg dry	Sep-14-10	BCMOE	RMD	

10-WW4 (R009169-09) Matrix: Soil Sampled: Sep-09-10 12:00

EPHs (10-19)	<250	250	mg/kg dry	Sep-14-10	EPA 3570/BCMOE	RMD	
LEPHs	<250	250	mg/kg dry	Sep-14-10	BCMOE	RMD	
EPHs (19-32)	<250	250	mg/kg dry	Sep-14-10	EPA 3570/BCMOE	RMD	
HEPHs	<250	250	mg/kg dry	Sep-14-10	BCMOE	RMD	
Total PAH	<0.10	0.10	mg/kg dry	Sep-14-10	BCMOE	RMD	

10-WW5 (R009169-10) Matrix: Soil Sampled: Sep-09-10 12:00

EPHs (10-19)	<250	250	mg/kg dry	Sep-14-10	EPA 3570/BCMOE	RMD	
LEPHs	<250	250	mg/kg dry	Sep-14-10	BCMOE	RMD	
EPHs (19-32)	<250	250	mg/kg dry	Sep-14-10	EPA 3570/BCMOE	RMD	
HEPHs	<250	250	mg/kg dry	Sep-14-10	BCMOE	RMD	
Total PAH	<0.10	0.10	mg/kg dry	Sep-14-10	BCMOE	RMD	

10-EW1 (R009169-11) Matrix: Soil Sampled: Sep-09-10 12:00

EPHs (10-19)	<250	250	mg/kg dry	Sep-15-10	EPA 3570/BCMOE	RMD	
LEPHs	<250	250	mg/kg dry	Sep-15-10	BCMOE	RMD	
EPHs (19-32)	<250	250	mg/kg dry	Sep-15-10	EPA 3570/BCMOE	RMD	
HEPHs	<250	250	mg/kg dry	Sep-15-10	BCMOE	RMD	
Total PAH	<0.10	0.10	mg/kg dry	Sep-15-10	BCMOE	RMD	

10-EW2 (R009169-12) Matrix: Soil Sampled: Sep-09-10 12:00

EPHs (10-19)	<250	250	mg/kg dry	Sep-15-10	EPA 3570/BCMOE	RMD	
LEPHs	<250	250	mg/kg dry	Sep-15-10	BCMOE	RMD	
EPHs (19-32)	<250	250	mg/kg dry	Sep-15-10	EPA 3570/BCMOE	RMD	
HEPHs	<250	250	mg/kg dry	Sep-15-10	BCMOE	RMD	
Total PAH	<0.10	0.10	mg/kg dry	Sep-15-10	BCMOE	RMD	

SAMPLE DATA



CLIENT
PROJECT

Levelton Consultants Ltd. - Hazmat Surrey
FV10-1597-00

WORK ORDER #
REPORTED

R009169
Sep-15-10

Analyte	Result	RDL	Units	Analyzed	Method	Lab	Notes
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Aggregate Organic Parameters, Continued

10-Base 1 (R009169-13) Matrix: Soil Sampled: Sep-09-10 12:00

EPHs (10-19)	<250	250	mg/kg dry	Sep-15-10	EPA 3570/BCMOE	RMD	
LEPHs	<250	250	mg/kg dry	Sep-15-10	BCMOE	RMD	
EPHs (19-32)	<250	250	mg/kg dry	Sep-15-10	EPA 3570/BCMOE	RMD	
HEPHs	<250	250	mg/kg dry	Sep-15-10	BCMOE	RMD	
Total PAH	<0.10	0.10	mg/kg dry	Sep-15-10	BCMOE	RMD	

10-Base 2 (R009169-14) Matrix: Soil Sampled: Sep-09-10 12:00

EPHs (10-19)	<250	250	mg/kg dry	Sep-15-10	EPA 3570/BCMOE	RMD	
LEPHs	<250	250	mg/kg dry	Sep-15-10	BCMOE	RMD	
EPHs (19-32)	<250	250	mg/kg dry	Sep-15-10	EPA 3570/BCMOE	RMD	
HEPHs	<250	250	mg/kg dry	Sep-15-10	BCMOE	RMD	
Total PAH	<0.10	0.10	mg/kg dry	Sep-15-10	BCMOE	RMD	

10-Base 3 (R009169-15) Matrix: Soil Sampled: Sep-09-10 12:00

EPHs (10-19)	<250	250	mg/kg dry	Sep-15-10	EPA 3570/BCMOE	RMD	
LEPHs	<250	250	mg/kg dry	Sep-15-10	BCMOE	RMD	
EPHs (19-32)	<250	250	mg/kg dry	Sep-15-10	EPA 3570/BCMOE	RMD	
HEPHs	<250	250	mg/kg dry	Sep-15-10	BCMOE	RMD	
Total PAH	<0.10	0.10	mg/kg dry	Sep-15-10	BCMOE	RMD	

10-Base 4 (R009169-16) Matrix: Soil Sampled: Sep-09-10 12:00

EPHs (10-19)	<250	250	mg/kg dry	Sep-15-10	EPA 3570/BCMOE	RMD	
LEPHs	<250	250	mg/kg dry	Sep-15-10	BCMOE	RMD	
EPHs (19-32)	<250	250	mg/kg dry	Sep-15-10	EPA 3570/BCMOE	RMD	
HEPHs	<250	250	mg/kg dry	Sep-15-10	BCMOE	RMD	
Total PAH	<0.10	0.10	mg/kg dry	Sep-15-10	BCMOE	RMD	

10-Base 5 (R009169-17) Matrix: Soil Sampled: Sep-09-10 12:00

EPHs (10-19)	610	250	mg/kg dry	Sep-15-10	EPA 3570/BCMOE	RMD	
LEPHs	610	250	mg/kg dry	Sep-15-10	BCMOE	RMD	
EPHs (19-32)	<250	250	mg/kg dry	Sep-15-10	EPA 3570/BCMOE	RMD	
HEPHs	<250	250	mg/kg dry	Sep-15-10	BCMOE	RMD	
Total PAH	<0.10	0.10	mg/kg dry	Sep-15-10	BCMOE	RMD	

10-Base 6 (R009169-18) Matrix: Soil Sampled: Sep-09-10 12:00

EPHs (10-19)	<250	250	mg/kg dry	Sep-15-10	EPA 3570/BCMOE	RMD	
LEPHs	<250	250	mg/kg dry	Sep-15-10	BCMOE	RMD	
EPHs (19-32)	<250	250	mg/kg dry	Sep-15-10	EPA 3570/BCMOE	RMD	
HEPHs	<250	250	mg/kg dry	Sep-15-10	BCMOE	RMD	
Total PAH	<0.10	0.10	mg/kg dry	Sep-15-10	BCMOE	RMD	

10-Dup 1 (R009169-19) Matrix: Soil Sampled: Sep-09-10 12:00

EPHs (10-19)	<250	250	mg/kg dry	Sep-15-10	EPA 3570/BCMOE	RMD	
LEPHs	<250	250	mg/kg dry	Sep-15-10	BCMOE	RMD	
EPHs (19-32)	<250	250	mg/kg dry	Sep-15-10	EPA 3570/BCMOE	RMD	
HEPHs	<250	250	mg/kg dry	Sep-15-10	BCMOE	RMD	
Total PAH	<0.10	0.10	mg/kg dry	Sep-15-10	BCMOE	RMD	

SAMPLE DATA



CLIENT Levelton Consultants Ltd. - Hazmat Surrey
PROJECT FV10-1597-00

WORK ORDER # R009169
REPORTED Sep-15-10

Analyte	Result	RDL	Units	Analyzed	Method	Lab	Notes
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Aggregate Organic Parameters, Continued

10-Dup 2 (R009169-20) Matrix: Soil Sampled: Sep-09-10 12:00

EPHs (10-19)	<250	250	mg/kg dry	Sep-15-10	EPA 3570/BCMOE	RMD	
LEPHs	<250	250	mg/kg dry	Sep-15-10	BCMOE	RMD	
EPHs (19-32)	<250	250	mg/kg dry	Sep-15-10	EPA 3570/BCMOE	RMD	
HEPHs	<250	250	mg/kg dry	Sep-15-10	BCMOE	RMD	
Total PAH	<0.10	0.10	mg/kg dry	Sep-15-10	BCMOE	RMD	

Polycyclic Aromatic Hydrocarbons by GCMS

10-NW1 (R009169-01) Matrix: Soil Sampled: Sep-09-10 12:00

Acenaphthene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Acenaphthylene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Anthracene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Benzo (a) anthracene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Benzo (a) pyrene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Benzo (b) fluoranthene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Benzo (g,h,i) perylene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Benzo (k) fluoranthene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Chrysene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Dibenz (a,h) anthracene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Fluoranthene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Fluorene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Indeno (1,2,3-cd) pyrene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Naphthalene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Phenanthrene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Pyrene	0.18	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Surrogate: Naphthalene-d8	57 %	50-130		Sep-14-10			
Surrogate: Acenaphthene-d10	62 %	50-130		Sep-14-10			
Surrogate: Phenanthrene-d10	62 %	60-130		Sep-14-10			
Surrogate: Perylene-d12	91 %	60-130		Sep-14-10			

10-NW2 (R009169-02) Matrix: Soil Sampled: Sep-09-10 12:00

Acenaphthene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Acenaphthylene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Anthracene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Benzo (a) anthracene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Benzo (a) pyrene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Benzo (b) fluoranthene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Benzo (g,h,i) perylene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Benzo (k) fluoranthene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Chrysene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Dibenz (a,h) anthracene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Fluoranthene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Fluorene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Indeno (1,2,3-cd) pyrene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Naphthalene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Phenanthrene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	

SAMPLE DATA



CLIENT
PROJECT

Levelton Consultants Ltd. - Hazmat Surrey
FV10-1597-00

WORK ORDER #
REPORTED

R009169
Sep-15-10

Analyte	Result	RDL	Units	Analyzed	Method	Lab	Notes
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Polycyclic Aromatic Hydrocarbons by GCMS, Continued

10-NW2 (R009169-02) Matrix: Soil Sampled: Sep-09-10 12:00, Continued

Pyrene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Surrogate: Naphthalene-d8	65 %	50-130		Sep-14-10			
Surrogate: Acenaphthene-d10	68 %	50-130		Sep-14-10			
Surrogate: Phenanthrene-d10	64 %	60-130		Sep-14-10			
Surrogate: Perylene-d12	91 %	60-130		Sep-14-10			

10-SW1 (R009169-03) Matrix: Soil Sampled: Sep-09-10 12:00

Acenaphthene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Acenaphthylene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Anthracene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Benzo (a) anthracene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Benzo (a) pyrene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Benzo (b) fluoranthene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Benzo (g,h,i) perylene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Benzo (k) fluoranthene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Chrysene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Dibenz (a,h) anthracene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Fluoranthene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Fluorene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Indeno (1,2,3-cd) pyrene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Naphthalene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Phenanthrene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Pyrene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Surrogate: Naphthalene-d8	68 %	50-130		Sep-14-10			
Surrogate: Acenaphthene-d10	68 %	50-130		Sep-14-10			
Surrogate: Phenanthrene-d10	65 %	60-130		Sep-14-10			
Surrogate: Perylene-d12	77 %	60-130		Sep-14-10			

10-SW2 (R009169-04) Matrix: Soil Sampled: Sep-09-10 12:00

Acenaphthene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Acenaphthylene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Anthracene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Benzo (a) anthracene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Benzo (a) pyrene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Benzo (b) fluoranthene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Benzo (g,h,i) perylene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Benzo (k) fluoranthene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Chrysene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Dibenz (a,h) anthracene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Fluoranthene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Fluorene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Indeno (1,2,3-cd) pyrene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Naphthalene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Phenanthrene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Pyrene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Surrogate: Naphthalene-d8	64 %	50-130		Sep-14-10			

SAMPLE DATA



CLIENT Levelton Consultants Ltd. - Hazmat Surrey
PROJECT FV10-1597-00

WORK ORDER # R009169
REPORTED Sep-15-10

Analyte	Result	RDL	Units	Analyzed	Method	Lab	Notes
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Polycyclic Aromatic Hydrocarbons by GCMS, Continued

10-SW2 (R009169-04) Matrix: Soil Sampled: Sep-09-10 12:00, Continued

Surrogate: Acenaphthene-d10	64 %	50-130	Sep-14-10
Surrogate: Phenanthrene-d10	61 %	60-130	Sep-14-10
Surrogate: Perylene-d12	80 %	60-130	Sep-14-10

10-SW3 (R009169-05) Matrix: Soil Sampled: Sep-09-10 12:00

Acenaphthene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD
Acenaphthylene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD
Anthracene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD
Benzo (a) anthracene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD
Benzo (a) pyrene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD
Benzo (b) fluoranthene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD
Benzo (g,h,i) perylene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD
Benzo (k) fluoranthene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD
Chrysene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD
Dibenz (a,h) anthracene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD
Fluoranthene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD
Fluorene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD
Indeno (1,2,3-cd) pyrene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD
Naphthalene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD
Phenanthrene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD
Pyrene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD
Surrogate: Naphthalene-d8	69 %	50-130		Sep-14-10		
Surrogate: Acenaphthene-d10	69 %	50-130		Sep-14-10		
Surrogate: Phenanthrene-d10	68 %	60-130		Sep-14-10		
Surrogate: Perylene-d12	74 %	60-130		Sep-14-10		

10-WW1 (R009169-06) Matrix: Soil Sampled: Sep-09-10 12:00

Acenaphthene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD
Acenaphthylene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD
Anthracene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD
Benzo (a) anthracene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD
Benzo (a) pyrene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD
Benzo (b) fluoranthene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD
Benzo (g,h,i) perylene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD
Benzo (k) fluoranthene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD
Chrysene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD
Dibenz (a,h) anthracene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD
Fluoranthene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD
Fluorene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD
Indeno (1,2,3-cd) pyrene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD
Naphthalene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD
Phenanthrene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD
Pyrene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD
Surrogate: Naphthalene-d8	65 %	50-130		Sep-14-10		
Surrogate: Acenaphthene-d10	67 %	50-130		Sep-14-10		
Surrogate: Phenanthrene-d10	66 %	60-130		Sep-14-10		

SAMPLE DATA

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Levelton Consultants Ltd. - Hazmat Surrey
FV10-1597-00

WORK ORDER #
REPORTED

R009169
Sep-15-10

Analyte	Result	RDL	Units	Analyzed	Method	Lab	Notes
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Polycyclic Aromatic Hydrocarbons by GCMS, Continued

10-WW1 (R009169-06) Matrix: Soil Sampled: Sep-09-10 12:00, Continued

Surrogate: Perylene-d12	76 %	60-130	Sep-14-10
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10-WW2 (R009169-07) Matrix: Soil Sampled: Sep-09-10 12:00

Acenaphthene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Acenaphthylene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Anthracene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Benzo (a) anthracene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Benzo (a) pyrene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Benzo (b) fluoranthene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Benzo (g,h,i) perylene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Benzo (k) fluoranthene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Chrysene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Dibenz (a,h) anthracene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Fluoranthene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Fluorene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Indeno (1,2,3-cd) pyrene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Naphthalene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Phenanthrene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Pyrene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Surrogate: Naphthalene-d8	64 %	50-130	Sep-14-10				
Surrogate: Acenaphthene-d10	64 %	50-130	Sep-14-10				
Surrogate: Phenanthrene-d10	62 %	60-130	Sep-14-10				
Surrogate: Perylene-d12	77 %	60-130	Sep-14-10				

10-WW3 (R009169-08) Matrix: Soil Sampled: Sep-09-10 12:00

Acenaphthene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Acenaphthylene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Anthracene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Benzo (a) anthracene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Benzo (a) pyrene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Benzo (b) fluoranthene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Benzo (g,h,i) perylene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Benzo (k) fluoranthene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Chrysene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Dibenz (a,h) anthracene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Fluoranthene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Fluorene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Indeno (1,2,3-cd) pyrene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Naphthalene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Phenanthrene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Pyrene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Surrogate: Naphthalene-d8	68 %	50-130	Sep-14-10				
Surrogate: Acenaphthene-d10	69 %	50-130	Sep-14-10				
Surrogate: Phenanthrene-d10	65 %	60-130	Sep-14-10				
Surrogate: Perylene-d12	84 %	60-130	Sep-14-10				

SAMPLE DATA

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PROJECT

Levelton Consultants Ltd. - Hazmat Surrey
FV10-1597-00

WORK ORDER #
REPORTED

R009169
Sep-15-10

Analyte	Result	RDL	Units	Analyzed	Method	Lab	Notes
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Polycyclic Aromatic Hydrocarbons by GCMS, Continued

10-WW4 (R009169-09) Matrix: Soil Sampled: Sep-09-10 12:00

Acenaphthene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Acenaphthylene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Anthracene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Benzo (a) anthracene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Benzo (a) pyrene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Benzo (b) fluoranthene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Benzo (g,h,i) perylene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Benzo (k) fluoranthene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Chrysene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Dibenz (a,h) anthracene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Fluoranthene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Fluorene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Indeno (1,2,3-cd) pyrene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Naphthalene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Phenanthrene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Pyrene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Surrogate: Naphthalene-d8	65 %	50-130		Sep-14-10			
Surrogate: Acenaphthene-d10	64 %	50-130		Sep-14-10			
Surrogate: Phenanthrene-d10	61 %	60-130		Sep-14-10			
Surrogate: Perylene-d12	88 %	60-130		Sep-14-10			

10-WW5 (R009169-10) Matrix: Soil Sampled: Sep-09-10 12:00

Acenaphthene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Acenaphthylene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Anthracene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Benzo (a) anthracene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Benzo (a) pyrene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Benzo (b) fluoranthene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Benzo (g,h,i) perylene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Benzo (k) fluoranthene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Chrysene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Dibenz (a,h) anthracene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Fluoranthene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Fluorene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Indeno (1,2,3-cd) pyrene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Naphthalene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Phenanthrene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Pyrene	<0.10	0.10	mg/kg dry	Sep-14-10	EPA 3570/8270D	RMD	
Surrogate: Naphthalene-d8	65 %	50-130		Sep-14-10			
Surrogate: Acenaphthene-d10	67 %	50-130		Sep-14-10			
Surrogate: Phenanthrene-d10	61 %	60-130		Sep-14-10			
Surrogate: Perylene-d12	84 %	60-130		Sep-14-10			

10-EW1 (R009169-11) Matrix: Soil Sampled: Sep-09-10 12:00

Acenaphthene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Acenaphthylene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	

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Levelton Consultants Ltd. - Hazmat Surrey
FV10-1597-00

WORK ORDER #
REPORTED

R009169
Sep-15-10

Analyte	Result	RDL	Units	Analyzed	Method	Lab	Notes
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Polycyclic Aromatic Hydrocarbons by GCMS, Continued

10-EW1 (R009169-11) Matrix: Soil Sampled: Sep-09-10 12:00, Continued

Anthracene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Benzo (a) anthracene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Benzo (a) pyrene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Benzo (b) fluoranthene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Benzo (g,h,i) perylene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Benzo (k) fluoranthene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Chrysene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Dibenz (a,h) anthracene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Fluoranthene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Fluorene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Indeno (1,2,3-cd) pyrene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Naphthalene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Phenanthrene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Pyrene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Surrogate: Naphthalene-d8	69 %	50-130		Sep-15-10			
Surrogate: Acenaphthene-d10	68 %	50-130		Sep-15-10			
Surrogate: Phenanthrene-d10	62 %	60-130		Sep-15-10			
Surrogate: Perylene-d12	88 %	60-130		Sep-15-10			

10-EW2 (R009169-12) Matrix: Soil Sampled: Sep-09-10 12:00

Acenaphthene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Acenaphthylene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Anthracene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Benzo (a) anthracene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Benzo (a) pyrene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Benzo (b) fluoranthene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Benzo (g,h,i) perylene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Benzo (k) fluoranthene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Chrysene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Dibenz (a,h) anthracene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Fluoranthene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Fluorene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Indeno (1,2,3-cd) pyrene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Naphthalene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Phenanthrene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Pyrene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Surrogate: Naphthalene-d8	69 %	50-130		Sep-15-10			
Surrogate: Acenaphthene-d10	69 %	50-130		Sep-15-10			
Surrogate: Phenanthrene-d10	64 %	60-130		Sep-15-10			
Surrogate: Perylene-d12	79 %	60-130		Sep-15-10			

10-Base 1 (R009169-13) Matrix: Soil Sampled: Sep-09-10 12:00

Acenaphthene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Acenaphthylene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Anthracene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Benzo (a) anthracene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	

SAMPLE DATA



CLIENT Levelton Consultants Ltd. - Hazmat Surrey
PROJECT FV10-1597-00

WORK ORDER # R009169
REPORTED Sep-15-10

Analyte	Result	RDL	Units	Analyzed	Method	Lab	Notes
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Polycyclic Aromatic Hydrocarbons by GCMS, Continued

10-Base 1 (R009169-13) Matrix: Soil Sampled: Sep-09-10 12:00, Continued

Benzo (a) pyrene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Benzo (b) fluoranthene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Benzo (g,h,i) perylene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Benzo (k) fluoranthene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Chrysene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Dibenz (a,h) anthracene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Fluoranthene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Fluorene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Indeno (1,2,3-cd) pyrene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Naphthalene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Phenanthrene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Pyrene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Surrogate: Naphthalene-d8	73 %	50-130		Sep-15-10			
Surrogate: Acenaphthene-d10	71 %	50-130		Sep-15-10			
Surrogate: Phenanthrene-d10	64 %	60-130		Sep-15-10			
Surrogate: Perylene-d12	83 %	60-130		Sep-15-10			

10-Base 2 (R009169-14) Matrix: Soil Sampled: Sep-09-10 12:00

Acenaphthene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Acenaphthylene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Anthracene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Benzo (a) anthracene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Benzo (a) pyrene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Benzo (b) fluoranthene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Benzo (g,h,i) perylene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Benzo (k) fluoranthene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Chrysene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Dibenz (a,h) anthracene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Fluoranthene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Fluorene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Indeno (1,2,3-cd) pyrene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Naphthalene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Phenanthrene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Pyrene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Surrogate: Naphthalene-d8	71 %	50-130		Sep-15-10			
Surrogate: Acenaphthene-d10	73 %	50-130		Sep-15-10			
Surrogate: Phenanthrene-d10	73 %	60-130		Sep-15-10			
Surrogate: Perylene-d12	88 %	60-130		Sep-15-10			

10-Base 3 (R009169-15) Matrix: Soil Sampled: Sep-09-10 12:00

Acenaphthene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Acenaphthylene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Anthracene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Benzo (a) anthracene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Benzo (a) pyrene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Benzo (b) fluoranthene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	

SAMPLE DATA

CLIENT
PROJECT

Levelton Consultants Ltd. - Hazmat Surrey
FV10-1597-00

WORK ORDER #
REPORTED

R009169
Sep-15-10

Analyte	Result	RDL	Units	Analyzed	Method	Lab	Notes
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Polycyclic Aromatic Hydrocarbons by GCMS, Continued

10-Base 3 (R009169-15) Matrix: Soil Sampled: Sep-09-10 12:00, Continued

Benzo (g,h,i) perylene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Benzo (k) fluoranthene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Chrysene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Dibenz (a,h) anthracene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Fluoranthene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Fluorene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Indeno (1,2,3-cd) pyrene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Naphthalene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Phenanthrene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Pyrene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Surrogate: Naphthalene-d8	70 %	50-130		Sep-15-10			
Surrogate: Acenaphthene-d10	68 %	50-130		Sep-15-10			
Surrogate: Phenanthrene-d10	62 %	60-130		Sep-15-10			
Surrogate: Perylene-d12	89 %	60-130		Sep-15-10			

10-Base 4 (R009169-16) Matrix: Soil Sampled: Sep-09-10 12:00

Acenaphthene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Acenaphthylene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Anthracene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Benzo (a) anthracene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Benzo (a) pyrene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Benzo (b) fluoranthene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Benzo (g,h,i) perylene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Benzo (k) fluoranthene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Chrysene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Dibenz (a,h) anthracene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Fluoranthene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Fluorene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Indeno (1,2,3-cd) pyrene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Naphthalene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Phenanthrene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Pyrene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Surrogate: Naphthalene-d8	78 %	50-130		Sep-15-10			
Surrogate: Acenaphthene-d10	75 %	50-130		Sep-15-10			
Surrogate: Phenanthrene-d10	70 %	60-130		Sep-15-10			
Surrogate: Perylene-d12	87 %	60-130		Sep-15-10			

10-Base 5 (R009169-17) Matrix: Soil Sampled: Sep-09-10 12:00

Acenaphthene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Acenaphthylene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Anthracene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Benzo (a) anthracene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Benzo (a) pyrene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Benzo (b) fluoranthene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Benzo (g,h,i) perylene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Benzo (k) fluoranthene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	

SAMPLE DATA



CLIENT
PROJECT

Levelton Consultants Ltd. - Hazmat Surrey
FV10-1597-00

WORK ORDER #
REPORTED

R009169
Sep-15-10

Analyte	Result	RDL	Units	Analyzed	Method	Lab	Notes
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Polycyclic Aromatic Hydrocarbons by GCMS, Continued

10-Base 5 (R009169-17) Matrix: Soil Sampled: Sep-09-10 12:00, Continued

Chrysene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Dibenz (a,h) anthracene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Fluoranthene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Fluorene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Indeno (1,2,3-cd) pyrene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Naphthalene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Phenanthrene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Pyrene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Surrogate: Naphthalene-d8	56 %	50-130		Sep-15-10			
Surrogate: Acenaphthene-d10	61 %	50-130		Sep-15-10			
Surrogate: Phenanthrene-d10	62 %	60-130		Sep-15-10			
Surrogate: Perylene-d12	74 %	60-130		Sep-15-10			

10-Base 6 (R009169-18) Matrix: Soil Sampled: Sep-09-10 12:00

Acenaphthene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Acenaphthylene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Anthracene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Benzo (a) anthracene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Benzo (a) pyrene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Benzo (b) fluoranthene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Benzo (g,h,i) perylene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Benzo (k) fluoranthene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Chrysene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Dibenz (a,h) anthracene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Fluoranthene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Fluorene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Indeno (1,2,3-cd) pyrene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Naphthalene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Phenanthrene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Pyrene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Surrogate: Naphthalene-d8	67 %	50-130		Sep-15-10			
Surrogate: Acenaphthene-d10	67 %	50-130		Sep-15-10			
Surrogate: Phenanthrene-d10	62 %	60-130		Sep-15-10			
Surrogate: Perylene-d12	81 %	60-130		Sep-15-10			

10-Dup 1 (R009169-19) Matrix: Soil Sampled: Sep-09-10 12:00

Acenaphthene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Acenaphthylene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Anthracene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Benzo (a) anthracene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Benzo (a) pyrene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Benzo (b) fluoranthene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Benzo (g,h,i) perylene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Benzo (k) fluoranthene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Chrysene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Dibenz (a,h) anthracene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	

SAMPLE DATA

CLIENT
PROJECT

Levelton Consultants Ltd. - Hazmat Surrey
FV10-1597-00

WORK ORDER #
REPORTED

R009169
Sep-15-10

Analyte	Result	RDL	Units	Analyzed	Method	Lab	Notes
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Polycyclic Aromatic Hydrocarbons by GCMS, Continued

10-Dup 1 (R009169-19) Matrix: Soil Sampled: Sep-09-10 12:00, Continued

Fluoranthene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Fluorene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Indeno (1,2,3-cd) pyrene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Naphthalene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Phenanthrene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Pyrene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Surrogate: Naphthalene-d8	81 %	50-130		Sep-15-10			
Surrogate: Acenaphthene-d10	84 %	50-130		Sep-15-10			
Surrogate: Phenanthrene-d10	81 %	60-130		Sep-15-10			
Surrogate: Perylene-d12	96 %	60-130		Sep-15-10			

10-Dup 2 (R009169-20) Matrix: Soil Sampled: Sep-09-10 12:00

Acenaphthene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Acenaphthylene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Anthracene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Benzo (a) anthracene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Benzo (a) pyrene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Benzo (b) fluoranthene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Benzo (g,h,i) perylene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Benzo (k) fluoranthene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Chrysene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Dibenz (a,h) anthracene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Fluoranthene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Fluorene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Indeno (1,2,3-cd) pyrene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Naphthalene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Phenanthrene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Pyrene	<0.10	0.10	mg/kg dry	Sep-15-10	EPA 3570/8270D	RMD	
Surrogate: Naphthalene-d8	72 %	50-130		Sep-15-10			
Surrogate: Acenaphthene-d10	71 %	50-130		Sep-15-10			
Surrogate: Phenanthrene-d10	66 %	60-130		Sep-15-10			
Surrogate: Perylene-d12	89 %	60-130		Sep-15-10			

QUALITY CONTROL DATA



**CLIENT
PROJECT**

Levelton Consultants Ltd. - Hazmat Surrey
FV10-1597-00

**WORK ORDER #
REPORTED**

R009169
Sep-15-10

The following section reports quality control (QC) data that is associated with your sample data. Groups of samples are prepared in "batches" and analyzed in conjunction with quality control samples that ensure your data is of the highest quality. Common QC types include:

- **Method Blank (Blk):** Laboratory reagent water is carried through sample preparation and analysis steps. Method Blanks indicate that results are free from contamination, i.e. not biased high from sources such as the sample container or the laboratory environment
- **Duplicate (Dup):** Preparation and analysis of a replicate aliquot of a sample. Duplicates provide a measure of the analytical method's precision, i.e. how reproducible a result is. Duplicates are only reported if they are associated with your sample data.
- **Blank Spike (BS):** A known amount of standard is carried through sample preparation and analysis steps. Blank Spikes, also known as laboratory control samples (LCS), are prepared from a different source of standard than used for the calibration. They ensure that the calibration is acceptable (i.e. not biased high or low) and also provide a measure of the analytical method's accuracy (i.e. closeness of the result to a target value).
- **Standard Reference Material (SRM):** A material of similar matrix to the samples, externally certified for the parameter(s) listed. Standard Reference Materials ensure that the preparation steps in the method are adequate to achieve acceptable recoveries of the parameter(s) tested for.

Each QC type is analyzed at a 5-10% frequency, i.e. one blank/duplicate/spike for every 10 samples. For all types of QC, the specified recovery (% Rec) and relative percent difference (RPD) limits are derived from long-term method performance averages and/or prescribed by the reference method.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Aggregate Organic Parameters, Batch R002312

Blank (R002312-BLK1)

Analyzed: Sep-12-10

EPHs (10-19)	<	250	mg/kg wet							
EPHs (19-32)	<	250	mg/kg wet							

Duplicate (R002312-DUP1)

Source: R009169-10

Analyzed: Sep-15-10

EPHs (10-19)	<	250	mg/kg dry		<				40	
EPHs (19-32)	<	250	mg/kg dry		<				40	

Reference (R002312-SRM2)

Analyzed: Sep-14-10

EPHs (10-19)	3290	250	mg/kg wet	3020		109	76-130			
EPHs (19-32)	4820	250	mg/kg wet	4330		111	75-128			

General Parameters, Batch R002315

Duplicate (R002315-DUP2)

Source: R009169-16

Analyzed: Sep-14-10

Moisture	5.5	0.1	%		5.3			0.1	7.2	
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Polycyclic Aromatic Hydrocarbons by GCMS, Batch R002312

Blank (R002312-BLK1)

Analyzed: Sep-12-10

Acenaphthene	<	0.10	mg/kg wet							
Acenaphthylene	<	0.10	mg/kg wet							
Anthracene	<	0.10	mg/kg wet							
Benzo (a) anthracene	<	0.10	mg/kg wet							
Benzo (a) pyrene	<	0.10	mg/kg wet							
Benzo (b) fluoranthene	<	0.10	mg/kg wet							
Benzo (g,h,i) perylene	<	0.10	mg/kg wet							
Benzo (k) fluoranthene	<	0.10	mg/kg wet							
Chrysene	<	0.10	mg/kg wet							
Dibenz (a,h) anthracene	<	0.10	mg/kg wet							
Fluoranthene	<	0.10	mg/kg wet							
Fluorene	<	0.10	mg/kg wet							
Indeno (1,2,3-cd) pyrene	<	0.10	mg/kg wet							
Naphthalene	<	0.10	mg/kg wet							
Phenanthrene	<	0.10	mg/kg wet							
Pyrene	<	0.10	mg/kg wet							
Surrogate: Naphthalene-d8	1.89		mg/kg wet	2.00		94	50-130			
Surrogate: Acenaphthene-d10	1.80		mg/kg wet	2.00		90	50-130			
Surrogate: Phenanthrene-d10	1.65		mg/kg wet	2.00		82	60-130			
Surrogate: Chrysene-d12	1.27		mg/kg wet	2.00		63	60-130			
Surrogate: Perylene-d12	1.41		mg/kg wet	2.00		70	60-130			

QUALITY CONTROL DATA



CLIENT
PROJECT

Levelton Consultants Ltd. - Hazmat Surrey
FV10-1597-00

WORK ORDER #
REPORTED

R009169
Sep-15-10

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Polycyclic Aromatic Hydrocarbons by GCMS, Batch R002312, Continued

LCS (R002312-BS1)

Analyzed: Sep-14-10

Acenaphthene	1.51	0.10	mg/kg wet	2.00		75	53-127			
Acenaphthylene	1.49	0.10	mg/kg wet	2.00		75	52-122			
Anthracene	1.24	0.10	mg/kg wet	2.00		62	60-122			
Benzo (a) anthracene	1.74	0.10	mg/kg wet	2.00		87	60-116			
Benzo (a) pyrene	1.79	0.10	mg/kg wet	2.00		89	60-124			
Benzo (b) fluoranthene	1.67	0.10	mg/kg wet	2.00		83	60-123			
Benzo (g,h,i) perylene	1.95	0.10	mg/kg wet	2.00		97	60-125			
Benzo (k) fluoranthene	1.81	0.10	mg/kg wet	2.00		90	60-128			
Chrysene	1.10	0.10	mg/kg wet	2.00		55	60-130			S02
Dibenz (a,h) anthracene	1.72	0.10	mg/kg wet	2.00		86	60-130			
Fluoranthene	1.54	0.10	mg/kg wet	2.00		77	60-123			
Fluorene	1.48	0.10	mg/kg wet	2.00		74	51-124			
Indeno (1,2,3-cd) pyrene	1.75	0.10	mg/kg wet	2.00		87	60-124			
Naphthalene	1.46	0.10	mg/kg wet	2.00		73	51-130			
Phenanthrene	1.52	0.10	mg/kg wet	2.00		76	60-125			
Pyrene	1.52	0.10	mg/kg wet	2.00		76	60-124			
Surrogate: Naphthalene-d8	1.42		mg/kg wet	2.00		71	50-130			
Surrogate: Acenaphthene-d10	1.40		mg/kg wet	2.00		70	50-130			
Surrogate: Phenanthrene-d10	1.42		mg/kg wet	2.00		71	60-130			
Surrogate: Chrysene-d12	1.71		mg/kg wet	2.00		85	60-130			
Surrogate: Perylene-d12	1.56		mg/kg wet	2.00		78	60-130			

Duplicate (R002312-DUP1)

Source: R009169-10

Analyzed: Sep-15-10

Acenaphthene	<	0.10	mg/kg dry	<					50	
Acenaphthylene	<	0.10	mg/kg dry	<					50	
Anthracene	<	0.10	mg/kg dry	<					50	
Benzo (a) anthracene	<	0.10	mg/kg dry	<					50	
Benzo (a) pyrene	<	0.10	mg/kg dry	<					50	
Benzo (b) fluoranthene	<	0.10	mg/kg dry	<					50	
Benzo (g,h,i) perylene	<	0.10	mg/kg dry	<					50	
Benzo (k) fluoranthene	<	0.10	mg/kg dry	<					50	
Chrysene	<	0.10	mg/kg dry	<					50	
Dibenz (a,h) anthracene	<	0.10	mg/kg dry	<					50	
Fluoranthene	<	0.10	mg/kg dry	<					50	
Fluorene	<	0.10	mg/kg dry	<					50	
Indeno (1,2,3-cd) pyrene	<	0.10	mg/kg dry	<					50	
Naphthalene	<	0.10	mg/kg dry	<					50	
Phenanthrene	<	0.10	mg/kg dry	<					50	
Pyrene	<	0.10	mg/kg dry	<					50	
Surrogate: Naphthalene-d8	1.37		mg/kg dry	1.97		69	50-130			
Surrogate: Acenaphthene-d10	1.35		mg/kg dry	1.97		69	50-130			
Surrogate: Phenanthrene-d10	1.27		mg/kg dry	1.97		65	60-130			
Surrogate: Chrysene-d12	1.19		mg/kg dry	1.97		60	60-130			
Surrogate: Perylene-d12	1.71		mg/kg dry	1.97		87	60-130			

Reference (R002312-SRM1)

Analyzed: Sep-14-10

Acenaphthene	<	0.10	mg/kg wet	0.124		75	70-130			
Acenaphthylene	<	0.10	mg/kg wet	0.110		70	70-130			SRM
Anthracene	0.27	0.10	mg/kg wet	0.380		71	70-130			
Benzo (a) anthracene	3.96	0.10	mg/kg wet	4.16		95	70-130			
Benzo (a) pyrene	0.26	0.10	mg/kg wet	0.291		88	70-130			
Benzo (b) fluoranthene	1.52	0.10	mg/kg wet	1.40		109	70-130			
Benzo (g,h,i) perylene	5.23	0.10	mg/kg wet	4.99		105	70-130			
Benzo (k) fluoranthene	3.92	0.10	mg/kg wet	3.68		106	70-130			
Chrysene	4.08	0.10	mg/kg wet	7.62		54	70-130			SRM
Dibenz (a,h) anthracene	5.30	0.10	mg/kg wet	4.96		107	60-130			
Fluoranthene	3.18	0.10	mg/kg wet	4.15		77	70-130			
Fluorene	4.17	0.10	mg/kg wet	5.80		72	70-130			
Indeno (1,2,3-cd) pyrene	2.45	0.10	mg/kg wet	2.22		110	70-130			
Naphthalene	0.99	0.10	mg/kg wet	1.14		87	70-130			
Phenanthrene	1.57	0.10	mg/kg wet	1.91		82	70-130			
Pyrene	0.44	0.10	mg/kg wet	0.780		56	70-130			SRM

QUALITY CONTROL DATA



**CLIENT
PROJECT**

Levelton Consultants Ltd. - Hazmat Surrey
FV10-1597-00

**WORK ORDER #
REPORTED**

R009169
Sep-15-10

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Polycyclic Aromatic Hydrocarbons by GCMS, Batch R002312, Continued

Reference (R002312-SRM1), Continued

Analyzed: Sep-14-10

Surrogate: Naphthalene-d8	1.30	mg/kg wet	1.98	66	50-130
Surrogate: Acenaphthene-d10	1.31	mg/kg wet	1.98	66	50-130
Surrogate: Phenanthrene-d10	1.38	mg/kg wet	1.98	70	60-130
Surrogate: Chrysene-d12	1.38	mg/kg wet	1.98	70	60-130
Surrogate: Perylene-d12	1.32	mg/kg wet	1.98	67	60-130

QC Qualifiers:

- S02 Surrogate recovery outside of control limits. The data was accepted based on valid recovery of the remaining surrogate(s).
- SRM Recovery of one or more analytes on Standard Reference Material (SRM) analysis are outside of control limits. Data accepted based on acceptable performance of other batch QC.

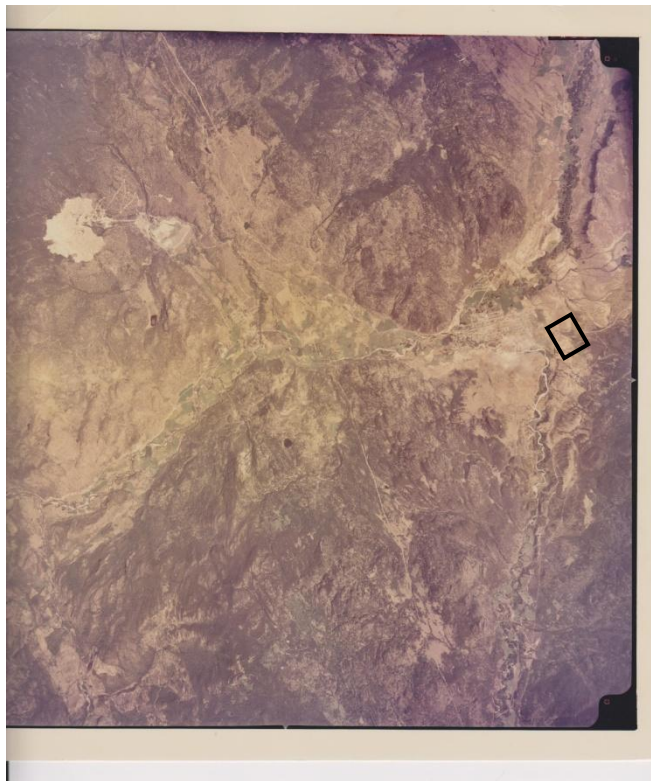
STANDARD LIMITATIONS

1. The findings and conclusions documented in this report have been prepared for specific application to this project and have been developed in a manner consistent with that level of care normally exercised by environmental professionals currently practicing under similar conditions in the area.
2. The findings of this report are based solely on data collected on Site during this investigation and pertain only to the locations that have been investigated and on the conditions of the Site during the completion of the work. Levelton has relied on good faith on information provided by individuals and sources noted in the report. No other warranty, expressed or implied, is made.
3. If new information is developed in future work that affects the conclusions of this report, Levelton should be contacted to re-evaluate the conclusions of this report and provide amendments as required.
4. The service provided by Levelton in completing this report is intended to assist the client in a business decision. The liability of the Site is not transferred to Levelton as a result of such services, and Levelton does not make recommendation regarding the purchase, sale, or investment in the property.

APPENDIX D
AERIAL PHOTOGRAPHS



Photograph 1. 1948 Aerial Photograph BC 653_37 001



Photograph 2. 1972 Aerial Photograph RSA 30518-24 001

APPENDIX E
POTENTIAL SPECIES AT RISK

Table B: BC CDC Search Results for Species within the Bunchgrass Ecosystem (CDC, 2010)¹

Scientific Name	English Name	COSEWIC*	BC List**
Amphibians			
<i>Spea intermontana</i>	Great Basin Spadefoot	T (Apr 2007)	Blue
<i>Chrysemys picta pop. 2</i>	Western Painted Turtle - Intermountain - Rocky Mountain Population	SC (Apr 2006)	Blue
Fish			
<i>Acrocheilus alutaceus</i>	Chiselmouth	NAR (May 2003)	Blue
<i>Catostomus platyrhynchus</i>	Mountain Sucker	NAR (May 1991)	Blue
<i>Salvelinus confluentus</i>	Bull Trout		Blue
Reptiles			
<i>Coluber constrictor</i>	Racer	SC (Nov 2004)	Blue
<i>Pituophis catenifer deserticola</i>	Gopher Snake, <i>deserticola</i> subspecies	T (May 2002)	Blue
<i>Crotalus oreganus</i>	Western Rattlesnake	T (May 2004)	Blue
Birds			
<i>Ardea herodias herodias</i>	Great Blue Heron, <i>herodias</i> subspecies		Blue
<i>Buteo swainsoni</i>	Swainson's Hawk		Red
<i>Falco mexicanus</i>	Prairie Falcon	NAR (May 1996)	Red
<i>Falco peregrinus anatum</i>	Peregrine Falcon, <i>anatum</i> subspecies	SC (Apr 2007)	Red
<i>Grus canadensis</i>	Sandhill Crane	NAR (May 1979)	Yellow
<i>Numenius americanus</i>	Long-billed Curlew	SC (Nov 2002)	Blue
<i>Asio flammeus</i>	Short-eared Owl	SC (Mar 2008)	Blue
<i>Athene cunicularia</i>	Burrowing Owl	E (Apr 2006)	Red
<i>Megascops kennicottii macfarlanei</i>	Western Screech-Owl, <i>macfarlanei</i> subspecies	E (May 2002)	Red
<i>Otus flammeolus</i>	Flammulated Owl	SC (Apr 2010)	Blue
<i>Melanerpes lewis</i>	Lewis's Woodpecker	T (Apr 2010)	Red
<i>Sphyrapicus thyroideus thyroideus</i>	Williamson's Sapsucker, <i>thyroideus</i> subspecies	E (May 2005)	Red

Scientific Name	English Name	COSEWIC*	BC List**
<i>Contopus cooperi</i>	Olive-sided Flycatcher	T (Nov 2007)	Blue
<i>Eremophila alpestris merrilli</i>	Horned Lark, <i>merrilli</i> subspecies		Blue
<i>Hirundo rustica</i>	Barn Swallow		Blue
<i>Catherpes mexicanus</i>	Canyon Wren	NAR (May 1992)	Blue
<i>Oreoscoptes montanus</i>	Sage Thrasher	E (Nov 2000)	Red
<i>Chondestes grammacus</i>	Lark Sparrow		Red
<i>Spizella breweri breweri</i>	Brewer's Sparrow, <i>breweri</i> subspecies		Red
<i>Dolichonyx oryzivorus</i>	Bobolink	T (Apr 2010)	Blue
<i>Euphagus carolinus</i>	Rusty Blackbird	SC (Apr 2006)	Blue
Mammals			
<i>Perognathus parvus</i>	Great Basin Pocket Mouse		Red
<i>Corynorhinus townsendii</i>	Townsend's Big-eared Bat		Blue
<i>Euderma maculatum</i>	Spotted Bat	SC (May 2004)	Blue
<i>Myotis ciliolabrum</i>	Western Small-footed Myotis		Blue
<i>Myotis thysanodes</i>	Fringed Myotis	DD (May 2004)	Blue
<i>Gulo gulo luscus</i>	Wolverine, <i>luscus</i> subspecies	SC (May 2003)	Blue
<i>Martes pennanti</i>	Fisher		Blue
<i>Taxidea taxus</i>	American Badger	E (May 2000)	Red
<i>Ursus arctos</i>	Grizzly Bear	SC (May 2002)	Blue
<i>Ovis canadensis</i>	Bighorn Sheep		Blue
Invertebrates			
<i>Stylurus olivaceus</i>	Olive Clubtail		Red
<i>Hesperia nevada</i>	Nevada Skipper		Blue
<i>Pholisora catullus</i>	Common Sootywing		Blue
<i>Satyrrium californica</i>	California Hairstreak		Blue
<i>Danaus plexippus</i>	Monarch	SC (Apr 2010)	Blue
<i>Promenetus umbilicatellus</i>	Umbilicate Sprite		Blue
<i>Vallonia cyclophorella</i>	Silky Vallonia		Blue
<i>Hemphillia camelus</i>	Pale Jumping-slug		Blue
Vascular Plants			
<i>Azolla mexicana</i>	Mexican mosquito fern	T (Nov 2008)	Red

Scientific Name	English Name	COSEWIC*	BC List**
<i>Dryopteris cristata</i>	crested wood fern		Blue
<i>Ophioglossum pusillum</i>	northern adder's-tongue		Blue
<i>Agoseris lackschewitzii</i>	pink agoseris		Blue
<i>Arabis lignifera</i>	woody-branched rockcress		Blue
<i>Arabis sparsiflora</i>	sickle-pod rockcress		Red
<i>Astragalus lentiginosus</i>	freckled milk-vetch		Blue
<i>Atriplex argentea</i> ssp. <i>argentea</i>	silvery orache		Red
<i>Atriplex truncata</i>	wedgescale orache		Red
<i>Castilleja cusickii</i>	Cusick's paintbrush		Red
<i>Centaurium exaltatum</i>	western centaury		Red
<i>Chamaerhodos erecta</i> ssp. <i>nuttallii</i>	American chamaerhodos		Blue
<i>Chamaesyce serpyllifolia</i> ssp. <i>serpyllifolia</i>	thyme-leaved spurge		Blue
<i>Chenopodium atrovirens</i>	dark lamb's-quarters		Red
<i>Crepis atriobarba</i> ssp. <i>atriobarba</i>	slender hawksbeard		Red
<i>Crepis modocensis</i> ssp. <i>modocensis</i>	low hawksbeard		Red
<i>Crepis modocensis</i> ssp. <i>rostrata</i>	western low hawksbeard		Red
<i>Epilobium halleanum</i>	Hall's willowherb		Blue
<i>Gaura coccinea</i>	scarlet gaura		Red
<i>Gayophytum humile</i>	dwarf groundsmoke		Blue
<i>Hackelia diffusa</i>	spreading stickseed		Blue
<i>Hedeoma hispida</i>	mock-pennyroyal		Red
<i>Hutchinsia procumbens</i>	hutchinsia		Blue
<i>Hypericum scouleri</i> ssp. <i>nortoniae</i>	western St. John's-wort		Blue
<i>Iva axillaris</i>	poverty-weed		Red

Scientific Name	English Name	COSEWIC*	BC List**
<i>Leptosiphon septentrionalis</i>	northern linanthus		Blue
<i>Lupinus argenteus</i> var. <i>laxiflorus</i>	silvery lupine		Red
<i>Lupinus bingenensis</i> var. <i>subsaccatus</i>	Suksdorf's lupine		Red
<i>Mimulus breviflorus</i>	short-flowered monkey-flower		Red
<i>Myriophyllum ussuriense</i>	Ussurian water-milfoil		Blue
<i>Navarretia intertexta</i>	needle-leaved navarretia		Red
<i>Polygonum polygaloides</i> ssp. <i>kelloggii</i>	Kellogg's knotweed		Blue
<i>Pyrola elliptica</i>	white wintergreen		Blue
<i>Salix boothii</i>	Booth's willow		Blue
<i>Salix tweedyi</i>	Tweedy's willow		Blue
<i>Sidalcea oregana</i> var. <i>procera</i>	Oregon checker-mallow		Red
<i>Sphaeralcea coccinea</i>	scarlet globe-mallow		Red
<i>Allium geyeri</i> var. <i>tenerum</i>	Geyer's onion		Blue
<i>Carex hystericina</i>	porcupine sedge		Blue
<i>Carex sychnocephala</i>	many-headed sedge		Blue
<i>Cyperus squarrosus</i>	awned cyperus		Blue
<i>Epipactis gigantea</i>	giant helleborine	SC (May 1998)	Blue
<i>Hesperostipa spartea</i>	porcupinegrass		Red
<i>Juncus confusus</i>	Colorado rush		Red
<i>Melica spectabilis</i>	purple oniongrass		Blue
<i>Olsynium douglasii</i> var. <i>inflatum</i>	satinflower		Red
<i>Poa fendleriana</i> ssp. <i>fendleriana</i>	mutton grass		Red
<i>Sphenopholis obtusata</i>	prairie wedgegrass		Red
<i>Sporobolus compositus</i> var. <i>compositus</i>	rough dropseed		Blue

Scientific Name	English Name	COSEWIC*	BC List**
<i>Stuckenia vaginata</i>	sheathing pondweed		Blue
Non Vascular Plants			
<i>Bryoerythrophyllum columbianum</i>	Columbian carpet moss	SC (May 2004)	Blue
<i>Microbryum vlassovii</i>	nugget moss	E (Nov 2006)	Red
<i>Pterygoneurum kozlovii</i>	alkaline wing-nerved moss	T (Nov 2004)	Red

* SC=Special Concern; T=Threatened; E=Endangered; XT=extirpated

** Blue= of special concern, Red= extirpated, endangered or threatened in British Columbia

APPENDIX F
PHOTOGRAPHIC DOCUMENTATION



Photo 1. View of the Joeyaska IR2 Lot 9 Residential Dump facing east. Note the abandoned vehicles and reserve boundary along Highway 5 to the east.



Photo 2. View of the Joeyaska IR2 Lot 9 Burnt House facing northeast. Note the occasional metal debris, concrete foundation, AST, and remaining chimney.



Photo 3. View of the Joeyaska Lot 6 Residential Dump facing east. Note the scattered debris surrounding the vehicles to the southeast.



Photo 4. View of the abandoned vehicles on the northeast extent of the Joeyaska Lot 6 Residential Dump facing southwest. Note the scattered car parts surrounding the vehicles.



Photo 5. View of the used road salt pile (top left) looking south, and the concrete lined drain pit (top right) down gradient from the salt pile looking northwest at the Godey Gravel Pit. Note the salt staining on the concrete leading to the drain area.



Photo 6. View of the fenced settling pond facing northwest at the Godey Gravel Pit.



Photo 7. View of the recycled asphalt pile at the Godey Grave Pit facing west. Note the proximity of the asphalt pile to the reserve boundary marked by a post and wire fence (right).



Photo 8. View of the off-reserve diesel spill site northeast of Joeyaska IR#2 facing southeast. Note the scraped appearance of the soil and replaced rip-rap.