FOX – C DEW Line Site
Phase III Environmental Site Assessment and Waste Audit
FINAL REPORT

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Final Report

Prepared for:

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Environmental Services, Western Region
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Attention: Mr. Chris Doupe
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Dear Sir:

Re: FOX – C DEW Line Site, Phase III ESA and Waste Audit
Final Report

Please find enclosed eight copies of the Earth Tech Canada final report summarizing the Phase III ESA and Waste Audit that was completed at the FOX – C DEW Line Site.

It has been Earth Tech's pleasure to complete this project. If you have any questions, please do not hesitate to contact the undersigned at (780) 453-0710.

Very truly yours,

EARTH TECH (CANADA) INC.
Per:

Gordon Woollett, P.Eng.
Project Manager Environment Group

Encl.

FOX-C DEW LINE SITE
PHASE III INVESTIGATION AND WASTE AUDIT

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1 EXECUTIVE SUMMARY

The FOX-C intermediate DEW line site is located on Baffin Island, approximately 240 km north of Qikiqtarjuaq, on the shores of Ekalugad Fiord (68° 42', 68° 33'). The station was constructed in 1957 as an intermediate DEW Line site and was occupied and operated until its closure in 1963. The site consists of a Beach Area, Water Lake Area, Mid-Station Area and an Upper Station Area. An access road connects all areas of the site. The Water Lake Area was used as a staging point to the upper station and to collect water from the lake. The Mid Station area includes the station road, which connects the Upper Station with the Water Lake Area, a helipad and various storage and dump areas. The Upper Station Area also has two large tanks for fuel storage and the majority of the operations infrastructure.

In order to assist in the development of a remedial plan for the FOX C site PWGSC is required to complete further assessments at the site. The assessments include the completion of a Phase III ESA and Waste Audit in order to delineate areas of environmental concern as well as to determine volumes of hazardous and non hazardous waste materials. The fieldwork for this program was completed between August 24 and September 2, 2004.

The Phase III investigation included the assessment of 15 areas of the site in-order to delineate previously identified contaminated areas and to confirm the presence of contaminants in areas that had not been previously identified.

Based on the findings of the Phase III Assessment, the following table presents a summary of the areas requiring remedial action at the FOX – C DEW Line site.

Table 1 Summary of Phase III Investigation Results

Location	Contaminant Exceeding Governing Criteria (Max Concentration ppm)	Media	Volume m^3	Comments
Beach Area POL Tanks	Hydrocarbons (F2 2890 ppm)	Soil	340	Close proximity to Fiord
Helipad Surface Stains	Hydrocarbons (F3 18000 ppm)	Soil	75	Maximum depth not achieved in hand augered testpits
Drainage Ditch Stain	Hydrocarbons (F3 13700 ppm, F4 8210 ppm)	Soil	6	
Mid Station Barrel Storage Area	Hydrocarbons, (F3 26,300 ppm and F4 15,600 ppm) PAHs (phenanthrene, 6.54 ppm)	Soil	75	Contaminant migration into rock material below gravel pad
Mid Station Barrel Dump #2	Hydrocarbons (F3 9,330 ppm, F4 21,000 ppm)	Soil	50	Complete delineation of hydrocarbons not achieved towards the south

Location	Contaminant Exceeding Governing Criteria (Max Concentration ppm)	Media	Volume m^3	Comments
Mid Station Barrel Dump #6	Hydrocarbons (F3 17800, F4 13800) Metals (Cu, 381 ppm, Pb 946 ppm, Zn 931 ppm)	Soil	60	Complete delineation of hydrocarbons not achieved towards the south. Metals concentrations exceed DCC Tier 2 criteria.
South of Module Train	PCB (5.6 ppm)	Soil	7	PCB concentrations exceed DCC Tier 2 criteria. Located near staircase.
West of Module Train	Hydrocarbons F2 8,050 ppm, F3 1,940 ppm)	Soil	14	Complete delineation of hydrocarbons not achieved
Sewer Outfall Area	PCBs (2.8 ppm), Hydrocarbons (F3 1,050 ppm)	Soil	30	Difficult area to delineate due to site conditions
Sewer Outfall Area	Metals (Cu 109, Pb 690)	Soil	5	Difficult area to delineate due to site conditions
Stain west of Garage	PCBs (3.8)	Soil	1	PCB levels less than DCC Tier 2 criteria
Stain below D8 Cat	Hydrocarbons F2 6540 ppm , F4 15600 ppm)	Soil	4	Leaking from Cat

A detailed Waste Audit was also completed to in order to determine the volumes of non-hazardous and hazardous materials. The following table briefly summarizes the quantities of the major categories for each waste type.

Table 2 Summary of Waste Volumes

Waste Type	Items	Estimated Volume m^3	Estimated Volume L
Non Hazardous			
	Wood, steel, domestic waste, vehicles, equipment parts building materials and contents, scattered debris	1824	
	Contents of Mid Station Dump	3300	
	8380 Empty Barrels	1257	
	Total	**6381**	
Hazardous			
	Miscellaneous materials, batteries, asbestos materials, oil filters, blasting caps	25	
	36 Full to partially full barrels		7400 L
	120 split open lube oil barrels at Mid station Barrel Dump #3		9000 L
	200 leaking 45 L barrels at Garage dump		2500 L
	PCB painted building materials (2000 m^2)	115	
	Miscellaneous fuel in day tanks and skid mounted tank		9000 L
	Total	**170 m^3**	**27,900 L**

Based on the scope of work of the Phase III Environmental Assessment and Waste Audit that was completed at the FOX – C DEW Line site the following conclusions are made.

Phase III ESA

- The Phase III investigation included the assessment of 15 areas of the site in order to delineate previously identified contaminated areas and to confirm the presence of contaminants in areas that had not been previously identified.

- The total volume of hydrocarbon, metal and PCB contaminated material found to be contaminated was estimated at 1444 m^3. Due to site conditions, full delineation was not achieved in some locations.

- Hydrocarbon impacted soils and groundwater were identified between the Beach Area POL tanks and Ekalugad Fiord. Due to the proximity of the material to the fiord, removal of this contaminated material is recommended.

- Study areas located at the Mid-Station and Upper Station areas typically had very small amounts of soil media. Fine to coarse grained, weathered material was encountered on the ground surface in some areas, however the site is dominated with large boulder sized (>300 mm) rocks. In some areas, contaminants are located on and below the large diameter rock. Remediation of contaminants located in these areas may be impractical.

- Runoff surface water was occasionally encountered, in some locations, this water was visible, however it was commonly located within a gully filled with coarse/fine grained material or with bolder sized material.

- Total metal concentrations in collected perched groundwater samples typically indicated exceedances for a number of metal concentrations. Comparison of dissolved metal concentrations to CCME criteria indicated no exceedances above CCME criteria except for cadmium in some locations.

Waste Audit

- Approximately 6400 m^3 of non-hazardous materials are located on the site. The vast majority of this material is located in accessible areas and this material should be removed from the site. Minor amounts of debris were located at the bottom of a cliff area below the Modular Train outfall and Mid-Station Dump. This material would be removable provided an access to the lower area on the north side of the mountain was available.

- A number of non-hazardous waste items including a partially buried crane and barrels were located either in Water Lake or in the streams flowing into and out of

Water Lake. The removal of these items will need to be completed in a manner that will satisfy DFO requirements.

- A total of 8380 empty barrels were identified at the site, it is recommended that subsurface soil conditions below the barrels be determined following their removal.

- A total of 36 full to partially full barrels were identified on the site. In addition, 120 lube oil barrels were split open and left at a dumpsite. Minor amounts of fuel were also identified in some of the day tanks located on the site. The remedial program will need to include a program to recover all liquids from these barrels and tanks.

- Approximately 2000 m^2 of material was observed to be painted with PCB containing paint. The majority of the paint products on a metal substrate was in poor condition (peeling) and may require some form of abatement prior to removal of the painted components. Wood materials painted with PCB containing paint was typically weathered and non peeling. It is recommended that the painted materials be removed by a contractor following a waste reduction process.

2 INTRODUCTION

Canada's north contains many federal contaminated sites. The Department of Indian and Northern Development (DIAND) is responsible for the care and management of many of these sites and has made it a priority to assess, prioritize and mitigate/remediate the environmental impacts. FOX-C is an Intermediate Distant Early Warning (DEW) line site that is currently listed as a high priority site as part of the Federal Contaminated Sites Accelerated Action Plan (FCSAAP). A consort of Federal departments including the Treasury Board Secretariat and Environment Canada developed the FCSAAP and the associated Accelerated Action Fund. The Accelerated Action Fund will fund the FOX-C remediation. Earth Tech Canada, on behalf of DIAND and at the request of Public Works and Government Services Canada (PWGSC) – Environmental Services Western Region, has been requested to complete a Phase III Site Assessment and Waste Audit at the FOX-C intermediate DEW line site. The following is the Earth Tech Phase III Site Assessment and Waste Audit Report based on field work completed between August 24 and September 2, 2004.

2.1 Background Information

The FOX-C intermediate DEW line site is located on Baffin Island, approximately 240 km north of Qikiqtarjuaq, on the shores of Ekalugad Fiord (68° 42', 68° 33'), shown in Figure 1.0 (Appendix A). The station was constructed in 1957 as an intermediate DEW line site to monitor the northern approach. The site was occupied and operated until its closure in 1963. The site consists of a Beach Area, Water Lake Area, Mid-Station Area and an Upper Station Area. An access road connects all areas of the site. The Beach Area contains two large tanks that were used to store fuel for site operations. The Water Lake Area was used as a staging point to the upper station and to collect water from the lake. The Mid Station area includes the station road, which connects the Upper Station with the Water Lake Area, a helipad and various storage and dump areas. The Upper Station Area also has two large tanks for fuel storage and the majority of the operations infrastructure. Figure 2 shows the layout of this site.

Various locations in all the areas of concern at the site were used for barrel storage, dumpsites and derelict equipment. In 1985 a partial assessment and clean up of the site was conducted by Environment Canada and DIAND. Various assessment and design work has since been completed and is summarized in the following section.

2.2 Previous Environmental Investigations

2.2.1 General

The following is a brief summary of the background reports that were available for review. Excerpts of these reports are reproduced in Appendix G. The scope of work for the 2004 investigation completed at the FOX–C DEW Line site was based on the findings and conclusions of these background reports.

2.2.2 Royal Roads Military College

The Royal Roads Military College (RRMC) conducted an Environmental Assessment of six abandoned DEW line sites in 1993. The RRMC Environmental Sciences Group conducted the Group F assessments, which included the FOX-C assessment. FOX-C and CAM-F were noted as being most affected by chemical contamination out of the six sites addressed. The RRMC assessment of FOX-C included visual observations, inspections of landfills, barrel dumps and station facilities. Soil and water samples were taken along with water and plant specimens for laboratory analysis. Barrels of hydrocarbon products and site staining (around buildings of the upper station) were noted. It was estimated that approximately ten thousand barrels were abandoned at the site. Seventy seven PCB/metals in soil samples were taken with fifteen samples exceeding the applied DCC PCB criteria and four exceeding the metal criteria. PCB paint and swab samples taken from the Upper Station buildings exceeded the PCB criteria. It was concluded that there was a high possibility of contaminants at FOX-C migrating off site.

2.2.3 Engineering Design (95%) Clean up of FOX C 2001

In 2001, Sinanni Company and Qikiqtaaluk Corporation developed a remedial plan for the FOX-C Site. The engineering design included a remediation plan and a general scope for the required clean up activities based on the available information at that time. The design included an Environmental Screening Report to mitigate measures from the clean up activities, development of project specifications and a cost estimate to complete the work. It was estimated the clean up work would require fifteen million dollars over four years of activities. It was recommended that a comprehensive site assessment be conducted to delineate the contaminated areas.

2.2.4 CANTOX Inc. and Gartner Lee Ltd. 1998 Site Risk Assessment

In 1998 Cantox and Gartner Lee Ltd. conducted a screening level human health and ecological risk assessment for submission to the Qikiqtaaluk Corporation. The Site risk assessment included a comparison of screening level information and a communication plan for the surrounding communities. The final recommendation of the report stated that more information was required and could be provided by a tissue sampling program and a detailed assessment of the risk associated with the contaminated surface soils and the consumption of wild game (Metal, PCB bioaccumulation).

2.2.5 SENES Consultants Risk Assessment November 2003

In 2003 SENES Consultants conducted and submitted a Human Health Screening Level Risk Assessment for submission to INAC. The assessment included receptor characterization, exposure assessment, hazard identification/assessment and a risk characterization using the information provided in the 1994 RRMC Environmental Assessment. The results of this evaluation indicated potentially unacceptable ecological risks associated with the PCBs and lead levels in soils at the site. Based on these findings, the FOX-C site was prioritized high on the list of sites requiring further investigation and remedial activity.

2.2.6 Contaminated Sites Monitoring Program, Gartner Lee Limited 2004

In 2003 Gartner Lee Ltd. completed a surface and groundwater water sampling program at FOX-C. This annual program was the continuation of a monitoring program that commenced in 2002. The results from this program include the following.

Exceedances above CCME freshwater aquatic life criterion for metals were detected in samples collected near (within 15 m) the shore of Ekalugad Fiord. Samples FC-SW-7 and FC-SW-2, taken from the area between the Beach Area fuel tanks and Ekalugad Fiord. The metals which exceeded CCME criteria included copper, iron and mercury and zinc. Detectable amounts of hydrocarbons were measured at both locations.

Further west down the beach samples FC-GW-1 and FC-SW-2 were taken in the area between beach area barrel dump #2 and Ekalugad Fiord. FC-SW-2 exceeded CCME Criteria for iron and mercury and FC-GW-1 exceeded criteria for iron. Detectable amounts of hydrocarbons were measured at both locations.

Petroleum hydrocarbons were detected from trace to high concentrations in an area down gradient of the Upper Site and Drum Storage Area. A lead concentration was also measured to exceed the CCME Freshwater Aquatic Life Criteria at this location.

In an area down gradient of a drum storage area on Freshwater Lake Road, concentrations of copper, iron and lead in a surface water sample were elevated above CCME criteria.

Exceedances above CCME criteria were also detected in samples collected from Water Lake. This analysis indicated copper, iron and lead exceeded CCME criteria for drinking water. Detectable amounts of hydrocarbons were also measured in the samples recovered from Water Lake.

This report also noted that Sample FC-SW-10 was a background water sample collected in a shallow drainage channel located on the west side of Water Lake. The PCB analysis of this sample indicated that it contained 0.12 µg/L of PCBs. This was the highest total PCB concentration recorded in this sampling program. This report also indicated that it was unknown if the elevated PCB levels were indicators of actual conditions or attributed to interference from sampling or analysis.

2.3 Scope of Work and Objectives

In order to develop a remedial plan for the FOX C site PWGSC is required to complete further assessments at the site. The assessments include the following components:

- Geotechnical Assessment/Site Survey – assessment of volumes of types of locally available borrow materials, and topographic survey.
- Geophysical Assessment – geophysical assessment of dump sites and other disturbances.
- Phase III ESA and Waste Audit - completion of environmental investigation in order to delineate areas of environmental concern as well as to determine volumes of hazardous and non hazardous waste materials.
- Risk Assessment – completion of ecological human health risk assessment based on the contaminated levels determined in the Phase III ESA program.
- Remedial Design – based on the results of all the above programs a remedial design will be completed.

The objectives of the Phase III ESA and Waste Audit of the project include the following:

- Quantify the volume of contaminated soil through both horizontal and vertical delineation at the site (Contaminants of concern included PCBs, petroleum hydrocarbons and metals).
- Quantify the volume of hazardous materials at the site (i.e. asbestos, paint with PCBs).
- Quantify the volume of non-hazardous materials at the site.
- Quantify and identify the volume of liquid waste located in barrels and tanks.

The main scope of work for the FOX-C project was to conduct a Phase III assessment of the site using previous report information and data as outlined in the Terms of Reference prepared by PWGSC-Environmental Services, Western Region (Appendix B). The scope of work includes the development and implementation of a Site Specific Health and Safety Plan (HASP) on site (Earth Tech FOX-C HASP is attached in Appendix C). The scope of work also included the delineation of known contaminated areas and suspected contaminated areas, biological tissue sampling (collection of local sport fish), and completion of an inventory of hazardous and non hazardous materials inventory of all onsite material. Earth Tech was one of four engineering consultants who collected data during the field program at this site. The other consultants consisted of UMA Engineering (site survey), EBA Engineering (geotechnical engineering and geophysics) and Jacques Whitford (Risk Assessment).

3 EARTH TECH WORK COMPLETED

3.1 Methodologies

The following is a summary of the investigation protocols and methodologies, which were used during the completion of this investigation program.

Soil Sampling

In total, Earth Tech collected approximately 234 soil samples (at 97 different locations) to a depth of up to 1.5 meters where permitted. All soil samples were collected from hand augered testholes or from testpits excavated with a shovel/pickaxe. Hydraulic excavators and/or drill rigs were not used in this sampling program since the excavator was inoperable or located in other areas of the site while the contaminant investigation was ongoing. The road conditions also limited the area where the excavator was able to operate.

During the testpit excavation operation, all soil samples obtained were carefully trimmed to remove surface contamination, minimizing the potential for cross-depth contamination during the sampling process. Samples were handled with fresh nitrile or latex gloves for each location. Soil sampling equipment were cleaned with a wire brush as outlined in the ASTM Designation D 5088-90, "Standard Practice for Decontamination of Field Equipment Used at Non Radioactive Waste Sites".

Testpit observations were be recorded and soil samples taken from the fill stratigraphy at 0.3 m intervals as well as at the bottom of the active layer. All surface stained areas greater than 2 m^2 were to be delineated. All sample locations were marked with UV resistant stakes with labels in order to assist in any follow up remedial activity at the site.

Due to the age of the petroleum products and lack of volatile fraction field screening was not aided with a GasTech style hydrocarbon surveyor. To help confirm if delineation was achieved, the field program also included a field screening component. Selected soil samples were field screened using a PCB 'Chlor N soils' kit and fir hydrocarbons with a 'Petro Flag' kit. Selected soil samples were sent for analysis for various contaminants including PCBs, Hydrocarbons (BTEX and F1-F4 fractions), PAHS and metals.

Sediment Sampling

The field sampling program also included the collection of four sediment samples. These samples were collected from the both of Water Lake and from sediments in the River between Water Lake and the Beach (Ekalugad Fiord). All sediment samples were collected with an Eckmann Sediment dredge. Access to areas of the Lake was provided with the outfitter supplied boat.

Surface Water Sampling

Surface water samples were also taken at various locations around the site. A total of 7 water samples were collected and submitted to the lab for analysis. Water samples were be collected with dedicated water sampling equipment installed in each previous installed

monitoring wells. The water samples were collected and stored in laboratory supplied bottles and coolers until delivery to the laboratory.

Sample Submission and Analysis

Soil, sediment and groundwater samples were collected in laboratory-supplied jars, bottles and bags (depending upon the parameters to be analyzed), and stored in coolers until their delivery to a CAEAL certified laboratory. Fresh nitrile or latex gloves were utilized for each sampling location. Samples were placed in coolers prior to offsite shipping.

Biological Sampling

As per the TOR requirements, living tissue samples were also taken. Five fish of varying sizes were netted at the lake river outfall area. The samples were frozen, kept on ice and submitted to Norwest labs for PCB and metal analysis.

Once the fish were captured and on-shore, each specimen were identified, weighed, and measured (tip to tail). The time, date and location of capture were also recorded. The fish were tagged and placed in coolers packed with ice for shipment to the analytical laboratory for analysis.

Sampling of Building Materials

All buildings were inspected by the Earth Tech field team to inventory all suspected hazardous building materials and contents. The goal of the building material inventory program was to fill any data gaps from the previous sampling programs. The following paragraphs present the methods used in the collection of suspected asbestos containing materials and PCB containing paint samples.

Asbestos

Samples were sampled "adequately wet" to prevent the release of fibers and respirators were dawned when sampling friable ACM. Samples were placed in sealed plastic bags, labelled accordingly, and the sample area sealed to prevent the release of additional fibers.

Lead/PCBs in Paint

Generally speaking paint samples were collected with a utility knife or putty knife. Paint on concrete were scraped off utilizing an industrial grade abrasive scraper or with a cold chisel and hammer. Concrete samples were collected using a pickaxe. Substrate materials were also recorded.

Quantification of Non-hazardous and Hazardous Materials (Waste Audit)

A waste audit was performed to inventory all hazardous and non hazardous materials on the site. This process involved measuring the dimensions of surfaces, piles, counting the quantity of like materials, and visual estimations of volumes. Materials that were quantified included, volumes of debris piles, barrels, concrete, steel structures, metal cladding, equipment parts, wood, glass and other debris noted on site. The survey included a complete room-by-room assessment of all structures, including wall, floor, and ceiling coverings, construction materials, and any items stored inside the structures. Due to the amount of snow cover, identification of some materials was difficult.

Barrel Sampling

A review of available background information on this site has indicated that there are a large number of barrels at this site (approx. 10,000). It is understood that some of these barrels have been previously assessed to determine if they contain product or if they are empty. Earth Tech is proposing to expand on the previous barrel information in order to develop an accurate inventory of barrels containing liquids.

As required by the PWGSC RFP, Earth Tech was able to sample a small number of barrels in order to determine barrel contents. In the event that a full to partially full barrel was encountered, an attempt was made to open the barrel. Due to the poor condition or rusted condition of the barrels not all of the barrels could be opened. If the barrel could be opened, product samples were collected and analyzed for TEH (Total Extractable Hydrocarbons)-CHROM-ED analysis with:

- Product Histogram
- Product Chromatograph
- Percent water
- Lab spike match to known histogram/chromatograph for known fuels

Proper TDG and IATA documentation was required to send samples to the laboratory. The inventory of empty and full barrels is included in the Waste Audit (Section 5.0).

3.2 Site Identification

In preparation for the field sampling, information from past investigations was reviewed to identify areas where contaminants had been previously identified and where further lateral and vertical delineation was required. Proposed testpit locations were plotted on old site plans as visualize the location of samples, number of samples and the contaminant(s) of concern.

Once onsite, the Earth Tech first task was to map out the location of past sample points by conducting a reconnaissance walk over the site. Although this was found to be challenging in some cases due to marker pins and stakes either missing or found dislodged from their original locations, most locations had a satisfactory amount of markers to properly map out the area of concern. The proposed testpit locations were then reviewed to determine whether site influences such as topography and geology would govern moving the testpits to a more suitable location. Once the testpit location was finalized, an Earth Tech survey pin equipped with a numbered tag was placed in the ground at the sample location. Previously documented protocols were followed once the testhole location was identified.

In areas of potential contamination identified by geophysical investigations being conducted simultaneously, locations for Earth Tech testpits were determined based on the extent of potential contamination mapped out by the geophysicist's pin flags. In such cases, one or more testpits were advanced inside the mapped area and delinatory testpits were advanced outside the pin flag boundary to identify the presence of contaminated soils.

Soil sampling conducted on site involved delineation of heavy metals, hydrocarbons and PCB contamination. Although heavy metals cannot easily be identified in soils by visual observations, they are often associated with hydrocarbon staining. Surface staining was used to aid in identifying the outer limits of impacted soils.

3.3 Health and Safety

A detailed Health and Safety Plan was prepared for this field program. A copy of this plan was submitted to PWGSC and/or to the Camp Outfitter (General Contractor) upon arrival at the site. A copy of this plan has been reproduced in Appendix C of this report.

4 RESULTS OF SITE INVESTIGATIONS

4.1 Summary of Investigated Areas

The following table presents a brief summary of the areas that were investigated during the completion of the Phase III ESA at the FOX – C DEW Line site.

Table 4.1 Summary of Investigated Areas

Location	Site	Contaminant	Comments
Beach Area	Beach Area POL Tanks	Hydrocarbons	Close proximity to Fiord
	Beach Area Barrel Dumps	Metals, hydrocarbons	
Water Lake Area	Surface Stains	Hydrocarbons	
Mid-Station	Mid Station Dump Site	Hydrocarbons, metals, PCBs PAHs	Dumpsite on north facing slope
	Mid Station Barrel Dumps	Hydrocarbons	Large stain, barrels burned in place
Upper Station	Around Module Train	PCB, metals, hydrocarbons	
	Sewer Outfall Area	PCBs, metals, hydrocarbons	
	Around Garage	Metals, PCBs, hydrocarbons	Various surface stains
	Garage Dump Area	PCBs, metals, hydrocarbons	Extensive amount of surface staining, barrels onsite continue to be source for additional contamination
	POL Storage Facility	Hydrocarbons	
	Warehouse ASTs	Hydrocarbons	
	Inuit House Stain and Dump	Metals, hydrocarbons	
	Surface Stain – Antenna Base Area	PCBs, hydrocarbons	
	Surface Stains – NW of Module Train	PCBs, hydrocarbons	

4.2 Background Conditions

The following table presents a summary of the background metal concentrations determined in both the 2004 investigation as well as the from the 1994 investigation completed by RRMC. The background values determined in the 1994 investigation were based on the analysis of one sample collected at the east side of Water Lake (local background) as well as from the analysis of five samples (plus four field duplicates) that were collected in remote areas located between 7 to 51 km from FOX-C.

Parameter	Criteria	West Side of Water Lake	RRMC Local Background	RRMC Background Mean	RRMC	RRMC
	ppm	2004	1994	1994	Max.	Min
Antimony	20	2.4	-	-	-	-
Arsenic	30*	2	0.7	1.4	2.6	0.6
Barium	500	126	-	-	-	-
Beryllium	4	0.39	-	-	-	-
Boron	2	0.3	-	-	-	-
Cadmium	5*	0.1	<1.0	0.5	<1.0	<1.0
Chromium	250*	72.5	24	30	53	28
Cobalt	50*	10.7	<5.0	5.1	10.9	7.8
Copper	100	25.8	13.6	15.8	33	7
Lead	200/500	10.5	<10	5	<10	<10
Mercury	6.6	<0.01	-	-	-	-
Molybdenum	10	1	-	-	-	-
Nickel	100*	29.9	11.3	11.9	27	8
Selenium	1	0.3	-	-	-	-
Silver	20	0.07	-	-	-	-
Thallium	1	<0.3	-	-	-	-
Tin	50	2.6	-	-	-	-
Vanadium	130	63.8	-	-	-	-
Zinc	500*	82.4	21	31	56	8.3

Note: Criteria based on CCME Soil Quality Guidelines for Residential Land Use except as noted below.

- * Indicates criteria based on DCC Tier 2 criteria
- Lead criteria based on DCC Tier 1 (200 ppm) and DCC Tier 2 (500 ppm)

4.3 Beach Area

4.3.1 General

Since there was no airfield constructed at the FOX-C site, the beach was the main arrival point for all materials and personnel who constructed and worked at the facility. The beach is located at the foot of a glacial deposit that slopes towards Ekalugad Fiord. Mountainous terrain is located on the western and eastern ends of the beach. Visible remains in the beach area consisted of two aboveground fuel storage tanks and associated aboveground pipeline, a heavy equipment/vehicle dump and three barrel dumps. Scattered debris was also observed around the area, the debris consisted of barrels,

vehicle parts, and miscellaneous pieces of metal and wood. A road connects the beach area to the other portions of the station. Photos 1-6 show the fuel storage facility, the vehicle dump and the barrel dumps.

The previous investigation (1994) indicated that there was elevated metal levels for total chromium in the areas surrounding two barrel dumps. This report also indicated that there was the potential for hydrocarbon contamination in the vicinity of the two aboveground fuel storage tanks. In summary, the 2004 investigation included the excavation of a total of nine testholes around the above ground fuel storage tanks and nine testholes around two barrel dumps. Figure 3 in Appendix A shows the borehole locations at the three investigated areas.

Subsurface soils in this area consisted of sands, silts, and clays extending to a depth of 1.55 m (maximum depth of hand augered testholes). Immediately upon completion of augering, the boreholes typically filled with perched groundwater to a depth below grade of 0.05 m to 0.1 m.

4.3.2 Aboveground POL Storage Tanks

The POL storage facility consisted of two aboveground tanks and a pipeline, which ran towards the shore. The manway in both of the tanks was open and the eastern tank contained 150 mm of water. A total of eleven soil samples were analyzed from the testholes advanced at this location. These samples also included one field duplicate. Soils samples were analyzed for BTEX and CWS F1-F4 fractions. Two additional soil samples were also analyzed for PAHs. All analytical results are presented in Tables 1.1, 1.2 and 1.3 in Appendix D. Copies of the laboratory reports are also presented in Appendix E. In 1994, RRMC had collected three soil samples from this area, all samples were analyzed for metals and the data indicated that there were no exceedances above DCC or CCME residential/parkland criteria.

The analytical data indicates that the only exceedances (F2 fraction) that were encountered were in testholes BAT 1010 and BAT 1012, between the depths of 30 cm and 150 cm. Due to subsurface conditions, no soil sample could be collected below a depth of 150 cm, (auger refusal potentially due to permafrost). It should be noted that sample BAT-1010 (30-50) was visually classified as being representative of the worst-case soil conditions. Delineation boreholes include BAT-1008, BAT-1011, BAT-1013 and BAT 1014. Assuming the plume extends to half of the distance to the next borehole, the plume covers an estimated area of 280 m^2. Field observations indicated that the thickness of impacted soils was approximately 1.2 m. Based on the thickness of impacted soils, the estimated volume of hydrocarbon impacted soil at this location is 340 m^3.

As was previously presented in Section 2.2.6, shallow groundwater wells were previously installed down gradient of this site. The analysis of water samples collected at this site indicated concentrations of metals (copper, iron, mercury and zinc) above CCME drinking water criteria. The analysis also indicated that detectable levels of hydrocarbons were also encountered.

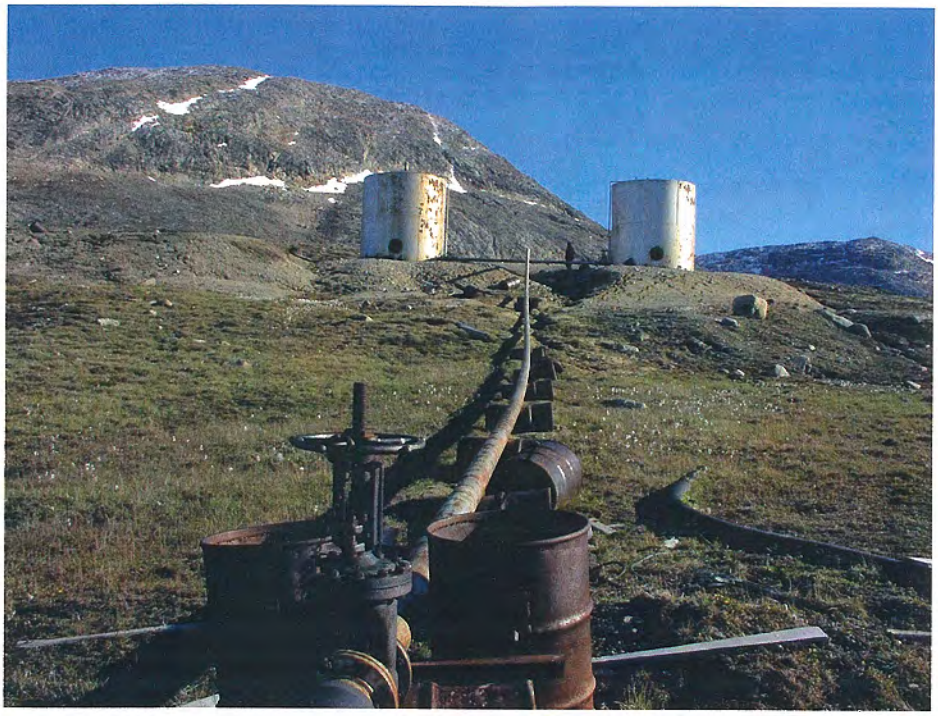


Photo 1 Beach Area POL tanks and pipeline, looking south

Photo 2 Beach Area POL tanks, looking southeast

Photo 3 Barrel Dump #1, looking west

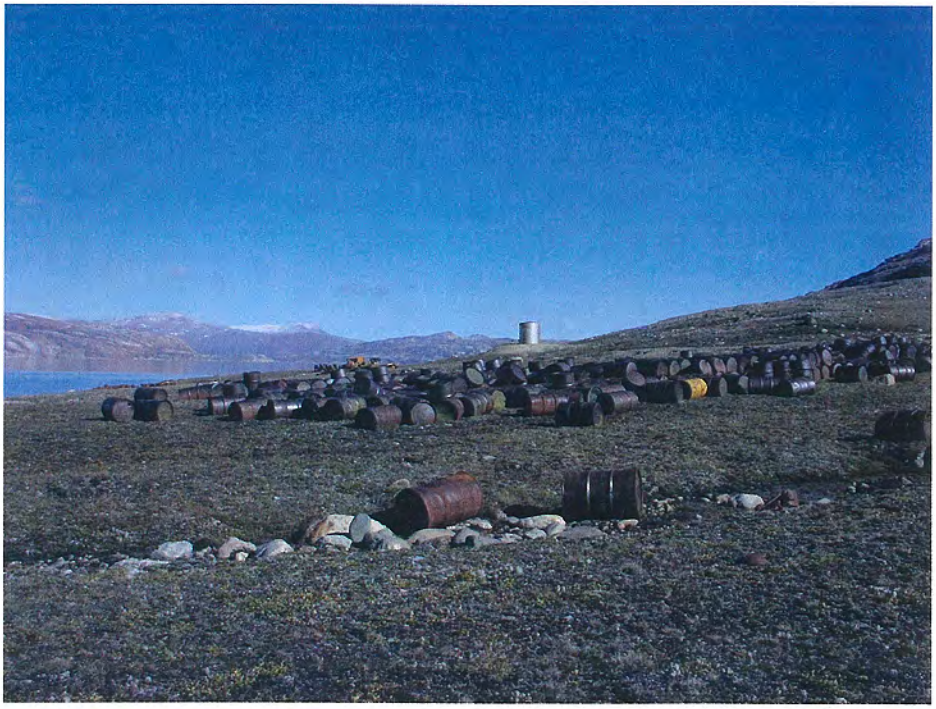


Photo 4 Barrel Dump #2, looking east

Photo 5 Beach area vehicle dump, looking northeast

Photo 6 Beach area vehicle dump

Two soil samples were analyzed for PAHs. One sample was representative of the worst-case hydrocarbon staining (BAT-1010) and the second sample was representative of local background conditions (BAT-1009). The analytical report indicated that the PAHs from sample BAT-1010 (30-50) were all below detectable values (Table 1.2, Appendix D). The analysis of the sample from Testhole BAT-1009 was also below detectable values.

One water sample was also collected from one of the tanks in order to determine a suitable disposal method. This sample was analyzed for hydrocarbons. Table 1.3 in Appendix D presents a summary of the analytical data for this sample. The analytical data indicated that all BTEX compounds were at, or below lab detection limits. Based on this information, the water in this tank does not require treatment for hydrocarbons prior to disposal.

4.3.3 Barrel Dump #1

Barrel Dump # 1 consisted of approximately 300 empty barrels as well as various types of metal and wooden debris. In 1994, RRMC had collected three surface soil samples from this area. The recovered samples were analyzed for metals and the data indicated that there was an elevated concentration of total chromium in one sample. This sample had a concentration of 92 mg/kg compared to the CCME criteria for total chromium of 64 mg/kg. One sample was also analyzed for PCBs and was determined to be below criteria.

In order to obtain additional data to verify the previous findings at this site, the 2004 investigation consisted of the installation of four additional boreholes. Figure 3.0 shows the location of the boreholes at this site. Table 2.1 presents a summary of the analytical data collected from this site. The highest chromium concentration recorded at this site was 65.7 mg/kg, at a 30 cm depth, below the DCC Tier 2 criteria for chromium.

It should also be noted that the chromium concentration was less than the concentration recorded in the background location, (72.5 mg/kg), on the west side of Water Lake. Analysis for the hexavalent form of chromium indicated that these concentrations were all below detectable values in this area. The hexavalent form of chromium is classified as 'carcinogenic to humans' by the CEPA. Based on the information.

Elevated chromium levels above CCME criteria have been detected at this site however they are well below the governing DCC Tier 2 criteria. Due to concentrations recorded in the background sample, there is the possibility that the elevated chromium values detected at this site are indicators of natural levels and not a contaminant from past land use activities.

4.3.4 Barrel Dump #2

Barrel Dump #2 consisted of approximately 520 empty barrels located along the beach, west of the vehicle dump. In 1994, RRMC had collected three soil samples from this area. The recovered samples were all analyzed for metals and the data indicated that all samples had elevated levels of chromium. The maximum chromium concentration

recorded was 81 ppm (less than DCC Tier 2 criteria). The 1994 investigation also included the analysis of two samples for PCBs (below criteria).

The 2004 investigation at this site consisted of the installation of five additional to confirm chromium concentrations in this area. Figure 3.0 shows the location of the boreholes at this site. Testhole BA-1019 was installed in the middle of the barrel dump while boreholes BA-1017, BA-1018, BA-1020, and BA-1021 were advanced around the perimeter of the dump.

Table 2.1 in Appendix D presents a summary of the metal analysis from this site. The analytical data indicates that the highest chromium concentration recorded in this area was 82.8 mg/kg, which is below DCC Tier 2 criteria. It should be noted that this value is similar to the data collected in the background sample. Analysis for the hexavalent form of chromium indicated that these concentrations were all below detectable values or below the CCME criteria in this area.

As was discussed in the findings for Barrel Dump #1, the elevated chromium levels may be an indication of natural levels and not an indication of a contaminant from past land use activities.

4.3.5 Barrel Dump #3/Vehicle Dump

Barrel Dump # 3 consisted of approximately 135 empty barrels as well as a number of abandoned vehicles (7) and various types of equipment. In 1994, RRMC had collected three soil samples from this area (up gradient) of this vehicle and barrel dump as well down gradient of the barrels. The recovered samples were all analyzed for metals and the data indicated that there were no exceedances above DCC or CCME residential/parkland criteria. One sample was also analyzed for PCBs and was found to be below criteria. Due to the results of the previous investigation at this area and the lack of signs of distressed vegetation or soil staining, the 2004 field program did not include any additional investigation at this area.

4.4 Water Lake Area

4.4.1 General

The Water Lake Area (location indicated in Figure 4) was used as a staging area for base operations. The lake was used as a source of water and trucks would drive down the station road to fill up with water and haul it back to the other station areas. Water Lake is a catchment area for the majority of the runoff from the Upper Station areas. The east side of the water lake consists of a large granular outwash deposit. A number of overland drainage courses, which lead down to the lakeshore, are visible along the western edge of the deposit. Areas of potential contamination include surface staining, barrel dumps, a vehicle dump as well as a large amount of scattered debris between the station road and the lakeshore.

The previous investigation investigated a number of specific locations within this area, including a debris pile, area around the hut, surface stain area, vehicle dump and a barrel

dump. This study did not find any exceedances above DCC or CCME criteria for metals or PCBs in the investigated areas, however it estimated that there was approximately 2,000 m^3 of hydrocarbon impacted soils located at a barrel dump and at the location of a fuel stain. Photos 7 through 10 show the barrel dump, vehicle dump as well as the surface stained areas and debris areas. Figure 4.0 in Appendix A shows the investigation locations at this area.

In summary, the 2004 investigation included the installation of a total of eight testholes excavated around the barrel dump and two observed surface stains. Additional investigation activities in this area included the collection of four sediment samples (two from the bottom of Water Lake and two from the sediments in the river between Water Lake and the Beach Area).

4.4.2 Water Lake Barrel Dump

Barrel Dump # 1 consisted of approximately 250 empty barrels, a large amount of wood debris was also observed up gradient of the site. In 1994, RRMC had collected one soil sample from this area. The recovered samples were all analyzed for metals and the data indicated that there were no exceedances above DCC or CCME residential/parkland criteria however, based on field observations it was estimated that there may be approximately 1,500 m^3 of hydrocarbon impacted soils at this site.

The 2004 investigation at this site consisted of the installation of three testholes (WL-1001, WL-1002 and WL-1003). Two of the testholes were installed on the down gradient side of the site and one borehole was installed at the same location of the RRMC sample location (#62) in order to confirm the depth of hydrocarbon levels at this location. Figure 4.0 shows the location of the boreholes at this site. An inspection of this site indicated no signs of distressed vegetation or surface staining around this barrel dump.

Table 3.1 presents a summary of the analytical data from the samples collected at this site. The analytical data indicated that all the hydrocarbons (BTEX and CWS F1-F4 fractions) were below detection limits or well below CCME criteria.

Based on results from this investigation and from the metal analysis completed in the previous investigation, no additional investigation is recommended at this location. At the time the barrels are removed, it is recommended that the area be re-inspected to confirm if there is any residual hydrocarbon impacted soils located below the barrels that would require remedial action.

4.4.3 Surface Stains

Two large surface stains were observed in the Water Lake area, both of the stains were located on a bench area located above the lakeshore. The 2004 study included the investigation of a stain located near the current helicopter landing pad as well as a stain area located further to the north on the side of a drainage channel. Figure 4.0 shows the location of the two study areas.

Photo 7 Water Lake barrel dump, looking southwest

Photo 8 Water Lake vehicle dump, looking west

Photo 9 Surface stains near helicopter landing pad, looking north

Photo 10 Surface stain in drainage course, north of helicopter landing pad, looking north

Helicopter Landing Pad Stain

In the area that was used as a helicopter landing pad in 2004, a number of surface stains, which covered an area of approximately 90 m^2, was observed. Photo 9 presents a photo of this area. Other waste debris in the area included, ten barrels, a wooden spool with large diameter cable as well as scattered wood debris. The site is located at the western edge of an outwash deposit that overlooks the lake. Stained areas were also observed in two adjacent drainage courses at the north and south end of the stain.

The 1994 investigation at this site included the analysis of one soil sample for metals and PCBs. This analysis indicated that both the PCB and metal concentrations were below CCME criteria. The 2004 investigation included the installation of four boreholes and the analysis of five soil samples. Two soil samples were analyzed from the center of the stain (WL-1005) and three boreholes were installed to help delineate hydrocarbon contamination up gradient and down gradient of the site.

A summary of all the hydrocarbon analysis is presented in Table 3.1 in Appendix D. The analytical data indicated that elevated F3 concentrations (exceeding CCME criteria) were recorded down to a depth of 0.75 m in the center of the stain (Borehole WL-1005). Due to site conditions, Earth Tech was unable to collect soil samples at depths greater than 0.75 m with a hand auger. Delineation to the east and north was achieved from the data collected in WL-1004 and WL-1007. The F3 concentration in the soil sample collected from WL-1006 (depth 40-60 cm) was only slightly above criteria (838 ppm vs. 800 ppm). The maximum depth of excavation with a hand auger at this location was 0.6 m.

Based on the lateral extent of the stained area and a maximum depth of contamination of 75 cm. The volume of impacted soils in this area is estimated at 75 m^3. However, this value should be considered as a rough estimate since the maximum depth of impacted soils was not confirmed in the hand excavated testholes.

Drainage Course Stain

This stain covered an area of approximately 18 m^2 and was located on the side slope of an overland drainage channel leading off the outwash deposit. Oily rags and dead vegetation were also observed in the area. Photo 10 presents a photo of the stain. One borehole was excavated (WL-1008) at this site. One surface soil sample was collected and analyzed for BTEX, F1-F4 fractions as well as PCBs. Tables 3.1 and 3.3 present a summary of the analytical data from this borehole. The analytical data indicated both the F3 and F4 fractions exceeded the CCME criteria at this location. A second soil sample was collected at a depth of 0.3 m and screened in the field with a Petro Flag kit. The analysis for total petroleum hydrocarbon with this kit indicated a TPH concentration less than 50 ppm. Due to the low concentration for TPH, no additional hydrocarbon investigation was completed at this site.

The analysis indicated that the PCB levels in both soil samples in WL-1008 were less than detection limits.

Based on the results of this investigation, a volume of 6 m^3 of hydrocarbon impacted soils has been estimated at this site.

4.4.4 Water Lake Water Analysis

Two water samples were collected from Water Lake. Sample WL-SW01 was collected at the point where the creek, which drains the Upper Station areas, drains into Water Lake and sample WL-SW02 was collected near where Water Lake drains into the river that flow to the Beach Area. Tables 4.1, 4.2 and 4.3 present a summary of the analysis total metals, hydrocarbons and PCBs. The analysis indicates that the concentrations for hydrocarbons and PCBs were less than CCME freshwater aquatic life guidelines for both water samples. The total metal analysis for sample WL-SW-02 indicates that all metal parameters were below CCME guidelines except for aluminum, cadmium, copper, iron, and zinc. The sample collected from WL-SW-02 in 2004 had a high turbidity, therefore the metal analysis may have produced anomalously high values. The total metals in sample WL-SW-02 that exceeded criteria were similar to the values previously recorded in the Gartner Lee surface water monitoring report (Gartner Lee, 2004). It should be noted that the samples bottles for dissolved metals in sample WL-SW-02 as well as the total and dissolved metals in WL-SW-01 were broken during transit to the laboratory.

4.4.5 Water Lake Sediment Analysis

In order to confirm sediment conditions in the bottom of Water Lake and in sediments located in the adjacent river, two samples were collected at both locations. All four samples were analyzed for PCBs, hydrocarbons, PAHs and metals. A summary of the analysis is presented in Tables 5.1 through 5.4 in Appendix D. As indicated in the summary tables, the analysis for all of these parameters was less than the laboratory's detection limits or less than the CCME sediment quality guidelines. Based on the results of this investigation, no additional investigation for sediments is recommended.

4.5 Mid Station Area

4.5.1 General

The available background reports presented very little information regarding any environmental concerns located between the Upper Station area and the Water Lake area. The background reports indicated that a drum storage area as well as a potential dumpsite may be located in the mid mountain area. However, due to snow coverage at the time of the previous investigation, no investigation activities were previously completed in the mid mountain area.

The Upper site and Water Lake area are approximately 4 km apart and are joined with a mountain road that is in very poor condition. Since the area was not accessible with a Quad, access to this area of the site was with a helicopter and by foot. During the initial inspection of this area in 2004 it was determined that environmental concerns in the mid mountain area included a large dumpsite, eight barrel dumps, remains of four Quonset style buildings as well as numerous debris piles and various types of scattered metal and wooden debris. The majority of the barrels at the barrel dumps appeared to be stacked or

piled once they were empty. Occasionally partially full to full barrels were encountered around the barrel dumps.

The mid station area is typically located on the south facing slope of a mountain. This location has very little soil media and there is no vegetation cover. In some locations, small amounts of fine to coarse grained material (weathered) was encountered on the ground surface, however the site is dominated with large boulder sized (> 300 mm) rocks. In some developed areas, sand or gravel sized rock had been imported and used for fill/leveling. Runoff surface water was occasionally encountered, in some locations, this water was visible, however it was commonly located within a gully filled with coarse/fine grained material or below boulder sized rubble.

The areas that were investigated in 2004 consisted of a large dumpsite, an area where barrels had been burned, an area with a large surface stain and three barrel dumps. An examination of the eight barrel dumps in this area indicated that there was only one site where surface staining was observed to be attributed to leaking barrels. Two other barrel dumps were investigated to confirm if there was typically a contaminant concern from the barrel dumps even though they did not show any signs of surface staining. Figure 5 shows the location of the investigated sites in the mid station area and photos of the sites are presented in Photos 11-20.

4.5.2 Dumpsite/Barrel Storage Area

The barrel storage area consists of a leveled gravel pad located on a saddle between the Upper Site and the adjacent peak to the east. This site was referred to as a barrel storage area in the 1994 assessment report. In 2004, this area was used as a helicopter landing pad. A large dumpsite is also located off the north end of this pad. Figure 5 shows the location of this site and Photos 11, 12, and 13 shows the site features. In 2004 there were approximately 110 barrels stored on top of the pad and approximately 250 additional barrels as well as a small amount of domestic waste were located between the pad and the dump site to the north. A large well defined black stain was also observed around the base of the barrels on the pad as well leading down gradient towards the dumpsite. This stain covered an area of approximately 510 m^2. Observations indicated that approximately 50 barrels at the southern end of the pad had been burned in place. A number of full to partially full barrels were also identified in this area, 13 were located on the pad and 6 were identified scattered north of the site. All of these barrels appeared to have been previously opened.

This pad area, which has approximate dimensions of 50 m x 50 m, was constructed by leveling the area and bridging over the voids in the boulders with smaller sized rock and gravel. There was approximately 0.15 m of sand material used as the surface material. Due to the sizes of the voids between the boulders, the bridging has subsided in some locations, leaving deep cavities in the pad surface. Black staining was also observed to be present in some of the voids located below the pad.

The majority of the materials observed in the dump were made of metal/steel or wood. Items that were identified included a large amount of barrels, domestic waste (tin cans,

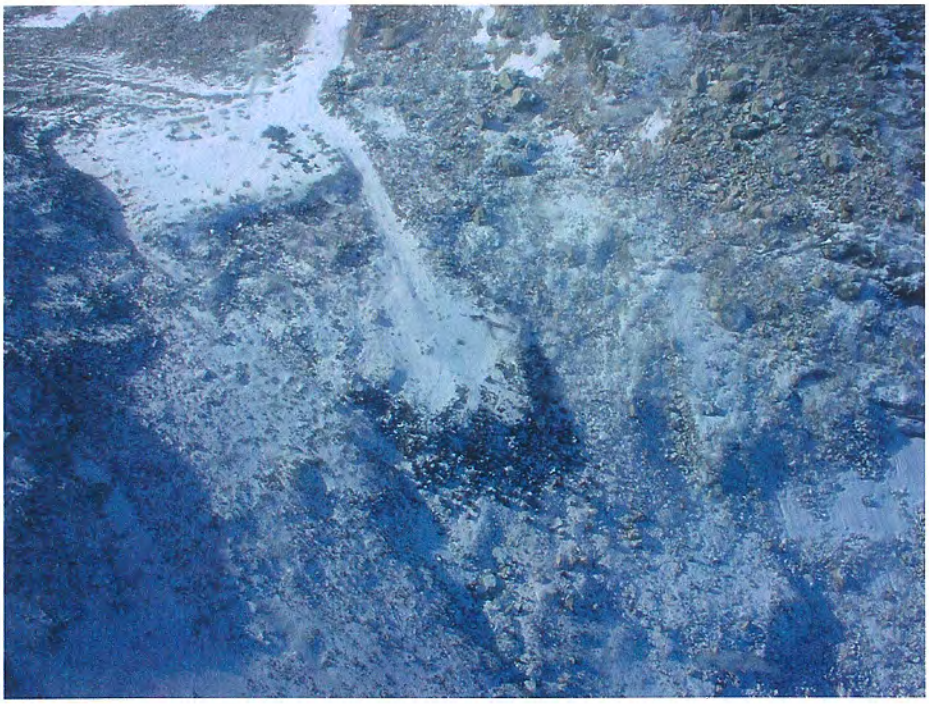


Photo 11 Barrel storage area and dump, looking south

Photo 12 Staining at barrel storage area, looking northeast

Photo 13 Waste materials at dumpsite, looking north

Photo 14 Staining below Barrel Dump #2, looking south

Photo 15 Split open lubricating oil barrel, Barrel Dump #2

Photo 16 Barrel Dump #4, looking west

Photo 17 Barrels and debris around Quonset Hut #1

Photo 18 Staining and debris at Barrel Dump #6

Photo 19 Barrel Dump #5 across from Quonset huts

Photo 20 Barrel Dump #7

dishes, pots, cloth), used vehicle and heavy equipment parts, various types of filters, and batteries. The dumpsite was situated on a 20° slope (determined from vertical survey data). It should be noted that the material at the toe end of the dumpsite mainly consisted of scattered metal (barrels) and wood debris on the ground surface and the footprint of dumped materials was estimated at approximately 600 m^2. Approximately 75 m beyond the toe end of the dump, the slope dramatically increased and became a cliff. A number of barrels were noticed at the bottom of this cliff.

A barrel dump (Barrel Dump #1) was also located approximately 100 m south of this site, this dump contained approximately 1000 empty barrels, due to the lack of surface staining at this site, no investigation activities were conducted in this area.

Soil Investigation

The investigation program at this site consisted of the collection of soil samples at six locations; one surface water sample was also collected down gradient of the dumpsite. Three of the sample locations were positioned around the perimeter of the main dump; one was located below a smaller dump area located off the NE corner of the pad and two samples were collected in the stained area on top of the pad.

Due to the small thinness of soil or fine-grained material in this area, the samples were typically recovered between the depths of 0 cm to 15 cm. The soil samples from the pad area were analyzed for hydrocarbons, PCBs and metals. Samples for PAHs were only collected at two locations. The summary of the analytical results is presented in Tables 6.1 to 6.4 in Appendix D.

The analytical results indicated that there was an exceedance above CCME criteria for the F3 and F4 hydrocarbon fractions in the area where the barrels had been burned (MS-1086) and an exceedance for F3 at the north edge of the pad (MS-1080). The PAH analysis indicated that there was an exceedance above CCME residential criteria for phenanthrene (6.54 ppm vs. 5 ppm).

Assuming that there is a layer of accessible fine grained material with a thickness of 15 cm and the impacted material is confined to the stained area, the volume of hydrocarbon impacted soils in this area is approximately 75 m^3. However, due to the presence of large boulder sized rocks and the small amount of fine grained material within the stained area, remediation of all the impacted material is difficult to impracticable due to the difficulty in removing contaminants from around the rock material.

The soil samples collected from around the perimeter of the dumpsite were analyzed for hydrocarbons, metals and PCBs. Tables 6.1 to 6.4 in Appendix D present a summary of the analytical test results. The PCB analysis indicates that there were no PCB, metals or hydrocarbon exceedances in the soil samples collected down gradient of the dumpsite.

Groundwater Investigation

Below the dumpsite, water could be heard running through and under the porous substrate of boulders and cobbles. This stream was followed and found to surface further

down gradient of the dumpsite. One grab sample of the groundwater was collected (MS-1081) and was analyzed for metals (both dissolved and total), hydrocarbons PAHs and PCBs. The analytical results indicated that PAH and PCB compounds were below detection limits.

Tables 7.1-7.3 in Appendix D present a summary of the analytical results of the groundwater sample collected from this location. The results indicated that all the total metal parameters, except for aluminum, iron and cadmium were below CCME freshwater aquatic life criteria. All hydrocarbon parameters were also below CCME freshwater aquatic life criteria. The results also indicate that the PCB levels in all four samples collected around the dump materials were less that the laboratory detection limits. The metal concentrations determined in this sampling program were similar to the concentrations determined in the previous surface water sampling events at the FOX – C site.

The analysis of the dissolved metal concentrations indicated that all metal parameters were at or below the CCME freshwater aquatic life criteria.

4.5.3 Barrel Dump #2

Barrel Dump #2 consists of approximately 120 barrels, which were labeled as containing lubricating oil. These barrels are located in a storage area that is located off the main road. This storage area had been leveled and surfaced with a gravel/sand material. Large boulders and cobble sized material surrounded the site. Some of the barrels were partially full and evidence indicated that the barrels were split open while they were stockpiled at this location. Viewed from above, a large stain was visible on the down gradient side of the barrels and extended down the mountain for a considerable distance. Aerial photos showing the staining at this site are presented in Photo 14 and Photo 15 shows one of the split opened barrels.

Two additional barrel dumps were located south of this site (Barrel Dump#3 and #8), however due to the lack of surface staining around these dumps, a subsurface investigation was not completed at these sites.

The investigation that was completed at this site consisted of the collection of soil samples at a total of six locations. One soil sample was collected up gradient of the source (MS-1087) and two samples (MS-1088 and MS-1089) were installed to delineate the lateral extent of the impacted area. Sample locations MS-1090 and MS-1090B were both located down gradient of the source (40 and 90 m). Due to the lack of soil media in this area and the snow cover, the field identification of stained areas and the delineation of the impacted area was hampered. Figure 5.0 shows the samples locations.

Soil samples were typically recovered at depths ranging from the ground surface to a maximum depth of 10 cm and in areas where fine and coarse weathered material had accumulated (typically in seasonal drainage courses). The majority of the stained material was located around and below large sized rocks. Due to the size of the rock material that is located below the ruptured barrels, it is possible that a large percentage of the released oil has migrated vertically downwards until it reached bedrock material. The

released oil materials on the rocks continue to migrate down gradient during runoff events.

Table 8.1 in Appendix D presents a summary of the analytical data from this site. As indicated in analytical summary table, exceedances for the hydrocarbon fraction F3 and F4 were recorded adjacent to the barrels extending in an area approximately 90 m down gradient of the site. Determination of the down gradient extent of hydrocarbon contamination was not achieved.

Based on the area observed to be stained in the aerial photos the stained area may cover an area of approximately 1,600 m^2. Calculation of the volume of impacted material is difficult due to the lack of soil media within the contaminant plume, remediation of the impacted material is also difficult to impracticable due to the difficulty in removing contaminants from around the rock material. Based on observations, there is approximately 50 m^3 of accessible granular material located around the base of the barrels. It is recommended that this material be removed since it continues to be a source for future down gradient contamination.

4.5.4 Barrel Dump #4

Barrel Dump #4 consists of approximately 200 empty barrels located on the south side of the remains of Quonset Hut #1. Waste debris is scattered around the hut as well as amongst the barrel piles (see Photos 16 and 17). In order to confirm that there was no residual hydrocarbon contamination within the confines of the barrel dump and immediately down gradient of the barrels, three grab samples were collected and analyzed for hydrocarbons. One sample from MS-1091 was also analyzed for PCBs. Tables 8.1 and 8.3 presents a summary of the analytical data from the three samples collected from barrel dump #4. The three samples (MS-1091, MS-1092, and MS-1093) were collected between the ground surface and a depth of 10 cm in an area where fine materials had accumulated. The analysis indicated that the BTEX concentrations were below detectable levels. The F1-F4 fractions were detectable however they were also below the applicable CCME residential/parkland remediation criteria. It should be noted that the F3 fraction in the sample collected from MS–1091 was close to the CCME generic guideline (726 ppm vs. 800 ppm). The PCB concentration in the sample collected from MS-1091 was below laboratory detection limits.

Based on results from this investigation and from the metal analysis completed in the previous investigation, no additional investigation is recommended at this location. At the time the barrels are removed, it is recommended that the area be re-inspected to confirm if there is any residual hydrocarbon impacted soils located below the barrels.

4.5.5 Barrel Dump #6

Barrel Dump #6 consists of approximately 175 empty barrels. Large amounts of waste material are also scattered around Quonset Buildings #2, #3 and #4. Barrel dump #5 is located across the access road from Quonset Building #2 (Photo 19). Based on the

materials located in the area, it appears heavy construction equipment was repaired in this area.

Located on the downhill side of the Quonset Buildings #3 and #4 is a large stain approximately 200 m^2 in size. This stain covers a bedrock slope and extends down gradient towards a barrel dump. Portions of the stain area below the bedrock slope are covered with large boulder sized material as well as various types of vehicle and machinery parts (Photo 18). Minor amounts of stained soils were observed in depressions in the bedrock slope. Mapping the limits of the stained area was difficult due to the amount of snow coverage at the time the investigation was completed. As was observed at Barrel Dump #2, the stained material appeared to have migrated vertically downwards between boulder sized materials at the base of the slope. Some staining was observed in the rock material approximately 4 m away from the slope.

A total of two soil samples were collected at this site. Sample BD6 was in the middle of the stained area in a depression on the bedrock slope and sample MS-1094 was collected below a group of barrels down gradient of the stained slope. Figure 5.0 shows the sample locations.

Sample BD6 was analyzed for PCBs, hydrocarbons, PAHs and metals. Sample MS-1094 was analyzed for hydrocarbons only. Tables 8.1 to 8.4 present a summary of the analytical data from the two soil samples. The analytical results indicated exceedances of F3 and F4 above the CCME criteria in sample BD6. The F3 and F4 concentrations in BD6 were recorded at 17800 and 13800 ppm for F3 and F4 respectively. Metal exceedances above DCC Tier 2 criteria for copper, lead, and zinc were detected in sample BD6. The analytical results indicated that there was an F3 exceedance of 972 ppm, slightly above the CCME criteria of 800 ppm in sample MS-1094.

Based on field observations, the stained area may cover an area of approximately 200 m^2. Calculation of the volume of impacted material is difficult due to the lack of soil media within the contaminant plume. Remediation of the impacted material is also difficult to impracticable due to the difficulty in removing contaminants from around rock material. Assuming a maximum depth of contamination of 0.3 m in the accessible soils within the stained area, the volume of hydrocarbon impacted soils may be approximately 60 m^3. It is recommended that this material be removed since it continues to be a source for future down gradient contamination.

It is also recommended that the barrel storage areas be re-inspected once the barrels have been removed to confirm if there is any residual hydrocarbon impacted soils located below the barrels. At the time the barrels are removed, it is recommended that the area be re-inspected to confirm if there is any residual hydrocarbon impacted soils located below the barrels.

4.5.6 Barrel Dump #7

Barrel Dump #7 consists of approximately 300 empty barrels separated by the Upper station access road. In order to confirm that there was no residual hydrocarbon contamination in this area, one grab sample was collected in an area immediately below the barrel dump. This sample (MS-1095) was collected between the depths of 0 cm and

10 cm in an area where fine materials had accumulated. This sample was analyzed for hydrocarbons and the analysis indicated that the BTEX concentrations were below detectable levels. The F1-F4 fractions were detectable however, they were also below the applicable CCME residential/parkland remediation criteria. Table 8.1 presents a summary of the analytical data from the sample analyzed at this site.

Based on results from this investigation and from the metal analysis completed in the previous investigation, no additional investigation is recommended at this location. At the time the barrels are removed, it is recommended that the area be re-inspected to confirm if there is any residual hydrocarbon impacted soils located below the barrels.

4.6 Upper Station Area

4.6.1 General

The main operations center of the site was located on the summit (elev. 770 m asl) of a rocky mountain overlooking Ekalugad Fiord to the north and a large glacier/icefield to the south. The mountain is characterized with a series of small benches located on the sides of the mountain, below the summit. At approximately 60 m from the summit, the north slope of the mountain increased to a steep, nearly vertical face.

Access to the summit was achieved with the construction of a road located on the southern and eastern sides of the mountain. Facilities of the Upper Station area included the modular train, warehouse, garage, POL storage facility, barrel storage areas, antenna remains as well as the remains of several buildings (Quonset style house, paint shed and Inuit house). Large amounts of waste debris, including vehicles, barrels, and misc. metal and wood pieces are scattered around the summit. Figure 6.0 and Photo 21 presents the layout and features of the Upper site.

Previous background reports had identified the following environmental concerns on the summit area.

- PCB contamination in the areas surrounding the modular train, garage, east and west of the garage and in surface stains scattered around the site.
- Hydrocarbon contamination in the sewer outfall area, areas surrounding the garage, in the POL area, south of the Inuit House and in surface stains scattered around the summit area.
- Metal contamination in the area east of the garage, north of the modular train, and in surface stains scattered around the site.
- Dumpsites were also reported on the north and south sides of the mountain, near the Inuit House.

The upper station area is located on the summit and north and south faces of a mountain. Study areas typically had no to little soil media and there was no vegetation cover. As was seen in the mid station area, fine to coarse grained, weathered material was encountered on the ground surface in some areas, however the site is dominated with large boulder sized (>300 mm) rocks.

Photo 21 FOX- C Upper Station

Photo 22 PCB impacted area on south side of Module Train

In some areas, the area had been leveled and sand or gravel sized rock had been used for fill/leveling. Runoff surface water was occasionally encountered, in some locations, this water was visible, however it was commonly located within a gully filled with coarse/fine grained material or with boulder sized material.

4.6.2 Module Train Area

During the previous investigation, two areas of concern were identified adjacent to the modular train these included the following.

- PCB contamination on the south side of the train (RRMC flag #3) and
- Elevated metal concentrations on the west end of the train (RRMC flag #5).

The following paragraphs summarize the results at these two locations.

PCB Contamination

The previous investigation identified PCB contamination in the vicinity of the staircase on the south side of the train. This location was labeled as RRMC #3 and had a recorded PCB concentration of 5.6 ppm (highest level recorded in 1994 investigation and only exceedance above DCC Tier 2 criteria for PCBs). This site was partially delineated with sample locations RRMC # 2 (PCB <1 ppm) and RRMC #4 (PCB<1 ppm). Figure 6.1 and Photo 22 show the location of this site.

The scope of work for the 2004 investigation included the excavation of thee testpits around the site and one testpit (US-1037) adjacent to sample location RRMC #3 in order to confirm the maximum depth of PCB contamination. The four testpits advanced in this investigation were labeled US-1034 through US-1037. The analytical results from this investigation program are summarized in Table. 9.1. This data indicates that all PCB levels in the delineating boreholes were less than detection limits.

Based on the information obtained in this investigation it is assumed that the maximum depth of PCBs in the vicinity of RRMC #3 sample point is less than 0.45 m (sample depth of US-1037) and the volume of PCB contaminated soils is approximately 7 m^3.

Metals

The 1994 investigation identified elevated zinc levels (316 ppm) in soils in an area off the west end of the modular train. The recorded zinc levels were below DCC Tier 2 criteria. This location was labeled as RRMC #5. Figure 6.1 and Photo 23 show the location of this site.

The scope of work for the 2004 investigation included the excavation of thee testpits around the site and one testpit adjacent to sample location RRMC #5 in order determine if any higher levels were detectable in the area. The four testpits advanced in this investigation were labeled US-1038 through US-1041. During the excavation of these testpits a hydrocarbon odor was encountered at a depth of 25 mm and all sample locations were frozen below a depth of 50 mm. The analytical results from this

Photo 23 Metal impacted at west end of Modular Train

Photo 24 Discharge area of sewage outfall

investigation program are summarized in Tables 9.1 – 9.3. The recovered soils samples were analyzed for metals and due to the presence of a hydrocarbon odor the soil samples were also analyzed for PCBs and hydrocarbons. This data indicates that all metal concentrations (including zinc) were below DCC and CCME residential criteria. All PCB levels in the delineating boreholes were less than detection limits. Hydrocarbon analysis indicated that there were exceedances for hydrocarbons in US-1038 (F2 and F3), US-1040 (F2 and F3) and US-1041 (F2).

Based on the results of this investigation program it appears that the elevated zinc levels in soil determined in the previous investigation are contained to material located on the ground surface. Based on the placement of the testpits, the hydrocarbon contamination plume covers an area of at least 25 m^2. Vertical delineation of the hydrocarbon contamination could not be achieved due to the presence of frozen materials. However, assuming that the fill in this area is approximately 0.45 m thick and the hydrocarbon impacted material covers an area of 30 m^2, there may be approximately 14 m^3 of hydrocarbon impacted soils in this area.

4.6.3 Sewage Outfall/Dump Area

Located on the north side of the modular train is the sewage outfall as well as an area that was previous referenced as a dump. This portion of the summit consists of a number of steps, which drop in elevation prior to becoming a steep cliff (approximately) 60 – 80 m north of the modular train. The sewage outfall area extended from the end of the sewer discharge line down the north mountain face. Pieces of the drain line are visible, however the original alignment and the discharge end of the sewer line are unknown. Due to the site conditions and the amount of snow at the time of the 2004 investigation, the identification of surface stained areas as well as the location of the previous sample points was difficult. Photos 24, 25 and 26 show the sewage outfall and dump area.

An inspection of the north side of the mountain indicated that the dump consisted of occasional piles of scattered debris over the northern slope. The debris consisted of piles of filters, barrels, strapping, cable, wire, wooden crates and assorted steel pieces. One partially filled and leaking barrel was also located at the location of RRMC flag #10. Located in the vicinity of the barrel was a narrow (0.6 m wide ribbon of staining which followed a natural drainage pathway down the mountain face. Field observations indicated that this drainage pathway originated higher up on the mountain and it potentially may have received runoff from the sewer outfall. Due to the terrain on this site of the mountain there were a number of natural pathways, which lead to areas down gradient. Various amounts of sand and gravel material (depths between 0.1 to 0.5 m) were located in the drainage pathways as well as along portions of the rock faces. Surface water was not observed on the north face of the mountain in 2004.

The 1994 investigation at this site included the analysis of ten samples for metals and PCBs. Exceedances above DCC criteria were detected in six of the samples for PCBs and in two of the samples for metals (copper and lead). The highest PCB and metals concentrations recorded in this area in 1994 were located below the sewer outfall.

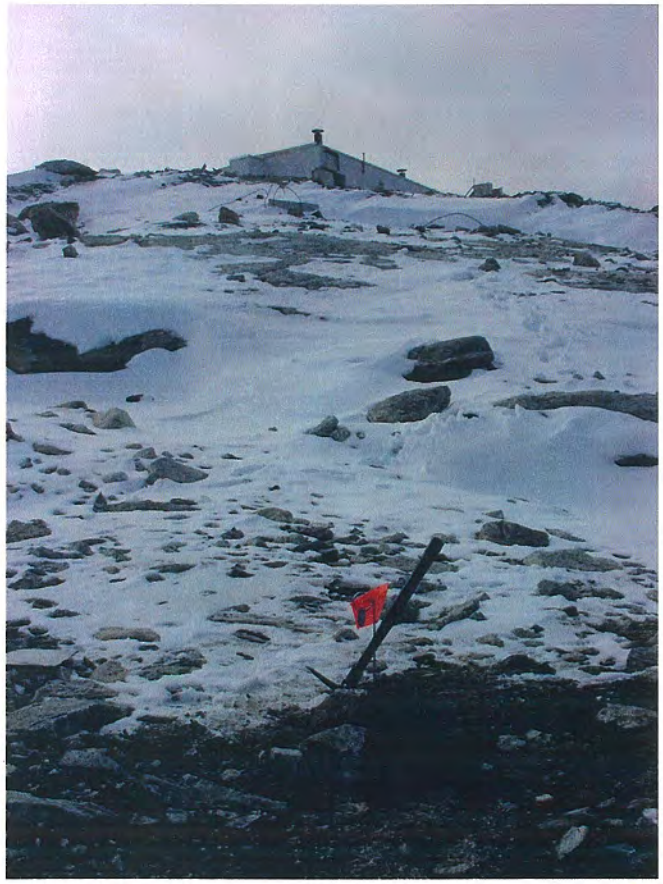


Photo 25 Sample location US-1028 below sewage outfall

Photo 26 Scattered debris in outfall dump area

The 2004 investigation included the collection of nine additional samples that were analyzed for PCB and metals. Hydrocarbons were also analyzed in seven of the soil samples. In order to complete delineation, samples locations were selected in down gradient areas that would receive runoff from areas that had been previously determined to be impacted. Sampling depths were limited due to the lack of soil or gravel like material on top of the large sized rock.

A summary of the analytical data is presented in Table 10.1, 10.2 and 10.3 in Appendix D. The analytical data indicates that delineation of the metal and PCB contamination was achieved in all areas of the study area except PCBs in Testpit US-1028. The analytical data, indicated this sample had a PCB concentration of 2.2 ppm and a F3 concentration of 1050 ppm, both of which exceeded the respective DCC Tier 1 and CCME remediation criteria. Testpit US-1028 is located approximately 80 m northeast of the outfall area (Photo 25). Delineation down gradient of US-1028 is achieved with US-1026. Metals, hydrocarbons and PCBs were all below DCC and CCME criteria in this testpit.

Based on the information obtained in this investigation, there may be approximately 30 m^3 of PCB and hydrocarbon contaminated material and 5 m^3 of metal contaminated material at this site.

4.6.4 Garage Area

The previous investigation, identified a number of environmental concerns around the garage area (Shown in Figure 6.2), the concerns included the following.

- PCB contamination and metal contamination south, and east of the garage.
- Hydrocarbon and PCB impacted soils to the west of the garage.
- Hydrocarbon contamination in dump area south of the garage.

During an inspection of this area in 2004, it was also noticed that a surface stain was visible around the base of the D8 cat that was located on the west side of the garage. This stain covered an area of approximately 16 m^2. The following sections provide details of all the investigation activities that were completed in the Garage area.

West of Garage - PCB Contamination

Located 2 m west of the Garage is a surface stain that covers an area of approximately 2 m x 2.5 m (5 m^2). This site is presented in Figure 6.2 and in Photo 27. The analysis of a surface sample (RRMC tag #22) from this stain in 1994, determined that there was PCB and metal exceedances above CCME residential criteria. The PCB concentration was 3.8 ppm and there were elevated metal concentrations for chromium, lead and zinc. One testpit was hand excavated at this site in 2004 (US-1075) in an area close to the previous sample point. The maximum depth of excavation in this testpit was limited to 0.20 m due to the presence of solid rock below that depth. One soil sample was recovered between the depths of 0.15 m to 0.20 m and was analyzed for hydrocarbons, PCBs and metals.

Tables 11.1, 11.2 and 11.3 in Appendix D present a summary of the analytical data for sample collected at this surface stain. The analytical data indicated that the sample collected from US-1075 had a PCB concentration of 0.1 ppm, BTEX concentrations were

Photo 27 PCB impacted area west of Garage

Photo 28 Stain below D8 Cat, west of Garage

less than detection limits and CWS F1-F4 fractions were below criteria. Metal analysis indicated that all metal concentrations were below DCC criteria.

Due to the concentrations of PCBs in the sample analyzed, it appears that the contamination in this area is confined to the near surface levels and is less than DCC Tier 2 criteria. Based on the size of the surface stain and the maximum depth of fill in this location, there is approximately 1 m^3 of PCB contaminated material at this location.

West of Garage – D8 Cat Stain

Located northwest of the Garage is a D8 Cat, below the cat is a surface stain that covers an area of approximately 4 m x 4 m (16 m^2). This stain appeared to be originating from liquids dripping out of the back end of the cat. The previous environmental investigation did not include any investigation in this stain area. This site is presented in Figure 6.2 and in Photo 28.

The 2004 investigation included the excavation of one testpit (US-1076) in this stain to determine hydrocarbon concentrations in the granular material located on top of the underlying rock. Two soil samples were analyzed from this testpit. One sample was collected from a depth of 0-15 cm and the second was collected at a depth of 20 cm. The analytical data presented in Table 11.2 indicates that there were exceedances above the CCME criteria for the F2 (6540 ppm) and F3 (15600) ppm in the sample collected at a depth of 0-15 cm and there were no hydrocarbon exceedances from the sample collected at 20 cm. Based on the scope of work completed at this stain and the depth of fill materials in this area, there is approximately 4 m^3 of hydrocarbon contaminated material in this area.

West of Garage – Gravel Pad Stain

Located west of two portable fuel tanks and a truck, on the west side of the garage is a level pad with a sandy gravel surface. A light stain was visible on the surface of this pad. This pad has approximate dimensions of 14 m x 40 m. and the stained area covered approximately 60% of this area. This site is presented in Figure 6.2 and in Photo 29.

The previous investigation in this area included the collection of two soil samples (RRMC #26, #27) from the surface of the pad as well as the collection of one sample down gradient towards the south (RRMC #28). The analysis of these three soil samples indicated that metal and PCB levels were less than the CCME remediation criteria. The previous report also estimated that 15 m^3 of hydrocarbon contaminated soils may be present at in this area, however no hydrocarbon analysis was completed.

In order to confirm if hydrocarbon contamination was present at this location, the 2004 investigation included the excavation of one testpit in the middle of the stained area (US-1071). During the excavation of this testpit it was noticed that the surficial geology profile of this area consisted of 0.75 m of moist sandy gravel fill material placed on top of rock. At a depth of 0.50 m the gravel was wet and had a very faint hydrocarbon odor. Two soil samples were collected at this testpit, one from a depth of 0.20 m and the second from a depth of 0.50 m.

Photo 29 Staining on gravel pad west of Garage

Photo 30 PCB and metal impacted area, east of Garage

These two samples were submitted for hydrocarbon analysis. Table 11.2 presents a summary of the data from sample US-1071. The data indicates that there were no exceedances in the sample collected at a depth of 0.2 m however, there was a F3 exceedance (1210 ppm vs. criteria of 800) in the sample collected at a depth of 0.5 m. Due to the small amount of evidence in the field which indicated hydrocarbon contamination at this site, no additional boreholes were installed around the perimeter of the pad area. Assuming that there is a layer of hydrocarbon impacted material between the depths of 0.5 m and 0.75 m over the entire area of the pad, there may be approximately 140 m^3 of material, which exceeds CCME residential criteria for the F3 hydrocarbon fraction, in this area.

East of Garage - PCB Contamination

The previous investigation identified a surface stain approximately 16 m^2 in size on the east side of the Garage. The stain was located between the man door and the overhead door on the east side of the garage. One soil sample, RRMC flag #21, was collected from this area and was analyzed for PCBs and metals. The PCB concentration was determined to be 3.6 ppm and the metals that exceeded DCC Tier 2 criteria included copper, lead and zinc. This site is presented in Figure 6.2 and in Photo 30.

At the time of the 2004 investigation, the previously identified 16 m^2 size stain was not apparent in this area however, a black stain approximately 8 m^2 was visible along the garage wall and a second stain <2 m^2 in size was visible off the northeast corner of the garage. The scope of work in the 2004 investigation included the excavation of four testpits at this site in order to delineate subsurface contamination. One of the testpits was excavated adjacent to RRMC flag #21 (US-1079) in order to determine the vertical extent of contamination and three testpits (US-1050, US-1078 and US-1079) were excavated to delineate the horizontal extent.

Tables 11.1 and 11.2 present a summary of the PCB and hydrocarbon analysis from this location. The analysis of the sample from US-1079 indicated that the maximum depth of PCB contamination was less than 0.3 m and was delineated horizontally in testpits, US-1050 and US-1078. An exceedance of the DCC Tier 1 criteria of 1.3 ppm was detected in US-1079 (1.7 ppm) therefore PCB delineation to the north was not achieved. Hydrocarbon contamination (F3) exceeding CCME criteria was detected in all boreholes, except for US-1050. Figure 6.2 shows the approximate extent of the PCB and hydrocarbon contaminant plume in this area. Based on the position of the boreholes, the PCB and hydrocarbon plume covers an area of approximately 40 m^2, assuming a maximum depth of contamination at 0.2 m, there is at least 8 m^3 of PCB (DCC Tier 1) and metals (DCC Tier 2) and hydrocarbon impacted material at this site.

South of Garage

The previous investigation identified a surface stain and a dump area on the south side of the Garage. An inspection of this site in 2004 identified a very large surface stain in this area as well as areas where debris had been discarded. The debris consisted of barrels (some of which were leaking), semi buried barrels, vehicle parts and scrap metal pieces.

The surface stain was visible on the rocky slope immediately below the Garage, and appeared to get more extensive at the base of the slope and in the areas adjacent to the pipeline from the POL storage facility (See Photos 31 - 35). A second large surface stain was visible below a pile of leaking 45 L barrels. This stain had migrating down an access road and then flowed down the mountain slope (Photo 36-38) to the south (approximately 60 m from the Garage). Due to the presence of a number of small cliffs and valleys, the contaminants were directed to migrate down gradient through a number of natural drainage courses.

The previous investigation at this dump area consisted of the collection of 10 surface soil samples. Two of these soil samples exceeded the CCME PCB criteria and there was one elevated chromium metal concentration. The scope of work of the 2004 investigation included the excavation of 12 testpits. Figure 6.2 shows the location of the testpits and Tables 12.1, 12.2 and 12.3 present a summary of the analytical data.

Metals

The previous investigation identified an elevated chromium concentration in surface sample RRMC 29 (67 ppm). To determine if there was any higher concentrations of chromium in this area, the 2004 investigation included the collection of additional testpits in the area around RRMC 29 (US-1042 and US 1044). As indicated in Table 12.1, there were no additional elevated chromium concentrations recorded in the additional soil samples. Figure 6.2 presents the location of the boreholes in the vicinity of RRMC 29 (southwest of garage).

PCBs

The 1994 investigation identified PCB concentrations above DCC Tier 1 criteria in sample RRMC #13 and RRMC #16. Earth Tech was able to complete delineation of these two areas using existing RRMC data and with the collection of soil samples from additional testpits. Figure 6.2 presents the location of the PCB plume around RRMC flag #13 and flag #16. Two additional areas with PCBs levels above DCC Tier 1 criteria were also encountered (US-1052 and US-1074). Delineation east of borehole US-1074 was not achieved in this investigation. Based on the location of the delineating boreholes, the PCB plume may be approximately 170 m^2 in size, assuming the same vertical conditions as in the metals investigation, there may be 35 m^3 of PCB impacted material at this site (< DCC Tier 2).

Hydrocarbons

An extensive amount of surface staining was observed on the side and at the bottom of the embankment below the Garage. The source of the staining appeared to be from the disposal of waste oil. There was also an extensive amount of staining observed in the vicinity of the POL storage pipeline that was located at the base of the embankment. Potentially this pipeline may have been leaking while it was in use. Very high F3 and F4 fractions were identified in samples collected in US-1051, US-1052 and US-1073. Delineation to the down gradient side of the stain was achieved with testpits US-1042,

Photo 31 Staining below southwest corner of Garage

Photo 32 Staining below southeast corner of Garage, note semi buried fuel pipeline

Photo 33 Staining below Garage, looking north

Photo 34 Staining below Garage, looking north east

Photo 35 Staining below Garage, looking south

Photo 36 Staining below leaking barrels in Garage dump area

Photo 37 Staining below leaking barrels, looking south

Photo 38 Sample location US-1045, down-gradient of dump

US-1047, US-1045, US-1046, and US-1049. In order to determine the maximum depth of hydrocarbon contamination within the plume area, a sample was collected from a depth of 30 cm in US-1048. This sample was collected at the maximum depth achievable. The hydrocarbon analysis indicated that there was a slight exceedance for F2 (1060 ppm vs. a criteria of 900 ppm) in this sample. Based on the location of the surrounding boreholes, the area impacted with hydrocarbons, is approximately 1100 m^2 in size. However, due to elevated F3 and F4 concentrations in US-1074, delineation of the impacted hydrocarbons to the northeast was not determined. Assuming a depth of 0.3 m there may be approximately 330 m^3 of hydrocarbon impacted material at this location.

Water Analysis

Below the dump area, surface water could be heard running through and under the porous substrate of boulders and cobbles, these streams were followed and found to at surface further down gradient of the dumpsite. Grab samples of the groundwater were collected south of US-1045 and at a second location approximately 30 m to the east. The sample collected near US-1045 was located in a drainage course that would receive the majority of the runoff from the upper stained area. Figure 6.2 shows the location of these two sample locations. Both water samples were analyzed for metals (total and dissolved), hydrocarbons and PCBs.

The two water samples were analyzed for metals, hydrocarbons and PCBs. Tables 13.1, 13.2 and 13.3 present a summary of the water analytical results. The analytical results indicated that the PCB concentrations were less than detection limits and the hydrocarbon concentrations below CCME Freshwater Aquatic Life criteria. The metal analysis indicated that there were exceedances in the water sample collected near US-1045 for aluminum, arsenic, chromium, copper, iron, lead, nickel, thallium and zinc. The metals which exceeded the CCME FWAL criteria in USGW1 were, aluminum, cadmium, copper, iron, lead and nickel. The surface water sample US-1045 was collected in an area down gradient of the main drainage pathway below the garage/dumpsite, while USGW1 was collected approximately 30 m east of this point. It should be noted that the samples collected at both sample points in 2004 had high turbidity therefore the total metal analysis may have produced anomalously high values.

The analysis of the dissolved metal concentrations indicated that all metal parameters for both water samples were at or below the CCME freshwater aquatic life criteria.

4.6.5 POL Storage Area

Located between the Inuit house and the Garage is the POL storage facility. This facility consisted of two 75,700 L ASTs as well as the remains of a pumphouse building. The pumphouse was used to transfer fuel via an aboveground 75 mm diameter pipeline to the Garage, Warehouse and Modular Train. Portions of the pipeline are buried around these buildings. There were no signs of surface staining at this site. Both fuel tanks were open and water had collected in the tanks up to the bottom of the man way. The POL storage facility is shown in Photos 39 and on Figure 6.2.

Photo 39 POL Storage Facility, looking north

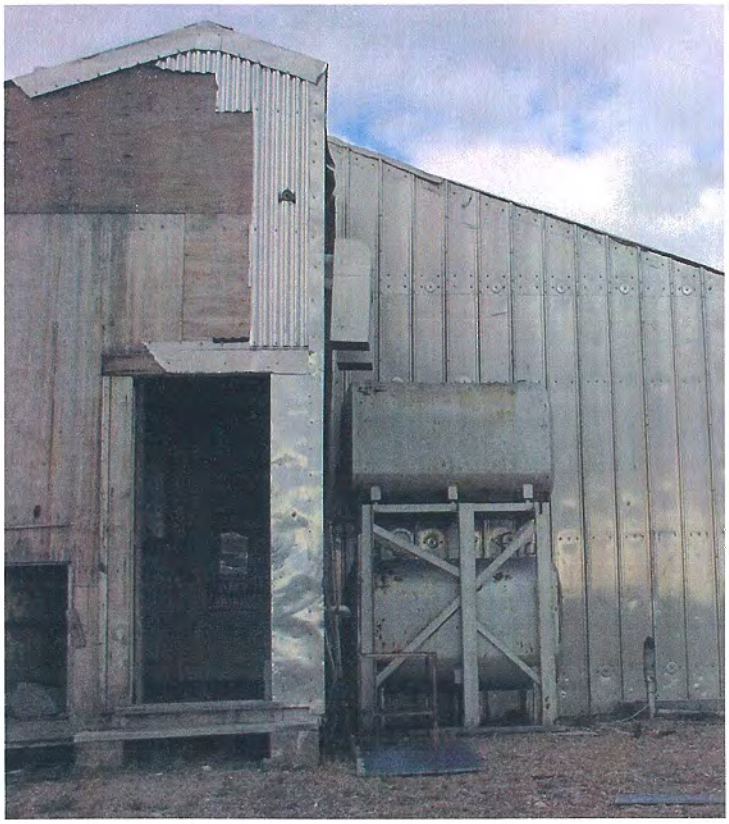


Photo 40 Configuration of Warehouse ASTs

Observations indicated that this site was constructed by leveling an area with imported gravel material. The largest amounts of fill were recorded below the fuel tanks and around the pumphouse (at least 40 cm). A bare rock face with minor amounts of gravel on the surface was located immediately down gradient of the site.

Previous investigations in this area were limited to the analysis of two samples for metals adjacent to the pumphouse and in an area down gradient of the site. The intent of the 2004 investigation was to determine if there was any hydrocarbon contamination at this site. The investigative effort at this site consisted of the hand excavation of six testpits, one test pit was excavated up gradient of the site, one adjacent to each tank and pumphouse and two were excavated down gradient of the fuel storage area. These six testpits were labeled US-1056 to US-1061.

Table 14.1 and 14.2 present a summary of the analytical data from this site. The analytical data indicates that there were no exceedances for the PAHs (all compounds were below detection limits). There were exceedances for F2 and F3 in US-1056, US-1057 and US-1061 (all up gradient and down gradient of the site) and exceedances for F2 were detected in US-1058, US-1059 and US-1060 (around the fuel tanks and pumphouse). Based on the information obtained in this investigation, the contaminant plume covers an area of approximately 650 m^2 and assuming that the average depth of contamination in this area is 0.3 m, there is at least 200 m^3 of hydrocarbon impacted gravel at this site. It is assumed that a portion of this material would be accessible if the site was remediated however, it is expected that rock material located below the surface gravels are also impacted with hydrocarbons. Remediation of this rock (by excavation) material may be impractical.

One composite water sample was collected from the two tanks in order to determine a suitable disposal method. This sample was analyzed for hydrocarbons. Table 14.3 in Appendix D presents a summary of the analytical data for this sample. The analytical data indicated that all BTEX compounds were below lab detection limits (benzene, toluene, ethylbenzene) and CCME aquatic life criteria. Based on this information, the water in these tanks does not require disposal prior to disposal.

4.6.6 Warehouse POL Storage Area

Located on the west side of the Warehouse are two 1040 L aboveground storage tanks, which were used to supply fuel to the generators located inside the Warehouse (Photo 40). The investigation at this site included the collection of soil samples from three hand excavated testpits. As was seen in other areas of the summit, the surficial materials consisted of approximately 0.10 to 0.50 m of sand/gravel fill on top of rock. In some areas the fill materials were frozen. The subsurface investigation that was completed at this site consisted of the collection of soil samples from US-1062, US-1069 and US-1070. All three of these samples were collected between the depths of 0.30 m to 0.50 m and analyzed for hydrocarbons and PAHs. Tables 15.2 and 15.3 present a summary of the analytical data. Figure 6.1 shows the locations of the three testpits at the Warehouse.

The analytical data indicates that there were no exceedances for the PAHs (all compounds were below detection limits) and there were exceedances for F2 in US-1062 and US-1069. These two testpits were located adjacent to the south end and north ends of the tanks. There were no exceedances in US-1070, which was located 5 m west of the storage tanks and at a depth of 0.50 m. Due to the frozen materials located below the warehouse, Earth Tech was unable to determine if there was any subsurface hydrocarbon contamination located below this building. Assuming a maximum depth of impacted soils at 0.5 m and there is no contamination below the warehouse, there is approximately 15 m^3 of hydrocarbon impacted soils in this area.

4.6.7 Inuit House Area

Located around the area of the Inuit House, are two barrel dumps located east of the building. The 1994 investigation had identified metal impacted material at the smaller of the two barrel dumps. The 2004 investigation in this area included the delineation of hydrocarbon staining and metal impacted soils as well as an investigation of an area of a potential waste dump site that was mapped out by the geophysical sub consultant. Figure 6.3 shows the location of the sites investigated in this area. Tables 17.1, 17.2 and 17.3 in Appendix D presents all the analytical data from the investigation work completed in the Inuit House area.

Sample US-1053, US-1054 and US-1055 were located in an area previously determined to have elevated concentrations of zinc and chromium. The metal concentrations were below DCC criteria. In addition, located in this area were 19 barrels and a surface stain that covered an area of approximately 31 m^2. This stain was concentrated around the base of a number of barrels (Photo 41) however, a narrow ribbon of staining (0.3 m wide, 11 m long) was visible extending from the southern end of the stain.

Sample location US-1055 (sample depth 35-40 cm) was located adjacent to RRMC tag #72. The metal analysis for this sample as well as the samples from US-1053 and US-1054 were below DCC and CCME criteria.

Hydrocarbon analysis was not completed on any of the samples collected at this site however, a Petroflag screening kit was used to confirm total hydrocarbon levels on the sample collected from US-1055. This kit indicated a TPH concentration of 954 ppm, due to the low level recorded, no additional hydrocarbon sampling was completed at this site.

Based on the information obtained in this investigation it is assumed that the hydrocarbon and metal contamination at this site is limited to the extent of the stained area. Assuming a maximum achievable depth of 35 cm, there is approximately 14 m^3 of hydrocarbon and metal impacted sands/gravels in this area.

During the completion of the geophysical survey of the upper station, an area north east of the Inuit House was identified as a being a potential buried dump site (Photo 42). In order to confirm if any contaminants were migrating off this site, four testpits were hand excavated and soil samples were collected. These testpits are labeled US-1065, US-1066, US-1067 and US-1068 on Figure 6.3. A sample from each of these testpits was analyzed

Photo 41 Surface stain near Inuit House

Photo 42 Inuit House dump location, antenna structure in background

for metals and samples from the two down gradient testpits (US-1066 and US-1067) were also analyzed for hydrocarbons and PCBs. The analysis of these additional samples indicated that metals, PCB and hydrocarbon concentrations were less than DCC and CCME criteria. Tables 17.1, 17.2 and 17.3 present a summary of the analytical results for these samples.

During the excavation of the testpits at this dumpsite, perched groundwater flowed into the open excavations. A sample of the groundwater recovered from US-1067 was collected and analyzed for PCBs, hydrocarbons and metals (total and dissolved). Tables 18.1, 18.2 and 18.3 present a summary of the groundwater analytical data. The data indicated that the hydrocarbon concentrations were substantially less than the CCME Freshwater Aquatic Life criteria. The PCB analysis was 1.7 µg/L, which is elevated compared to the former CCME criteria of 0.1 µg/L. Currently the CCME does not have any publish criteria for PCBs in water. Total metal analysis also determined exceedances for several metals (aluminum, arsenic, copper, lead, molybdenum, nickel, silver, thallium and zinc) all above CCME Freshwater Aquatic Life criteria.

The analysis for dissolved metals indicated that all metal parameters were at or below the CCME freshwater aquatic life criteria except for cadmium.

4.6.8 Surface Staining

A number of surface stains were observed in the Upper Station area. The following paragraphs present a summary of the investigation completed at each stain.

Antenna Base

Three very dark surface stains were observed on the ground surface in an area north of the antenna base (Photo 43). Figure 6.1 shows the location of these three stains. These stains were close together and covered an area of approximately 35 m^2. The previous investigation did not include any investigative activity at these stains. These stains did not appear to be related to any adjacent activity and were likely caused by intentional or inadvertent spills.

One composite surface sample was collected from the three stains and one testpit was excavated in the center stain in order to determine the vertical depth of soil contamination. Due to size of the subsurface rocks, this tespit could not be excavated beyond a depth of 0.50 m and vertical delineation was not achieved. The samples from this location were analyzed for hydrocarbons, PCBs and PAHs. The analytical data indicated that PCBs and PAHs were not detected however; there were very high exceedances above CCME F3 criteria in both samples. The F3 fraction in the composite sample was 29,200 ppm and the F3 fraction in the sample collected at a depth of 0.5 m was 16,300 ppm. Tables 15.1, 15.2 and 15.3 in Appendix D presents a summary of the analytical data.

Based on the information obtained from this limited investigation there is approximately 25 m^3 of impacted accessible material (<0.5 m in depth, non rock material) in this area.

Photo 43 Surface stain near antenna base

Photo 44 Surface stain off northwest corner of Modular Train

During the excavation of the testpit US-1063, perched groundwater flowed into the open excavation. A sample of the groundwater was recovered and was analyzed for PCBs, hydrocarbons and metals (total and dissolved). Tables 16.1, 16.2 and 16.3 present a summary of the groundwater analytical data.

The data indicated that hydrocarbon concentrations were detectable however they were substantially less than the CCME Freshwater Aquatic Life criteria. The PCB analysis was 0.4 µg/L, which is slightly higher compared to the former CCME criteria of 0.1 µg/L. Currently the CCME does not have any publish criteria for PCBs in water. Total metal analysis also determined exceedances for several metals (aluminum, arsenic, copper, lead, molybdenum, nickel, silver, thallium and zinc) all above CCME Freshwater Aquatic Life criteria.

The dissolved metal analysis indicated that all metal parameters except cadmium were below the CCME freshwater aquatic life criteria.

Northwest of Module Train

The 1994 investigation identified a number of surface stains west and north west of the modular train. The previous investigation determined that a PCB concentration of 1.5 ppm (RRMC flag #78) at one of the stains. The stains were located in a naturally rocky area beyond the extent of leveled part of the summit.

During an inspection of this area in 2004, a total of eight stains were observed north and north west of the module train. The stains were located on rock ledges north of the train or on a lower plateau located below the train. Scattered debris in this area consisted of oil filters, metal strapping, cables, sheet metal roofing and barrels. The total surface area of the stains were difficult to determine due to the snow cover and since the stains were also located in, on, and below boulders and rock crevasses. However, it is estimated that they cover an area of at least 85 m^2. Material at the location of the stains was typically fine sand and gravel or boulder size rocks. The maximum depth of sampling in the stain areas was limited to depths less than 10 cm due to site conditions. The stain in the area of RRMC flag #78 was approximately 31 m^2 in size. Photos 44 and 45 show the staining on the west side of the train and Figure 6.1 shows the locations of the stains.

One composite soil sample was collected in order to get an understanding of the contaminant levels for the entire stained area. Table 15.1 presents a summary of the analytical data for this sample (NW Stains). This sample was analyzed for hydrocarbons, PCBs and PAHs. The analytical data indicated that the only exceedance that was recorded in the composite sample was in the F3 and F4 hydrocarbon fractions. The PCB concentration of this sample was determined to be 0.5 ppm. To help determine if there were any impacts down gradient of the stained areas, one soil sample (US-1043) was collected in an obvious drainage pathway down gradient of the stains. This sample was collected between the depths of 0-0.10 m. The data from this sample was previously presented in Tables 10.2 and 10.3. The analysis for this sample indicated that the hydrocarbon and PCB concentrations were well below CCME residential criteria.

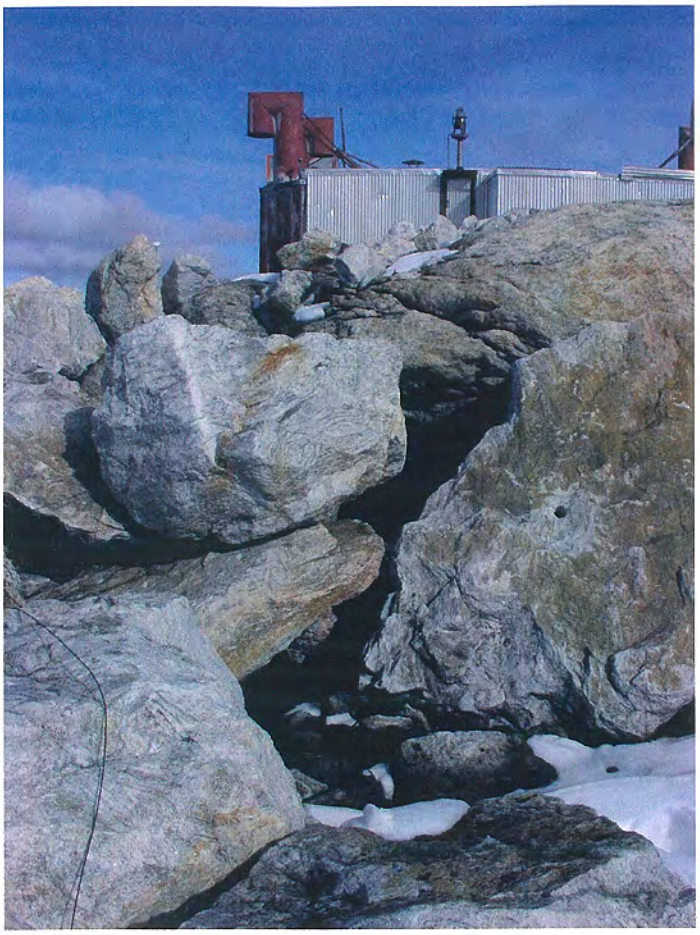


Photo 45 Staining below boulder sized rock, west side of Modular Train

Due to the lack of granular material in the area of stains, the maximum depth of contamination is assumed to be 0.10 m. Based on this depth and the size of the staining, there is approximately 10 m^3 of PCB (<DCC Tier 2 criteria) and hydrocarbon impacted material at these sites.

4.7 Biological Sampling

As requested in the Terms of Reference, a total of five sport fish were collected from Water Lake for tissue analysis. To help facilitate the collection of the fish, a gill net was placed across the Water Lake outlet. In summary a total of five Arctic Char were caught and sent to the laboratory for analysis of metal and PCB content in the muscle tissue. Tables 19.1, 19.2 and 19.3 present a summary of the physical properties and PCB and metal concentrations recorded for each fish.

It was noticed that detectable amounts of PCBs were identified in each specimen. Since these fish do not live in Water Lake year around the presence of the PCBs may not be attributed to PCB materials originating at the FOX–C DEW Line site. It is expected that these values are representative of background conditions.

4.8 Summary of QA/QC

To determine the precision of the reported laboratory analytical results, Duplicate sample results were evaluated using the EPA Relative Percent Difference Method.

$$\text{Relative percent Difference (RPD)} = \frac{(X_1 - X_2) \times 100}{(X_1 + X_2)/2}$$

Table 20.1 in Appendix D presents the QA/QC calculations for the 4 different parameters analyzed for (Hydrocarbons, PCBs, PAHs and Metals).

Two parameters exceeded the recommended RPD value of 20 % for metals (inorganics). These metals included boron and cadmium. The RPD exceedance may be attributed to non-homogeneous contaminant dispersion within the soil that was sampled twice for duplication. Comparison of the other RPD values for metals indicated that they were within the recommended range.

Three parameters exceeded the recommended RPD value of 40 % for organics, these included hydrocarbons concentrations of F3 and F4. The RPD exceedances for the F4 and may be attributed to the numerical results being close to the detection limit of 10 ppm. The RPD exceedance may be attributed to non-homogeneous contaminant dispersion within the soil that was sampled twice for duplication.

One parameter exceeded the recommended RPD value of 40 % for PCBs (Arochlor 1254). The RPD exceedance for Archlor 1254 may be attributed to the numerical results (0.3 ppm and 0.1 ppm) being close to the detection limit of 0.1 ppm.

One parameter exceeded the recommended RPD value of 40 % for PAHs (Chrysene). The RPD values for all other PAH compounds were within the acceptable range.

The laboratory QA/QC include duplicates, and surrogate spike recoveries were all within acceptable limits for all parameters analyzed.

5.0 WASTE AUDIT

5.1 General

Previous reports[1] completed for the Ekalugad Fiord site discussed partial inventories for both hazardous and non-hazardous materials. Non-hazardous materials were generally described as inert or dry material that could be left or disposed of on site that would not have a negative impact on the environment. Hazardous materials were generally described as wet or leachable materials that if left on site or not properly contained may pose a threat to the environment.

The reports discussed location of the material, whether it was hazardous or not, type of material, and estimated quantities. For continuity purposes, the format for the 2004 site visit and materials inventory follows a similar format and has increased detail. Keeping with the format of the report, there are four main areas, The Beach Area, the Water Lake and River Area, The Mid Station Area and the Upper Station Area. Each area listed has several sub areas. Occasional materials located outside of the four main areas will be incorporated into the area closest to where it was encountered.

Non Hazardous Material is reported in crushed volumes and is assumed that simple demolition procedures will be used to obtain these volumes (e.g. crushing with excavator bucket or crushing in landfill with bull dozer, torch cutting of tanks etc.). The summary tables in Appendix F present a detailed summary of the waste audit that was completed at the FOX-C DEW Line Site.

The following paragraphs present a brief description of the waste materials.

5.2 Beach Area

The Beach area site is located on the shores of Ekalugad Fiord as shown in Figures 2 and 3 of Appendix A. Sub areas include; two barrel dumps, a barrel/vehicle dump and a POL storage area complete with two large steel tanks. Aside from general inventory, environmental concerns in this area include any remaining vehicle fluids, miscellaneous oil and fuel filters that may still contain some residual hydrocarbon material. All barrels checked in these areas appeared to be empty. All materials noted at the beach area are listed in Table 1 of Appendix F.

[1] Construction Specifications For The Clean Up of Ekalugad Fiord (FOX-C): Intermediate DEW Lien Site. The CAM-F Sarcpa Lake DEW Line Site, Sinnani Inc. March 2001. Environmental Study of Abandoned DEW Line Sites. Volume II Six Intermediate Sites in the Arctic, ESG Royal Roads Military College, March 1994.

Beach Area Barrel Dump #1

The Beach Area Barrel Dump #1 contains approximately 300 empty barrels. Labels on the barrels indicated that they used to contain fuel, lubricating oil and other hydrocarbon products. Most barrels were noted as being empty. Fluid sample BA-BD1-01 was taken from one of the partially full barrels and is listed in Table 22.1 of Appendix D. The sample was noted as containing mostly water, however trace amounts of hydrocarbon product may still be present. Also located in this area are a number of steel vehicle and crane parts.

Beach Area Barrel Dump #2

The Beach Area Barrel Dump #1 contains approximately 520 empty barrels. Labels on the barrels indicated that they used to contain diesel.

Beach Area Vehicle Dump

The beach area vehicle dump is an area between the Beach Area Barrel Dump #2 and the POL AST site as shown in Figure 3.0. The dump contains heavy equipment, trucks, generators and empty barrels. Hazardous items include potential fluids that still remain in the heavy equipment and a small pile of miscellaneous fuel and oil filters.

Beach POL ASTs Area

The two 75,000 L above ground storage tanks were used to store fuel used for operation of the FOX-C Intermediate DEW Line site. Materials noted at this site included the two tanks, above ground piping, barrels, concrete tank pads and various other debris items.

5.3 Water Lake Area

The Water Lake Area, indicated in Figure 4, was used as a staging area and water retrieval point for station operations. The water lake consisted of four separate sub areas that included the Water Lake Barrel Dump, the East Side of Water Lake, the Water Lake Vehicle Dump near the Station Road Washout and the River Area between the Water Lake and Beach Area. All material encountered at each of these areas is listed in Tables 2 and 3 of Appendix F.

Water Lake Barrel Dump #1

The Water Lake Barrel Dump #1 contains approximately 250 empty barrels and some scattered wood debris. Labels on the barrels indicated that they used to contain fuel, lubricating oil and other hydrocarbon products. Most barrels were noted as being empty.

East Side of Water Lake

The east side of Water Lake includes the shore area of water lake and the section of braided river coming down from the mountain. The non-hazardous industrial debris noted in this area included wood debris, metal debris, heavy equipment (crane booms and bases) and construction materials. Hazardous materials encountered included several full barrels of product in the braided river section, blasting caps, fuel oil filters and PCB paint on the wood of a small hut located at the east end of the lake. All materials are inventoried in Table 2 of Appendix F. A number of empty barrels also exist on the west shores of Water Lake.

Water Lake Vehicle Dump

Approximately 750 m east of the Water Lake near the station road washout is where several vehicles have been abandoned. The inventory of this area includes tracked bombardiers, generators and industrial debris. Creosote treated timbers were also noted in the area. Details of existing materials are listed in Table 2 of Appendix F.

It should be noted that remains of a crane were visible partially buried in a landslide slope, west of the vehicle dump. Portions of the materials were located adjacent and in the adjacent stream. Photo 46 shows a picture of this debris. To successfully remove this debris, the contractor will need to make special precautions to prevent any releases into the stream and to ensure the safety of onsite workers.

River Area between Water Lake and Beach Area

The river area between Water Lake and Ekalugad Fiord has banks scattered with barrels and domestic garbage. This area includes the riverbed and banks and two separate dump areas. The riverbed and banks contain approximately 200 rusted empty barrels with no visible labels. Approximately 400 m downstream of Water Lake exists a domestic dump containing tin cans, glass, wood, old newspapers and empty barrels. Further down the river on the east slope there is another barrel dump with 175 barrels scattered over the east bank. It is suspected that some barrels have been carried down the river and deposited in Ekalugad Fiord.

Braided River Area Leading from Mountain to Water Lake

In the area leading from the mountain to the Water Lake there is a braided river area with approximately 100 barrels scattered throughout the area. Approximately 15 of the barrels were noted to be full to partially full. These barrels were identified and marked with orange spray paint. Fluid samples 1, 2, 3, 8 and 9 were taken from some of these barrels and are listed in Table 22.1 of Appendix D. Fluids within these barrels were identified as Diesel, Condensate (Jet fuel, gasoline) or mixtures containing mostly water. The majority of the barrels were empty.

Photo 46 Buried debris adjacent to creek below Water Lake Vehicle Dump

Photo 47 Downed antenna structure

5.4 Mid Station Area

The Mid Station area consists of various stationing areas, Quonset storage units, barrel dumps and general waste dumps. There are 8 barrel dumps containing a total of approximately 6000 barrels and domestic/industrial waste. The mid station and associated sub areas are indicated on Figure 5. Non hazardous materials encountered at the mid station include empty barrels, at tracks, wood debris, wooden building foundations, generators, piping and other industrial waste materials. Hazardous materials include full barrels, PCB painted items and blasting caps.

Barrel fluid samples MS Barrel # 1, MS-Barrel # 2 and MS Barrel # 3 were taken from three separate full barrels. Samples were identified as Lube Oil, Diesel or a mixture containing mostly water and the results of the fluid identification analysis are listed in Table 22.1 of Appendix D. Mid Station barrel dump #2 contains approximately 120 barrels of lube oil and appear to be leaking. All materials are listed in Table 4 of Appendix F. The mid station area is estimated to contain approximately 4,488 cubic meters of non hazardous waste and approximately 40 cubic meters of hazardous waste.

5.5 Upper Station Area

The upper station area at FOX-C consists of three main buildings (Module Train, Warehouse and Garage), a sewer outfall area, a POL storage area, a large fallen antenna and a dump area. The complete inventory of identified waste materials located in the Upper Station area is presented in Table 5 in Appendix F.

The outfall area is located at the north end of the Upper Station site. The outfall area contains stained soils, out fall piping, oil filters, barrels and a concrete foundation for the former antenna (Photo 47).

The Module Train is located south of the outfall area and was used as the living and working quarters while FOX-C was in operation. The building is a wood structure with partially painted aluminum siding, built on raised lumber cribbing. The interior of the station consists of sleeping quarters, washroom, water/sewage room, kitchen and eating area, laboratory (which was likely the operations room while the site was used as an intermediate station), electrical room, and a diesel storage and generator room. Photos 49 and 50 present views of the interior of the Module Train.

Table 5 in Appendix F indicates a summary of the hazardous material identified at the Module Train. This is to allow differentiation between actual volumes of uncontaminated (non-hazardous) material and hazardous substances.

The interior of the module station had several substances considered hazardous building materials including:

- PCB paint coated substances.

Photo 49 Typical piping insulation and paint condition – Module Train

Photo 50 Genset - Module Train

- ACM in fire doors. Friable and exposed.
- ACM piping insulation and on roof penetrations for ventilation pipes.
- Floor tiles with ACM. Non-Friable.
- Battery Acid.
- Compressed gas cylinders.
- Possible residual hydrocarbons left over in the heating oil, diesel fuel tanks and supply lines.
- Used oil (4 litres)

Non-Hazardous materials were comprised of mostly lumber, soft metals (aluminum, copper etc.), steel, and fiberglass insulation. Quantities of barrels, lumber, steel, wire, etc. are presented in Table 5 of Appendix F.

Nearly all painted substances (including water tanks and interior plywood) contained PCB's in the paint. Previously sampled areas had laboratory values for PCB's in interior paints from 4000 to 30,000 ppm and the 2004 site visit yielded values of PCB's in interior paints of 3.3 to 42,000 ppm.

The Warehouse is empty and contains shelving units and furniture. The north end of the warehouse contains 4 separate rooms. Two of the rooms contain asbestos floor tile. The small room containing the heating unit has interior transite boarding and exposed asbestos insulation on some of the ductwork. The rooms are filled with old bedsprings and miscellaneous furniture. PCB paint exists on all the interior painted plywood surfaces and on the overhead door at the south end. A summary of the materials is listed in Table 5 of Appendix F.

Not all the interior walls of the warehouse are painted. Unpainted panels of galvanized or aluminum metal were visible. Paint on plywood inside the warehouse was found to contain PCB paint.

Two AST day tanks are located at the west end of the warehouse and still contain fuel. Photos 51 and 52 present views of the interior of the Warehouse.

Non-hazardous materials are listed in detail within the Table 5 and are mostly wood, concrete and structural steel.

The Garage is still intact and contains two large generators. Paint sampling conducted in the Garage indicate that the majority of painted surfaced surfaces contain PCB Paint. The paint on the interior cladding is severely flaked and a large amount of paint flakes exist on the floor of the Garage. The heating unit room contains exposed asbestos insulation. The Garage concrete floor slab contains some staining and associated PCB levels of approximately 38 ppm. There is also a large tracked vehicle in the main bay. Both of the overhead doors are coated with PCB containing paint.

Photo 51 Typical piping in Warehouse

Photo 52 Overhead door and exterior wall cladding – Warehouse

Photo 53 Genset and peeling paint in Generator Room – Garage

Photo 54 Batteries in Generator Room - Garage

Fill materials (gravel, and boulder sized material) as well as pallets of 25 L pails (contents unknown) have used to level the base below the garage floor slab. Photos 53 and 54 present views of the Garage interior.

Southeast of the garage is a pile of 120 lubricating oil barrels that are currently leaking lubrication oil. Fluid sample US-BS-01 was taken from the leaking barrels indicating that the lubricating oil did not contain PCBs as noted in Tables 22.1, 22.2 and 22.3 of Appendix D.

Northwest of the Garage is the remains of a paint shed that contains cans of paint and various solvents. South of the garage is the southern face of the mountain. The southern face contains scattered barrels and heavy soil staining. West of the garage there are 2 mobile fuel tanks on pallets. The associated fuel gauges indicate there is still approximately 7000 liters of fuel remaining. All materials are listed in detail on Table 5 of Appendix F.

The upper station POL storage area is similar to the one located at the Beach Area. The outside of the tanks and the associated pump house contain PCB levels that exceed criteria.

The station antenna and the associated concrete foundations still remain. A small barrel dump containing approximately 40 barrels is just north of the Antenna.

The remains of the Inuit house is locate at the southeast corner of the Upper Site and has an associated dump area just north of it. There are approximately 200 barrels scattered to the south of the house. The house itself has wood painted with PCB containing paint. There are also creosote treated timbers noted at the Inuit House area.

6 REGULATORY CRITERIA

The following presents a summary of the criteria that had been selected to be used for comparison purposes. This included the following criteria for the each media type.

- Soil - The results of the laboratory analyses for metals and PCBs were compared to the criteria that were developed for the Department of National Defence to support their DEW Line clean up projects (DCC Tier I and Tier II criteria). For metals that were not included in the DCC criteria, the most recent edition of the *CCME Canadian Environmental Quality Guidelines* – Residential/Parkland criteria was used for comparison. Hydrocarbon analysis was compared to the CCME Canadian Wide Standards for Hydrocarbons.
- Water – *CCME Canadian Environmental Quality Guidelines* Freshwater Aquatic Life Criteria
- Sediments – *CCME Canadian Environmental Quality Guidelines* Freshwater
- Tissues - *CCME Canadian Environmental Quality Guidelines*

7 NCS SITE CLASSIFICATION SUMMARY

The national Classification System for Contaminated Sites (NCS) was developed by the CCME for the review and classification of contaminated sites in Canada. The NCS is a standardized method that uses site characteristics, site location and contaminant information to prioritize and classify the potential for adverse impacts. All relevant site information is stored in a national database in an effort to ensure funding for contaminated site clean up is allocated to sites with respectively higher potentials for adverse effects and impacts.

A previous assessment had calculated a NCS value of 76.7 for the FOX – C DEW Line Site. This value ranks the site as a Class 1 site.

As requested in the Terms of Reference for this project, an updated NCS Classification was determined based on the findings of the investigation. In summary the NCS score determined by Earth Tech is 73.7 , indicating a Class 1 site. A copy of the NSC score is included as Appendix H.

8 SUMMARY OF INVESTIGATION ACTIVITIES

8.1 Phase III Site Investigation

During the time period of August 24 to September 1, 2004, Earth Tech completed a detailed Phase III ESA of the FOX-C DEW Line Site. The purpose of this assessment was to help determine the extent and volumes of contaminated materials in order to support the development of a remedial plan for the site.

Based on the findings of the Phase III Assessment, the following table presents a summary of the areas with soil or groundwater contamination in excess of the governing DCC or CCME criteria.

Table 8.1 Summary of Areas Requiring Remedial Action

Location	Contaminant Exceeding Governing Criteria (Max Concentration ppm)	Media	Volume m^3	Comments
Beach Area POL Tanks	Hydrocarbons (F2 2890 ppm)	Soil	340	Close proximity to Fiord
Helipad Surface Stains	Hydrocarbons (F3 18000 ppm)	Soil	75	Maximum depth not achieved in hand augered testpits
Drainage Ditch Stain	Hydrocarbons (F3 13700 ppm, F4 8210 ppm)	Soil	6	
Mid Station Barrel Storage Area	Hydrocarbons, (F3 26,300 ppm and F4 15,600 ppm) PAHs (phenanthrene, 6.54 ppm)	Soil	75	Contaminant migration into rock material below gravel pad
Mid Station Barrel Dump #2	Hydrocarbons (F3 9,330 ppm, F4 21,000 ppm)	Soil	50	Complete delineation of hydrocarbons not achieved towards the south
Mid Station Barrel Dump #6	Hydrocarbons (F3 17800, F4 13800) Metals (Cu, 381 ppm, Pb 946 ppm, Zn 931 ppm)	Soil	60	Complete delineation of hydrocarbons not achieved towards the south. Metals concentrations exceed DCC Tier 2 criteria.
South of Module Train	PCB (5.6 ppm)	Soil	7	PCB concentrations exceed DCC Tier 2 criteria. Located near staircase.
West of Module Train	Hydrocarbons F2 8,050 ppm, F3 1,940 ppm)	Soil	14	Complete delineation of hydrocarbons not achieved
Sewer Outfall Area	PCBs (2.8 ppm), Hydrocarbons (F3 1,050 ppm)	Soil	30	Difficult area to delineate due to site conditions
Sewer Outfall Area	Metals (Cu 109, Pb 690)	Soil	5	Difficult area to delineate due to site conditions
Stain west of Garage	PCBs (3.8)	Soil	1	PCB levels less than DCC Tier 2 criteria
Stain below D8 Cat	Hydrocarbons F2 6540 ppm , F4 15600 ppm)	Soil	4	Leaking from Cat

Location	Contaminant Exceeding CCME Criteria (Max Concentration ppm)	Media	Volume m^3	Comments
Stain on pad west of Garage	Hydrocarbons (F3 1210 ppm)	Soil	140	Vertical delineation for hydrocarbons not achieved, potential dump site
Stain area east of Garage	PCBs (3.6 ppm), hydrocarbons (F3 16500 ppm), Metals (Cu 278 ppm, Zn 1060 ppm, Zn 1400 ppm)	Soil	8	Metal concentrations exceed DCC Level 2 criteria. PCB and metals delineation to the north was not completed
Garage Dump Area	PCB (3.3 ppm)	Soil	35	Four isolated pockets, less than DCC Tier 2 criteria
Garage Dump Area	Hydrocarbons (F2 8000 ppm, F3 31900 ppm, F4 8180 ppm)	Soil	330	Extensive amount of surface staining, barrels onsite continue to be source for additional contamination
POL Storage Facility	Hydrocarbons (F2 2630 ppm, F3 1990 ppm)	Soil	200	Complete delineation of hydrocarbons not achieved
Warehouse ASTs	Hydrocarbons (F2 2770 ppm)	Soil	15	Complete delineation of hydrocarbons not achieved to the east
Inuit House Stain	Metals (Zn 204, Cr 67)	Soil	14	Metals delineated
Inuit House Dump	PCB, dissolved metals	Water	-	Elevated PCBs and dissolved cadmium exceedance above FWAL criteria in one water sample
Surface Stain – Antenna Base Area	Hydrocarbons (F3 29200, F 4 10100)	Soil	25	
Surface Stain – Antenna Base Area	PCBs, dissolved metals	Water	-	Elevated PCBs and dissolved cadmium exceedance above FWAL criteria in one water sample
Surface Stains – NW of Module Train	PCB (2), Hydrocarbons (F3 14100, F8300)	Soil	10	
All Barrel Dumps	Hydrocarbons	Soil	-	Confirm site conditions at each barrel dump site after barrels are removed
Total Estimated Volume			1444	

8.2 Waste Audit

A detailed Waste Audit was completed to in order to determine the volumes of non-hazardous and hazardous materials. The following table briefly summarizes the quantities of the major categories for each waste type.

It should be noted that the volume of materials containing PCB paint should be considered as a rough estimate as this volume is dependant on the amount of volume reduction completed by a contractor. In some locations the paint had substantially peeled away. It is envisioned that some amount of abatement will be required in the field prior to the removal of the substrate materials.

Approximately 6400 m^3 of non hazardous material is located on the site. Based on the location and nature of these materials, all of the materials could be removed from the site. It should be indicated that a number of waste items including a partially visible crane and barrels were located either in Water Lake or in the steams flowing into and out of Water Lake. The removal of these items will need to be completed in a manner that will satisfy DFO requirements.

Table 8.2 Summary of Waste Volumes

Waste Type	Items	Estimated Volume m^3	Estimated Volume L
Non Hazardous			
	Wood, steel, domestic waste, vehicles, equipment parts building materials and contents, scattered debris	1824	
	Contents of Mid Station Dump	3300	
	8380 Empty Barrels	1257	
	Total	**6381**	
Hazardous			
	Miscellaneous materials, batteries, asbestos materials, oil filters, blasting caps	25	
	36 Full to partially full barrels		7400 L
	120 split open lube oil barrels at Mid station Barrel Dump #3		9000 L
	200 leaking 45 L barrels at Garage dump		2500 L
	PCB painted building materials (2000 m^2)	115	
	Miscellaneous fuel in day tanks and skid mounted tank		9000 L
	Total	**170 m^3**	**27,900 L**

9.0 CONCLUSIONS

Based on the scope of work of the Phase III Environmental Assessment and Waste Audit that was completed at the FOX – C DEW Line site the following conclusions are made.

Phase III ESA

- The Phase III investigation included the assessment of 15 areas of the site in order to delineate previously identified contaminated areas and to confirm the presence of contaminants in areas that had not been previously identified.

- The total volume of hydrocarbon, metal and PCB contaminated material found to be contaminated was estimated at 1,444 m^3. Due to site conditions, full delineation was not achieved in some locations.

- Hydrocarbon impacted soils and groundwater were identified between the Beach Area POL tanks and Ekalugad Fiord. Due to the proximity of the material to the fiord, removal of this contaminated material is recommended.

- Study areas located at the Mid-Station and Upper Station areas typically had very small amounts of soil media. Fine to coarse grained, weathered material was encountered on the ground surface in some areas, however the site is dominated with large boulder sized (>300 mm) rocks. In some areas, contaminants are located on and below the large diameter rock, remediation of contaminants located in these areas may be impractical.

- Runoff surface water was occasionally encountered, in some locations, this water was visible, however it was commonly located within a gully filled with coarse/fine grained material or with boulder sized material.

- Total metal concentrations in collected perched groundwater samples typically indicated exceedances for a number of metal concentrations. Comparison of dissolved metal concentrations to CCME criteria indicated no exceedances above CCME criteria except for cadmium in some locations.

Waste Audit

- Approximately 6400 m^3 of non-hazardous materials are located on the site. The vast majority of this material is located in accessible areas and this material should be removed from the site. Minor amounts of debris were located at the bottom of a cliff area below the Modular Train outfall and Mid-Station Dump. This material would be removable provided an access to this lower area on the north side of the mountain was available.

- A number of non-hazardous waste items including a partially buried crane and barrels were located either in Water Lake or in the steams flowing into and out of

Water Lake. The removal of these items will need to be completed in a manner that will satisfy DFO requirements.

- A total of 8380 empty barrels were identified at the site, it is recommended that subsurface soil conditions below the barrels be determined following their removal.

- A total of 36 full to partially full barrels were identified on the site. In addition, 120 lube oil barrels were split open and left at a dumpsite. Minor amounts of fuel were also identified in some of the day tanks located on the site. The remedial program will need to include a program to recover all liquids from these barrels and tanks.

- Approximately 2000 m^2 of material was observed to be painted with PCB containing paint. The majority of the paint products on a metal substrate was in poor condition (peeling) and may require some form of abatement prior to removal of the painted components. Wood materials painted with PCB containing paint was typically weathered and non peeling. It is recommended that the painted materials be removed by a contractor following a waste reduction process.

10.0 CLOSURE

The usage of this report is limited by the standard Earth Tech Special Provisions – Environmental Site Services, which are included in Appendix I of this report.

APPENDIX A

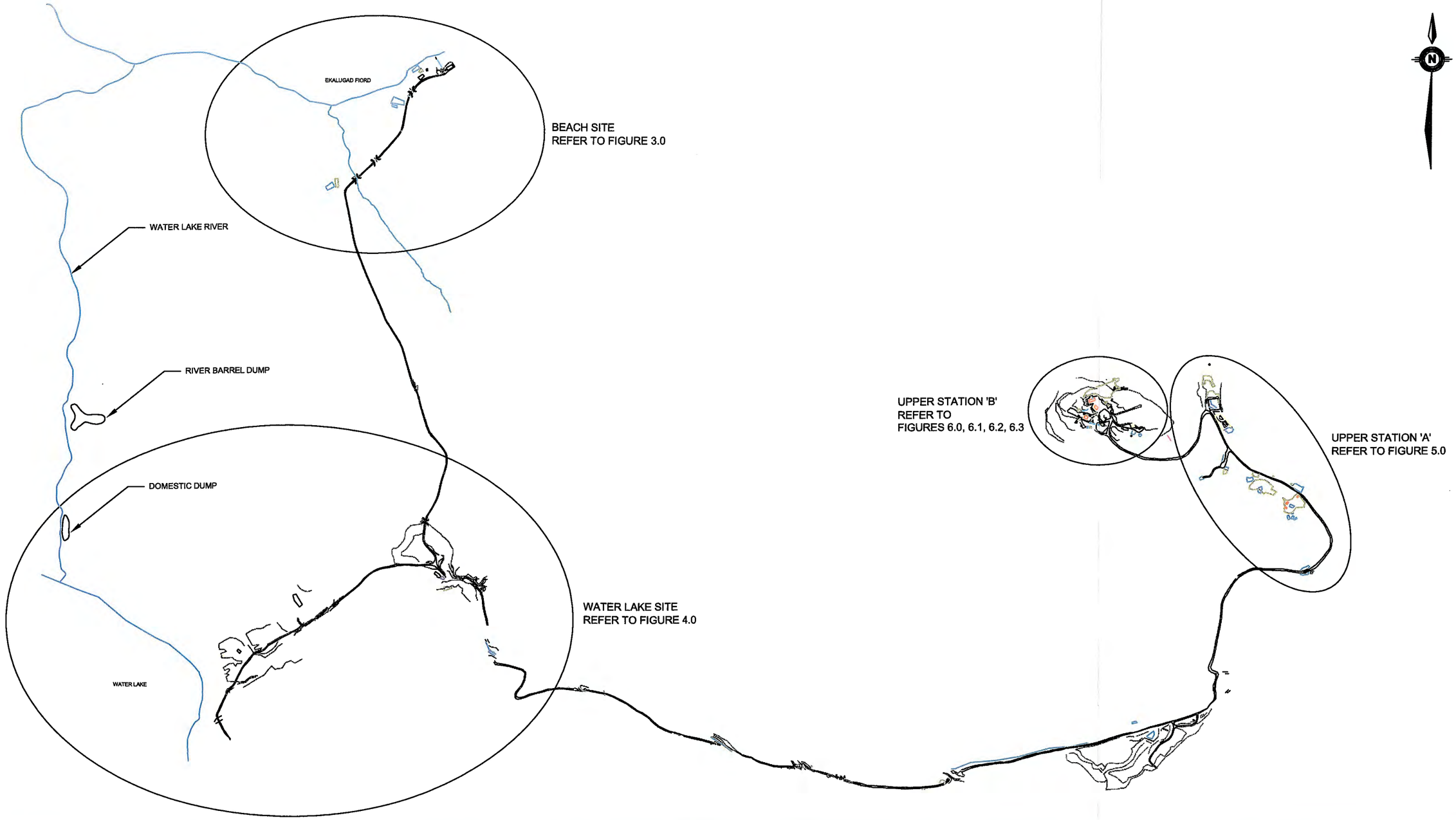
FIGURES

PWGSC-Environmental Services
FOX-C Phase III
FOX-C Location

EarthTech
A Tyco International Ltd. Company

October, 2004

Figure 1.0



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Date: OCTOBER 05, 2004

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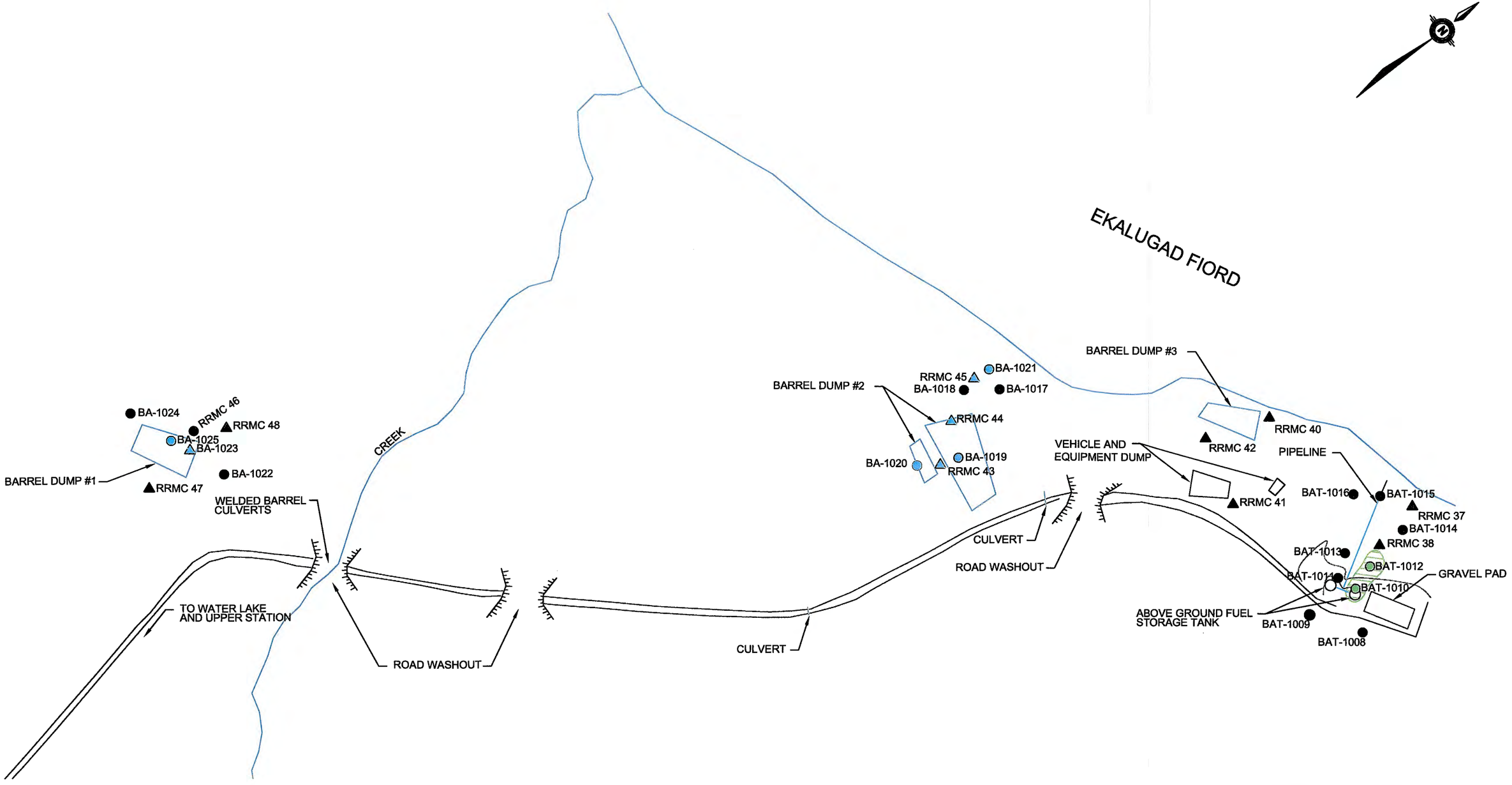
Scale 1:15000

EarthTech
A Tyco International Ltd. Company

PWGSC
FOX-C DEW LINE
SITE PLAN
Figure 2.0



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Date: JANUARY 03, 2005

0 20 40 60 80 100

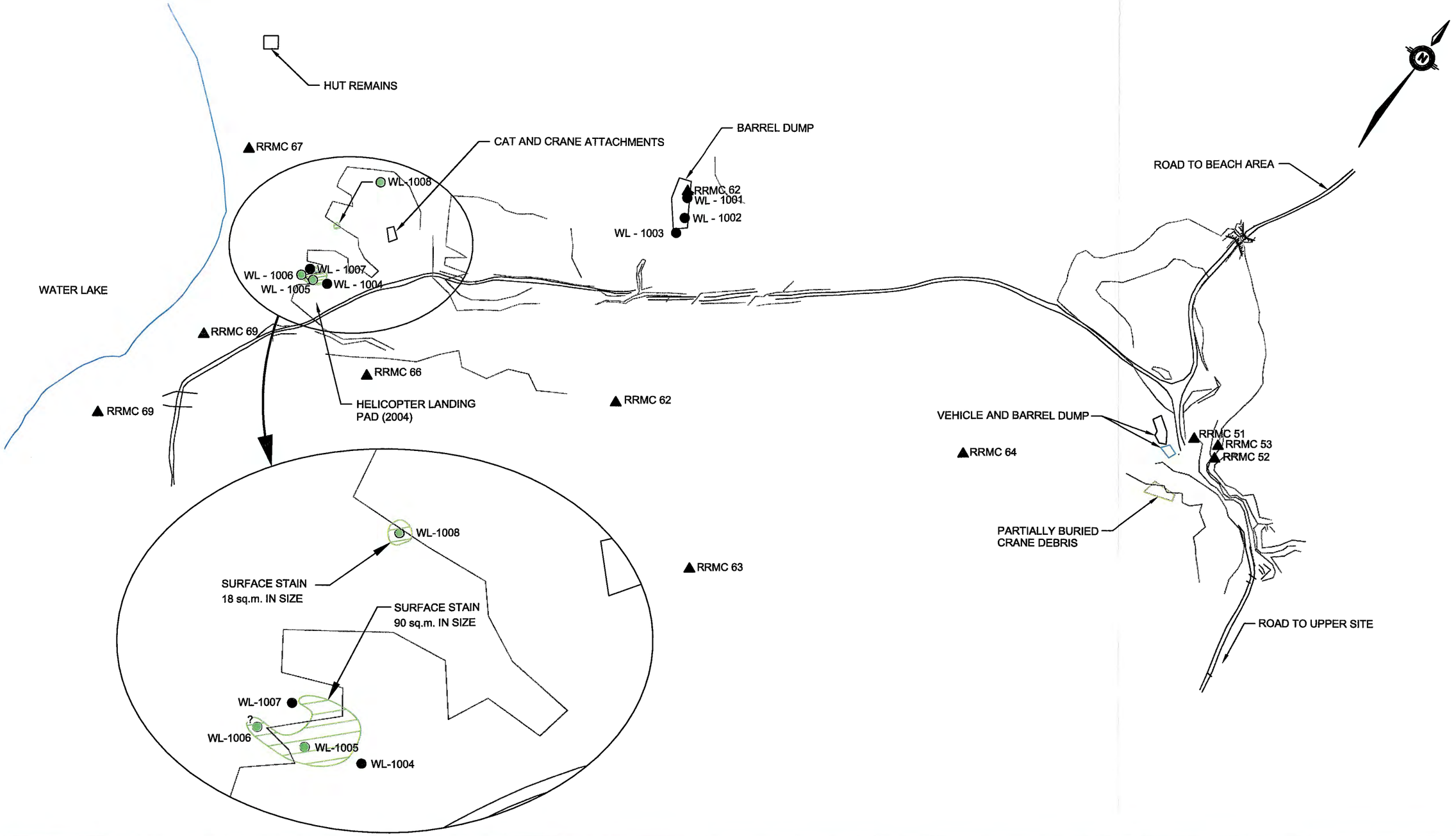
Scale 1:2000

EarthTech
A Tyco International Ltd. Company

Legend

- SOIL SAMPLE
- RRMC SAMPLE
- PCBs EXCEEDANCE
- METALs EXCEEDANCE
- PHCs EXCEEDANCE
- PAHs EXCEEDANCE
- NONE
- PCBs CONTAMINATION PLUME
- METALs CONTAMINATION PLUME
- PHCs CONTAMINATION PLUME
- PAHs CONTAMINATION PLUME

PWGSC
FOX-C DEW LINE SITE - BEACH AREA
BOREHOLE LOCATION PLAN
Figure 3.0



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Date: OCTOBER 05, 2004

0 20 40 60 80 120 160 200

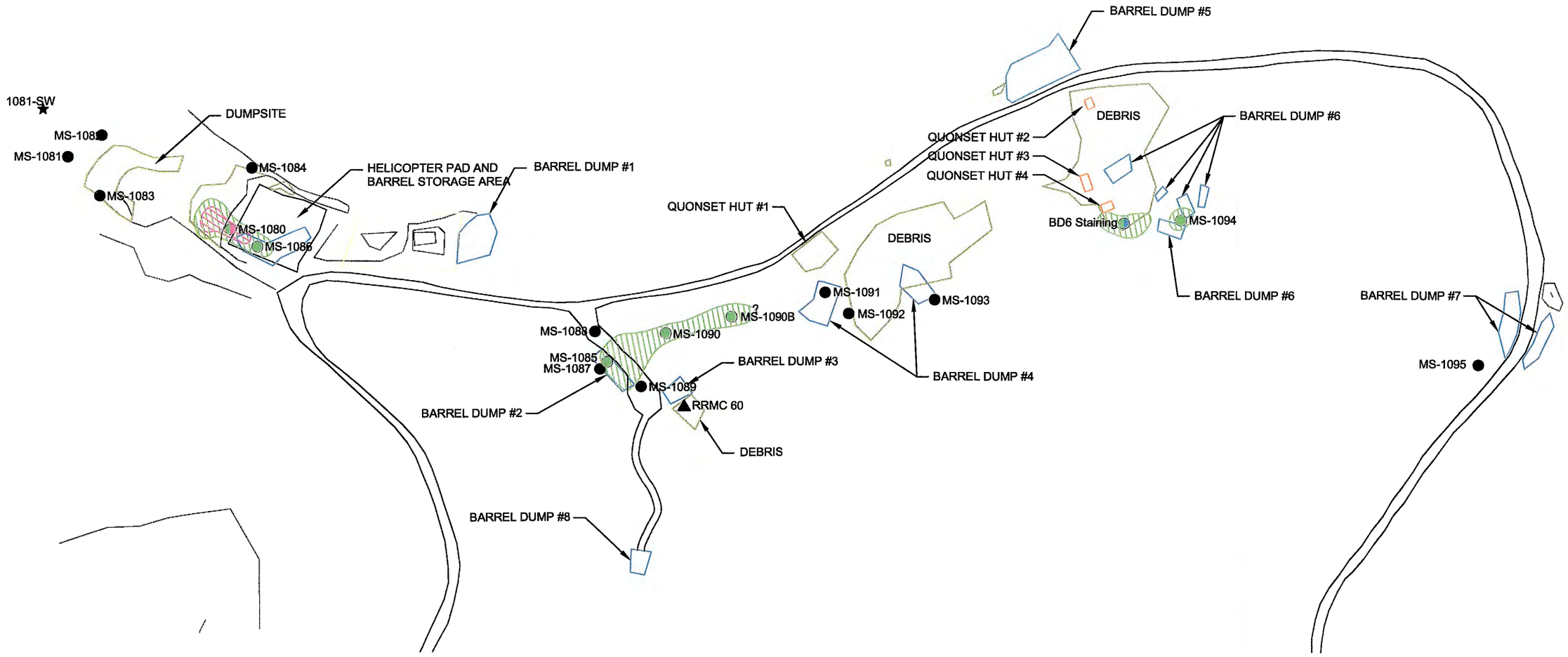
Scale 1:4000

Earth Tech
A Tyco International Ltd. Company

Legend

- ○ SOIL SAMPLE
- △ RRMC SAMPLE
- PCBs EXCEEDANCE
- METALs EXCEEDANCE
- PHCs EXCEEDANCE
- PAHs EXCEEDANCE
- NONE
- PCBs CONTAMINATION PLUME
- METALs CONTAMINATION PLUME
- PHCs CONTAMINATION PLUME
- PAHs CONTAMINATION PLUME

PWGSC
FOX-C DEW LINE SITE - WATER LAKE
BOREHOLE LOCATION PLAN
Figure 4.0



*NOTE: METAL EXCEEDANCES AT BD6 INCLUDES; Cu 381ppm, Pb 946ppm, Zn 931ppm

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Date: JANUARY 03, 2005

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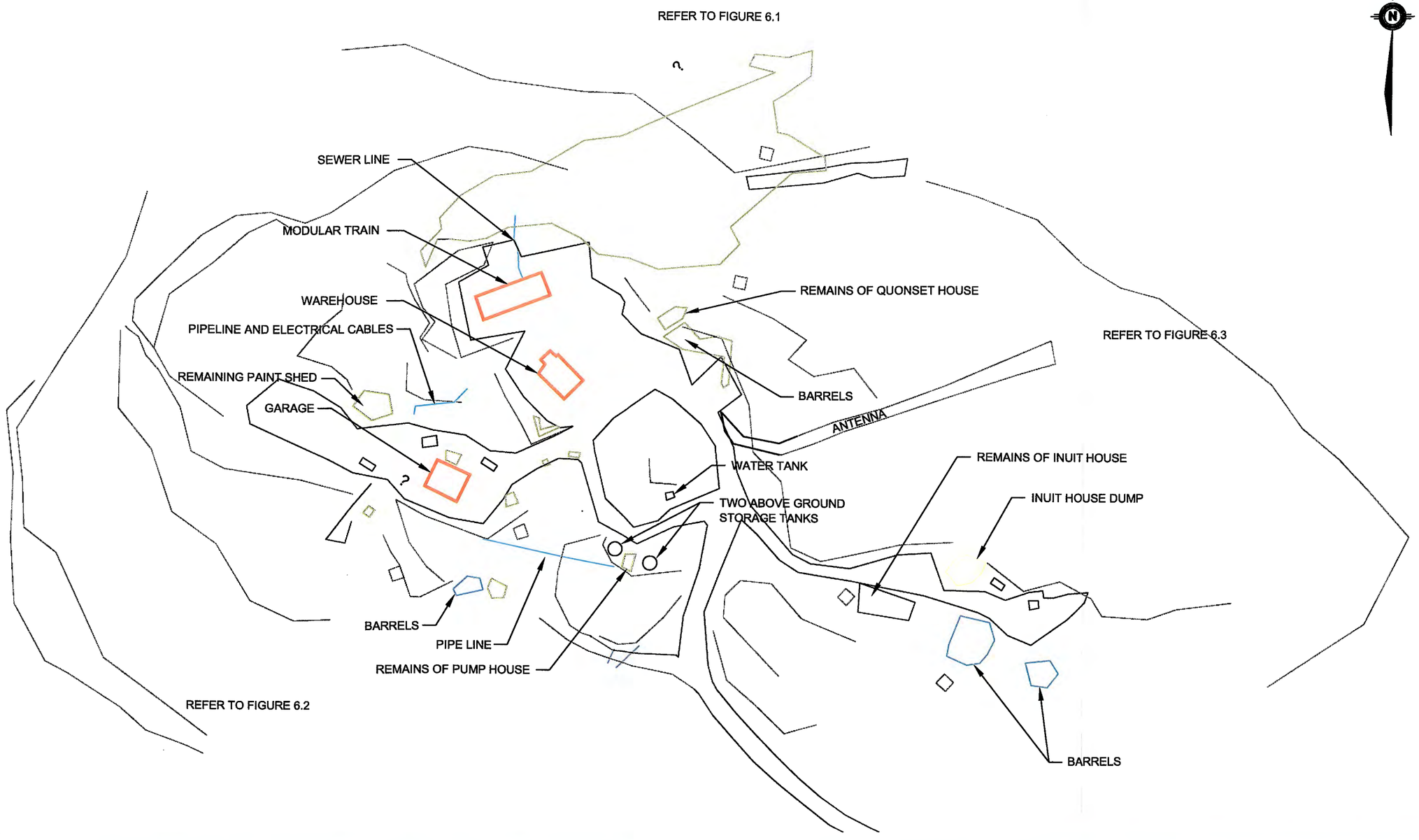
Scale 1:2500

EarthTech
A Tyco International Ltd. Company

Legend

○ SOIL SAMPLE	PCBs EXCEEDANCE	PCBs CONTAMINATION PLUME
△ RRMC SAMPLE	METALs EXCEEDANCE	METALs CONTAMINATION PLUME
☆ WATER SAMPLE	PHCs EXCEEDANCE	PHCs CONTAMINATION PLUME
	PAHs EXCEEDANCE	PAHs CONTAMINATION PLUME
	NONE	

PWGSC
FOX-C DEW LINE SITE - MID STATION
BOREHOLE LOCATION PLAN
Figure 5.0



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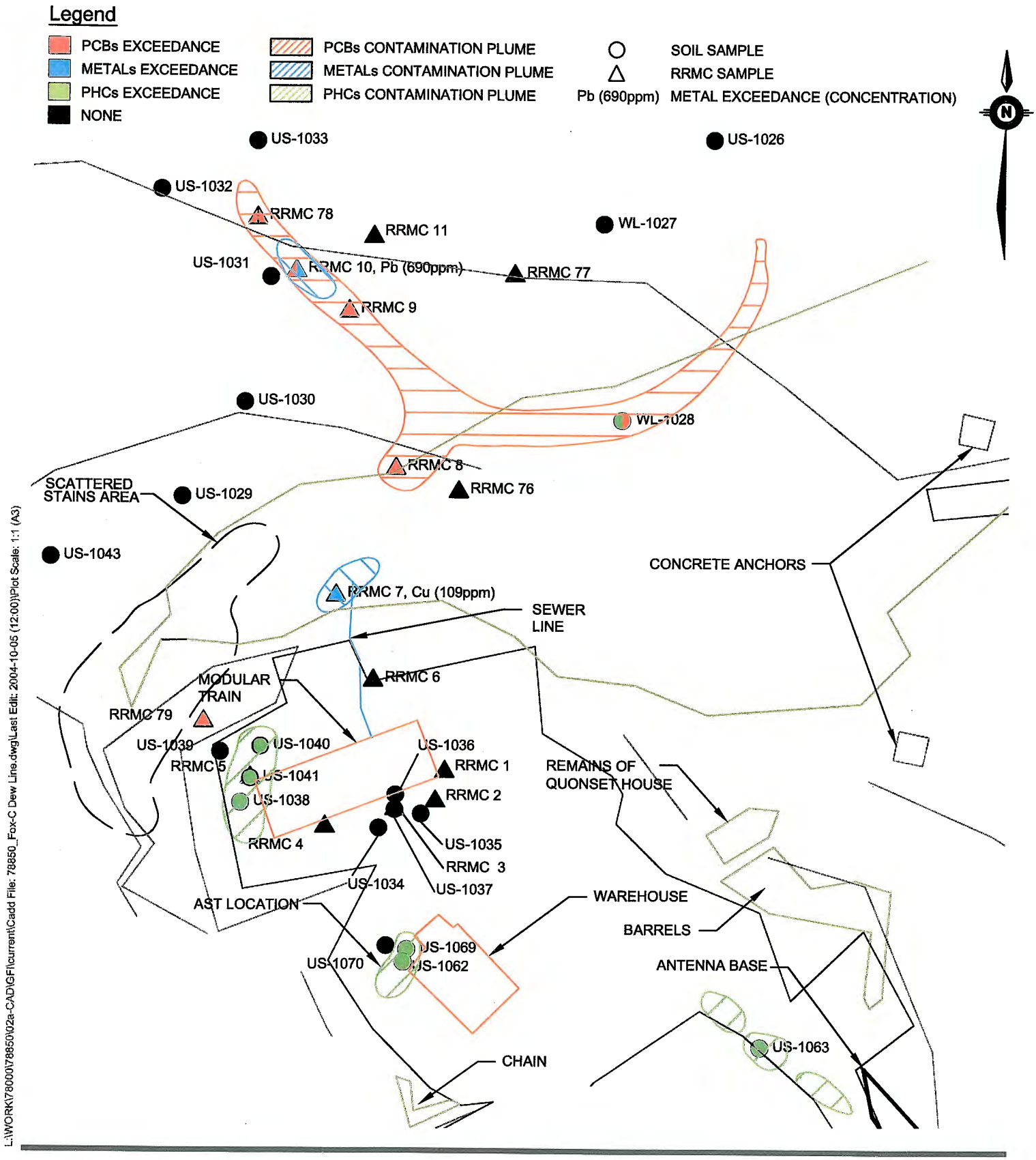
Date: OCTOBER 05, 2004

0 20 40 60 80 100

Scale 1:1500

EarthTech
A Tyco International Ltd. Company

PWGSC
FOX-C DEW LINE SITE - UPPER STATION 'B'
UPPER STATION 'B' PLAN
Figure 6.0



Date: JANUARY 03, 2005

0 10 20 30 40 50

Scale 1:750

PWGSC

FOX-C DEW LINE SITE - UPPER STATION 'B'

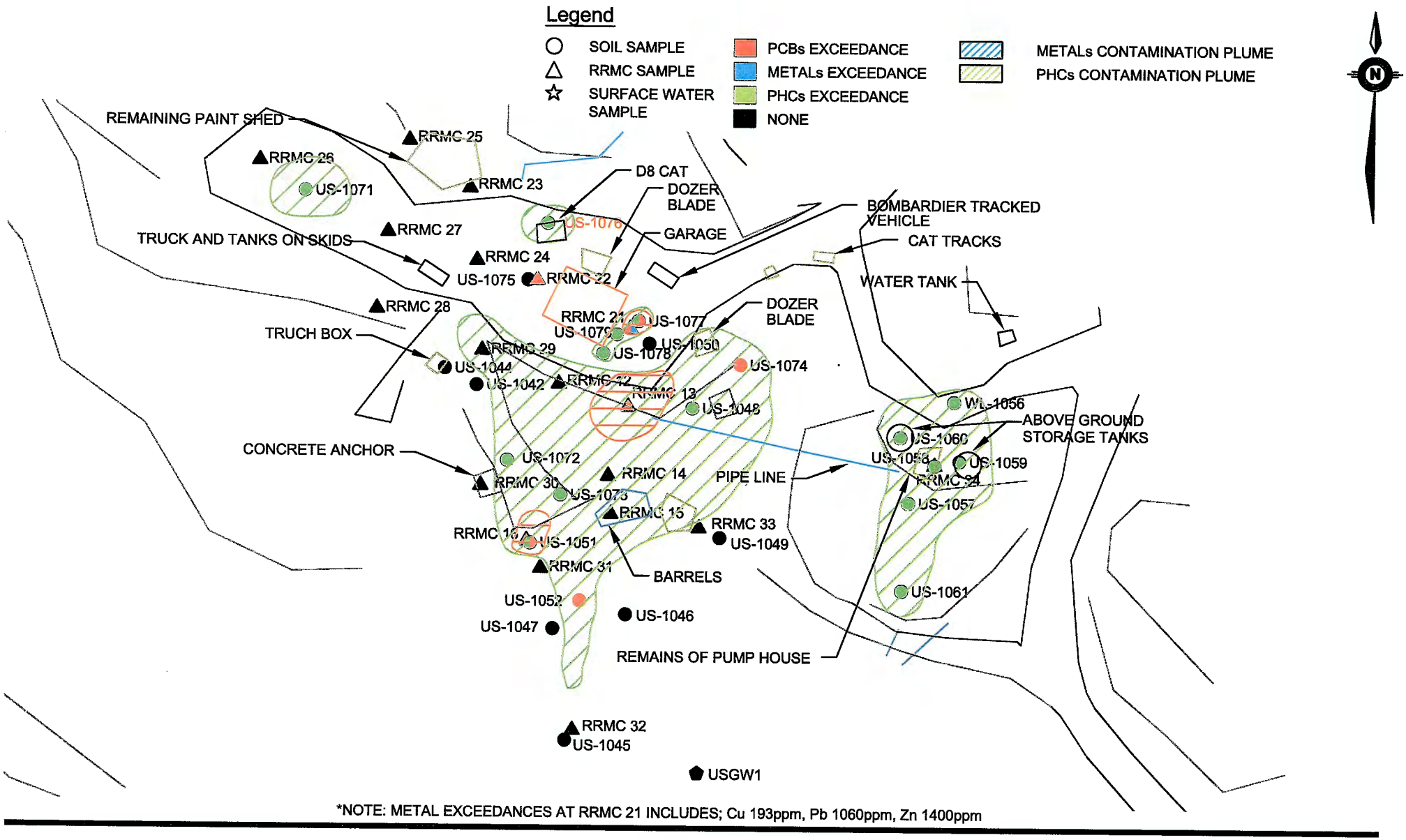
UPPER STATION 'B' PLAN

Figure 6.1

EarthTech

A Tyco International Ltd. Company

L:\WORK\78000\78850\02a-CAD\GFI\current\Cadd File: 78850_Fox-C Dew Line.dwg\Last Edit: 2004-10-05 (12:00)\Plot Scale: 1:1 (A4)



*NOTE: METAL EXCEEDANCES AT RRMC 21 INCLUDES; Cu 193ppm, Pb 1060ppm, Zn 1400ppm

Date: JANUARY 03, 2005

0 10 20 30 40 50

Scale 1:1000

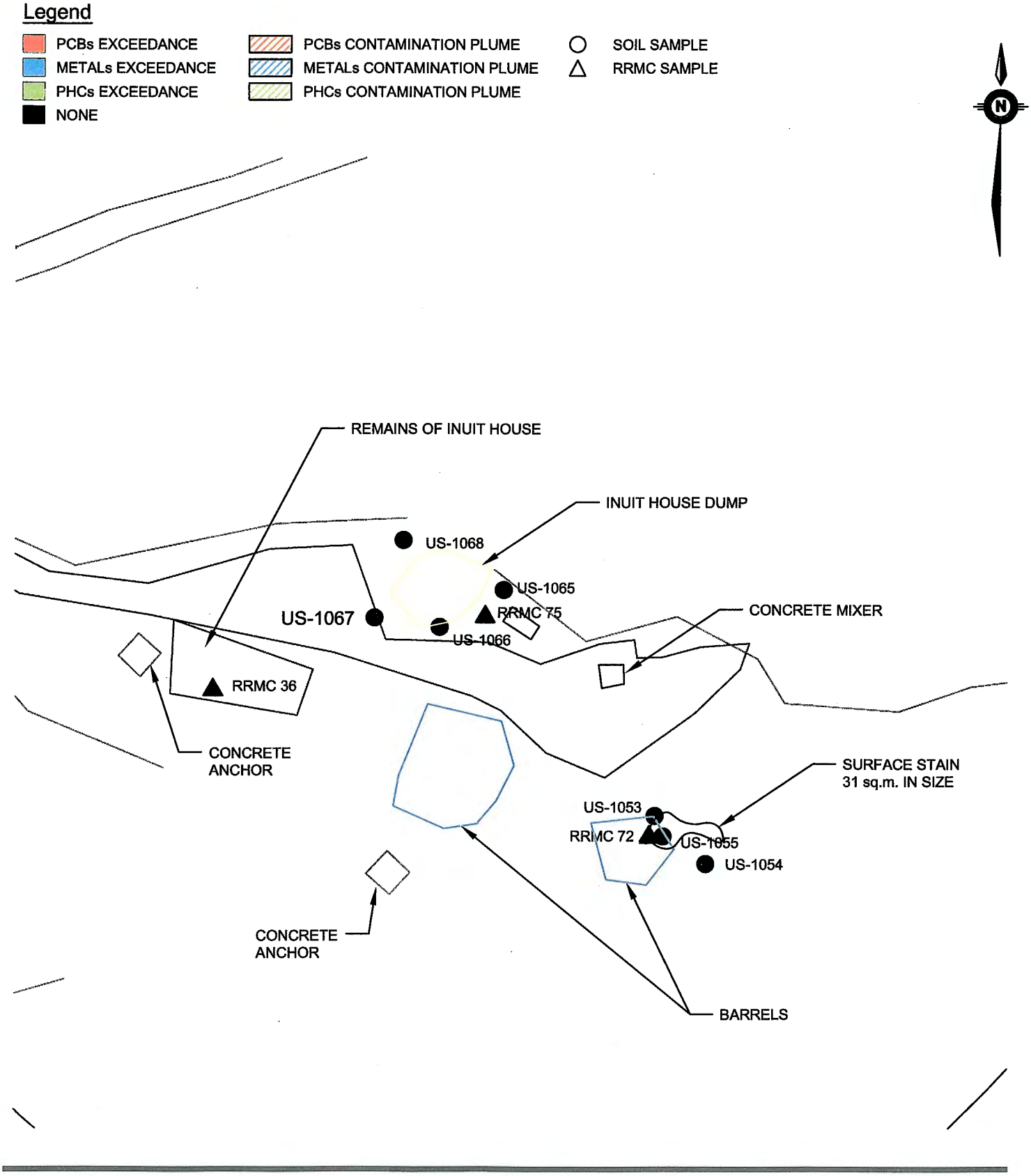
EarthTech
A Tyco International Ltd. Company

PWGSC

FOX-C DEW LINE SITE - UPPER STATION 'B'

UPPER STATION 'B' PLAN

Figure 6.2



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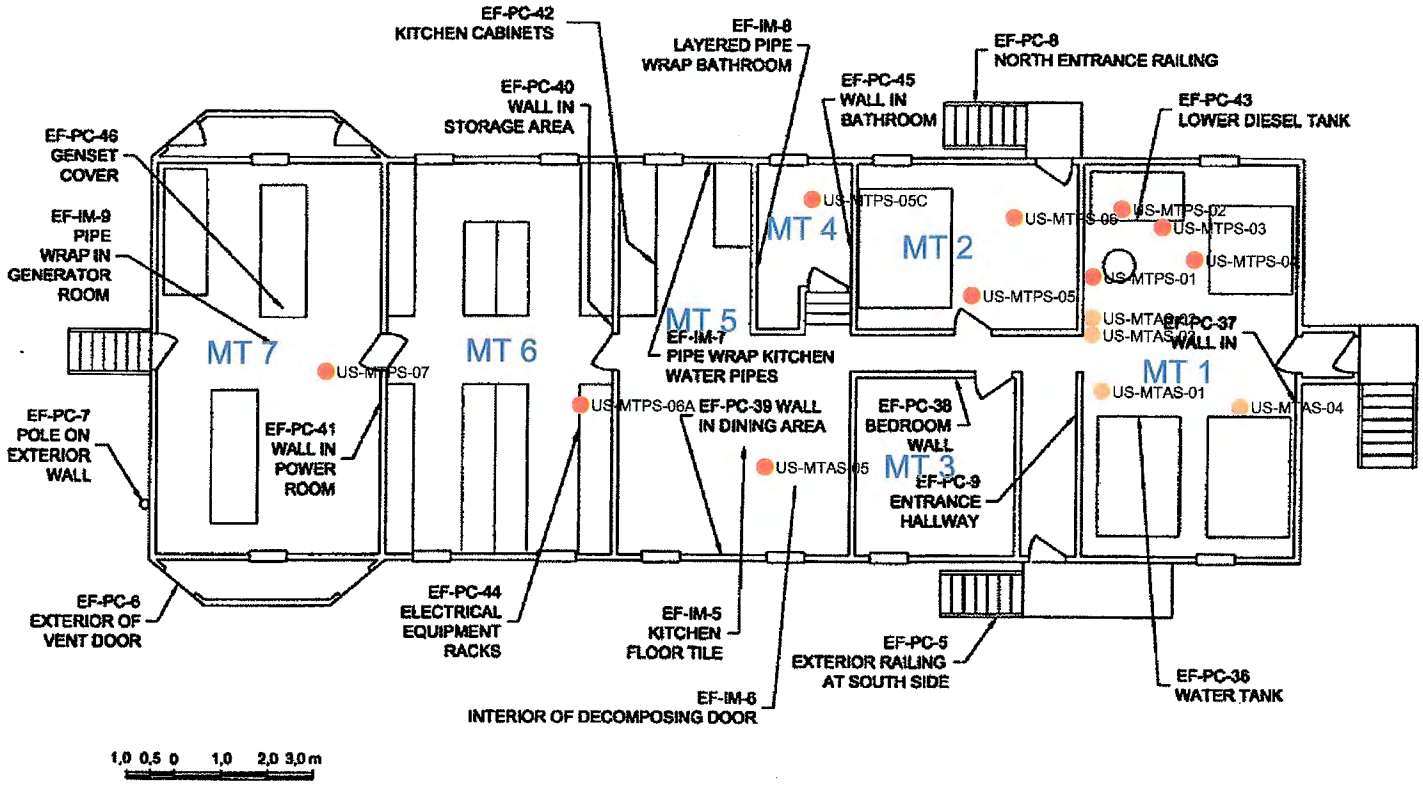
Date: OCTOBER 05, 2004

0 10 20 30 40 50

Scale 1:1500

EarthTech
A Tyco International Ltd Company

PWGSC
FOX-C DEW LINE SITE - UPPER STATION 'B'
UPPER STATION 'B' PLAN
Figure 6.3



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Date: OCTOBER 05, 2004

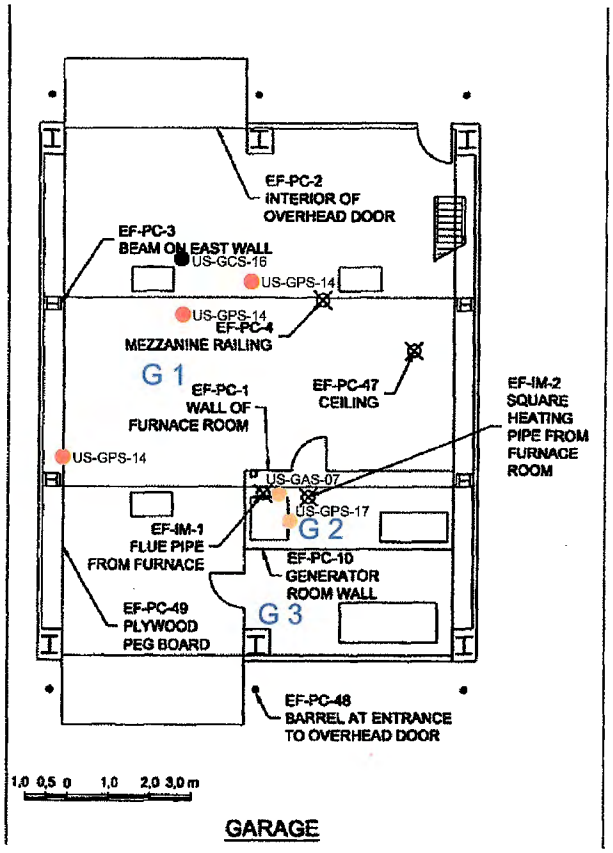
EarthTech
A Tyco International Ltd. Company

PWGSC

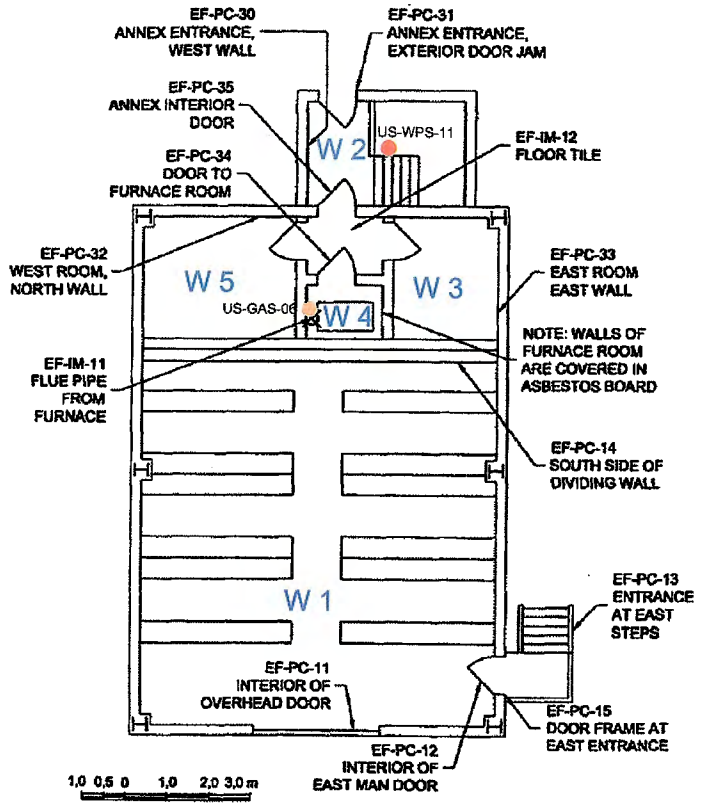
FOX-C DEW LINE SITE - UPPER STATION 'B'

Material Samlping Locations Module Train

Figure 7.1



GARAGE



WAREHOUSE

Date: OCTOBER 05, 2004

EarthTech
A Tyco International Ltd. Company

PWGSC

FOX-C DEW LINE SITE - UPPER STATION 'B'

Material Samlping Locations Garage/Warehouse

Figure 7.2

APPENDIX B

TERMS OF REFERENCE

TERMS OF REFERENCE

FOR A
PHASE III SITE ASSESSMENT
AND WASTE AUDIT
FOR

THE FOX-C DEW LINE SITE

AT EKALUGAD FJORD, NUNAVUT

Prepared by: Environmental Services, Western Region
Public Works and Government Services Canada
June 16, 2004

1. Introduction

As the custodian of most federal lands in the North, Department of Indian Affairs and Northern Development (DIAND) has responsibility, through the Northern Contaminated Sites Program (CSP), to manage a number of contaminated properties that are no longer maintained by the original occupant. DIAND's portfolio of contaminated sites in the North originated from private sector mining, oil and gas activities and government military activity dating back over half a century, from a time long before the environmental impacts of such activities were adequately understood. CAM-F DEW Line is one of these sites.

FOX-C is located at 68°42' N, 68°33' W on the east coast of Baffin Island on the south shore of Ekalugad Fjord, 195 km south of the community of Clyde River, Nunavut. The terrain at FOX-C consists of high rugged hills cut by rock outcrop. The beaching area is located on Qarmaralik Cove, 3 km NW of the main station area. The main station area overlooks Ekalugad Fjord and is 770 m above sea level. A gravel road links the beaching area and the freshwater lake to the upper site.

The Treasury Board Secretariat, Environment Canada and other departments have developed the *Federal Contaminated Sites Accelerated Action Plan* (FCSAAP). FCSAAP is designed to accelerate the remediation of federal contaminated sites and reduce the government's associated financial liability. Treasury Board policies related to the management of federal contaminated sites will be adhered to under FCSAAP. The Secretariate will implement the *Accelerated Action Fund*, a fund created to help departments administer the FCSAAP. Remediation of CAM-F is being funded through this program.

2. Background

The site is accessible by barge. Due to the uneven terrain, an airstrip was never constructed at FOX-C. A freshwater lake has previously been used as a landing strip in the winter and a helipad is located at the upper site. Relevant site plans and photographs are attached.

The former DEW Line site was constructed in 1957 and subsequently closed and abandoned in 1963. The site has not been formally occupied since 1963. A hazardous materials removal program completed in 1985 and an assessment completed in 1994 have confirmed the presence of various hazardous materials and contaminated soil. A number of drum caches were identified. Many of the drums still contained product and were left in-place. In addition to drum caches, many drums were also strewn along the river, the road and in the bottom of the lake. Elevated PCB concentrations were noted in soil samples and paint. However, these investigations did not include assessment of hydrocarbon contamination that has the potential to be a significant source of contamination at the site.

Facilities constructed at the main operations site included a five module building train, warehouse, vehicle garage, Inuit house, three storage sheds, a POL (petroleum, oil, lubricants) drum storage area and a continuous wave tower. A gravel road was built linking the beaching area and the freshwater lake to the upper site. Due to the uneven terrain, an airstrip was never constructed at FOX-C. In the winter a freshwater lake served as a landing strip and a helipad was constructed at the upper site, to the east of the station buildings.

In 1985, a partial clean-up of the site was intiated by DIAND with assistance from Environmental Protection Branch of Environment Canada and the Department of National Defence (DND). The objective of the clean-up was to remove surface contaminants such as polycyclic biphenyls (PCBs) and POLs.

In 1993, the Environmental Sciences Group (ESG) of the Royal Roads Military College in Victoria, British Columbia, investigated FOX-C as part of an assessment of six intermediate DEW Line sites in the Eastern Arctic. The results of the 1993 program indicated areas of soil impacted by PCBs and inorganic elements (eg. copper, lead), paint containing PCBs and building materials containing asbestos. During the 1993 work the building train, warehouse and garage were still standing but had been severely weathered. The POL tanks were still in place but the road that linked the beach area and water site to the main station was severely eroded and unstable.

To effectively utilize newly available funding under the FCSAAP, DIAND required that their contaminated sites be effectively prioritized for actioning. In September 2003, SENES Consultants Limited was retained by the DIAND to undertake Screening Level Risk Assessments (SLRAs) of the potential impacts on human health from exposure to hazards at eleven mine sites and thirteen former military sites in northern Canada. The SLRAs were to provide INAC with a basis of ranking the relative risks presented by the sites, for input to a process for prioritizing reclamation funding in future years.

One of the subject sites of these SLRAs was a former DEW Line site, FOX-C. The dominant vegetation near the main station-site was restricted to mosses and lichens and the beaching area was characterized as containing a wider variety of flora including sedges, grasses and willows. Native fauna at the site included seals, caribou, Thayer's gulls, snow goose and snow buntings.

To characterize the human health risks associated with the sites, standard approaches were developed for application to mine sites and former military sites, respectively. In both cases, the risk assessments were based on maximum likely exposures to chemical, radiological (where applicable) and physical hazards. In all cases, it was assumed that people would be on the sites for some portion of the year, even though some of the sites are at remote locations. It should be noted that risk assessment does not provide a precise measure of risk due to the fact that many assumptions must typically be made.

A SLRA for human health was carried out for existing conditions at the FOX-C site for the purpose of determining whether there were contaminant levels present in the aquatic and soil environments that may have an adverse effect on humans that either use, or may potentially use the site. The assessment included the following elements, which were

proposed and readily accepted by regulatory agencies such as Environment Canada and the U.S. Environmental Protection Agency:

- receptor characterization;
- exposure assessment;
- hazard assessment; and
- risk characterization.

Measured concentrations of contaminants in soil were used in the assessment. A statistical assessment of 1993 soil data was carried out to determine the appropriate concentrations to use in the assessment.

An Ecological Risk Evaluation was also undertaken at this site, and the findings thereof included potentially unacceptable ecological risks associated with PCBs and lead levels in soils at the site. This indicates that the subject site is indeed contaminated and requires further investigation. On this basis, FOX-C was prioritized high on the list of sites to be actioned.

Public Works and Government Services Canada (PWGSC) is inviting proposals from consultants to complete a Phase III Site Investigation & Waste Audit as identified in the Scope of Work that follows.

3. Scope of Work

The scope of work for the project has been separated into individual tasks required at the site. The work will be carried out at a "remote camp". Camp services including food, accommodation, transportation, water and wastewater infrastructure, power and telecommunications (satellite phones) will be provided. Heavy equipment (small rubber-tired backhoe) will be operated by a general contractor under the direction of the consultant. Wildlife monitors, with separate monitors for each remote crew, will also be provided by a general contractor.

PWGSC will also provide copies of all relevant permits to the consultant outlining all requirements that must be complied with.

In addition to the site investigation and waste audit, other activities will be carried out at the site either concurrently or after completion of this work including barrel consolidation and crushing; geotechnical/geophysical investigations; and ecological and human health risk assessment

Task 1: Site Logistics

Equipment to be provided by consultant includes: personal sampling equipment (hand auger, shovel, barrel thiefs and barrel wrenches); sampling containers; monitoring well supplies; personal protective equipment (Tyvek suits, respirators equipped with organic gas cartridges, nitrile gloves, etc.); and personal equipment.

The following supplies will be required for the monitoring well installations:

- three wells to be 3/4" steel construction, 2 meters deep (max) with 24" drive points, 1 meter stick up without casing;
- three wells to be 1" PVC construction, 2 meters deep (max), ½ screened, ½ solid, 1 meter stick up without casing; and
- sand, bentonite and any other materials required for well installations.

The consultant will be responsible for their own transportation to Iqaluit using regular commercial aircraft. The consultant should include this cost in their proposal. PWGSC will be providing charter aircraft from Iqaluit to the site at a previously determined set time.

A Health and Safety Plan for the site will be produced by the general contractor and will be signed by all personnel at the site. The consultant shall have a Health and Safety Plan to cover their specific activities that will be submitted to the contractor for approval.

For purposes of developing the project budget, the consultant should determine laboratory analytical costs and include these in a separate section of the cost part of the proposal. However, PWGSC will be paying these invoices directly using our own laboratory standing offers. The names of laboratories that are on PWGSC standing offer will be provided to the consultant upon award of contract.

Task 2: Delineation of Contaminated & Potentially Contaminated Areas

Previous studies identified a number of areas impacted by heavy metals and Petroleum Hydrocarbons (PHC's). Although no concerns were identified for other parameters, a limited number of samples will also be analyzed for PAH's. In general, during the previous programs, impacted areas were delineated laterally but not vertically.

Note that the DEW Line Protocol was used previously to laterally delineate the impacted areas, however, INAC has not determined to date what clean up criteria will be used at this site. Therefore, the consultant will be expected to delineate all impacted areas both laterally and vertically using the most stringent applicable criteria (see Table 1 below).

Table 1: Ekalugad Fjord Assessment Criteria

Assessment Comparison Criteria Inorganic and Organic Compounds in Soil			
Parameter	**Tier I DCC DEW Line Cleanup Criteria (ppm)**	**Tier II DCC DEW Line Cleanup Criteria (ppm)**	**CCME CEQG for Residential/Parkland Land Use (ppm)**
Inorganic Parameters			
Arsenic	N.G.	30	12
Cadmium	N.G.	5.0	10
Chromium	N.G.	250	64
Cobalt	N.G.	50	50
Copper	N.G.	100	63
Lead	200	500	140

Mercury	N.G.	2.0	6.6
Nickel	N.G.	100	50
Zinc	N.G.	500	200
Organic Parameters			
Benzene	N.G.	N.G.	0.5
Ethylbenzene	N.G.	N.G.	1.2
Toluene	N.G.	N.G.	0.8
Xylenes	N.G.	N.G.	1.0
PHC Fraction F1	N.G.	N.G.	N.A.
PHC Fraction F2	N.G.	N.G.	N.A.
PHC Fraction F3	N.G.	N.G.	N.A.
PHC Fraction F4	N.G.	N.G.	N.A.
PCBs	1.0	5.0	1.3
Notes: N.G. – No guideline limit established N.A. – Specific guideline concentration will be based on the type of soil and depth of the sample.			

Specific areas that must be delineated include:
Three discrete areas adjacent to the module train;
Two sediment locations in adjacent river & Water Lake;
One area below outfall;
Areas surrounding (two) upper dump sites;
Areas surrounding both upper site bulk fuel tank locations;
Area surrounding lower site bulk fuel tanks;
Beach area soils (for PHC's only);
Two areas surrounding large debris piles (for PHC's only); and
One location (soils) near Water Lake.

This list of sites is not exhaustive and allowances should also be made to sample other locations not previously sampled. should also be made to sample other locations not previously sampled. For the purposes of evaulating proposals, it should be assumed that 45 test pits will be advanced; 20 soil samples will be submitted to the laboratory for analysis of PCB's; 30 for target heavy metals; 8 for PAH's; and 45 PHC's (BTEX & TPH in accordance with CCME CWS for PHC's). Suitable field screening techniques that will allow fewer samples to be transported to the laboratory will be considered and evaluated.

With the exception of very small (less than 2 m^2) surface stains, areas where PHC's are suspected are to be delineated. PHC's are to be delineated to the extent possible using a suitable screening methodology followed by an adequate number of samples to be submitted to a CAEAL accredited laboratory for analysis. The Canadian Council of Ministers of the Environment's (CCME's) Canada Wide Standards (CWS) for PHC will be used as the applicable criteria.

The consultant will maintain a photographic record of all contaminated soil areas and sample locations. Photos of the interior and exterior of the buildings and any debris area shall also be obtained.

Task 3: Biological Sampling

Approximately four adult sportfish are to be collected by the consultant from Water Lake and four collected from the adjacent river. Tissue samples are to be taken and submitted to the laboratory and analyzed for the presence of PCB's and target metals.

Task 4: Sampling of Building Materials

Some building materials have been sampled and analyzed for potentially hazardous components. Principle contaminants of concern are asbestos and PBC's and lead in paint. Sampling has been carried out in specific areas of the facility, however, additional sampling will be required. For the purposes of proposal submission, consultants should assume that 12 separate samples will be submitted and analyzed for asbestos, 15 for PCB's in paint and 20 for lead in paint.

Task 5: Quantification of Non-Hazardous & Hazardous Materials (Waste Audit)

Non-hazardous materials at the site are predominantly associated with building materials and debris including equipment and barrels. Hazardous materials are predominantly associated with building materials including asbestos, both packaged and remaining in use, and lead and PCB's in paint. Small volumes of hazardous materials remain in storage, particularly in the storage shed.

The consultant shall inventory the buildings and site debris in order to calculate volumes and weights of materials. Wastes types must be identified. These include concrete, corrugated cardboard, unpainted drywall, steel and wood. The consultant will use this information to prepare a detailed waste summary. For each type of material, the summary must include: % of total, volume and weight of waste, method used to estimate the volume and weights, and any relevant comments.

Task 6: Barrel Sampling

An unknown number of unopened barrels remain at site, potentially containing some product. The consultant will attempt to sample a representative number of barrels (assume 10 for purposes of completing this proposal) and characterize this waste through submission of samples to the laboratory.

The five bulk fuel tanks (2 at the lower site & 3 at the upper site) may contain product. The consultant must determine fuel and sludge volumes in both tanks.

Task 7: Co-ordination with Other Consultants

In order to successfully complete this project, there will be some requirement to liase with the geophysical/geotechnical and remedial design consultants as follows:

Geotechnical requirements:

- sample points and other site features identified during the investigation are to be surveyed by the geotechnical consultant.
- geotechnical consultant will be provided with with an estimated required granular volume in order for them to identify the necessary borrow areas. geotechnical consultant will be testpitting at the landfill areas and any

anomalies noted during the geophysical work may be meshed in with this work.

Geophysical requirements:

- the dump sites (landfills) and potentially other areas with surface disturbances will be covered by geophysical surveys prior to the site investigation. This information is to be effectively communicated to the site investigation consultant prior to initiating any intrusive work in these areas.

Design requirements:

- results of the site investigation including findings and conclusions need to be effectively communicated to the design consultant, possibly verbally prior to completion of the draft report.

Risk assessment requirements:

- results of the site investigation including findings and conclusions need to be effectively communicated to the risk assessment consultant, possibly verbally prior to completion of the draft report.

Task 8: Reporting

Report will be prepared in a standard format utilizing the following sections:
Executive Summary
Table of Contents
Introduction
Background
Findings or Discussion (including waste audit information)
Conclusions
Drawings (base drawings to be provided)
Appendices including photos and detailed NCS scoring worksheets

Note: Recommendations and remedial options sections are not required.

Deliverables

Preliminary draft	One electronic copy in Adobe Acrobat
Draft report	Eight hard copies & one electronic copy in Adobe Acrobat (with draft clearly stated on every page)
Final report	Eight hard copies & one electronic copy in Adobe Acrobat (with AutoCAD drawings)

4. Scheduling

The following scheduled milestones must be met in order to coincide with camp operations and aircraft charter dates and to fulfill PWGSC commitments to INAC:

Field Investigation	first week of August 2004
Completion of Field Investigation	third week of August 2004
Completion of Draft Reports	fourth week of September 2004
Completion of Final Reports	two weeks after receipt of client comments

The consultant must include their intended schedule in the proposal.

5. Proposal Evaluation Criteria

Consultant proposals will be evaluated using the following criteria:

Criteria	Points Awarded
Northern Experience on Similar Projects	15
Project Team Experience on Similar Projects	15
Technical Approach to Project	30
Cost	40

6. Project Management

Chris Doupe
Manager, Environmental Assessment
Environmental Services
Public Works and Government Services Canada
Phone: (780) 497-3868
Fax: (780) 497-3842

7. Reference Documents

Relevant reports will be provided to the successful consultant as follows:

Title:	Contaminated Sites Water Monitoring Program – East Nunavut
Date:	March 2004
Author:	Gartner Lee Limited

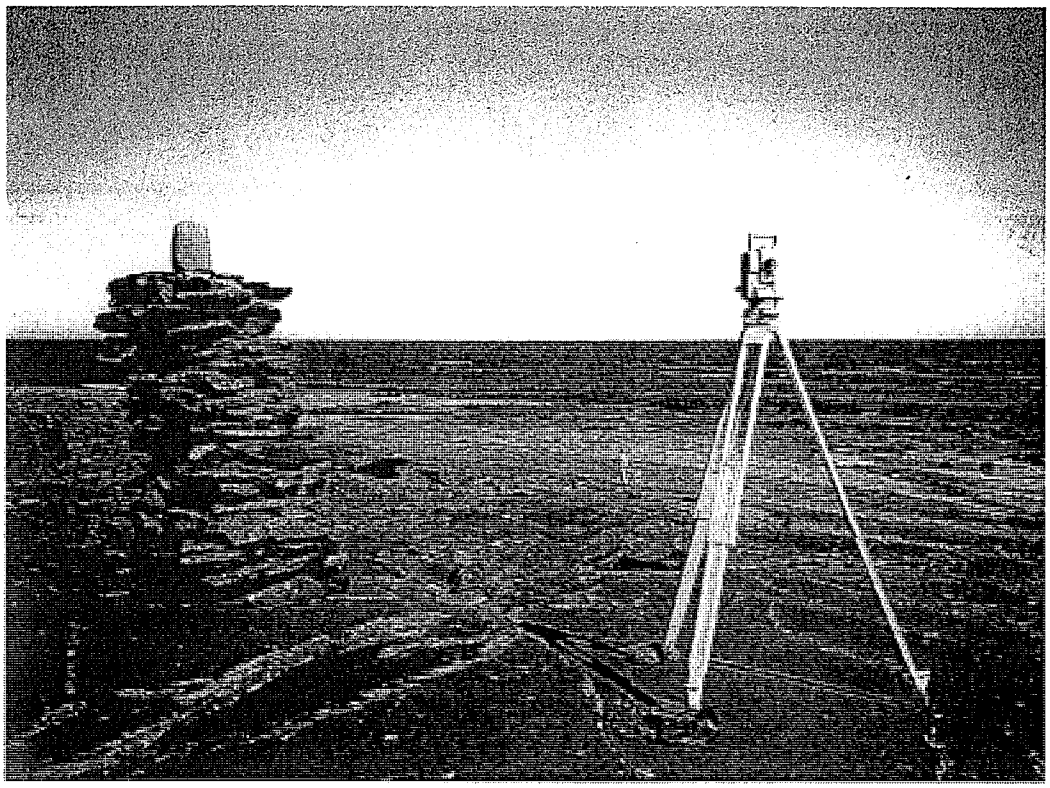
Title:	Human Heath Risk Assessment for FOX-C Ekalugad Fjord Former Military Site
Date:	November 2003
Author:	Senes Consultants

Title:	Ecological Risk Evaluation for FOX-C Ekalugad Fjord Former Military Site
Date:	November 2003
Author:	Senes Consultants
Title:	Engineering Design (95% Submission) and Cost Estimates for the Clean Up of Ekalugad Fjord (FOX-C): Intermediate DEW Line Site
Date:	March 2001 (Revised October 2001)
Author:	Sinanni Inc. and Qikiqtaaluk Corporation
Title:	I – Site Risk Assessment Final Report Volume 1 of 2
Date:	June 1998
Author:	Gartner Lee Limited with Cantox Inc.
Title:	Environmental Study of Abandoned DEW Line Sites: II. Six Intermediate Sites in the Eastern Arctic
Date:	March 1994
Author:	Royal Roads Military College – Environmental Sciences Group

APPENDIX C

EARTH TECH SITE SPECIFIC HEALTH AND SAFETY PLAN

SITE SPECIFIC
HEALTH AND SAFETY PLAN
FOR EARTH TECH OPERATIONS
(Supplemental to Contractors General H/S Plan)
FOX-C DEW LINE SITE, ENVIRONMENTAL SITE INVESTIGATION
EKALUGAD FJORD, NUNAVUT
AUGUST 16TH TO AUGUST 26th, 2004



Prepared For: Public Works and Government Services Canada
Environmental Services Western Region
1000 - 9700 Jasper Avenue, 9th Floor
Edmonton, Alberta
T5J 4E2

Attention: Mr. Jared Buchko, P.Eng.
Senior Environmental Engineer

Submitted By: Earth Tech Canada Inc.
17203-103 Ave.
Edmonton Alberta
T5S 1J4

TABLE OF CONTENTS

1.0 INTRODUCTION AND BACKGROUND

Public Works and Government Services Canada (PWGSC), Environmental Services division has been retained by INAC to continue site additional site investigations and clean up activities located at the former FOX-C DEW Line site located on the shore of Ekalugad Fjord, Nunavut.

In order to develop a remedial plan for the CAMF site, PWGSC is required to complete further assessments at the site. The assessments include the following components:

- Geotechnical Assessment/Site Survey – assessment of volumes of types of local available borrow materials, and topographic surveys.
- Geophysical Assessment – geophysical assessment of dump sites and other disturbances.
- Phase III ESA and Waste Audit - completion of environmental investigation order to delineate areas of environmental concern as well as to determine volumes of hazardous and non hazardous waste materials.
- Risk Assessment – completion of ecological human health risk assessment based on the contaminated levels determined in the Phase III ESA program.
- Remedial Design – based on the results of all the above programs a remedial design will be completed.

The objectives of the Phase III ESA and Waste Audit portion of the project include the following:

- Quantify the volume of contaminated soil through at the site both horizontal and vertical delineation (Contaminants of concern included PCBs, petroleum hydrocarbons and metals).
- Quantify the volume of hazardous materials at the site (i.e. asbestos, paint with PCBs/lead).
- Quantify the volume of non-hazardous materials at the site.
- Quantify and identify the volume of liquid waste located in barrels and tanks.

1.1 Technical Approach

One of the main goals of the Phase III ESA is to complete the delineation of subsurface contamination horizontally, as well as vertically, in all areas of environmental concern. It is understood that previous studies have identified areas with heavy metals and hydrocarbons and that in general the delineation was achieved horizontally but not vertically. Therefore the intent of this investigation is to fill in the data gaps. The delineation work will be completed comparing the analytical data to the most stringent applicable remediation criteria for each parameter in question (Tier I and Tier II DCC Clean up Criteria and CCME Residential/Parkland).

Due to the remote nature of the site, the proposed work plan and sampling program is designed to try to accomplish full contaminant delineation during one site visit. In addition to meeting the technical requirements of this assignment, it is recognized that

detailed logistical planning and preparation are required to carrying out the work in an efficient and cost effective manner while up keeping the highest level of safety and awareness.

1.2 Site Logistics/Health and Safety

It is understood that the work base will be a General Contractor operated camp. Camp services will include food, accommodations, transportation, water, wastewater, and power. PWGSC will provide all necessary charter flights to/from Hall Beach. A small rubber tired backhoe will also be onsite and available for subsurface investigation work.

It is understood that the General Contractor will be producing a Health and Safety Plan. This plan will need to be signed by all personnel at the site.

The Earth Tech team will travel to Hall Beach via regularly scheduled aircraft in order to meet the previously determined PWGSC schedule time for the charter flight to the CAM F site. The Earth Tech field equipment and sampling supplies will be sent to Hall Beach via air cargo prior to the field team leaving Edmonton. It is understood that Earth Tech will supply all field equipment and supplies for this project. Earth Tech employees are fully trained in all operations their field equipment including workplace ergonomics, and awareness of repetitive stress injuries.

Upon arrival at the site, Earth Tech will complete the following items prior to commencing with the items listed in the Phase III ESA/ Waste Audit work plan:

- Meet with the General Contractor and get site and safety orientations; discuss Health and Safety Plan, Earth Tech work plan, equipment usage schedule.
- During the completion of the field activities, Earth Tech will inspect all study areas of the site to identify all potential risks/hazards to human health (structurally unsafe buildings, open excavations, tripping hazards, broken glass, rebar, chemical hazards, explosive hazards etc).
- Mark, sign and label all hazards upon identification.
- Locate previously investigated areas of environmental concern.

2.0 BACKGROUND DATA

2.1 Location

FOX-C is located on Melville Peninsula between Foxe Basin and Committee Bay (68°33' N, 83 °19' W); 85km west of Hall Beach and 100km southwest of Igloolik. FOX-C (at Ekalugad Fjord) was reserved for use as an Intermediate DEW Line site from 1956 to 1963. The station was constructed in 1957 and the site was closed and abandoned in 1963. The site was converted to a scientific research station in 1977 under the auspices of the Science Institute of the Northwest Territories and DIAND.

2.2 Scope of Work

The scope of work for the project has been separated into individual tasks required at the site. The work will be carried out at a "remote camp". In addition to the site

investigation and waste audit, other activities will be carried out at the site either concurrently or after completion of this work including barrel consolidation and crushing; geotechnical/geophysical investigations; and ecological and human health risk assessment. Specific Standard Operating Procedures (SOP), for tasks that may undertaken during the course of site activities, are included in the appendices of this plan.

Task 1: Site Logistics

PWGSC will be providing charter aircraft from Hall Beach to the site at a previously determined set time. From Hall Beach, personnel are to be transported via fixed wing aircraft to the site. All aircraft safety precautions will be adhered to as per the carrier's guidelines and Transport Canada Regulations.

Task 2: Delineation of Contaminated & Potentially Contaminated Areas

In general, during the previous programs, impacted areas were delineated laterally but not vertically. Therefore, Earth Tech will be expected to delineate all impacted areas. Specific areas that must be delineated include:

- Sediments in Ekalugad Fjord at point nearest to the construction camp;
- Station proximity soils in nine discrete areas (areas adjacent to four module train exterior staircases, a drainage area northwest of the module train, stained area at the station pad, stained area at the warehouse bay door, below transformer casing at north end of garage, stained area on south side of garage);
- Soils beneath the sewage outfall;
- Soils at a stained area and vehicle pile south of the Station;
- Soils at Dumps A & B;
- Soils at two locations adjacent to drum storage area; and
- Soils at one location in construction camp area.

This list of sites is not exhaustive and allowances will also be made to sample other locations not previously sampled. The estimated number of test pits is assumed to be approximately 50. Earth Tech will sample these locations with the means available (i.e. sediment sampler, hand auger, backhoe, etc.) and a specific safety review will be carried with the operator and/or other team members prior to commencing the work.

Task 3: Biological Sampling

Approximately five adult sportfish are to be collected by Earth Tech from Ekalugad Fjord and five collected from Hall Lake near the effluent of Kingora River. Tissue samples are to be taken and submitted to the laboratory and analyzed for the presence of PCB's and target metals. This will be completed by gill nets, rod and tackle, and the assistance of the local labours familiar with the area. Earth Tech will complete this by following the necessary precautions required when working near water (i.e. life preservers, land lines, hypothermia awareness, boat safety, etc.)

Task 4: Sampling of Building Materials

Some building materials have been sampled and analyzed for potentially hazardous components. Principle contaminants of concern are asbestos and PCB's and lead in paint. Much of the asbestos has been removed and is currently stored in bags in the quonset hut. Sampling has been carried out in specific areas of the facility, however, additional sampling will be required. It is assumed that 15 separate samples will be submitted and analyzed for asbestos, 20 for PCB's in paint and 20 for lead in paint. These hazardous material samples will be retrieved under OSHA, NIOSH, and EPA sampling protocol and guidelines (e.g. Adequately-wet NIOSH guideline for sampling asbestos.) Level C PPE will be dawned where and when required.

Task 5: Quantification of Non-Hazardous & Hazardous Materials (Waste Audit)

Non-hazardous materials at the site are predominantly associated with building materials and debris including equipment and barrels. Hazardous materials are predominantly associated with building materials including asbestos, both packaged and remaining in use, and lead and PCB's in paint. Small volumes of hazardous materials remain in storage, particularly in the storage shed. Earth Tech will inventory the buildings and site debris in order to calculate volumes and weights of materials. Personnel will be cognizant of sharp objects, slippery and unstable surfaces. At no time will personnel climb, or place themselves beneath waste piles for investigation purposes

Task 6: Barrel Sampling

An unknown number of unopened barrels remain at site, potentially containing some product. Earth Tech will attempt to sample a representative number of barrels (assume 10) and characterize this waste through submission of samples to the laboratory. (In particular, the barrels located near the airstrip that contain debris and waste.) These barrels contain partially burned debris. Earth Tech will utilize drum sampler, syringes, and laceration proof gloves to conduct this task. At least one member of the Earth Tech team will have been trained and certified to package and ship I.A.T.A. and T.D.G. regulated (Class 3 only) substances via air.

Task 7: Co-ordination with Other Consultants

All though not a physical safety item, this task is important to be aware of site operations and necessary rescue planning if needed. In general, there will be some requirement to liase with the risk assessment group, geophysical/geotechnical, and remedial design consultants. Communications with these parties will be established at the start of each working day. Earth Tech personnel will be equipped for communications on site with two-way radios, safety whistle, and emergency flares.

2.3 Training Requirements

As indicated in the TOR, only personnel having received the OSHA 40 Hour HAZWOPER training course will be allowed to handle any contaminated material.

All personal on site shall be responsible for attending a pre-job safety meeting held on site the morning of each workday. The meeting will be conducted as a daily tailgate safety meeting and an understating of each days scope of work will be established prior to commencing any activities on site. Other mid-day safety awareness and planning meeting will be held at the discretion of the onsite Earth Tech Engineer(s).

2.5 Project Personnel

Name	Position	Company	Phone
Chris Doupe Jared Buchko	Client Representative and Project Manager	P.W.G.S.C.	(780) 497-3868
Gordon Woollett	Project Manager	Earth Tech Canada	(780) 453-0710
Don Roy	Onsite Safety Officer and Team Leader	Earth Tech Canada	(780) 453-0709 Cell (780) 717-2755
Greg Wright	Project Field Scientist	Earth Tech Canada	(780) 488-6800

2.6 Work Schedule

The proposed work outlined in this health and safety plan is scheduled for August 8, 2004 to August 18th, 2004 and will be completed during daylight hours.

2.7 Project Roles

Projects of this nature often require the input and participation of several different types of professionals. The paragraph below briefly outlines the roles of each participant for the investigation and closure of each site.

Indian and Northern Affairs Canada (INAC)

Client.

Public Works and Government Services Canada (PWGSC)

Clients project managing body responsible for contracts with consultant and other parties involved with project. Liaison for project staff and client.

Earth Tech Canada Inc.

Project environmental investigation consultant. Responsible for project design, sampling, laboratory analyses, liaison with PWGSC.

3.0 SITE CHARACTERISTICS

3.1 General

(See Section 2.1)

3.2 Access

Plans to access the site with the least amount of damage and disturbance will be implemented. Site access will be via fixed wing aircraft.

3.3 Topography

The sit is situated on the Canadian Shield with sandy gravel deposits throughout. The main site is approximately 220 m above mean sea level and is comprised of gently slopes and drainage valleys.

3.4 Site Plans

A site plan is included with the appendices.

4.0 GENERAL HAZARDS

General site hazards have been identified as:

- Tripping, slipping, or stumbling on uneven or slippery/frozen terrain.
- Cold stress and weather conditions that may cause dehydration or wind burn.
- Loss of traction under wet driving/walking conditions.
- Lifting hazards during any site clearing activities.
- Noise and vibration hazards.
- Eye irritants or projectiles caused by wind.
- Working near wildlife.
- Contact with sharp or jagged objects while soil sampling off augers.
- Destructive sampling hazardous material assessment.

5.0 PROJECT SPECIFIC HAZARDS

5.1 Level of Safety

The investigation of possible subsurface contaminants presents specific safety precautions that must be adhered to.

Potential exposure pathways of chemical exposure these contaminants on site are primarily through dermal exposure and inhalation, and secondly through ingestion exposure.

All personal working are handling potentially hazardous substances shall be required to dawn a minimal of OSHA/NIOSH Level C Personal Protective Equipment (PPE). Level C PPE consists of:

- **Hard Hat**
- **Hearing protection where appropriate (e.g. concrete breaking with hydraulic hammer)**
- **Safety Glasses**
- **Steel Toed Boots**

5.2 Potential Contaminant Identification

The site has been previously used a DEW Line defence/communications center. As a result of operating the site during the early stages of the electronics era, the site is heavily contaminated with PCB's and Heavy Metals.

At no time will on site investigation personnel use olfactory odour or taste identification techniques to identify possible chemical contamination. All identification and quantification shall be done with the use of visual, field instrument, and laboratory techniques.

5.3 Preventing Cross Contamination and Tracking

Cross contamination and tracking of chemicals can pose a safety hazard as well add to project schedule and budget to decontaminate equipment and personnel. All sampling, and excavation equipment shall have precautions taken to minimize exposure to potentially contaminated soil and ground water. Minimization may be in the form of:

- Inspecting PPE to ensure it is in proper condition before each use.
- Closing zippers, buttons, and snaps fully.
- Not wearing leather boots.
- Tucking inner gloves under the sleeves and outer gloves over sleeves.
- Tucking boots under the legs of outer clothing.
- Wearing hoods, if not attached, outside the collar.
- Taping all junctures to help prevent contaminants from running inside gloves, boots, and jackets.
- Follow standard operating procedures (SOP's) regarding decontamination and sampling.
- Minimize the use of porous substances such as wooden tools, leather, foam covered handles, etc. These items are difficult to decontaminate.
- Do not walk through puddles or stockpiled waste material.
- Properly disposing of equipment and solvents used for decontamination.
- Do not directly touch potential hazardous substances.
- Use remote sampling equipment when practical.
- Wear disposable outer garments and use disposable equipment when possible.
- Contain source of hazardous substance.

5.4 Decontamination Procedures

Decontamination of equipment, tools, and personnel will be necessary to prevent cross contaminant of samples, contaminant tracking, and personal hygiene and safety. Decontamination can be accomplished by:

- Physically removing contaminants.

- Chemically removing containments.
- Rinsing off containments.
- Disinfecting and Sterilizing.
- Combining the above methods.

The decontamination at the subject site will utilize a single surfactant/soap wash to clean any necessary sampling equipment. The following generalized decontaminating procedures will be followed during the course of the investigation.

- Personnel shall change gloves regularly during the investigation.
- Heavy equipment shall conduct site work in such a manner that prevents equipment from traveling through, or resting on any drill cuttings. This may include tarping of soils if reentry to investigation area is required.

5.4 Preservation of Site Conditions

The site is situated gravel pad areas built up on the arctic tundra. Travel on the tundra will b on a strictly need to access basis. All site monuments and survey markers will be left in place.

5.5 Working Near Wildlife

A variety of wildlife may be encountered while working within the limits of the site. In particular, polar bears. Since polar bears are extremely unpredictable, all personnel must work within the designated zone where a polar bear monitor (provided by general contractor) is situated. **Under no exceptions are personnel to be out of eye site and protection of polar bear monitor.**

A brief description of polar bear habits is provided within the appendices. At no time are animals encountered on site to be feed.

5.6 Decontamination of Personnel and Equipment

Hands must be washed prior to lunch and nutrition breaks. Equipment used on site shall be decontaminated prior to leaving the premises.

5.7 Record Keeping

The consultant shall keep a record of all health and safety procedures and decontamination practices. All incidents, near misses, and hazard identification shall be recorded. Copies of records will be included in consultants report to the client.

5.8 Insects

All personnel shall take precautions against being bit by flying insects. Bug net jackets and hoods shall be provided as will mosquito repellant with a minimum of 20% DEET. The use of repellent shall be completed under the manufactures instructions.

5.9 Aircraft

All personnel shall conform to Transport Canada rules and regulation for embarking and traveling on aircraft. Detailed guides to both helicopter safety and fixed wing aircraft are included with the appendices of this plan.

5.10 ATV's

All personnel shall conform to the ATV safety manual located in the appendices of this plan. Approved CSA helmets shall be worn while operating or passengering on an ATV.

6.0 EMERGENCY CONTINGENCY PLAN

6.1 Responsibilities

Each member involved in onsite activities shall be responsible for identification of onsite hazards and safety of themselves and others. Each member engaged in onsite work for this project will be responsible for initiating the emergency response plan on an as identified basis.

The General Contractor shall provide emergency plan and mustering point.

6.2 Emergency Response Steps

Should and emergency arise, the following steps are to be taken:

1. Ensure your own safety.
2. Notify other team members of emergency.
3. Call for help.
4. If possible without further endangerment, attempt to assess/address situation and bring under control. Perform First Aid if required.
5. Inform consultant and/or team leader.
6. Inform Client(s).

APPENDIX D

ANALYTICAL RESULTS

FOX C- DEW Line Site
Summary of Analytical Data
Beach Area POL Storage Tanks

Table 1.1: PHC Concentrations in Soils

PARAMETER	CRITERIA	BAT-1008	BAT-1009	BAT-1010	BAT-1010	BAT-1010	BAT-1011	BAT-1012	BAT-1013	BAT-1014	BAT-1015	BAT-1016
Depth:	(ppm)	0-25 cm	10-30 cm	30-50 cm	50 cm	150 cm	90-120 cm	80-100 cm	150 cm	120-150 cm	100-120 cm	60-80 cm
Benzene	0.5	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Toluene	0.8	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Ethylbenzene	1.2	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.28	0.08	<0.02	<0.02	<0.02
Total Xylenes (m,p,o)	1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	4.31	1.02	<0.02	<0.02	<0.02
F1 C6-C10	260	<1	<1	9	37	37	<1	179	87	<1	<1	<1
F2 C10-C16	900	<10	<10	2280	2140	2890	<10	2540	651	<10	<10	<10
F3 C16-C34	800	<10	21	86	59	462	<10	154	90	<10	<10	<10
F4 C34-C50	5600	<10	<10	14	<10	23	<10	<10	<10	<10	<10	<10

NOTES:
1) BTEX Criteria based on CCME Soil Quality Guidelines for Residential Land-Use
2) F1-F4 Criteria based on Canada Wide Standards for PHCs in Soil
3) Exceedance indicated with shading

Table 1.2: PAH Concentrations in Soils

PARAMETER	CRITERIA	BAT-1009	BAT-1010
Depth:	(ppm)	10-30 cm	30-50 cm
Naphthalene	0.6	<0.05	<0.05
Acenaphthylene	-	<0.05	<0.05
Acenaphthene	-	<0.05	<0.05
Fluorene	-	<0.05	<0.05
Phenanthrene	5	<0.05	<0.05
Anthracene	-	<0.05	<0.05
Fluoranthene	-	<0.05	<0.05
Pyrene	10	<0.05	<0.05
Benzo(a)anthracene	1	<0.05	<0.05
Chrysene	-	<0.05	<0.05
Benzo(b)fluoranthene	1	<0.05	<0.05
Benzo(j)fluoranthene	-	<0.05	<0.05
Benzo(k)fluoranthene	1	<0.05	<0.05
Benzo(a)pyrene	0.7	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	1	<0.05	<0.05
Dibenzo(a,h)anthracene	1	<0.05	<0.05
Benzo(g,h,i)perylene	-	<0.05	<0.05
CB(a)P	-	<0.05	<0.05

NOTES:
1) Criteria based on CCME Soil Quality Guidelines for Residential Land-Use except as noted below
2) * Indicates criteria based on DCC Tier 2 Criteria
3) Lead criteria based on DCC Tier 1 (200 ppm) and DCC Tier 2 (500 ppm)

Table 1.3: Storage Tank Contents - Hydrocarbon Concentrations in Water

PARAMETER	CRITERIA	East
	(ppm)	Tank
Benzene	0.37	<0.001
Toluene	0.002	<0.001
Ethylbenzene	0.09	<0.001
Xylene	-	0.001
F1	-	0.08
F2	-	0.08
F3	-	3.5
F4	-	4.6

NOTES:
1) Criteria based on CCME Freshwater Aquatic Life

FOX C - DEW Line Site
Summary of Analytical Data
Beach Area Barrel Dumps

Table 2.1: Metals Concentrations in Soils

PARAMETER	CRITERIA	BA-1017	BA-1018	BA-1019	BA-1019	BA-1020	Duplicate of	BA-1021	BA-1023	BA-1024	BA-1025
Depth:	(ppm)	40-60 cm	60-80 cm	40 cm	100 cm	25-40 cm	BA-1020	50-70 cm	40-60 cm	10-30 cm	30 cm
Antimony	20	3	2.6	2.5	3.3	3.5	3.3	2.8	1.1	0.8	2.8
Arsenic	30*	3.9	3.7	3.5	3.8	4.3	4.2	4.2	2.5	1.4	3.6
Barium	12	107	110	106	137	141	134	120	50.1	24.5	122
Beryllium	500	0.44	0.44	0.4	0.54	0.58	0.55	0.48	0.21	0.15	0.46
Boron	4	0.5	0.5	0.5	1.3	0.8	0.6	0.5	0.1	<0.1	0.2
Cadmium	5*	0.07	0.07	0.06	0.08	0.08	0.1	0.06	0.06	0.05	0.09
Chromium	250*	59.5	60.5	58.4	76.4	82.8	76.2	66.4	23.8	12.8	65.7
Hexavalent Chromium	0.4	<0.1	0.2	0.1	0.2	<0.1	0.1	0.2	<0.1	<0.1	<0.1
Cobalt	50*	7.43	7.69	7.7	9.19	9.77	9.32	8.28	3.76	2.57	8.5
Copper	100*	22.8	24.9	22.9	29.5	32	30.4	26.9	13.3	8.92	28.3
Lead	200/500	8.6	8.4	10.9	10.2	10.8	10.4	9.3	4.6	3.5	9.6
Mercury	140	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Molybdenum	6.6	0.8	0.8	1.1	0.9	1.1	1	0.8	0.3	0.3	0.4
Nickel	100*	25.6	27.2	25.6	32.6	35.2	32.8	29.1	13.8	9.43	30.3
Selenium	1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Silver	20	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Thallium	1	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Tin	50	2.2	2	2.2	2.2	2.6	2.7	2.3	1.9	2	2.2
Vanadium	130	53.7	54.5	52	68.2	72.2	69	59.5	20.7	11.3	57.9
Zinc	500*	60.1	61	58.6	78.3	83.3	78.8	68.5	25.7	15.4	70.1

NOTES:

1) Criteria based on CCME Soil Quality Guidelines for Residential Land-Use except as noted below
2) * Indicates criteria based on DCC Tier 2 Criteria
3) Lead criteria based on DCC Tier 1 (200 ppm) and DCC Tier 2 (500 ppm)

FOX - C DEW Line Site
Summary of Analytical Data
Water Lake Area

Table 3.1: PHC Concentrations in Soils

PARAMETER	CRITERIA	WL-1001	WL-1002	WL-1003	WL-1004	WL-1005	WL-1005	WL-1006	WL-1007	WL-1008
Depth:	(ppm)	0-15 cm	30-50 cm	40-50 cm	30-40 cm	0-30 cm	75 cm	40-60 cm	60-80 cm	0-10 cm
Benzene	0.5	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Toluene	0.8	<0.02	<0.02	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.02
Ethylbenzene	1.2	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Total Xylenes (m,p,o)	1	<0.02	<0.02	<0.02	<0.02	<0.02	0.04	<0.02	<0.02	<0.02
F1 C6-C10	260	<1	<1	<1	<1	4	10	36	<1	2
F2 C10-C16	900	13	<10	<10	<10	87	358	881	<10	<10
F3 C16-C34	800	37	77	69	<10	11400	18000	838	116	13700
F4 C34-C50	5600	27	46	73	<10	1370	2080	288	52	8210

NOTES:
1) BTEX Criteria based on CCME Soil Quality Guidelines for Residential Land-Use
2) F1-F4 Criteria based on Canada Wide Standards for PHCs in Soil
3) Exceedance indicated with shading

Table 3.2: PAH Concentrations in Soils

PARAMETER	CRITERIA	WL-1005
Depth:	(ppm)	0-30 cm
Naphthalene	0.6	<0.1
Acenaphthylene	-	<0.1
Acenaphthene	-	<0.1
Fluorene	-	<0.1
Phenanthrene	5	<0.1
Anthracene	-	<0.1
Fluoranthene	-	<0.1
Pyrene	10	<0.1
Benzo(a)anthracene	1	<0.1
Chrysene	-	<0.1
Benzo(b)fluoranthene	1	0
Benzo(j)fluoranthene	-	0
Benzo(k)fluoranthene	1	0
Benzo(a)pyrene	0.7	0
Indeno(1,2,3-c,d)pyrene	1	0
Dibenzo(a,h)anthracene	1	0
Benzo(g,h,i)perylene	-	0
CB(a)P	-	0

NOTES:
1) Criteria based on CCME Soil Quality Guidelines for Residential Land-Use

Table 3.3: PCB Concentrations in Soils

PARAMETER	CRITERIA	WL-1005	WL-1008	WL-1008
Depth:	(ppm)	0-30 cm	0-10	30 cm
Aroclor 1016	-	<0.1	<0.1	<0.1
Aroclor 1221	-	<0.1	<0.1	<0.1
Aroclor 1232	-	<0.1	<0.1	<0.1
Aroclor 1242	-	<0.1	<0.1	<0.1
Aroclor 1248	-	<0.1	<0.1	<0.1
Aroclor 1254	-	<0.1	<0.1	<0.1
Aroclor 1260	-	<0.1	<0.1	<0.1
Aroclor 1262	-	<0.1	<0.1	<0.1
Aroclor 1268	-	<0.1	<0.1	<0.1
Total PCBs	1-5	<0.1	<0.1	<0.1

NOTES:
1) Criteria based on DCC Tier 1 (1 ppm) and DCC Tier 2 (5 ppm) for PCBs

FOX - C DEW Line Site
Summary of Analytical Data
Surface Water Samples from Water Lake

Table 4.1: Total Metals in Surface Water

PARAMETER	UNIT	CRITERIA	WL-SW-02
Aluminum	mg/L	0.005	**0.186**
Antimony	mg/L	-	0.0002
Arsenic	mg/L	0.005	<0.0002
Barium	mg/L	-	0.031
Beryllium	mg/L	-	<0.0001
Bismuth	mg/L	-	<0.0005
Boron	mg/L	-	<0.002
Cadmium	mg/L	0.000017	**0.00006**
Chromium	mg/L	-	0.0007
Cobalt	mg/L	-	0.0049
Copper	mg/L	0.002	**0.004**
Iron	mg/L	0.3	**1.1**
Lead	mg/L	0.001	0.001
Lithium	mg/L	-	0.002
Manganese	mg/L	-	0.041
Mercury	mg/L	-	<0.0002
Molybdenum	mg/L	0.073	<0.001
Nickel	mg/L	0.025	0.0126
Selenium	mg/L	0.001	<0.0002
Silicon	mg/L	-	3.97
Silver	mg/L	0.0001	<0.0001
Strontium	mg/L	-	0.017
Sulphur	mg/L	-	3.02
Thallium	mg/L	0.0008	<0.00005
Tin	mg/L	-	<0.001
Titanium	mg/L	-	0.0068
Uranium	mg/L	-	<0.0005
Vanadium	mg/L	-	0.0002
Zinc	mg/L	0.03	**0.056**

Notes

1. Criteria based on CCME Freshwater Aquatic Life Guideline

Table 4.2: PHC Concentrations in Surface Water

PARAMETER	UNIT	CRITERIA	WL-SW-01	WL-SW-02
Benzene	mg/L	0.37	<0.001	<0.001
Toluene	mg/L	0.002	<0.001	<0.001
Ethylbenzene	mg/L	0.09	<0.001	<0.001
Total Xylenes (m,p,o)	mg/L	-	0.002	0.001
F1	mg/L	-	0.07	0.06
F2 C10-C16	mg/L	-	<0.1	<0.1
F3 C16-C34	mg/L	-	<0.1	<0.1
F3+ C34+	mg/L	-	<0.1	<0.1
ph	-	6.5-9	-	6.7
Hardness	mg/L	-	-	9.6
Ca^{2+}	mg/L	-	-	2.6

Notes

1. Criteria based on CCME Freshwater Aquatic Life Guideline

Table 4.3: PCB Concentrations in Surface Water

PARAMETER	UNIT	CRITERIA	WL-SW-02	WL-SW-02
Aroclor 1016	ug/L	-	<0.1	<0.1
Aroclor 1221	ug/L	-	<0.1	<0.1
Aroclor 1232	ug/L	-	<0.1	<0.1
Aroclor 1242	ug/L	-	<0.1	<0.1
Aroclor 1248	ug/L	-	<0.1	<0.1
Aroclor 1254	ug/L	-	<0.1	<0.1
Aroclor 1260	ug/L	-	<0.1	<0.1
Aroclor 1262	ug/L	-	<0.1	<0.1
Aroclor 1268	ug/L	-	<0.1	<0.1
Total PCBs	ug/L	0.1	<0.1	<0.1

Notes:

1. Criteria based on CCME Freshwater Aquatic Life Guideline, guideline is no longer recommended
2. Exceedance indicated with shading

FOX - C DEW Line Site
Summary of Analytical Data
Water Lake and River Sediments

Table 5.1: Metals Concentrations in Sediment

PARAMETER	Criteria	RS-1	RS-2	WLS-1	WLS-2
Depth:	(ppm)	0 cm	0 cm	0 cm	0 cm
Antimony	-	0.6	0.5	0.8	0.5
Arsenic	5.9	<0.5	0.8	2.2	<0.5
Barium	-	18.8	18.2	29.4	25.8
Beryllium	-	0.13	0.15	0.16	0.22
Boron	-	<0.1	0.4	<0.1	<0.1
Cadmium	0.6	0.05	0.03	0.06	0.03
Chromium	37.3	9.87	12.7	17.2	11.2
Cobalt	-	1.55	1.87	2.9	1.46
Copper	35.7	8.58	6.86	11.3	4.39
Lead	35	3.8	2.2	3.2	1.5
Mercury	0.17	<0.01	<0.01	<0.01	<0.01
Molybdenum	-	0.1	0.1	0.5	<0.1
Nickel	-	4.83	5.72	9.98	4.77
Selenium	-	<0.2	<0.2	<0.2	<0.2
Silver	-	0.06	<0.05	<0.05	<0.05
Thallium	-	<0.3	<0.3	<0.3	<0.3
Tin	-	2	2.1	2	1.9
Vanadium	-	8.6	11.8	15	9.11
Zinc	123	14.9	14.7	20.3	15.6

NOTES:

Table 5.2: PCB Concentrations in Sediment

PARAMETER	Criteria	RS-1	RS-2	WLS-1	WLS-2
Depth:	ppm	0 cm	0 cm	0 cm	0 cm
Aroclor 1016	-	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	-	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	-	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	-	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	-	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	-	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	-	<0.1	<0.1	<0.1	<0.1
Aroclor 1262	-	<0.1	<0.1	<0.1	<0.1
Aroclor 1268	-	<0.1	<0.1	<0.1	<0.1
Total PCBs	0.034	<0.1	<0.1	<0.1	<0.1

NOTES:
1) Criteria based on CCME Interim Sediment Quality Guidelines

Table 5.3: PHC Concentrations in Sediment

PARAMETER	Criteria	RS-1	RS-2	WLS-1	WLS-2
Depth:	(ug/kg)	0 cm	0 cm	0 cm	0 cm
Benzene	-	<0.02	<0.02	<0.02	<0.02
Toluene	-	<0.02	<0.02	<0.02	<0.02
Ethylbenzene	-	<0.02	<0.02	<0.02	<0.02
Total Xylenes (m,p,o)	-	<0.02	<0.02	<0.02	<0.02
F1 C6-C10	-	<1	<1	<1	<1
F2 C10-C16	-	<10	<10	<10	<10
F3 C16-C34	-	28	27	26	<10
F4 C34-C50	-	11	18	12	<10

NOTES:
1) No standards exist for BTEX or F1-F4 Parameters
2) Exceedance indicated with shading

Table 5.4: PAH Concentrations in Sediment

PARAMETER	Criteria	RS-1	RS-2	WLS-1	WLS-2
Depth:	(ppm)	0 cm	0 cm	0 cm	0 cm
Naphthalene	0.0346	<0.05	<0.05	<0.05	<0.05
Acenaphthylene	0.00587	<0.05	<0.05	<0.05	<0.05
Acenaphthene	0.00671	<0.05	<0.05	<0.05	<0.05
Fluorene	0.0212	<0.05	<0.05	<0.05	<0.05
Phenanthrene	0.0419	<0.05	<0.05	<0.05	<0.05
Anthracene	0.0469	<0.05	<0.05	<0.05	<0.05
Fluoranthene	0.111	<0.05	<0.05	<0.05	<0.05
Pyrene	0.053	<0.05	<0.05	<0.05	<0.05
Benzo(a)anthracene	0.0317	<0.05	<0.05	<0.05	<0.05
Chrysene	0.0571	<0.05	<0.05	<0.05	<0.05
Benzo(b)fluoranthene	-	<0.05	<0.05	<0.05	<0.05
Benzo(j)fluoranthene	-	<0.05	<0.05	<0.05	<0.05
Benzo(k)fluoranthene	-	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene	0.0319	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	-	<0.05	<0.05	<0.05	<0.05
Dibenzo(a,h)anthracene	0.00622	<0.05	<0.05	<0.05	<0.05
Benzo(g,h,i)perylene	-	<0.05	<0.05	<0.05	<0.05
CB(a)P	-	<0.05	<0.05	<0.05	<0.05

NOTES:
1) Criteria based on CCME Interim Sediment Quality Guidelines

FOX - C DEW Line Site
Summary of Analytical Data
Mid Station - Barrel Storage Area/Dump Site

Table 6.1: Metals Concentrations in Soils

PARAMETER	Criteria	MS-1081	MS-1082	MS-1083	MS-1086	MS-1086
Depth:	(ppm)	0-20 cm	0-20 cm	20 cm	20 cm	10-20 cm
Antimony	20	2.2	1.6	1.8	1	0.5
Arsenic	30*	2	2.6	2	0.9	0.7
Barium	500	72.1	59.8	57.9	45.9	29
Beryllium	4	0.4	0.35	0.29	0.15	0.2
Boron	2	<0.1	<0.1	<0.1	<0.1	<0.1
Cadmium	5*	0.22	0.08	0.07	0.12	0.04
Chromium	250*	40.4	37.6	36.8	41.7	15.8
Cobalt	50*	6.21	5.59	5.62	3.78	2.47
Copper	100*	28.7	25.7	33.6	17	12
Lead	200/500	14.3	7.9	7	132	10.2
Mercury	6.6	<0.01	<0.01	<0.01	<0.01	<0.01
Molybdenum	10	1.1	1.1	1	1.3	0.2
Nickel	100*	23.6	21.8	21	12.2	8.42
Selenium	1	<0.2	<0.2	<0.2	<0.2	<0.2
Silver	20	<0.05	<0.05	<0.05	<0.05	<0.05
Thallium	1	<0.3	<0.3	<0.3	<0.3	<0.3
Tin	50	2.6	2.2	2.5	2.8	2.1
Vanadium	130	36.6	34.3	34.9	19.3	13.6
Zinc	500*	78.4	44.8	43.2	74.3	21.3

NOTES:

1) Criteria based on CCME Soil Quality Guidelines for Residential Land-Use except as noted below
2) * Indicates criteria based on DCC Tier 2 Criteria
3) Lead criteria based on DCC Tier 1 (200 ppm) and DCC Tier 2 (500 ppm)

Table 6.2: PCB Concentrations in Soils

PARAMETER	CRITERIA	MS-1080	MS-1081	MS-1082	US-1083	US-1084	MS-1086	MS-1086
Depth:	(ppm)	0-10 cm	0-20 cm	0-20 cm	20 cm	0-10 cm	20 cm	10-20 cm
Aroclor 1016	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	-	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1262	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1268	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total PCBs	1/5	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	<0.1

NOTES:

1) Criteria based on DCC Tier 1 (1 ppm) and DCC Tier 2 (5 ppm) for PCBs

FOX - C DEW Line Site
Summary of Analytical Data
Mid Station - Barrel Storage Area/Dump Site

Table 6.3: PHC Concentrations in Soils

PARAMETER	CRITERIA	MS-1080	MS-1081	MS-1082	MS-1083	MS-1086	MS-1086	MS-1086
Depth:	(ppm)	0-10 cm	0-20 cm	0-20 cm	20 cm	20 cm	10-20 cm	Duplicate
Benzene	0.5	<0.02	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02
Toluene	0.8	<0.02	<0.01	<0.01	<0.01	0.04	0.03	<0.02
Ethylbenzene	1.2	<0.02	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02
Total Xylenes (m,p,o)	1	0.02	<0.01	<0.01	<0.01	0.03	0.02	<0.02
F1 C6-C10	260	<1	<5	<5	<5	<1	<1	<1
F2 C10-C16	900	537	<10	<10	<10	348	66	287
F3 C16-C34	800	17100	126	404	10	26300	12400	14700
F4 C34-C50	5600	3830	40	105	<10	15600	9900	6530

NOTES:
1) BTEX Criteria based on CCME Soil Quality Guidelines for Residential Land-Use
2) F1-F4 Criteria based on Canada Wide Standards for PHCs in Soil
3) Exceedance indicated with shading

Table 6.4: PAH Concentrations in Soils at the Mid Station Heli Pad Dump Area

PARAMETER	CRITERIA	MS-1080	US-1084	MS-1086	MS-1086	MS-1086
Depth:	(ppm)	0-10 cm	0-10 cm	20 cm	10-20 cm	Duplicate
Naphthalene	0.6	<0.05	<0.05	0.07	0.06	<0.05
Acenaphthylene	-	<0.05	<0.05	0.23	0.22	0.61
Acenaphthene	-	0.07	<0.05	<0.05	<0.05	<0.05
Fluorene	-	0.84	<0.05	0.11	0.11	0.15
Phenanthrene	5	6.54	<0.05	0.83	0.76	0.79
Anthracene	-	<0.05	<0.05	<0.05	<0.05	0.08
Fluoranthene	-	0.3	<0.05	0.07	0.05	0.1
Pyrene	10	<0.05	<0.05	0.12	0.08	0.12
Benzo(a)anthracene	1	<0.05	<0.05	0.09	0.06	<0.05
Chrysene	-	0.34	<0.05	0.24	0.23	0.1
Benzo(b)fluoranthene	1	0.05	<0.05	<0.05	0.15	<0.05
Benzo(j)fluoranthene	-	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(k)fluoranthene	1	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene	0.7	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	1	<0.05	<0.05	<0.05	<0.05	<0.05
Dibenzo(a,h)anthracene	1	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(g,h,i)perylene	-	<0.05	<0.05	<0.05	<0.05	<0.05
CB(a)P	-	<0.05	<0.05	<0.05	<0.05	<0.05

NOTES:
1) Criteria based on CCME Soil Quality Guidelines for Residential Land-Use
2) Exceedance indicated with shading

FOX - C DEW Line Site
Summary of Analytical Data
Mid Station Dump - Water Analysis

Table 7.1: Metals in Surface Water

			Total Metals	Dissolved Metals
PARAMETER	**UNIT**	**CRITERIA**	**MS-1081**	**MS-1081**
Aluminum	mg/L	0.005	0.358	<0.005
Antimony	mg/L	-	0.0002	0.0003
Arsenic	mg/L	0.005	<0.0002	<0.0002
Barium	mg/L	-	0.005	0.002
Beryllium	mg/L	-	<0.0001	<0.0001
Bismuth	mg/L	-	<0.0005	<0.0005
Boron	mg/L	-	0.006	0.007
Cadmium	mg/L	0.000017	0.00003	0.00002
Chromium	mg/L	-	0.0011	<0.0005
Cobalt	mg/L	-	0.0003	<0.0001
Copper	mg/L	0.002	0.002	0.003
Iron	mg/L	0.3	0.4	-
Lead	mg/L	0.001	0.001	0.0003
Lithium	mg/L	-	<0.001	<0.001
Manganese	mg/L	-	0.006	-
Mercury	mg/L	-	<0.0002	-
Molybdenum	mg/L	0.073	<0.001	<0.001
Nickel	mg/L	0.025	0.0008	<0.0005
Selenium	mg/L	0.001	<0.0002	<0.0002
Silicon	mg/L	-	1.67	-
Silver	mg/L	0.0001	<0.0001	<0.0001
Strontium	mg/L	-	0.006	0.009
Sulphur	mg/L	-	0.68	-
Thallium	mg/L	0.0008	<0.00005	<0.00005
Tin	mg/L	-	<0.001	<0.001
Titanium	mg/L	-	0.0384	<0.0005
Uranium	mg/L	-	<0.0005	<0.0005
Vanadium	mg/L	-	0.0008	<0.0001
Zinc	mg/L	0.03	0.005	0.002

Notes
1. Criteria based on CCME Freshwater Aquatic Life Guideline

Table 7.2: PHC Concentrations in Surface Water

PARAMETER	UNIT	CRITERIA	MS-1081
Benzene	mg/L	0.37	<0.001
Toluene	mg/L	0.002	0.001
Ethylbenzene	mg/L	0.09	<0.001
Total Xylenes (m,p,o)	mg/L	-	0.003
F1	mg/L	-	0.013
F2 C10-C16	mg/L	-	<0.1
F3 C16-C34	mg/L	-	<0.1
F3+ C34+	mg/L	-	<0.1
ph	-	6.5-9	6.74
Hardness	mg/L	-	3.9
Ca^{2+}	mg/L	-	1.2

Notes
1. Criteria based on CCME Freshwater Aquatic Life Guideline

Table 7.3: PCB Concentrations in Surface Water

PARAMETER	UNIT	CRITERIA	MS-1081
Aroclor 1016	ug/L	-	<0.1
Aroclor 1221	ug/L	-	<0.1
Aroclor 1232	ug/L	-	<0.1
Aroclor 1242	ug/L	-	<0.1
Aroclor 1248	ug/L	-	<0.1
Aroclor 1254	ug/L	-	<0.1
Aroclor 1260	ug/L	-	<0.1
Aroclor 1262	ug/L	-	<0.1
Aroclor 1268	ug/L	-	<0.1
Total PCBs	ug/L	0.1	<0.1

Notes:
1. Criteria based on former CCME Guideline, guideline is no longer recommended
2. Exceedance indicated with shading

FOX - C DEW Line Site
Summary of Analytical Data
Mid Station Barrel Dumps

Table 8.1: PHC Concentrations in Soils

PARAMETER	CRITERIA	US-1085	US-1085	MS-1087	MS-1088	MS-1089	MS-1090	MS-1090B	MS-1091	MS-1092	MS-1093	MS-1094	MS-1095	BD6
Depth:	(ppm)	10 cm	85 cm	20 cm	10 cm	20 cm	0-10 cm	0-10 cm	0-10 cm	0-10 cm	0-10 cm	0-10 cm	0-10 cm	0-5 cm
Benzene	0.5	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Toluene	0.8	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Ethylbenzene	1.2	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Total Xylenes (m,p,o)	1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02
F1 C6-C10	260	<1	<1	<1	<1	4	<1	<1	3	<1	<1	<1	<1	<1
F2 C10-C16	900	22	<10	<10	<10	100	44	35	302	516	<10	20	<10	76
F3 C16-C34	800	9330	28	29	19	76	6650	4500	726	284	59	972	36	17800
F4 C34-C50	5600	21000	21	12	10	40	15100	5740	175	39	15	221	18	13800

NOTES:
1) BTEX Criteria based on CCME Soil Quality Guidelines for Residential Land-Use
2) F1-F4 Criteria based on Canada Wide Standards for PHCs in Soil
3) Exceedance indicated with shading

Table 8.2: PAH Concentrations in Soils

PARAMETER	CRITERIA	BD6
Depth:	(ppm)	0-5 cm
Naphthalene	0.6	0.63
Acenaphthylene	-	<0.05
Acenaphthene	-	<0.05
Fluorene	-	0.1
Phenanthrene	5	0.59
Anthracene	-	0.06
Fluoranthene	-	0.08
Pyrene	10	0.15
Benzo(a)anthracene	1	0.07
Chrysene	-	0.63
Benzo(b)fluoranthene	1	0.09
Benzo(j)fluoranthene	-	<0.05
Benzo(k)fluoranthene	1	<0.05
Benzo(a)pyrene	0.7	<0.05
Indeno(1,2,3-c,d)pyrene	1	<0.05
Dibenzo(a,h)anthracene	1	<0.05
Benzo(g,h,i)perylene	-	<0.05
CB(a)P	-	<0.05

NOTES:
1) Criteria based on CCME for Residential Land-Use

Table 8.3: PCB Concentrations in Soils

PARAMETER	CRITERIA	MS-1091	MS-1094	BD6
Depth:	(ppm)	0-10 cm	0-10 cm	0-5 cm
Aroclor 1016	-	<0.1	<0.1	<0.1
Aroclor 1221	-	<0.1	<0.1	<0.1
Aroclor 1232	-	<0.1	<0.1	<0.1
Aroclor 1242	-	<0.1	<0.1	<0.1
Aroclor 1248	-	<0.1	<0.1	<0.1
Aroclor 1254	-	<0.1	<0.1	0.2
Aroclor 1260	-	<0.1	<0.1	<0.1
Aroclor 1262	-	<0.1	<0.1	<0.1
Aroclor 1268	-	<0.1	<0.1	<0.1
Total PCBs	1-5	<0.1	<0.1	0.2

NOTES:
1) Criteria based on DCC Tier 1 and Tier 2 Criteria for PCBs

Table 8.4: Metals Concentrations in Soils

PARAMETER	Criteria	BD6
Depth:	(ppm)	0-5 cm
Antimony	20	5.6
Arsenic	30*	1.5
Barium	500	411
Beryllium	4	0.22
Boron	2	0.4
Cadmium	5*	4.3
Chromium	250*	38.1
Cobalt	50*	4.49
Copper	100*	381
Lead	200/500	946
Mercury	6.6	0.03
Molybdenum	10	1.6
Nickel	100*	17
Selenium	1	0.3
Silver	20	1.89
Thallium	1	<0.3
Tin	50	17.8
Vanadium	130	17.4
Zinc	500*	931

NOTES:
1) Criteria based on CCME Residential Land-Use except as noted below
2) * Indicates criteria based on DCC Tier 2 Criteria
3) Lead criteria based on DCC Tier 1 (200 ppm) and DCC Tier 2 (500 ppm)
4) Shaded values exceed DCC Tier 2 criteria

FOX - C DEW Line Site
Summary of Analytical Data
Module Train Area

Table 9.1: PCB Concentrations in Soils

PARAMETER	CRITERIA	US-1034	US-1035	US-1036	Duplicate of	US-1037	US-1038	US-1039	US-1040	US-1041
Depth:	(ppm)	35-50 cm	0-15 cm	35 cm	US-1036	45 cm	0-10 cm	0-5 cm	0-20 cm	0-10 cm
Aroclor 1016	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	-	<0.1	0.6	0.7	0.3	0.1	0.5	<0.1	0.4	0.2
Aroclor 1260	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1262	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1268	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total PCBs	1.3	<0.1	0.6	0.7	0.3	0.1	0.5	<0.1	0.4	0.2

NOTES:
1) Criteria based on DCC Tier 1 (1 ppm) and DCC Tier 2 (5 ppm) for PCBs

Table 9.2: PHC Concentrations in Soils at Upper Station Module Train

PARAMETER	CRITERIA	US-1038	US-1039	US-1040	US-1041
Depth:	(ppm)	0-10 cm	0-5 cm	0-20 cm	0-10 cm
Benzene	0.5	<0.02	<0.02	<0.02	<0.02
Toluene	0.8	<0.02	<0.02	<0.02	<0.02
Ethylbenzene	1.2	<0.02	<0.02	0.02	<0.02
Total Xylenes (m,p,o)	1	0.05	<0.02	0.23	0.03
F1 C6-C10	260	58	<1	103	47
F2 C10-C16	900	2990	180	8050	2350
F3 C16-C34	800	1940	346	936	466
F4 C34-C50	5600	366	47	17	66

NOTES:
1) BTEX Criteria based on CCME Soil Quality Guidelines for Residential Land-Use
2) F1-F4 Criteria based on Canada Wide Standards for PHCs in Soil
3) Exceedance indicated with shading

Table 9.3: Metals Concentrations in Soils

PARAMETER	Criteria	US-1039	US-1040	US-1041
Depth:	(ppm)	0-5 cm	0-20 cm	0-10 cm
Antimony	20	1	2.9	1.5
Arsenic	30*	<0.5	1	<0.5
Barium	0	16	34.4	16.7
Beryllium	<0.02	0.13	0.34	0.25
Boron	<0.02	0.1	0.2	<0.1
Cadmium	5*	0.06	0.42	0.11
Chromium	250*	11.9	23.2	15.3
Cobalt	50*	1.97	3.63	2.83
Copper	100*	8.29	14.1	10.2
Lead	200/500	3	10.9	10.3
Mercury	2080	<0.01	0.04	0.1
Molybdenum	2160	0.2	0.4	0.3
Nickel	100*	7.48	12.2	8.17
Selenium	1	<0.2	<0.2	<0.2
Silver	20	<0.05	<0.05	<0.05
Thallium	1	<0.3	<0.3	<0.3
Tin	50	2	2.1	2.1
Vanadium	130	9.6	19.1	8.46
Zinc	500*	13.6	49.2	16.3

NOTES:
1) Criteria based on CCME Residential Land-Use except as noted below
2) * Indicates criteria based on DCC Tier 2 Criteria
3) Lead criteria based on DCC Tier 1 (200 ppm) and DCC Tier 2 (500 ppm)

FOX - DEW Line Site
Summary of Analytical Data
Upper Station - Sewer Outfall/Dump Area

Table 10.1: Metals Concentrations in Soils

PARAMETER	CRITERIA	US-1026	US-1027	US-1028	US-1029	US-1030	US-1031	US-1032	US-1033
Depth:	(ppm)	0-10 cm	0-10 cm	0-10 cm	0-10 cm	0-10 cm	0-15 cm	0-10 cm	0-10 cm
Antimony	20	1.2	1.3	1.7	1.4	1.3	1.3	1.4	1.3
Arsenic	30*	1.1	2.1	1.3	1.9	1.3	1.8	1	1.9
Barium	12	57.6	50.1	40.6	42.2	36	39.6	36.8	42.8
Beryllium	500	0.2	0.33	0.25	0.23	0.23	0.26	0.15	0.27
Boron	4	<0.1	0.1	0.5	<0.1	<0.1	<0.1	<0.1	<0.1
Cadmium	5*	0.1	0.06	0.46	0.05	0.08	0.05	0.05	0.07
Chromium	250*	28.2	33.6	27	28.4	22.4	28.3	23.8	30.7
Cobalt	50*	3.59	4.86	4.36	3.86	3.14	4.04	3.02	3.86
Copper	100*	13.4	23	28.8	15.6	14	17.6	15	17.9
Lead	200/500	5.6	7.1	23.1	5.5	5.6	6	4	6.7
Mercury	140	<0.01	0.01	0.04	<0.01	0.05	0.01	<0.01	0.02
Molybdenum	6.6	0.5	1	0.5	0.6	0.5	0.6	0.5	0.7
Nickel	100*	13.2	18.4	12.4	13	11.4	14.1	10.8	14.2
Selenium	1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Silver	20	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Thallium	1	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Tin	50	1.8	2	2.9	2.1	2.1	1.8	2	1.9
Vanadium	130	24.9	29.2	21.5	26.2	20.2	26.6	21.8	27.6
Zinc	500*	43.7	42.6	67.3	32.4	35.2	33.3	28.8	36.6

NOTES:
1) Criteria based on CCME Soil Quality Guidelines for Residential Land-Use
3) Exceedance indicated with shading

Table 10.2: PCB Concentrations in Soils

PARAMETER	CRITERIA	US-1026	US-1027	US-1028	US-1029	US-1030	US-1031	US-1032	US-1033	US-1043
Depth:	(ppm)	0-10 cm	0-10 cm	0-10 cm	0-10 cm	0-10 cm	0-15 cm	0-10 cm	0-10 cm	0-10 cm
Aroclor 1016	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	-	<0.1	<0.1	2	<0.1	0.5	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	-	<0.1	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1262	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1268	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total PCBs	1/5	<0.1	<0.1	2.2	<0.1	0.5	<0.1	<0.1	<0.1	<0.1

NOTES:
1) Criteria based on DCC Tier 1 (1 ppm) and DCC Tier 2 (5 ppm) for PCBs
2) Exceedance above DCC Tier 1 indicated with shading

FOX - DEW Line Site
Summary of Analytical Data
Upper Station - Sewer Outfall/Dump Area

Table 10.3: PHC Concentrations in Soils at the Upper Station Outfall Area

PARAMETER	CRITERIA	US-1026	US-1028	US-1029	US-1030	US-1032	US-1033	US-1043
Depth:	(ppm)	0-10 cm	0-10 cm	0-10 cm	0-10 cm	0-10 cm	0-10 cm	0 cm
Benzene	0.5	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Toluene	0.8	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Ethylbenzene	1.2	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Total Xylenes (m,p,o)	1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
F1 C6-C10	260	<1	<1	<1	<1	<1	<1	<1
F2 C10-C16	900	11	39	14	47	<10	94	<10
F3 C16-C34	800	128	1050	31	564	11	397	33
F4 C34-C50	5600	28	226	<10	84	<10	22	<10

NOTES:
1) BTEX Criteria based on CCME Soil Quality Guidelines for Residential Land-Use
2) F1-F4 Criteria based on Canada Wide Standards for PHCs in Soil
3) Exceedance indicated with shading

FOX - C DEW LINE Site
Summary of Analytical Data
Garage Area

Table 11.1: PCB Concentrations in Soils

PARAMETER	CRITERIA	US-1075	US-1077	US-1078	US-1079	US-1050
Depth:	(ppm)	15-20 cm	0-10 cm	0-10 cm	10-30 cm	0-10 cm
Aroclor 1016	-	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	-	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	-	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	-	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	-	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	-	0.1	1.6	0.5	0.6	0.2
Aroclor 1260	-	<0.1	0.1	<0.1	<0.1	<0.1
Aroclor 1262	-	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1268	-	<0.1	<0.1	<0.1	<0.1	<0.1
Total PCBs	1/5	0.1	1.7	0.5	0.6	0.2

NOTES:
1) Criteria based on DCC Tier 1 (1 ppm) and DCC Tier 2 (5 ppm) for PCBs
2) Exceedance above DCC Tier 1 indicated with shading

Table 11.2: PHC Concentrations in Soils

PARAMETER	CRITERIA	US-1071	US-1071	US-1075	US-1076	US-1076	US-1077	US-1078	US-1079	US-1050
Depth:	(ppm)	20 cm	50 cm	15-20 cm	0-15 cm	20 cm	0-10 cm	0-10 cm	10-30 cm	0-10 cm
Benzene	0.5	<0.02	<0.02	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.02
Toluene	0.8	<0.02	<0.02	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.02
Ethylbenzene	1.2	<0.02	<0.02	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.02
Total Xylenes (m,p,o)	1	<0.02	<0.02	<0.02	<0.02	0.09	<0.02	0.02	<0.02	<0.02
F1 C6-C10	260	<1	<1	15	4	<1	<1	<1	<1	<1
F2 C10-C16	900	<10	<10	288	6540	214	524	19	673	16
F3 C16-C34	800	284	1210	481	15600	599	8630	930	16500	768
F4 C34-C50	5600	40	47	72	686	99	726	219	1290	209

NOTES:
1) BTEX Criteria based on CCME Soil Quality Guidelines for Residential Land-Use
2) F1-F4 Criteria based on Canada Wide Standards for PHCs in Soil
3) Exceedance indicated with shading

FOX - C DEW LINE Site
Summary of Analytical Data
Garage Area

Table 11.3: Metals Concentrations in Soils

PARAMETER	Criteria	US-1050	US-1075
Depth:	(ppm)	0-10 cm	15-20 cm
Antimony	20	1.4	1
Arsenic	30*	1.1	1
Barium	500	42.7	39.5
Beryllium	12	0.14	0.2
Boron	2	<0.1	0.2
Cadmium	5*	0.08	0.27
Chromium	250*	51.5	82.2
Cobalt	50*	5.77	7.53
Copper	100*	16.4	25.8
Lead	200/500	9.5	16.1
Mercury	6.6	0.04	<0.01
Molybdenum	10	0.5	0.5
Nickel	100*	23.6	34.7
Selenium	1	<0.2	<0.2
Silver	20	<0.05	<0.05
Thallium	1	<0.3	<0.3
Tin	50	2.2	2.4
Vanadium	130	32.2	31.4
Zinc	500*	43.7	46.7

NOTES:

1) Criteria based on CCME Soil Quality Guidelines for Residential Land-Use except as noted below
2) * Indicates criteria based on DCC Tier 2 Criteria
3) Lead criteria based on DCC Tier 1 (200 ppm) and DCC Tier 2 (500 ppm)

FOX - C DEW Line Site
Summary of Analytical Data
South of Garage/Dump Area

Table 12.1: Metals Concentrations in Soils

PARAMETER	CRITERIA	US-1042	US-1044	US-1044	US-1047	US-1048	US-1053
Depth:	(ppm)	0 cm	0 cm	20-30 cm	0 cm	20-30 cm	0 cm
Antimony	20	1.1	1.4	1.5	1.4	1.2	1.9
Arsenic	30*	1.2	1.8	1.6	2.2	1.1	1.6
Barium	500	32	60.3	56.2	47	49.9	60.7
Beryllium	4	0.18	0.28	0.23	0.27	0.22	0.55
Boron	2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Cadmium	5*	0.06	0.06	0.07	0.06	0.07	0.08
Chromium	250*	21.3	33.7	30.5	32.8	30	49
Cobalt	50*	2.51	4.5	4	4.2	4.06	5.22
Copper	100*	9.39	15.5	13	16.2	13.4	26.9
Lead	200/500	5.5	7	5	5.8	4.9	21
Mercury	6.6	0.01	0.01	0.02	<0.01	<0.01	0.02
Molybdenum	10	0.3	0.6	0.6	0.7	0.4	0.8
Nickel	100*	9.06	15	13.6	14.5	12.4	19.5
Selenium	1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Silver	20	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Thallium	1	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Tin	50	2.2	2	2.1	2	2.2	2.2
Vanadium	130	19.2	31	28.4	29	27.1	40.4
Zinc	500*	25.3	38.7	33.6	38.3	35	55.5

NOTES:
1) Criteria based on CCME Soil Quality Guidelines for Residential Land-Use except as noted below
2) * Indicates criteria based on DCC Tier 2 Criteria
3) Lead criteria based on DCC Tier 1 (200 ppm) and DCC Tier 2 (500 ppm)

Table 12.2: PCB Concentrations in Soils

PARAMETER	CRITERIA	US-1042	US-1046	US-1047	US-1048	US-1049	US-1051	US-1052	US-1072	US-1073	US-1074
Depth:	(ppm)	0 cm	25-35 cm	0 cm	20-30 cm	30 cm	0 cm	0 cm	0-20cm	0-20cm	0-20 cm
Aroclor 1016	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.4
Aroclor 1248	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	-	<0.1	<0.1	<0.1	<0.1	<0.1	1	1.1	<0.1	0.1	0.6
Aroclor 1260	-	<0.1	<0.1	<0.1	<0.1	<0.1	0.3	<0.1	<0.1	<0.1	0.2
Aroclor 1262	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1268	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total PCBs	1/5	<0.1	<0.1	<0.1	<0.1	<0.1	1.3	1.1	<0.1	0.1	1.2

NOTES:
1) Criteria based on DCC Tier 1 (1 ppm) and DCC Tier 2 (5 ppm) for PCBs
2) Exceedance indicated with shading

FOX - C DEW Line Site
Summary of Analytical Data
South of Garage/Dump Area

Table 12.3: PHC Concentrations in Soils

PARAMETER	CRITERIA	US-1042	US-1045	US-1046	US-1047	US-1048	US-1049	US-1051	US-1052	US-1072	US-1073	US-1074
Depth:	(ppm)	0 cm	30-50 cm	25-35 cm	0 cm	20-30 cm	30 cm	0 cm	0 cm	0-20cm	0-20cm	0-20 cm
Benzene	0.5	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Toluene	0.8	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Ethylbenzene	1.2	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Total Xylenes (m,p,o)	1	0.04	<0.02	<0.02	<0.02	0.07	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
F1 C6-C10	260	<1	<1	<1	<1	113	<1	<1	2	4	5	3
F2 C10-C16	900	16	<10	136	<10	1060	<10	524	126	3610	8800	1440
F3 C16-C34	800	84	259	151	11	138	29	17200	31900	788	27000	6610
F4 C34-C50	5600	17	36	27	<10	16	<10	2200	8180	53	3370	1020

NOTES:
1) BTEX Criteria based on CCME Soil Quality Guidelines for Residential Land-Use
2) F1-F4 Criteria based on Canada Wide Standards for PHCs in Soil
3) Exceedance indicated with shading

FOX - C DEW Line Site
Summary of Analytical Data
Garage Dump - Surface Water

Table 13.1: Metals in Water

			Total Metals	Dissolved Metals	Total Metals	Dissolved Metals
PARAMETER	**UNIT**	**CRITERIA**	**US-1045**	**US-1045**	**USGW1**	**USGW1**
Aluminum	mg/L	0.005	**209**	0.06	**3.54**	0.007
Antimony	mg/L	-	<0.004	0.0015	0.0012	0.0013
Arsenic	mg/L	0.005	**0.039**	<0.0002	0.0004	<0.0002
Barium	mg/L	-	1.13	0.004	0.026	0.005
Beryllium	mg/L	-	0.0088	<0.0001	0.0001	<0.0001
Bismuth	mg/L	-	<0.01	<0.0005	<0.0005	<0.0005
Boron	mg/L	-	<0.04	0.013	0.011	0.012
Cadmium	mg/L	0.000017	**0.0017**	<0.00001	**0.00004**	<0.00001
Chromium	mg/L	-	0.57	<0.0005	0.0094	<0.0005
Cobalt	mg/L	-	0.11	<0.0001	0.0015	<0.0001
Copper	mg/L	0.002	**0.472**	0.003	**0.006**	<0.001
Iron	mg/L	0.3	**267**	-	**4.2**	-
Lead	mg/L	0.001	**0.177**	<0.0001	**0.0043**	<0.0001
Lithium	mg/L	-	0.297	<0.001	0.005	<0.001
Manganese	mg/L	-	2.28	-	0.035	-
Mercury	mg/L	-	<0.0002	-	<0.0002	-
Molybdenum	mg/L	0.073	<0.02	<0.001	<0.001	<0.001
Nickel	mg/L	0.025	**0.336**	<0.0005	**0.0043**	<0.0005
Selenium	mg/L	0.001	<0.004	<0.0002	0.0003	<0.0002
Silicon	mg/L	-	118	-	6.35	-
Silver	mg/L	0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Strontium	mg/L	-	0.11	0.019	0.025	0.022
Sulphur	mg/L	-	2.5	-	2.39	-
Thallium	mg/L	0.0008	**0.0049**	<0.00005	0.00008	<0.00005
Tin	mg/L	-	<0.02	<0.001	<0.001	<0.001
Titanium	mg/L	-	18.9	0.0034	0.317	<0.0005
Uranium	mg/L	-	0.045	<0.0005	0.0006	<0.0005
Vanadium	mg/L	-	0.542	0.0002	0.0086	<0.0001
Zinc	mg/L	0.03	**0.715**	<0.001	0.013	<0.001

Notes:
1. Criteria based on CCME Freshwater Aquatic Life Guideline

Table 13.2: PHC Concentrations in Surface Water

PARAMETER	UNIT	CRITERIA	US-1045	USGW1
Benzene	mg/L	0.37	<0.001	<0.001
Toluene	mg/L	0.002	<0.001	<0.001
Ethylbenzene	mg/L	0.09	<0.001	<0.001
Total Xylenes (m,p,o)	mg/L	-	0.002	0.002
F1 C6-C10	mg/L	-	0.06	0.09
F1 -BTEX	mg/L	-	0.06	0.09
F2 C10-C16	mg/L	-	<0.1	<0.1
F3 C16-C34	mg/L	-	2	<0.1
F3+ C34+	mg/L	-	<0.1	<0.1
ph	-	6.5-9	7.1	7.1
Hardness	mg/L	-	13.6	15.1
Ca^{2+}	mg/L	-	4.7	5.1

Notes:
1. Criteria based on CCME Freshwater Aquatic Life Guideline
2. Exceedance indicated with shading

Table 13.3: PCB Concentrations in Surface Water

PARAMETER	UNIT	CRITERIA	US-1045	USGW1
Aroclor 1016	ug/L	-	<0.1	<0.1
Aroclor 1221	ug/L	-	<0.1	<0.1
Aroclor 1232	ug/L	-	<0.1	<0.1
Aroclor 1242	ug/L	-	<0.1	<0.1
Aroclor 1248	ug/L	-	<0.1	<0.1
Aroclor 1254	ug/L	-	<0.1	<0.1
Aroclor 1260	ug/L	-	<0.1	<0.1
Aroclor 1262	ug/L	-	<0.1	<0.1
Aroclor 1268	ug/L	-	<0.1	<0.1
Total PCBs	ug/L	0.1	<0.1	<0.1

FOX - C DEW Line Site
Summary of Analytical Data
Upper Station POL Storage Facility

Table 14.1: PHC Concentrations in Soils

PARAMETER	CRITERIA	US-1056	US-1057	US-1058	US-1059	US-1060	US-1061
Depth:	(ppm)	0 cm	10 cm	30-40 cm	20-30 cm	20 cm	20 cm
Benzene	0.5	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Toluene	0.8	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Ethylbenzene	1.2	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Total Xylenes (m,p,o)	1	<0.02	<0.02	0.03	<0.02	<0.02	<0.02
F1 C6-C10	260	<1	1	57	29	1	2
F2 C10-C16	900	938	2050	2820	2920	1130	2630
F3 C16-C34	800	1070	819	181	229	188	1990
F4 C34-C50	5600	146	25	<10	<10	<10	73

NOTES:
1) BTEX Criteria based on CCME Soil Quality Guidelines for Residential Land-Use
2) F1-F4 Criteria based on Canada Wide Standards for PHCs in Soil
2) Exceedances indicated with shading

Table 14.2: PAH Concentrations in Soils

PARAMETER	CRITERIA	US-1056	US-1058	US-1059	US-1060	US-1061
Depth:	(ppm)	0 cm	30-40 cm	20-30 cm	20 cm	20 cm
Naphthalene	0.6	<0.05	<0.05	<0.05	<0.05	<0.05
Acenaphthylene	-	<0.05	<0.05	<0.05	<0.05	<0.05
Acenaphthene	-	<0.05	<0.05	<0.05	<0.05	<0.05
Fluorene	-	<0.05	0.46	<0.05	<0.05	<0.05
Phenanthrene	5	<0.05	0.27	<0.05	<0.05	<0.05
Anthracene	-	<0.05	<0.05	<0.05	<0.05	<0.05
Fluoranthene	-	<0.05	<0.05	<0.05	<0.05	<0.05
Pyrene	10	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)anthracene	1	<0.05	<0.05	<0.05	<0.05	<0.05
Chrysene	-	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(b)fluoranthene	1	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(j)fluoranthene	-	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(k)fluoranthene	1	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene	0.7	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	1	<0.05	<0.05	<0.05	<0.05	<0.05
Dibenzo(a,h)anthracene	1	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(g,h,i)perylene	-	<0.05	<0.05	<0.05	<0.05	<0.05
CB(a)P	-	<0.05	<0.05	<0.05	<0.05	<0.05

NOTES:
1) Criteria based on CCME Soil Quality Guidelines for Residential Land-Use

Table 14.3: Storage Tank Contents
Hydrocarbon Concentrations is Water

PARAMETER	CRITERIA	Tank
	(ppm)	Composite
Benzene	0.37	<0.001
Toluene	0.002	<0.001
Ethylbenzene	0.09	<0.001
Xylene	-	0.002
F1	-	0.07
F2	-	0.5
F3	-	0.3
F4	-	<0.1

NOTES:
1) Criteria based on CCME Freshwater Aquatic Life

FOX - C DEW Line Site
Summary of Analytical Data
Warehouse AST and Surface Stains

Table 15.1 PCB Concentrations in Soils

PARAMETER	CRITERIA	US-1063 (Comp)	US-1063	NW Stains
Depth:	(ppm)	0-20 cm	40-50 cm	0-10 cm
Aroclor 1016	-	<0.1	<0.1	<0.1
Aroclor 1221	-	<0.1	<0.1	<0.1
Aroclor 1232	-	<0.1	<0.1	<0.1
Aroclor 1242	-	<0.1	<0.1	<0.1
Aroclor 1248	-	<0.1	<0.1	<0.1
Aroclor 1254	-	<0.1	<0.1	0.5
Aroclor 1260	-	<0.1	<0.1	<0.1
Aroclor 1262	-	<0.1	<0.1	<0.1
Aroclor 1268	-	<0.1	<0.1	<0.1
Total PCBs	1/5	<0.1	<0.1	0.5

NOTES:
1) Criteria based on DCC Tier 1 (1 ppm) and DCC Tier 2 (5 ppm) for PCBs

Table 15.2: PHC Concentrations in Soils

PARAMETER	CRITERIA	US-1062	US-1063 (Comp)	US-1063	US-1069	US-1070	NW Stains
Depth:	(ppm)	0-30 cm	0-20 cm	40-50 cm	50 cm	50 cm	0-10 cm
Benzene	0.5	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Toluene	0.8	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Ethylbenzene	1.2	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Total Xylenes (m,p,o)	1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
F1 C6-C10	260	26	2	2	46	1	<1
F2 C10-C16	900	**1110**	42	165	**2770**	29	406
F3 C16-C34	800	152	**29200**	**16300**	165	143	**14100**
F4 C34-C50	5600	<10	**10100**	3420	11	34	**8300**

NOTES:
1) BTEX Criteria based on CCME Soil Quality Guidelines for Residential Land-Use
2) F1-F4 Criteria based on Canada Wide Standards for PHCs in Soil
3) Exceedances indicated with shading

FOX - C DEW Line Site
Summary of Analytical Data
Warehouse AST and Surface Stains

Table 15.3 PAH Concentrations in Soils

PARAMETER	CRITERIA	US-1062	US-1063 (Comp)	US-1063	US-1069	US-1070	NW Stains
Depth:	(ppm)	0-30 cm	0-20 cm	40-50 cm	50 cm	50 cm	0-10 cm
Naphthalene	0.6	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acenaphthylene	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acenaphthene	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fluorene	-	<0.05	<0.05	<0.05	0.17	<0.05	<0.05
Phenanthrene	5	<0.05	<0.05	<0.05	0.06	<0.05	0.06
Anthracene	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fluoranthene	-	<0.05	<0.05	<0.05	<0.05	<0.05	0.07
Pyrene	10	<0.05	<0.05	<0.05	<0.05	<0.05	0.16
Benzo(a)anthracene	1	<0.05	<0.05	<0.05	<0.05	<0.05	0.05
Chrysene	-	<0.05	0.22	0.6	<0.05	<0.05	0.28
Benzo(b)fluoranthene	1	<0.05	<0.05	<0.05	<0.05	<0.05	0.1
Benzo(j)fluoranthene	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(k)fluoranthene	1	<0.05	<0.05	<0.05	<0.05	<0.05	0.07
Benzo(a)pyrene	0.7	<0.05	<0.05	<0.05	<0.05	<0.05	0.09
Indeno(1,2,3-c,d)pyrene	1	<0.05	<0.05	<0.05	<0.05	<0.05	0.14
Dibenzo(a,h)anthracene	1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(g,h,i)perylene	-	<0.05	<0.05	<0.05	<0.05	<0.05	0.26
CB(a)P	-	<0.05	<0.05	<0.05	<0.05	<0.05	0.14

NOTES:
1) Criteria based on CCME Soil Quality Guidelines for Residential Land-Use

FOX - DEW Line Site
Summary of Analytical Results
Antenna Base Area - Perched Groundwater

Table 16.1: Metals in Water

			Total Metals	Dissolved Metals
PARAMETER	**UNIT**	**CRITERIA**	**US-1063**	**US-1063**
Aluminum	mg/L	0.005	**81.8**	0.357
Antimony	mg/L	-	<0.002	<0.0002
Arsenic	mg/L	0.005	**0.013**	<0.0002
Barium	mg/L	-	0.524	0.006
Beryllium	mg/L	-	0.0034	<0.0001
Bismuth	mg/L	-	<0.005	<0.0005
Boron	mg/L	-	<0.02	0.003
Cadmium	mg/L	0.000017	**0.00096**	**0.00005**
Chromium	mg/L	-	0.238	<0.0005
Cobalt	mg/L	-	0.0466	<0.0001
Copper	mg/L	0.002	**0.2**	0.022
Iron	mg/L	0.3	**112**	-
Lead	mg/L	0.001	**0.0843**	0.0004
Lithium	mg/L	-	0.122	<0.001
Manganese	mg/L	-	0.887	-
Mercury	mg/L	-	<0.0002	-
Molybdenum	mg/L	0.073	<0.01	<0.001
Nickel	mg/L	0.025	**0.127**	0.0006
Selenium	mg/L	0.001	<0.002	<0.0002
Silicon	mg/L	-	64.1	-
Silver	mg/L	0.0001	**<0.001**	<0.0001
Strontium	mg/L	-	0.062	0.009
Sulphur	mg/L	-	1.48	-
Thallium	mg/L	0.0008	**0.0024**	<0.00005
Tin	mg/L	-	<0.01	<0.001
Titanium	mg/L	-	7.96	0.0179
Uranium	mg/L	-	0.016	<0.0005
Vanadium	mg/L	-	0.238	0.0007
Zinc	mg/L	0.03	**0.519**	0.005

Notes:
Bold Values exceed CCME FWAL criteria

Table 16.2: PHC Concentrations in Water

PARAMETER	UNIT	CRITERIA	US-1063
Benzene	mg/L	0.37	<0.001
Toluene	mg/L	0.002	0.002
Ethylbenzene	mg/L	0.09	<0.001
Total Xylenes (m,p,o)	mg/L	-	0.004
F1 C6-C10	mg/L	-	0.2
F1 -BTEX	mg/L	-	0.2
F2 C10-C16	mg/L	-	1.5
F3 C16-C34	mg/L	-	331
F3+ C34+	mg/L	-	44.3
ph	-	6.5-9	6.5
Hardness	mg/L	-	6.8
Ca^{2+}	mg/L	-	2.1

Notes:
1. Criteria based on CCME Freshwater Aquatic Life Guideline
2. Exceedance indicated with shading

Table 16.3: PCB Concentrations in Water

PARAMETER	UNIT	CRITERIA	US-1063
Aroclor 1016	ug/L	-	<0.1
Aroclor 1221	ug/L	-	<0.1
Aroclor 1232	ug/L	-	<0.1
Aroclor 1242	ug/L	-	<0.1
Aroclor 1248	ug/L	-	<0.1
Aroclor 1254	ug/L	-	<0.1
Aroclor 1260	ug/L	-	0.4
Aroclor 1262	ug/L	-	<0.1
Aroclor 1268	ug/L	-	<0.1
Total PCBs	ug/L	0.1	0.4

Notes:
1. Criteria based on former CCME guideline, guideline is no longer recommended

FOX - C DEW Line Site
Summary of Analytical Data
Inuit House Area/Dump

Table 17.1: Metals Concentrations in Soils

PARAMETER	Criteria	US-1053	US-1054	US-1055	US-1065	US-1066	US-1067	US-1068
Depth:	(ppm)	0-20 cm	0 cm	35-40 cm	40-50 cm	50-60 cm	50-60 cm	40-50 cm
Antimony	20	1.8	1.4	1.3	1.2	1.4	1.5	1.2
Arsenic	30*	1.9	1.3	1.5	1.7	1.6	1.9	2
Barium	500	63.1	76.7	175	44.2	53.6	60.6	43.6
Beryllium	12	0.78	0.45	0.6	0.33	0.28	0.55	0.26
Boron	2	<0.1	<0.1	<0.1	<0.1	0.2	<0.1	<0.1
Cadmium	5*	0.06	0.07	0.14	0.05	0.09	0.06	0.05
Chromium	250*	49.3	44	42.9	30.9	35.8	45	29.4
Cobalt	50*	6.66	5.17	6.25	4.84	4.66	6.76	4.34
Copper	100*	37.2	24.2	29.2	24.5	19	32.9	17.8
Lead	200/500[2]	8.3	15.6	8.3	6.4	5.7	6.8	6
Mercury	6.6	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01
Molybdenum	10	0.9	0.6	0.7	0.8	0.7	1	0.7
Nickel	100*	24.4	18.5	28.8	16	16.4	23.4	14.7
Selenium	1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.3
Silver	20	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Thallium	1	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Tin	50	2	2.2	2.1	2.1	2.3	2.1	1.9
Vanadium	130	42.3	36.1	35.9	27.2	30.7	39.1	26.2
Zinc	500*	54.2	56.1	56.5	36.1	42.4	51.7	34.7

NOTES:
1) Criteria based on CCME Soil Quality Guidelines for Residential Land-Use except as noted below
2) * Indicates criteria based on DCC Tier 2 Criteria
3) Lead criteria based on DCC Tier 1 (200 ppm) and DCC Tier 2 (500 ppm)

Table 17.2: PCB Concentrations in Soils

PARAMETER	CRITERIA	US-1066	US-1067
Depth:	(ppm)	50-60 cm	50-60 cm
Aroclor 1016	-	<0.1	<0.1
Aroclor 1221	-	<0.1	<0.1
Aroclor 1232	-	<0.1	<0.1
Aroclor 1242	-	<0.1	<0.1
Aroclor 1248	-	<0.1	<0.1
Aroclor 1254	-	<0.1	<0.1
Aroclor 1260	-	<0.1	<0.1
Aroclor 1262	-	<0.1	<0.1
Aroclor 1268	-	<0.1	<0.1
Total PCBs	1/5	<0.1	<0.1

NOTES:
1) Criteria based on DCC Tier 1 (1 ppm) and DCC Tier 2 (5 ppm) for PCBs

Table 17.3: PHC Concentrations in Soils

PARAMETER	CRITERIA	US-1066	US-1067
Depth:	(ppm)	50-60 cm	50-60 cm
Benzene	0.5	<0.02	<0.02
Toluene	0.8	<0.02	<0.02
Ethylbenzene	1.2	<0.02	<0.02
Xylene	1	<0.02	<0.02
F1 C6-C10	260	<1	<1
F2 C10-C16	900	<10	<10
F3 C16-C34	800	32	<10
F4 C34-C50	5600	10	<10

NOTES:
1) BTEX Criteria based on CCME Soil Quality Guidelines for Residential
2) F1-F4 Criteria based on Canada Wide Standards for PHCs in Soil

FOX - C DEW Line Site
Summary of Analytical Data
Inuit House Dump - Perched Groundwater

Table 18.1: Metals in Water

			Total Metals	Dissolved Metals
PARAMETER	**UNIT**	**CRITERIA**	**US-1067**	**US-1067**
Aluminum	mg/L	0.005	**1660**	0.136
Antimony	mg/L	-	<0.008	0.0006
Arsenic	mg/L	0.005	**0.232**	<0.0002
Barium	mg/L	-	8.76	0.016
Beryllium	mg/L	-	0.0858	<0.0001
Bismuth	mg/L	-	0.022	<0.0005
Boron	mg/L	-	0.14	0.038
Cadmium	mg/L	0.000017	**0.0119**	**0.00028**
Chromium	mg/L	-	4.72	<0.0005
Cobalt	mg/L	-	0.876	0.0019
Copper	mg/L	0.002-0.0046	**3.78**	0.015
Iron	mg/L	0.3	**1960**	-
Lead	mg/L	0.001	**1.72**	<0.0001
Lithium	mg/L	-	2.32	<0.001
Manganese	mg/L	-	14.1	-
Mercury	mg/L	-	0.001	-
Molybdenum	mg/L	0.073	**0.14**	<0.001
Nickel	mg/L	0.025	**2.64**	<0.0005
Selenium	mg/L	0.001	<0.008	<0.0002
Silicon	mg/L	-	304	-
Silver	mg/L	0.0001	**0.01**	<0.0001
Strontium	mg/L	-	0.29	0.022
Sulphur	mg/L	-	17.8	-
Thallium	mg/L	0.0008	**0.0488**	<0.00005
Tin	mg/L	-	0.041	<0.001
Titanium	mg/L	-	158	<0.0005
Uranium	mg/L	-	0.305	<0.0005
Vanadium	mg/L	-	4.26	<0.0001
Zinc	mg/L	0.03	**8.73**	<0.001

Notes:
1. Criteria based on CCME Freshwater Aquatic Life Guideline

Table 18.2: PHC Concentrations in Water

PARAMETER	**UNIT**	**CRITERIA**	**US-1067**
Benzene	mg/L	0.37	<0.001
Toluene	mg/L	0.002	<0.001
Ethylbenzene	mg/L	0.09	<0.001
Total Xylenes (m,p,o)	mg/L	-	0.002
F1 C6-C10	mg/L	-	0.1
F1 -BTEX	mg/L	-	0.1
F2 C10-C16	mg/L	-	<0.1
F3 C16-C34	mg/L	-	<0.1
F3+ C34+	mg/L	-	<0.1
ph	-	6.5-9	6
Hardness	mg/L	-	15.6
Ca^{2+}	mg/L	-	5.2

Notes:
1. Criteria based on CCME Freshwater Aquatic Life Guideline
2. Exceedance indicated with shading

Table 18.3: PCB Concentrations in Water

PARAMETER	**UNIT**	**CRITERIA**	**US-1067**
Aroclor 1016	ug/L	-	<0.1
Aroclor 1221	ug/L	-	<0.1
Aroclor 1232	ug/L	-	<0.1
Aroclor 1242	ug/L	-	<0.1
Aroclor 1248	ug/L	-	<0.1
Aroclor 1254	ug/L	-	1.7
Aroclor 1260	ug/L	-	<0.1
Aroclor 1262	ug/L	-	<0.1
Aroclor 1268	ug/L	-	<0.1
Total PCBs	ug/L	0.1	1.7

Notes:
1. Criteria based on former CCME guideline, guideline is no longer recommended

FOX - C DEW Line Site
Summary of Analytical Data
Biological Sampling

Table 19.1: Physical Properties of Fish Collected in Water Lake

PARAMETER	UNIT	Fish #1	Fish #2	Fish #3	Fish #4	Fish #5
Length	m	0.648	0.457	0.533	0.381	0.508
Weight	kg	4	1.5	2.3	2.3	1.8

Table 19.2: PCB Concentrations in Fish Tissue Samples

PARAMETER	UNIT	CRITERIA	Fish #1	Fish #2	Fish #3	Fish #4	Fish #5
Trichlorobiphenyls	ng/g	-	0.25	ND	0.19	0.121	0.12
Tetrachlorobiphenyls	ng/g	-	0.73	0.2	0.5	0.26	0.24
Pentachlorobiphenyls	ng/g	-	0.87	ND	0.34	ND	ND
Hezachlorobiphenyls	ng/g	-	0.77	0.2	0.34	ND	ND
Heptachlorobiphenyls	ng/g	-	ND	ND	ND	ND	ND
Octachlorobiphenyls	ng/g	-	ND	ND	ND	ND	ND
Nonachlorobiphenyls	ng/g	-	ND	ND	ND	ND	ND
Decachlorobiphenyls	ng/g	-	ND	ND	ND	ND	ND
Total PCB's	ng/g	-	2.6	0.4	1.37	0.38	0.36

Notes:
1. Criteria based on CCME Environmental Quality Guidelines for Tissue Residue

FOX - C DEW Line Site
Summary of Analytical Data
Biological Sampling

Table 19.3: Total Metal Concentrations in Fish Tissue Samples

PARAMETER	UNIT	CRITERIA	Fish #1	Fish #2	Fish #3	Fish #4	Fish #5
Aluminum	ug/g	-	<0.2	<0.25	<0.25	<0.2	<0.25
Antimony	ug/g	-	<0.1	<0.1	<0.1	<0.1	<0.1
Arsenic	ug/g	-	1.75	0.87	0.51	0.43	0.77
Barium	ug/g	-	<0.05	<0.05	<0.05	<0.05	<0.05
Beryllium	ug/g	-	<0.005	<0.005	<0.005	<0.005	<0.005
Bismuth	ug/g	-	<0.025	<0.025	<0.025	<0.025	<0.025
Cadmium	ug/g	-	0.0046	0.005	0.008	0.0058	0.0036
Calcium	ug/g	-	53	67	64	61	63
Chromium	ug/g	-	0.039	0.068	0.044	0.061	0.037
Cobalt	ug/g	-	0.007	0.009	0.009	0.008	0.017
Copper	ug/g	-	0.36	0.44	0.38	0.46	0.37
Iron	ug/g	-	4.3	2.2	3	3.8	2.5
Lead	ug/g	-	0.028	0.013	0.012	0.012	0.011
Lithium	ug/g	-	<0.05	<0.05	<0.05	<0.05	<0.05
Manganese	ug/g	-	274	268	277	262	276
Manganese	ug/g	-	<0.2	<0.2	<0.2	<0.2	<0.2
Molybdenum	ug/g	-	<0.05	<0.05	<0.05	<0.05	<0.05
Nickel	ug/g	-	<0.02	0.025	0.048	0.026	<0.02
Phosphorus	ug/g	-	2760	2930	2810	2820	2830
Potassium	ug/g	-	4110	4370	4060	4250	4270
Selenium	ug/g	-	0.45	0.48	0.45	0.38	0.37
Silicon	ug/g	-	<2	<2	<2	3.3	<2
Silver	ug/g	-	<0.005	<0.005	<0.005	<0.005	<0.005
Sodium	ug/g	-	472	388	376	360	359
Strontium	ug/g	-	0.22	0.25	0.22	0.25	0.23
Tin	ug/g	-	0.7	0.75	0.75	0.73	0.72
Titanium	ug/g	-	0.323	0.296	0.345	0.319	0.282
Uranium	ug/g	-	<0.025	<0.025	<0.025	<0.025	<0.025
Vanadium	ug/g	-	0.084	0.066	0.078	0.072	0.078
Zinc	ug/g	-	5.02	5.54	5.09	5.18	4.93
Zirconium	ug/g	-	<0.05	<0.05	<0.05	<0.05	<0.05
Mercury	ug/g	33	0.085	0.027	0.035	0.037	0.027

Notes:
1. Criteria based on CCME Environmental Quality Guidelines for Tissue Residue

FOX - C DEW Line Site
Summary of Analytical Data
QA/QC Summary

Table 20.1: Summary of QA/QC Results for Field Duplicates

PAHs			
Parameter	Sample ID		RPD
	MS - 1086	MS - 1086	
PAHs	0.07	0.06	15
Naphthalene	0.23	0.22	4
Acenaphthylene	<0.05	<0.05	0
Acenaphthene	0.11	0.11	0
Fluorene	0.83	0.76	9
Phenanthrene	<0.05	<0.05	0
Anthracene	0.07	0.05	33
Fluoranthene	0.12	0.08	40
Pyrene	0.09	0.06	40
Benzo(a)anthracene	0.24	0.23	4
Chrysene	0.05	0.15	**100**
Benzo(b)fluoranthen	<0.05	<0.05	0
Benzo(j)fluoranthene	<0.05	<0.05	0
Benzo(k)fluoranthen	<0.05	<0.05	0
Benzo(a)pyrene	<0.05	<0.05	0
Indeno(1,2,3-c,d)pyr	<0.05	<0.05	0
Dibenzo(a,h)anthrac	<0.05	<0.05	0
Benzo(g,h,i)perylene	<0.05	<0.05	0
CB(a)P	41	58	34

Metals			
Parameter	Sample ID		RPD
Metals	BA-1020	BAT-1013	
Antimony	3.5	3.3	6
Arsenic	4.3	4.2	2
Barium	141	134	5
Beryllium	0.58	0.55	5
Boron	0.8	0.6	**29**
Cadmium	0.08	0.1	**22**
Chromium	82.8	76.2	8
Hexavalent Chromium	0.1	0.1	0
Cobalt	9.77	9.32	5
Copper	32	30.4	5
Lead	10.8	10.4	4
Mercury	<0.01	<0.01	0
Molybdenum	1.1	1	10
Nickel	35.2	32.8	7
Selenium	<0.2	<0.2	0
Silver	<0.05	<0.05	0
Thallium	<0.3	<0.3	0
Tin	2.6	2.7	4
Vanadium	72.2	69	5
Zinc	83.3	78.8	6

PCBs			
Parameter	Sample ID		RPD
PCBs	US-1037	US-1037	
Aroclor 1016	<0.1	<0.1	0
Aroclor 1221	<0.1	<0.1	0
Aroclor 1232	<0.1	<0.1	0
Aroclor 1242	<0.1	<0.1	0
Aroclor 1248	<0.1	<0.1	0
Aroclor 1254	0.3	0.1	**100**
Aroclor 1260	<0.1	<0.1	0
Aroclor 1262	<0.1	<0.1	0
Aroclor 1268	<0.1	<0.1	0
Total PCBs	0.3	0.1	**100**

Hydrocarbons			
Parameter	Sample ID		RPD
BTEX	BAT-1010	BAT-1010	
Benzene	<0.02	<0.02	0
Toluene	<0.02	<0.02	0
Ethylbenzene	<0.02	<0.02	0
Total Xylenes (m,p,o)	<0.02	<0.02	0
F1 C6-C10	37	37	0
F2 C10-C16	2140	2890	30
F3 C16-C34	59	462	**155**
F4 C34-C50	10	23	**79**

Note Bold values exceeded recommended Relative Percent Difference (RPD), EPA 1988

FOX - C DEW Line Site
Summary of Hazardous Materials
Asbestos Containing Materials/ PCB Containing Paint

Table 21.1 Inventory of PCB Containing Paint

Sample Locations presented on Figures 7.1 and 7.2

Sample ID			Total PCBs
		Criteria	50
		Detection Limit	0.1
	Sample Location	**Substrate**	mg/kg
US-MTPS-01	Paint sample taken from Red compressed tanks in MT-01	Steel	**4760**
US-MTPS-02	Paint on day tanks inside MT-01	Steel	**3910**
US-MTPS-03	Paint taken from day tank supports	Steel	**4660**
US-MTPS-04	Paint on shelving unit in MT-01	Steel	**3520**
US-MTPS-05	Paint on concrete floor in MT-02	Concrete	**14000**
US-MTPS-05C	Paint in bathroom in MT-04	Wood	**42600**
US-MTPS-06	Blue Paint in Bathroom MT-04	Wood	**9070**
US-MTPS-06A	Paint on electrical shelving in MT-06	Steel	3.3
US-MTPS-07	Paint on concrete floor in MT-07	Concrete	**11700**
US-WPS-11	Blue paint on stairs in W2	Wood	**3890**
US-GPS-14	Interior wall of Garage, paint on metal cladding	Metal Cladding	**18000**
US-GPS-15	Paint on tracked ATV in garage	Steel	**1660**
US-GCS-16	Oil stained concrete in garage	Concrete	35.9
US-GPS-17	Paint on heating unit in Funace room of garage	Steel	**352**
US-MTEPS-20	Paint from paint in paint shed NW of Garage	Paint Cans	2.5
US-IHPS-21	Paint from wood in inuit house	Wood	**109**
US-ANTPS-22	Paint on Antenna	Steel	2.2
US-2HP-23	Paint from wood of second storage shed east of warehouse	Wood	8
MS-HHPS-24	Paint from hoop house wood at the mid station	Wood	**50.8**
WL-HUT	Paint from wood of hut at Water lake beach	Wood	**68.8**

Note: Shaded values exceed CEPA criteria of 50 ppm

Table 21.2 Inventory of Asbestos Containing Materials

Sample ID		Type	Chrysotile	Amosite
		Criteria	1	1
	Sample Location		%	%
US-MTAS-01	Insulation on exterior of water heater tank in MT-01		**80**	0
US-MTAS-02	1" pipe insulation with no black mastic paper (Type II pipe insulation)		**90**	0
US-MTAS-03	Piping insulation elbow		**70**	
US-MTAS-04	2 " pipe insulation with black paper (Type 1 pipe insulation) in module rain		**30**	0
US-MTAS-05	Fire door insulation on fire door in MT-05		**30**	0
USW4AS-06A	Exposed insulation on heating duct in W4		0	**50**
US-GAS-07	Exposed insulation on heating duct in G-2		**80**	**1**

Note: Shaded values contain asbestos fiber concentrtions greater than 1%

FOX - C DEW Line Site
Summary of Analytical Data
Barrel Sampling Program

Table 22.1: Barrel Fluid Identification

Sample ID	Location	Fluid Identified
MS Barrel # 3	Mid Station Barrel	Lube Oil
8	Barrel from Braided River	Condensate
1	Barrel from Braided River	Condensate
9	Barrel from Braided River	Condensate
MS Barrel # 2	Mid Station Barrel	Diesel
US-BS-01	Upper Station Leaking Barrels South of Garage	Lube Oil
BA-BD-01	Beach Area Barrel Dump #1	Mainly Water (may contain product)
MS Barrel # 1	Mid Station Barrel	Mainly Water (may contain product)
3	Barrel from Braided River	Mainly Water (may contain product)
2	Barrel from Braided River	Mainly Water (may contain product)

Table 22.2: Metals Concentrations Lube Oil Upper Station

PARAMETER	CRITERIA	US-BS-01
Arsenic	12	<2
Barium	500	0.839
Beryllium	4	<0.02
Boron	2	-
Cadmium	5	<0.02
Chromium	64	0.769
Hexavalent Chromiu	0.4	-
Cobalt	40	<0.05
Copper	63	2.32
Lead	140	1.3
Mercury	6.6	-
Molybdenum	10	<0.5
Nickel	50	4.3
Selenium	1	<5
Silver	20	-
Thallium	1	-
Tin	50	<0.5
Vanadium	130	0.084
Zinc	200	6.8

Table 22.3: PCB Concentrations Lube Oil Upper Station

PARAMETER	CRITERIA	US-BS-01
PCBs		
Aroclor 1016	-	<0.5
Aroclor 1221	-	<0.5
Aroclor 1232	-	<0.5
Aroclor 1242	-	<0.5
Aroclor 1248	-	<0.5
Aroclor 1254	-	<0.5
Aroclor 1260	-	<0.5
Aroclor 1262	-	<0.5
Aroclor 1268	-	<0.5
Total PCBs	1.3	<0.5

APPENDIX E

LABORATORY REPORTS

332098

NORWEST LABS

Control Number E 94775

Environmental Sample Information Sheet

NOTE: Proper completion of this form is required in order to proceed with analysis
See reverse for your nearest Norwest location and proper sampling protocol

Billing Address:	x	Copy of Report To:	Copy of invoice: ☐
Company: Earth Tech Canada Inc.		Company:	Mail invoice to this address for approval ☐
Address: 17203 - 103 Avenue, Edmonton, AB T5S 1J4	QA/QC Report ☒	Address:	
Attention: Environmental Group	Report Result:	Attention:	Report Result:
Phone: (780) 488-6800	Fax ☐	Phone: 717-2655	Fax ☐
Fax: (780) 488-2121	Mail ☐	Fax:	Mail ☐
Cell:	Courier ☐	Cell:	Courier ☐
e-mail: gwoollett@earthtech.ca	e-mail ☐	e-mail:	e-mail ☐

Information to be included on Report and Invoice

Project ID:
Project Name:
Project Location:
Legal Location:
PO#: 131-[illegible] 1739
Proj. Acct. Code:
Agreement ID: 40857

RUSH Please contact the laboratory to confirm rush dates and times before submitting samples.

Upon filling out this section, client accepts that surcharges will be attached to this analysis

Required on: all analyses ☐ or as indicated ☐

Date Required: ____________
Signature: ____________
Norwest Authorization: ____________

Sample Custody (Please Print)

Sampled by: MAM Date 09/09/04
Company ETC Signature [signature]
Relinquished by:
Company Date
Waybill number:
Received by:
Company Date

Special Instructions / Comments ☐ Check here if Norwest is required to report results directly to a regulatory body (Please include contact information)

	Sample Identification	Location	Depth (IN CM M)	Date / Time Sampled	Matrix	Sampling Method	Number of Containers	TW35 Metals	PCB3	PAH1	CCMEW Btex
1	US - 1063 ✓		—					X	X		X
2	US - 1045 ✓		—					X	X		X
3	MS-1081-SW		—					X	X	X	X
4	1067		—					X	X		X
5	USGW1		—					X	X		X
6	WL-SW-01		—						X		X
7	WL-SW-02		—					X			X
8	BAT-East Tank		—					X			X
9	US AST		—					X			X
10	[illegible]		—					X	X		
11			—								
12			—								
13			—								
14			—								
15			—								

Enter tests above (✔ relevant samples below)

NOTE: All hazardous samples must be labelled according to WHMIS guidelines.
Accredited by the Standards Council of Canada for specific tests

Page ____ of ____
##

NWL008 (08/01)

NORWEST LABS

Analytical Report

Norwest Labs
7217 Roper Road
Edmonton, AB. T6B 3J4
Phone: (780) 438-5522
Fax: (780) 438-0396

Bill to: Earth Tech Canada Inc.
Report to: Earth Tech Canada Inc.
17203 - 103 Avenue
Edmonton, AB, Canada
T5S 1J4
Attn: Environmental Group
Sampled By: MAM
Company: ETC

Project ID:
Name: Ekalugad
Location:
LSD:
P.O.: 131-1739
Acct. Code:

NWL Lot ID: 332098
Control Number: E 94775
Date Received: Sep 13, 2004
Date Reported: Oct 15, 2004
Report Number: 609481

			NWL Number	332098-1	332098-2	332098-3	
			Sample Date	Sep 09, 2004	Sep 09, 2004	Sep 09, 2004	
			Sample Description	US-1063	US-1045	MS-1081-SW	
			Matrix	Water - General	Water - General	Water - General	
Analyte		**Units**		**Results**	**Results**	**Results**	**Detection Limit**
Metals Dissolved							
Silicon	Dissolved	mg/L		2.26	1.20	1.01	0.05
Sulphur	Dissolved	mg/L		0.94	0.54	0.68	0.05
Aluminum	Dissolved	mg/L		0.357	0.060	<0.005	0.005
Antimony	Dissolved	mg/L		<0.0002	0.0015	0.0003	0.0002
Arsenic	Dissolved	mg/L		<0.0002	<0.0002	<0.0002	0.0002
Barium	Dissolved	mg/L		0.006	0.004	0.002	0.001
Beryllium	Dissolved	mg/L		<0.0001	<0.0001	<0.0001	0.0001
Bismuth	Dissolved	mg/L		<0.0005	<0.0005	<0.0005	0.0005
Boron	Dissolved	mg/L		0.003	0.013	0.007	0.002
Cadmium	Dissolved	mg/L		0.00005	<0.00001	0.00002	0.00001
Chromium	Dissolved	mg/L		<0.0005	<0.0005	<0.0005	0.0005
Cobalt	Dissolved	mg/L		<0.0001	<0.0001	<0.0001	0.0001
Copper	Dissolved	mg/L		0.022	0.003	0.003	0.001
Lead	Dissolved	mg/L		0.0004	<0.0001	0.0003	0.0001
Lithium	Dissolved	mg/L		<0.001	<0.001	<0.001	0.001
Molybdenum	Dissolved	mg/L		<0.001	<0.001	<0.001	0.001
Nickel	Dissolved	mg/L		0.0006	<0.0005	<0.0005	0.0005
Selenium	Dissolved	mg/L		<0.0002	<0.0002	<0.0002	0.0002
Silver	Dissolved	mg/L		<0.0001	<0.0001	<0.0001	0.0001
Strontium	Dissolved	mg/L		0.009	0.019	0.009	0.001
Thallium	Dissolved	mg/L		<0.00005	<0.00005	<0.00005	0.00005
Tin	Dissolved	mg/L		<0.001	<0.001	<0.001	0.001
Titanium	Dissolved	mg/L		0.0179	0.0034	<0.0005	0.0005
Uranium	Dissolved	mg/L		<0.0005	<0.0005	<0.0005	0.0005
Vanadium	Dissolved	mg/L		0.0007	0.0002	<0.0001	0.0001
Zinc	Dissolved	mg/L		0.005	<0.001	0.002	0.001
Metals Total							
Iron	Total	mg/L		112	267	0.4	0.1
Manganese	Total	mg/L		0.887	2.28	0.006	0.005
Silicon	Total	mg/L		64.1	118	1.67	0.05
Sulphur	Total	mg/L		1.48	2.50	0.68	0.05
Mercury	Total	mg/L		<0.0002	<0.0002	<0.0002	0.0002
Aluminum	Total	mg/L		81.8	209	0.358	0.005
Antimony	Total	mg/L		<0.002	<0.004	0.0002	0.0002
Arsenic	Total	mg/L		0.013	0.039	<0.0002	0.0002

NORWEST LABS

Norwest Labs
7217 Roper Road
Edmonton, AB. T6B 3J4
Phone: (780) 438-5522
Fax: (780) 438-0396

Analytical Report

Bill to: Earth Tech Canada Inc.
Report to: Earth Tech Canada Inc.
17203 - 103 Avenue
Edmonton, AB, Canada
T5S 1J4
Attn: Environmental Group
Sampled By: MAM
Company: ETC

Project ID:
Name: Ekalugad
Location:
LSD:
P.O.: 131-1739
Acct. Code:

NWL Lot ID: 332098
Control Number: E 94775
Date Received: Sep 13, 2004
Date Reported: Oct 15, 2004
Report Number: 609481

	NWL Number	332098-1	332098-2	332098-3	
	Sample Date	Sep 09, 2004	Sep 09, 2004	Sep 09, 2004	
	Sample Description	US-1063	US-1045	MS-1081-SW	
	Matrix	Water - General	Water - General	Water - General	
Analyte	**Units**	**Results**	**Results**	**Results**	**Detection Limit**
Metals Total - Continued					
Barium Total	mg/L	0.524	1.13	0.005	0.001
Beryllium Total	mg/L	0.0034	0.0088	<0.0001	0.0001
Bismuth Total	mg/L	<0.005	<0.01	<0.0005	0.0005
Boron Total	mg/L	<0.02	<0.04	0.006	0.002
Cadmium Total	mg/L	0.00096	0.0017	0.00003	0.00001
Chromium Total	mg/L	0.238	0.570	0.0011	0.0005
Cobalt Total	mg/L	0.0466	0.110	0.0003	0.0001
C er Total	mg/L	0.200	0.472	0.002	0.001
Lead Total	mg/L	0.0843	0.177	0.0011	0.0001
Lithium Total	mg/L	0.122	0.297	<0.001	0.001
Molybdenum Total	mg/L	<0.01	<0.02	<0.001	0.001
Nickel Total	mg/L	0.127	0.336	0.0008	0.0005
Selenium Total	mg/L	<0.002	<0.004	<0.0002	0.0002
Silver Total	mg/L	<0.001	<0.002	<0.0001	0.0001
Strontium Total	mg/L	0.062	0.11	0.006	0.001
Thallium Total	mg/L	0.0024	0.0049	<0.00005	0.00005
Tin Total	mg/L	<0.01	<0.02	<0.001	0.001
Titanium Total	mg/L	7.96	18.9	0.0384	0.0005
Uranium Total	mg/L	0.016	0.045	<0.0005	0.0005
Vanadium Total	mg/L	0.238	0.542	0.0008	0.0001
Zinc Total	mg/L	0.519	0.715	0.005	0.001
Physical and Aggregate Properties					
Temp. of observed pH and EC	°C	20.0	20.0	19.8	
Routine Water					
pH		6.46	7.07	6.74	
Electrical Conductivity	µS/cm at 25 C	21	37	18	1
Calcium Dissolved	mg/L	2.1	4.7	1.2	0.2
Magnesium Dissolved	mg/L	0.4	0.4	0.2	0.1
Sodium Dissolved	mg/L	1.0	1.6	1.1	0.4
Potassium Dissolved	mg/L	1.4	1.1	<0.4	0.4
Iron Dissolved	mg/L	0.30	0.09	<0.01	0.01
Manganese Dissolved	mg/L	0.050	<0.005	<0.005	0.005
C ride Dissolved	mg/L	<0.5	0.9	1.6	0.5
N e - N	mg/L	<0.1	<0.1	0.2	0.01
Nitrite - N	mg/L	<0.05	<0.05	<0.05	0.005

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17203 - 103 Avenue
Edmonton, AB, Canada
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Attn: Environmental Group
Sampled By: MAM
Company: ETC

Project ID:
Name: Ekalugad
Location:
LSD:
P.O.: 131-1739
Acct. Code:

NWL Lot ID: 332098
Control Number: E 94775
Date Received: Sep 13, 2004
Date Reported: Oct 15, 2004
Report Number: 609481

	NWL Number	332098-1	332098-2	332098-3	
	Sample Date	Sep 09, 2004	Sep 09, 2004	Sep 09, 2004	
	Sample Description	US-1063	US-1045	MS-1081-SW	
	Matrix	Water - General	Water - General	Water - General	
Analyte	**Units**	**Results**	**Results**	**Results**	**Detection Limit**
Routine Water - Continued					
Nitrate and Nitrite - N	mg/L	<0.2	<0.2	<0.2	0.02
Sulphate (SO4) Dissolved	mg/L	2.8	1.6	2.0	0.2
Hydroxide	mg/L	<5	<5	<5	5
Carbonate	mg/L	11	<6	8	6
Bicarbonate	mg/L	<5	22	<5	5
P-Alkalinity as CaCO3	mg/L	<5	<5	<5	5
T-Alkalinity as CaCO3	mg/L	9	18	6	5
dissolved solids Calculated	mg/L	13	21	10	1
Hardness Dissolved as CaCO3	mg/L	6.8	13.6	3.9	
Ionic Balance Dissolved	%	54	87	37	
Mono-Aromatic Hydrocarbons - Water					
Benzene	mg/L	<0.001	<0.001	<0.001	0.001
Toluene	mg/L	0.002	<0.001	0.001	0.001
Ethylbenzene	mg/L	<0.001	<0.001	<0.001	0.001
Total Xylenes (m,p,o)	mg/L	0.004	0.002	0.003	0.001
Volatile Petroleum Hydrocarbons - Water					
F1 C6-C10	mg/L	0.20	0.06	0.13	0.01
F1 -BTEX	mg/L	0.20	0.06	0.13	0.01
Extractable Petroleum Hydrocarbons - Water					
F2 C10-C16	mg/L	1.5	<0.1	<0.1	0.1
F3 C16-C34	mg/L	331	2.0	<0.1	0.1
F3+ C34+	mg/L	44.3	<0.1	<0.1	0.1
Polychlorinated Biphenyls - Water					
Aroclor 1016	ug/L	<0.1	<0.1	<0.1	0.1
Aroclor 1221	ug/L	<0.1	<0.1	<0.1	0.1
Aroclor 1232	ug/L	<0.1	<0.1	<0.1	0.1
Aroclor 1242	ug/L	<0.1	<0.1	<0.1	0.1
Aroclor 1248	ug/L	<0.1	<0.1	<0.1	0.1
Aroclor 1254	ug/L	<0.1	<0.1	<0.1	0.1
Aroclor 1260	ug/L	0.4	<0.1	<0.1	0.1
Aroclor 1262	ug/L	<0.1	<0.1	<0.1	0.1
Aroclor 1268	ug/L	<0.1	<0.1	<0.1	0.1
Total PCBs	ug/L	0.4	<0.1	<0.1	<0.1
Polychlorinated Biphenyls - Water - Surrogate					
Decachlorobiphenyl Surrogate	%	51	73	65	50-150

NORWEST LABS

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Analytical Report

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Report to: Earth Tech Canada Inc.
17203 - 103 Avenue
Edmonton, AB, Canada
T5S 1J4
Attn: Environmental Group
Sampled By: MAM
Company: ETC

Project ID:
Name: Ekalugad
Location:
LSD:
P.O.: 131-1739
Acct. Code:

NWL Lot ID: 332098
Control Number: E 94775
Date Received: Sep 13, 2004
Date Reported: Oct 15, 2004
Report Number: 609481

NWL Number	332098-3
Sample Date	Sep 09, 2004
Sample Description	MS-1081-SW
Matrix	Water - General

Analyte		Units	Results	Results	Results	Detection Limit
Polynuclear Aromatic Hydrocarbons - Water						
Naphthalene		ug/L	<0.01			0.01
Acenaphthylene		ug/L	<0.01			0.01
Acenaphthene		ug/L	<0.01			0.01
Fluorene		ug/L	<0.01			0.01
Phenanthrene		ug/L	<0.01			0.01
Anthracene		ug/L	<0.01			0.01
Acridine		ug/L	<0.01			0.01
[illegible]anthene		ug/L	<0.02			0.02
Pyrene		ug/L	<0.02			0.02
Benzo(a)anthracene		ug/L	<0.01			0.01
Chrysene		ug/L	<0.01			0.01
Benzo(b)fluoranthene		ug/L	<0.01			0.01
Benzo(k)fluoranthene		ug/L	<0.01			0.01
Benzo(a)pyrene		ug/L	<0.01			0.01
Indeno(1,2,3-c,d)pyrene		ug/L	<0.01			0.01
Dibenzo(a,h)anthracene		ug/L	<0.01			0.01
Benzo(g,h,i)perylene		ug/L	<0.01			0.01
CB(a)P	Carcinogenic Potency Equivalent	ug/L	<0.01			.01
PAH - Water - Surrogate Recovery						
Nitrobenzene-d5	PAH - Surrogate	%	72			23-130
2-Fluorobiphenyl	PAH - Surrogate	%	62			30-130
p-Terphenyl-d14	PAH - Surrogate	%	58			18-137

NORWEST LABS

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7217 Roper Road
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Analytical Report

Bill to: Earth Tech Canada Inc.
Report to: Earth Tech Canada Inc.
17203 - 103 Avenue
Edmonton, AB, Canada
T5S 1J4
Attn: Environmental Group
Sampled By: MAM
Company: ETC

Project ID:
Name: Ekalugad
Location:
LSD:
P.O.: 131-1739
Acct. Code:

NWL Lot ID: 332098
Control Number: E 94775
Date Received: Sep 13, 2004
Date Reported: Oct 15, 2004
Report Number: 609481

	NWL Number	332098-4	332098-5		
	Sample Date	Sep 09, 2004	Sep 09, 2004		
	Sample Description	1067	USGW1		
	Matrix	Water - General	Water - General		
Analyte		**Units**	**Results**	**Results**	**Results**	**Detection Limit**
Metals Dissolved						
Silicon	Dissolved	mg/L	1.78	1.13		0.05
Sulphur	Dissolved	mg/L	4.21	2.53		0.05
Aluminum	Dissolved	mg/L	0.136	0.007		0.005
Antimony	Dissolved	mg/L	0.0006	0.0013		0.0002
Arsenic	Dissolved	mg/L	<0.0002	<0.0002		0.0002
Barium	Dissolved	mg/L	0.016	0.005		0.001
Beryllium	Dissolved	mg/L	<0.0001	<0.0001		0.0001
Bismuth	Dissolved	mg/L	<0.0005	<0.0005		0.0005
Boron	Dissolved	mg/L	0.038	0.012		0.002
Cadmium	Dissolved	mg/L	0.00028	<0.00001		0.00001
Chromium	Dissolved	mg/L	<0.0005	<0.0005		0.0005
Cobalt	Dissolved	mg/L	0.0019	<0.0001		0.0001
Copper	Dissolved	mg/L	0.015	<0.001		0.001
Lead	Dissolved	mg/L	0.0003	<0.0001		0.0001
Lithium	Dissolved	mg/L	<0.001	<0.001		0.001
Molybdenum	Dissolved	mg/L	<0.001	<0.001		0.001
Nickel	Dissolved	mg/L	0.0024	<0.0005		0.0005
Selenium	Dissolved	mg/L	<0.0002	<0.0002		0.0002
Silver	Dissolved	mg/L	<0.0001	<0.0001		0.0001
Strontium	Dissolved	mg/L	0.024	0.022		0.001
Thallium	Dissolved	mg/L	<0.00005	<0.00005		0.00005
Tin	Dissolved	mg/L	<0.001	<0.001		0.001
Titanium	Dissolved	mg/L	0.0084	<0.0005		0.0005
Uranium	Dissolved	mg/L	<0.0005	<0.0005		0.0005
Vanadium	Dissolved	mg/L	0.0003	<0.0001		0.0001
Zinc	Dissolved	mg/L	0.056	<0.001		0.001

NORWEST LABS

Norwest Labs
7217 Roper Road
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Fax: (780) 438-0396

Analytical Report

Bill to: Earth Tech Canada Inc.
Report to: Earth Tech Canada Inc.
I7203 - 103 Avenue
Edmonton, AB, Canada
T5S 1J4
Attn: Environmental Group
Sampled By: MAM
Company: ETC

Project ID:
Name: Ekalugad
Location:
LSD:
P.O.: 131-1739
Acct. Code:

NWL Lot ID: 332098
Control Number: E 94775
Date Received: Sep 13, 2004
Date Reported: Oct 15, 2004
Report Number: 609481

	NWL Number	332098-4	332098-5	332098-6	
	Sample Date	Sep 09, 2004	Sep 09, 2004	Sep 09, 2004	
	Sample Description	1067	USGW1	WL-SW-01	
	Matrix	Water - General	Water - General	Water - General	
Analyte	**Units**	**Results**	**Results**	**Results**	**Detection Limit**
Mono-Aromatic Hydrocarbons - Water					
Benzene	mg/L	<0.001	<0.001	<0.001	0.001
Toluene	mg/L	<0.001	<0.001	<0.001	0.001
Ethylbenzene	mg/L	<0.001	<0.001	<0.001	0.001
Total Xylenes (m,p,o)	mg/L	0.002	0.002	0.002	0.001
Volatile Petroleum Hydrocarbons - Water					
F1 C6-C10	mg/L	0.10	0.09	0.07	0.01
F1 -BTEX	mg/L	0.10	0.09	0.07	0.01
Extractable Petroleum Hydrocarbons - Water					
F2 C10-C16	mg/L	<0.1	<0.1	<0.1	0.1
F3 C16-C34	mg/L	<0.1	<0.1	<0.1	0.1
F3+ C34+	mg/L	<0.1	<0.1	<0.1	0.1
Polychlorinated Biphenyls - Water					
Aroclor 1016	ug/L	<0.1	<0.1	<0.1	0.1
Aroclor 1221	ug/L	<0.1	<0.1	<0.1	0.1
Aroclor 1232	ug/L	<0.1	<0.1	<0.1	0.1
Aroclor 1242	ug/L	<0.1	<0.1	<0.1	0.1
Aroclor 1248	ug/L	<0.1	<0.1	<0.1	0.1
Aroclor 1254	ug/L	1.7	<0.1	<0.1	0.1
Aroclor 1260	ug/L	<0.1	<0.1	<0.1	0.1
Aroclor 1262	ug/L	<0.1	<0.1	<0.1	0.1
Aroclor 1268	ug/L	<0.1	<0.1	<0.1	0.1
Total PCBs	ug/L	1.7	<0.1	<0.1	<0.1
Polychlorinated Biphenyls - Water - Surrogate					
Decachlorobiphenyl Surrogate	%	76	77	NA	50-150

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Analytical Report

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Report to: Earth Tech Canada Inc.
17203 - 103 Avenue
Edmonton, AB, Canada
T5S 1J4
Attn: Environmental Group
Sampled By: MAM
Company: ETC

Project ID:
Name: Ekalugad
Location:
LSD:
P.O.: 131-1739
Acct. Code:

NWL Lot ID: 332098
Control Number: E 94775
Date Received: Sep 13, 2004
Date Reported: Oct 15, 2004
Report Number: 609481

		NWL Number	332098-4	332098-5	332098-7	
		Sample Date	Sep 09, 2004	Sep 09, 2004	Sep 09, 2004	
		Sample Description	1067	USGW1	WL-SW-02	
		Matrix	Water - General	Water - General	Water - General	
Analyte		**Units**	**Results**	**Results**	**Results**	**Detection Limit**
Metals Total						
Iron	Total	mg/L	1960	4.2	1.1	0.1
Manganese	Total	mg/L	14.1	0.035	0.041	0.005
Silicon	Total	mg/L	304	6.35	3.97	0.05
Sulphur	Total	mg/L	17.8	2.39	3.02	0.05
Mercury	Total	mg/L	0.0010	<0.0002	<0.0002	0.0002
Aluminum	Total	mg/L	1660	3.54	0.186	0.005
Antimony	Total	mg/L	<0.008	0.0012	0.0002	0.0002
Arsenic	Total	mg/L	0.232	0.0004	<0.0002	0.0002
Barium	Total	mg/L	8.76	0.026	0.031	0.001
Beryllium	Total	mg/L	0.0858	0.0001	<0.0001	0.0001
Bismuth	Total	mg/L	0.022	<0.0005	<0.0005	0.0005
Boron	Total	mg/L	0.14	0.011	<0.002	0.002
Cadmium	Total	mg/L	0.0119	0.00004	0.00006	0.00001
Chromium	Total	mg/L	4.72	0.0094	0.0007	0.0005
Cobalt	Total	mg/L	0.876	0.0015	0.0049	0.0001
Copper	Total	mg/L	3.78	0.006	0.004	0.001
Lead	Total	mg/L	1.72	0.0043	0.0010	0.0001
Lithium	Total	mg/L	2.32	0.005	0.002	0.001
Molybdenum	Total	mg/L	0.14	<0.001	<0.001	0.001
Nickel	Total	mg/L	2.64	0.0043	0.0126	0.0005
Selenium	Total	mg/L	<0.0080	0.0003	<0.0002	0.0002
Silver	Total	mg/L	0.010	<0.0001	<0.0001	0.0001
Strontium	Total	mg/L	0.29	0.025	0.017	0.001
Thallium	Total	mg/L	0.0488	0.00008	<0.00005	0.00005
Tin	Total	mg/L	0.041	<0.001	<0.001	0.001
Titanium	Total	mg/L	158	0.317	0.0068	0.0005
Uranium	Total	mg/L	0.305	0.0006	<0.0005	0.0005
Vanadium	Total	mg/L	4.26	0.0086	0.0002	0.0001
Zinc	Total	mg/L	8.73	0.013	0.056	0.001
Physical and Aggregate Properties						
Temp. of observed pH and EC		°C	20.0	20.2	21.7	
Routine Water						
pH			6.03	7.08	5.73	
Electrical Conductivity		µS/cm at 25 C	52	46	44	1
Calcium	Dissolved	mg/L	5.2	5.1	2.6	0.2

NORWEST LABS

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Analytical Report

Bill to: Earth Tech Canada Inc.
Report to: Earth Tech Canada Inc.
17203 - 103 Avenue
Edmonton, AB, Canada
T5S 1J4
Attn: Environmental Group
Sampled By: MAM
Company: ETC

Project ID:
Name: Ekalugad
Location:
LSD:
P.O.: 131-1739
Acct. Code:

NWL Lot ID: 332098
Control Number: E 94775
Date Received: Sep 13, 2004
Date Reported: Oct 15, 2004
Report Number: 609481

			NWL Number	332098-4	332098-5	332098-7	
			Sample Date	Sep 09, 2004	Sep 09, 2004	Sep 09, 2004	
			Sample Description	1067	USGW1	WL-SW-02	
			Matrix	Water - General	Water - General	Water - General	
Analyte		**Units**		**Results**	**Results**	**Results**	**Detection Limit**
Routine Water - Continued							
Magnesium	Dissolved	mg/L		0.6	0.5	0.7	0.1
Sodium	Dissolved	mg/L		1.5	1.7	2.5	0.4
Potassium	Dissolved	mg/L		1.5	1.2	0.7	0.4
Iron	Dissolved	mg/L		0.04	<0.01	0.05	0.01
Manganese	Dissolved	mg/L		0.005	<0.005	0.044	0.005
Chloride	Dissolved	mg/L		1.8	1.4	3.7	0.5
Nitrate - N		mg/L		1.1	<0.1	<0.1	0.01
[illegible]e - N		mg/L		<0.05	<0.05	<0.05	0.005
Nitrate and Nitrite - N		mg/L		1.1	<0.2	<0.2	0.02
Sulphate (SO4)	Dissolved	mg/L		12.6	7.6	9.3	0.2
Hydroxide		mg/L		<5	<5	<5	5
Carbonate		mg/L		9	<6	6	6
Bicarbonate		mg/L		<5	15	<5	5
P-Alkalinity	as CaCO3	mg/L		<5	<5	<5	5
T-Alkalinity	as CaCO3	mg/L		8	12	5	5
Total dissolved solids	Calculated	mg/L		28	25	23	1
Hardness	Dissolved as CaCO3	mg/L		15.6	15.1	9.6	
Ionic Balance	Dissolved	%		59	90	64	

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Report to: Earth Tech Canada Inc.
17203 - 103 Avenue
Edmonton, AB, Canada
T5S 1J4
Attn: Environmental Group
Sampled By: MAM
Company: ETC

Project ID:
Name: Ekalugad
Location:
LSD:
P.O.: 131-1739
Acct. Code:

NWL Lot ID: 332098
Control Number: E 94775
Date Received: Sep 13, 2004
Date Reported: Oct 15, 2004
Report Number: 609481

	NWL Number	332098-7	332098-8	332098-9	
	Sample Date	Sep 09, 2004	Sep 09, 2004	Sep 09, 2004	
	Sample Description	WL-SW-02	BAT-East Tank	US AST	
	Matrix	Water - General	Water - General	Water - General	
Analyte	**Units**	**Results**	**Results**	**Results**	**Detection Limit**
Mono-Aromatic Hydrocarbons - Water					
Benzene	mg/L	<0.001	<0.001	<0.001	0.001
Toluene	mg/L	<0.001	<0.001	<0.001	0.001
Ethylbenzene	mg/L	<0.001	<0.001	<0.001	0.001
Total Xylenes (m,p,o)	mg/L	0.001	0.001	0.002	0.001
Volatile Petroleum Hydrocarbons - Water					
F1 C6-C10	mg/L	0.06	0.08	0.07	0.01
F1 -BTEX	mg/L	0.06	0.08	0.07	0.01
Extractable Petroleum Hydrocarbons - Water					
F2 C10-C16	mg/L	<0.1	3.5	0.5	0.1
F3 C16-C34	mg/L	<0.1	4.6	0.3	0.1
F3+ C34+	mg/L	<0.1	<0.1	<0.1	0.1

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Report to: Earth Tech Canada Inc.
17203 - 103 Avenue
Edmonton, AB, Canada
T5S 1J4
Attn: Environmental Group
Sampled By: MAM
Company: ETC

Project ID:
Name: Ekalugad
Location:
LSD:
P.O.: 131-1739
Acct. Code:

NWL Lot ID: 332098
Control Number: E 94775
Date Received: Sep 13, 2004
Date Reported: Oct 15, 2004
Report Number: 609481

NWL Number	332098-8
Sample Date	Sep 09, 2004
Sample Description	BAT-East Tank
Matrix	Water - General

Analyte		Units	Results	Results	Results	Detection Limit
Metals Total						
Iron	Total	mg/L	37.6			0.1
Manganese	Total	mg/L	6.45			0.005
Silicon	Total	mg/L	0.31			0.05
Sulphur	Total	mg/L	43.7			0.05
Mercury	Total	mg/L	<0.0002			0.0002
Aluminum	Total	mg/L	0.106			0.005
Antimony	Total	mg/L	0.0003			0.0002
(nic	Total	mg/L	0.0039			0.0002
Barium	Total	mg/L	0.045			0.001
Beryllium	Total	mg/L	<0.0001			0.0001
Bismuth	Total	mg/L	<0.0005			0.0005
Boron	Total	mg/L	0.018			0.002
Cadmium	Total	mg/L	0.00739			0.00001
Chromium	Total	mg/L	0.0024			0.0005
Cobalt	Total	mg/L	0.0142			0.0001
Copper	Total	mg/L	0.048			0.001
Lead	Total	mg/L	0.0092			0.0001
Lithium	Total	mg/L	0.004			0.001
Molybdenum	Total	mg/L	<0.001			0.001
Nickel	Total	mg/L	0.117			0.0005
Selenium	Total	mg/L	<0.0002			0.0002
Silver	Total	mg/L	<0.0001			0.0001
Strontium	Total	mg/L	0.118			0.001
Thallium	Total	mg/L	<0.00005			0.00005
Tin	Total	mg/L	<0.001			0.001
Titanium	Total	mg/L	0.0109			0.0005
Uranium	Total	mg/L	<0.0005			0.0005
Vanadium	Total	mg/L	<0.0001			0.0001
Zinc	Total	mg/L	0.078			0.001
Physical and Aggregate Properties						
Temp. of observed pH and EC		°C	21.5			
Routine Water						
pH			4.50			
E rical Conductivity		µS/cm at 25 C	1920			1
Calcium	Dissolved	mg/L	13.6			0.2

NORWEST LABS

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Analytical Report

Bill to: Earth Tech Canada Inc.
Report to: Earth Tech Canada Inc.
17203 - 103 Avenue
Edmonton, AB, Canada
T5S 1J4
Attn: Environmental Group
Sampled By: MAM
Company: ETC

Project ID:
Name: Ekalugad
Location:
LSD:
P.O.: 131-1739
Acct. Code:

NWL Lot ID: 332098
Control Number: E 94775
Date Received: Sep 13, 2004
Date Reported: Oct 15, 2004
Report Number: 609481

NWL Number	332098-8
Sample Date	Sep 09, 2004
Sample Description	BAT-East Tank
Matrix	Water - General

Analyte		Units	Results	Results	Results	Detection Limit
Routine Water - Continued						
Magnesium	Dissolved	mg/L	33.6			0.1
Sodium	Dissolved	mg/L	299			0.4
Potassium	Dissolved	mg/L	11.4			0.4
Iron	Dissolved	mg/L	27.2			0.01
Manganese	Dissolved	mg/L	6.30			0.005
Chloride	Dissolved	mg/L	535			0.5
Nitrate - N		mg/L	<0.1			0.01
[illegible]e - N		mg/L	<0.05			0.005
[illegible]ate and Nitrite - N		mg/L	<0.2			0.02
Sulphate (SO4)	Dissolved	mg/L	131			0.2
Hydroxide		mg/L	<5			5
Carbonate		mg/L	<6			6
Bicarbonate		mg/L	<5			5
P-Alkalinity	as CaCO3	mg/L	<5			5
T-Alkalinity	as CaCO3	mg/L	<5			5
Total dissolved solids	Calculated	mg/L	1020			1
Hardness	Dissolved as CaCO3	mg/L	172			
Ionic Balance	Dissolved	%	104			

Approved by: Darren Crichton

Darren Crichton, BSc, PChem
Operations Chemist

NORWEST LABS

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Quality Control

Bill to: Earth Tech Canada Inc.
Report to: Earth Tech Canada Inc.
17203 - 103 Avenue
Edmonton, AB, Canada
T5S 1J4
Attn: Environmental Group
Sampled By: MAM
Company: ETC

Project ID:
Name: Ekalugad
Location:
LSD:
P.O.: 131-1739
Acct. Code:

NWL Lot ID: 332098
Control Number: E 94775
Date Received: Sep 13, 2004
Date Reported: Oct 15, 2004
Report Number: 609481

Metals Dissolved

Blanks	Units	Measured	Mean	Lower Limit	Upper Limit	Passed QC
Silicon	mg/L	<0.05	0.00	-0.05	0.05	✓
Sulphur	mg/L	<0.05	0.08	-2.22	2.39	✓
Aluminum	ug/L	<5	-2	-8	4	✓
Antimony	ug/L	<0.2	0.0	-0.1	0.2	✓
Arsenic	ug/L	<0.2	0.0	0.0	0.0	✓
Barium	ug/L	<1	0	0	0	✓
Beryllium	ug/L	<0.1	0.0	0.0	0.0	✓
Bismuth	ug/L	<0.5	0.0	-0.1	0.1	✓
Boron	ug/L	<2	0	-2	2	✓
Cadmium	ug/L	<0.01	0.00	-0.01	0.01	✓
Chromium	ug/L	<0.5	-0.1	-0.4	0.2	✓
Cobalt	ug/L	<0.1	0.0	0.0	0.0	✓
ɔpper	ug/L	<1	0	-1	1	✓
Lead	ug/L	<0.1	0.0	0.0	0.0	✓
Lithium	ug/L	<1	0	0	0	✓
Molybdenum	ug/L	<1	0	0	0	✓
Nickel	ug/L	<0.5	0.0	-0.3	0.3	✓
Selenium	ug/L	<0.2	-0.1	-0.3	0.1	✓
Silver	ug/L	<0.1	0.0	0.0	0.0	✓
Strontium	ug/L	<1	0	0	0	✓
Thallium	ug/L	<0.05	0.00	0.00	0.01	✓
Tin	ug/L	<1	0	0	0	✓
Titanium	ug/L	<0.5	0.0	-0.2	0.1	✓
Uranium	ug/L	<0.5	0.0	0.0	0.0	✓
Vanadium	ug/L	<0.1	0.0	-0.1	0.0	✓
Zinc	ug/L	<1	0	-1	1	✓

Material Used: Edmonton Method Blank
Date Acquired: Oct 14, 2004
Acquired By: Jesse Dang

NORWEST LABS

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Quality Control

Bill to: Earth Tech Canada Inc.
Report to: Earth Tech Canada Inc.
17203 - 103 Avenue
Edmonton, AB, Canada
T5S 1J4
Attn: Environmental Group
Sampled By: MAM
Company: ETC

Project ID:
Name: Ekalugad
Location:
LSD:
P.O.: 131-1739
Acct. Code:

NWL Lot ID: 332098
Control Number: E 94775
Date Received: Sep 13, 2004
Date Reported: Oct 15, 2004
Report Number: 60948I

Metals Dissolved (Continued...)

Replicates	Units	Replicate1	Replicate2	% RSD Criteria	Absolute Criteria	Passed QC
Aluminum	ug/L	<5	<5	10	11	✓
Antimony	ug/L	0.3	0.2	10.0	0.4	✓
Arsenic	ug/L	<0.2	<0.2	10.0	0.4	✓
Barium	ug/L	2	2	10	2	✓
Beryllium	ug/L	<0.1	<0.1	10.0	0.2	✓
Bismuth	ug/L	<0.5	<0.5	10.0	1.1	✓
Boron	ug/L	7	6	10	4	✓
Cadmium	ug/L	0.02	0.02	9.99	0.02	✓
Chromium	ug/L	<0.5	<0.5	10.0	1.1	✓
Cobalt	ug/L	<0.1	<0.1	10.0	0.2	✓
Copper	ug/L	3	3	10	2	✓
ead	ug/L	0.3	0.3	10.0	0.2	✓
Lithium	ug/L	<1	<1	10	2	✓
Molybdenum	ug/L	<1	<1	10	2	✓
Nickel	ug/L	<0.5	<0.5	10.0	1.1	✓
Selenium	ug/L	<0.2	<0.2	10.0	0.4	✓
Silver	ug/L	<0.1	<0.1	10.0	0.2	✓
Strontium	ug/L	9	9	10	2	✓
Thallium	ug/L	<0.05	<0.05	9.99	0.11	✓
Tin	ug/L	<1	<1	10	2	✓
Titanium	ug/L	<0.5	<0.5	10.0	1.1	✓
Uranium	ug/L	<0.5	<0.5	10.0	1.1	✓
Vanadium	ug/L	<0.1	<0.1	10.0	0.2	✓
Zinc	ug/L	2	2	10	2	✓

Material Used: Edmonton Duplicate
Date Acquired: Oct 14, 2004
Acquired By: Jesse Dang

NORWEST LABS

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Quality Control

Bill to: Earth Tech Canada Inc.
Report to: Earth Tech Canada Inc.
17203 - 103 Avenue
Edmonton, AB, Canada
T5S 1J4
Attn: Environmental Group
Sampled By: MAM
Company: ETC

Project
ID:
Name: Ekalugad
Location:
LSD:
P.O.: 131-1739
Acct. Code:

NWL Lot ID: 332098
Control Number: E 94775
Date Received: Sep 13, 2004
Date Reported: Oct 15, 2004
Report Number: 609481

Metals Dissolved (Continued...)

Control Sample		Units	Measured	Mean	Lower Limit	Upper Limit	Passed QC
Silicon		mg/L	24.1	25.0	22.5	27.5	✓
Sulphur		mg/L	47.0	49.8	44.6	55.0	✓
Material Used:	Metals High						
Date Acquired:	Sep 14, 2004						
Acquired By:	Linda Li						
Silicon		mg/L	0.48	0.50	0.45	0.55	✓
Sulphur		mg/L	0.88	1.02	0.81	1.23	✓
Aluminum		ug/L	927	1000	850	1150	✓
Antimony		ug/L	39.8	40.0	34.0	46.0	✓
Arsenic		ug/L	40.7	40.0	34.0	46.0	✓
Barium		ug/L	192	200	170	230	✓
Beryllium		ug/L	19.6	20.0	17.0	23.0	✓
ismuth		ug/L	99.6	100	85	115	✓
oron		ug/L	400	400	340	460	✓
Cadmium		ug/L	2.08	2.00	1.70	2.30	✓
Chromium		ug/L	94.5	100	85	115	✓
Cobalt		ug/L	19.8	20.0	17.0	23.0	✓
Copper		ug/L	194	200	170	230	✓
Lead		ug/L	20.0	20.0	17.0	23.0	✓
Lithium		ug/L	189	200	170	230	✓
Molybdenum		ug/L	190	200	170	230	✓
Nickel		ug/L	101	100	85	115	✓
Selenium		ug/L	39.4	40.0	34.0	46.0	✓
Silver		ug/L	19.5	20.0	17.0	23.0	✓
Strontium		ug/L	199	200	170	230	✓
Thallium		ug/L	10.1	10.0	8.5	11.5	✓
Tin		ug/L	185	200	170	230	✓
Titanium		ug/L	101	100	85	115	✓
Uranium		ug/L	98.4	100	85	115	✓
Vanadium		ug/L	18.9	20.0	17.0	23.0	✓
Zinc		ug/L	195	200	170	230	✓
Material Used:	Metals Low						
Date Acquired:	Oct 14, 2004						
Acquired By:	Jesse Dang						

NORWEST LABS

Norwest Labs
7217 Roper Road
Edmonton, AB. T6B 3J4
Phone: (780) 438-5522
Fax: (780) 438-0396

Quality Control

Bill to: Earth Tech Canada Inc.
Report to: Earth Tech Canada Inc.
17203 - 103 Avenue
Edmonton, AB, Canada
T5S 1J4
Attn: Environmental Group
Sampled By: MAM
Company: ETC

Project
ID:
Name: Ekalugad
Location:
LSD:
P.O.: 131-1739
Acct. Code:

NWL Lot ID: 332098
Control Number: E 94775
Date Received: Sep 13, 2004
Date Reported: Oct 15, 2004
Report Number: 609481

Metals Dissolved (Continued...)

Control Sample	Units	Measured	Mean	Lower Limit	Upper Limit	Passed QC
Aluminum	ug/L	50	50	43	58	✓
Antimony	ug/L	2.2	2.0	1.7	2.3	✓
Arsenic	ug/L	2.1	2.0	1.7	2.3	✓
Barium	ug/L	10	10	9	12	✓
Beryllium	ug/L	1.0	1.0	0.9	1.2	✓
Bismuth	ug/L	5.1	5.0	4.3	5.8	✓
Boron	ug/L	20	20	17	23	✓
Cadmium	ug/L	0.09	0.10	0.09	0.12	✓
Chromium	ug/L	4.8	5.0	4.3	5.8	✓
Cobalt	ug/L	1.0	1.0	0.9	1.2	✓
Copper	ug/L	10	10	9	12	✓
Lead	ug/L	1.0	1.0	0.9	1.2	✓
'thium	ug/L	10	10	9	12	✓
Molybdenum	ug/L	9	10	9	12	✓
Nickel	ug/L	5.0	5.0	4.3	5.8	✓
Selenium	ug/L	1.8	2.0	1.7	2.3	✓
Silver	ug/L	1.0	1.0	0.9	1.2	✓
Strontium	ug/L	10	10	9	12	✓
Thallium	ug/L	0.49	0.50	0.43	0.58	✓
Tin	ug/L	10	10	9	12	✓
Titanium	ug/L	5.3	5.0	4.3	5.8	✓
Uranium	ug/L	5.1	5.0	4.3	5.8	✓
Vanadium	ug/L	1.0	1.0	0.9	1.2	✓
Zinc	ug/L	10	10	9	12	✓

Material Used: Metals Trace
Date Acquired: Oct 14, 2004
Acquired By: Jesse Dang

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Quality Control

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Report to: Earth Tech Canada Inc.
17203 - 103 Avenue
Edmonton, AB, Canada
T5S 1J4
Attn: Environmental Group
Sampled By: MAM
Company: ETC

Project
ID:
Name: Ekalugad
Location:
LSD:
P.O.: 131-1739
Acct. Code:

NWL Lot ID: 332098
Control Number: E 94775
Date Received: Sep 13, 2004
Date Reported: Oct 15, 2004
Report Number: 609481

Metals Total

Blanks	Units	Measured	Mean	Lower Limit	Upper Limit	Passed QC
Iron	mg/L	<0.1	0.0	0.0	0.0	✓
Manganese	mg/L	<0.005	0.000	-0.001	0.001	✓
Silicon	mg/L	<0.05	0.02	-0.04	0.09	✓
Sulphur	mg/L	<0.05	0.01	-0.03	0.04	✓
Mercury	mg/L	<0.0002	0.0000	0.0000	0.0000	✓
Aluminum	ug/L	<5	0	-5	5	✓
Antimony	ug/L	<0.2	0.0	-0.2	0.2	✓
Arsenic	ug/L	<0.2	0.0	-0.2	0.2	✓
Barium	ug/L	<1	0	-1	1	✓
Beryllium	ug/L	<0.1	0.0	-0.1	0.1	✓
Bismuth	ug/L	<0.5	0.0	-0.5	0.5	✓
Boron	ug/L	<2	0	-2	2	✓
Cadmium	ug/L	<0.01	0.00	-0.01	0.01	✓
Chromium	ug/L	<0.5	0.0	-0.5	0.5	✓
Cobalt	ug/L	<0.1	0.0	-0.1	0.1	✓
Copper	ug/L	<1	0	-1	1	✓
Lead	ug/L	<0.1	0.0	-0.1	0.1	✓
Lithium	ug/L	<1	0	-1	1	✓
Molybdenum	ug/L	<1	0	-1	1	✓
Nickel	ug/L	<0.5	0.0	-0.5	0.5	✓
Selenium	ug/L	<0.2	0.0	-0.2	0.2	✓
Silver	ug/L	<0.1	0.0	-0.1	0.1	✓
Strontium	ug/L	<1	0	-1	1	✓
Thallium	ug/L	<0.05	0.00	-0.05	0.05	✓
Tin	ug/L	<1	0	-1	1	✓
Titanium	ug/L	<0.5	0.0	-0.5	0.5	✓
Uranium	ug/L	<0.5	0.0	-0.5	0.5	✓
Vanadium	ug/L	<0.1	0.0	-0.1	0.1	✓
Zinc	ug/L	<1	0	-1	1	✓

Material Used: Edmonton Method Blank
Date Acquired: Sep 14, 2004
Acquired By: Jesse Dang

NORWEST LABS

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Quality Control

Bill to: Earth Tech Canada Inc.
Report to: Earth Tech Canada Inc.
17203 - 103 Avenue
Edmonton, AB, Canada
T5S 1J4
Attn: Environmental Group
Sampled By: MAM
Company: ETC

Project ID:
Name: Ekalugad
Location:
LSD:
P.O.: 131-1739
Acct. Code:

NWL Lot ID: 332098
Control Number: E 94775
Date Received: Sep 13, 2004
Date Reported: Oct 15, 2004
Report Number: 609481

Metals Total (Continued...)

Replicates	Units	Replicate1	Replicate2	% RSD Criteria	Absolute Criteria	Passed QC
Iron	mg/L	1.1	1.1	10.0	0.0	✓
Manganese	mg/L	1.50	1.12	9.990	0.001	✓
Silicon	mg/L	3.97	3.83	9.99	0.01	✓
Sulphur	mg/L	797	783	9.99	0.03	✓
Mercury	mg/L	<0.0002	<0.0002	9.9900	0.0003	✓
Aluminum	ug/L	1660000	1690000	10	11	✓
Antimony	ug/L	<8	<8	10.0	0.4	✓
Arsenic	ug/L	232	231	10.0	0.4	✓
Barium	ug/L	8760	8980	10	2	✓
Beryllium	ug/L	85.8	85.0	10.0	0.2	✓
Bismuth	ug/L	22	22	10.0	1.1	✓
Boron	ug/L	140	140	10	4	✓
Cadmium	ug/L	11.9	12.5	9.99	0.02	✓
Chromium	ug/L	4720	4830	10.0	1.1	✓
Cobalt	ug/L	876	878	10.0	0.2	✓
Copper	ug/L	3780	3780	10	2	✓
Lead	ug/L	1720	1730	10.0	0.2	✓
Lithium	ug/L	2320	2300	10	2	✓
Molybdenum	ug/L	140	150	10	2	✓
Nickel	ug/L	2640	2690	10.0	1.1	✓
Selenium	ug/L	<8.0	<8.0	10.0	0.4	✓
Silver	ug/L	10	10	10.0	0.2	✓
Strontium	ug/L	290	290	10	2	✓
Thallium	ug/L	48.8	49.0	9.99	0.11	✓
Tin	ug/L	41	43	10	2	✓
Titanium	ug/L	158000	158000	10.0	1.1	✓
Uranium	ug/L	305	307	10.0	1.1	✓
Vanadium	ug/L	4260	4320	10.0	0.2	✓
Zinc	ug/L	8730	8700	10	2	✓

Material Used: Edmonton Duplicate
Date Acquired: Sep 14, 2004
Acquired By:

NORWEST LABS

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Quality Control

Bill to: Earth Tech Canada Inc.
Report to: Earth Tech Canada Inc.
17203 - 103 Avenue
Edmonton, AB, Canada
T5S 1J4
Attn: Environmental Group
Sampled By: MAM
Company: ETC

Project
ID:
Name: Ekalugad
Location:
LSD:
P.O.: 131-1739
Acct. Code:

NWL Lot ID: 332098
Control Number: E 94775
Date Received: Sep 13, 2004
Date Reported: Oct 15, 2004
Report Number: 609481

Metals Total (Continued...)

Control Sample	Units	Measured	Mean	Lower Limit	Upper Limit	Passed QC
Iron	mg/L	2.0	2.0	1.8	2.2	✓
Manganese	mg/L	0.492	0.479	0.451	0.507	✓
Silicon	mg/L	4.73	5.00	4.50	5.50	✓
Sulphur	mg/L	9.57	9.68	8.74	10.62	✓
Mercury	mg/L	0.0008	0.0008	0.0006	0.0010	✓
Aluminum	ug/L	332	322	273	371	✓
Antimony	ug/L	11.0	11.5	10.2	12.8	✓
Arsenic	ug/L	11.0	11.5	10.3	12.7	✓
Barium	ug/L	67	61	52	69	✓
Beryllium	ug/L	5.5	5.9	4.9	7.0	✓
Bismuth	ug/L	29.3	30.2	26.0	34.4	✓
Boron	ug/L	121	125	102	148	✓
Cadmium	ug/L	0.62	0.63	0.47	0.78	✓
Chromium	ug/L	32.4	31.8	27.5	36.2	✓
Cobalt	ug/L	6.4	6.4	5.4	7.5	✓
Copper	ug/L	61	63	55	70	✓
Lead	ug/L	6.0	6.2	5.4	7.0	✓
Lithium	ug/L	74	65	53	76	✓
Molybdenum	ug/L	62	61	53	69	✓
Nickel	ug/L	30.5	31.4	27.0	35.8	✓
Selenium	ug/L	10.6	11.0	9.7	12.3	✓
Silver	ug/L	5.9	6.2	5.5	7.0	✓
Strontium	ug/L	65	64	55	72	✓
Thallium	ug/L	3.02	3.14	2.56	3.72	✓
Tin	ug/L	62	59	52	66	✓
Titanium	ug/L	32.2	31.5	27.0	36.0	✓
Uranium	ug/L	30.2	30.8	26.9	34.7	✓
Vanadium	ug/L	6.2	6.5	5.4	7.6	✓
Zinc	ug/L	60	59	49	69	✓
Material Used:	Edmonton Digestion Check					
Date Acquired:	Sep 14, 2004					
Acquired By:	Jesse Dang					
Iron	mg/L	9.7	9.7	9.1	10.3	✓
Manganese	mg/L	2.38	2.45	2.27	2.63	✓
Silicon	mg/L	24.1	25.0	22.5	27.5	✓
Sulphur	mg/L	49.4	50.0	46.3	53.7	✓
Mercury	mg/L	0.0030	0.0030	0.0025	0.0034	✓
Material Used:	Metals High					
Date Acquired:	Sep 20, 2004					
Acquired By:	Fernando Maglalang					

NORWEST LABS

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Quality Control

Bill to: Earth Tech Canada Inc.
Report to: Earth Tech Canada Inc.
17203 - 103 Avenue
Edmonton, AB, Canada
T5S 1J4
Attn: Environmental Group
Sampled By: MAM
Company: ETC

Project
ID:
Name: Ekalugad
Location:
LSD:
P.O.: 131-1739
Acct. Code:

NWL Lot ID: 332098
Control Number: E 94775
Date Received: Sep 13, 2004
Date Reported: Oct 15, 2004
Report Number: 609481

Metals Total (Continued...)

Control Sample	Units	Measured	Mean	Lower Limit	Upper Limit	Passed QC
Iron	mg/L	0.2	0.2	0.2	0.2	✓
Manganese	mg/L	0.049	0.048	0.043	0.052	✓
Silicon	mg/L	0.48	0.50	0.45	0.55	✓
Sulphur	mg/L	0.91	0.98	0.82	1.13	✓
Mercury	mg/L	0.0008	0.0008	-0.0016	0.0032	✓
Aluminum	ug/L	992	1000	850	1150	✓
Antimony	ug/L	40.4	40.0	34.0	46.0	✓
Arsenic	ug/L	38.8	40.0	34.0	46.0	✓
Barium	ug/L	200	200	170	230	✓
Beryllium	ug/L	20.4	20.0	17.0	23.0	✓
Bismuth	ug/L	99.2	100	85	115	✓
Boron	ug/L	405	400	340	460	✓
Cadmium	ug/L	2.03	2.00	1.70	2.30	✓
Chromium	ug/L	95.7	100	85	115	✓
Cobalt	ug/L	19.6	20.0	17.0	23.0	✓
Copper	ug/L	189	200	170	230	✓
Lead	ug/L	19.6	20.0	17.0	23.0	✓
Lithium	ug/L	200	200	170	230	✓
Molybdenum	ug/L	198	200	170	230	✓
Nickel	ug/L	96.4	100	85	115	✓
Selenium	ug/L	39.1	40.0	34.0	46.0	✓
Silver	ug/L	20.1	20.0	17.0	23.0	✓
Strontium	ug/L	197	200	170	230	✓
Thallium	ug/L	9.97	10.0	8.5	11.5	✓
Tin	ug/L	194	200	170	230	✓
Titanium	ug/L	96.8	100	85	115	✓
Uranium	ug/L	99.3	100	85	115	✓
Vanadium	ug/L	18.4	20.0	17.0	23.0	✓
Zinc	ug/L	199	200	170	230	✓

Material Used: Metals Low
Date Acquired: Sep 14, 2004
Acquired By: Jesse Dang

NORWEST LABS

Norwest Labs
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Quality Control

Bill to: Earth Tech Canada Inc.
Report to: Earth Tech Canada Inc.
17203 - 103 Avenue
Edmonton, AB, Canada
T5S 1J4
Attn: Environmental Group
Sampled By: MAM
Company: ETC

Project ID:
Name: Ekalugad
Location:
LSD:
P.O.: 131-1739
Acct. Code:

NWL Lot ID: 332098
Control Number: E 94775
Date Received: Sep 13, 2004
Date Reported: Oct 15, 2004
Report Number: 609481

Metals Total (Continued...)

Control Sample	Units	Measured	Mean	Lower Limit	Upper Limit	Passed QC
Aluminum	ug/L	54	50	43	58	✓
Antimony	ug/L	1.9	2.0	1.7	2.3	✓
Arsenic	ug/L	2.0	2.0	1.7	2.3	✓
Barium	ug/L	10	10	9	12	✓
Beryllium	ug/L	1.1	1.0	0.9	1.2	✓
Bismuth	ug/L	5.1	5.0	4.3	5.8	✓
Boron	ug/L	20	20	17	23	✓
Cadmium	ug/L	0.09	0.10	0.09	0.12	✓
Chromium	ug/L	5.1	5.0	4.3	5.8	✓
Cobalt	ug/L	1.0	1.0	0.9	1.2	✓
Copper	ug/L	10	10	9	12	✓
Lead	ug/L	1.0	1.0	0.9	1.2	✓
hium	ug/L	11	10	9	12	✓
Molybdenum	ug/L	10	10	9	12	✓
Nickel	ug/L	4.8	5.0	4.3	5.8	✓
Selenium	ug/L	1.9	2.0	1.7	2.3	✓
Silver	ug/L	1.1	1.0	0.9	1.2	✓
Strontium	ug/L	10	10	9	12	✓
Thallium	ug/L	0.51	0.50	0.43	0.58	✓
Tin	ug/L	10	10	9	12	✓
Titanium	ug/L	5.1	5.0	4.3	5.8	✓
Uranium	ug/L	5.1	5.0	4.3	5.8	✓
Vanadium	ug/L	1.0	1.0	0.9	1.2	✓
Zinc	ug/L	10	10	9	12	✓

Material Used: Metals Trace
Date Acquired: Sep 14, 2004
Acquired By: Jesse Dang

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Quality Control

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17203 - 103 Avenue
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T5S 1J4
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Company: ETC

Project
ID:
Name: Ekalugad
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LSD:
P.O.: 131-1739
Acct. Code:

NWL Lot ID: 332098
Control Number: E 94775
Date Received: Sep 13, 2004
Date Reported: Oct 15, 2004
Report Number: 609481

Routine Water

Blanks	Units	Measured	Mean	Lower Limit	Upper Limit	Passed QC
Calcium	mg/L	<0.2	0.0	-0.2	0.2	✓
Magnesium	mg/L	<0.1	0.0	-0.1	0.1	✓
Sodium	mg/L	<0.4	0.0	-0.4	0.4	✓
Potassium	mg/L	<0.4	0.0	-0.4	0.4	✓
Iron	mg/L	<0.01	0.00	-0.01	0.01	✓
Manganese	mg/L	<0.005	0.000	-0.005	0.005	✓
Chloride	mg/L	<0.5	0.0	-0.5	0.5	✓
Nitrate - N	mg/L	<0.1	0.00	-0.10	0.10	✓
Nitrite - N	mg/L	<0.05	0.000	-0.050	0.050	✓
Material Used:	Edmonton Method Blank					
Date Acquired:	Sep 14, 2004					
Acquired By:	Jodi Johnston					

licates	Units	Replicate1	Replicate2	% RSD Criteria	Absolute Criteria	Passed QC
pH		7.31	7.29	9.99	0.10	✓
Electrical Conductivity	dS/m at 25 C	1.92	1.92	9.990	0.002	✓
Chloride	mg/L	2840	2980	10.0	0.5	✓
Nitrate - N	mg/L	0.3	0.2	9.99	0.01	✓
Nitrite - N	mg/L	<0.05	<0.05	9.990	0.010	✓
Hydroxide	mg/L	<5	<5	10		✓
Carbonate	mg/L	<6	<6	10		✓
Bicarbonate	mg/L	<5	<5	10		✓
P-Alkalinity	mg/L	<5	<5	10	5	✓
T-Alkalinity	mg/L	<5	<5	10	5	✓
Material Used:	Edmonton Duplicate					
Date Acquired:	Sep 14, 2004					
Acquired By:	Amanda Mitchell					

NORWEST LABS

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Quality Control

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Report to: Earth Tech Canada Inc.
17203 - 103 Avenue
Edmonton, AB, Canada
T5S 1J4
Attn: Environmental Group
Sampled By: MAM
Company: ETC

Project
ID:
Name: Ekalugad
Location:
LSD:
P.O.: 131-1739
Acct. Code:

NWL Lot ID: 332098
Control Number: E 94775
Date Received: Sep 13, 2004
Date Reported: Oct 15, 2004
Report Number: 609481

Routine Water (Continued...)

Control Sample		Units	Measured	Mean	Lower Limit	Upper Limit	Passed QC
Chloride		mg/L	2020	2087	1875	2299	✓
Material Used:	Chloride High						
Date Acquired:	Sep 14, 2004						
Acquired By:							
Calcium		mg/L	246	251	237	265	✓
Magnesium		mg/L	97.6	102	95	109	✓
Sodium		mg/L	252	250	236	264	✓
Potassium		mg/L	252	251	234	268	✓
Iron		mg/L	9.54	9.73	9.26	10.20	✓
Manganese		mg/L	2.42	2.42	2.32	2.53	✓
Material Used:	Metals High						
Date Acquired:	Sep 14, 2004						
Acquired By:	Linda Li						
Calcium		mg/L	4.9	4.8	4.3	5.3	✓
Magnesium		mg/L	1.9	2.0	1.7	2.2	✓
Sodium		mg/L	4.9	5.2	4.3	6.1	✓
Potassium		mg/L	4.7	5.0	4.5	5.4	✓
Iron		mg/L	0.20	0.20	0.15	0.24	✓
Manganese		mg/L	0.049	0.049	0.044	0.054	✓
Material Used:	Metals Low						
Date Acquired:	Sep 14, 2004						
Acquired By:	Linda Li						
pH			9.20	9.23	9.11	9.35	✓
Electrical Conductivity		dS/m at 25 C	2.77	2.73	2.61	2.85	✓
Chloride		mg/L	82.6	81.0	76.4	85.6	✓
Nitrate - N		mg/L	10.1	10.0	9.6	10.4	✓
Nitrite - N		mg/L	10.1	10.0	9.6	10.4	✓
P-Alkalinity		mg/L	500	520	473	567	✓
T-Alkalinity		mg/L	1000	1005	972	1038	✓
Material Used:	Water High						
Date Acquired:	Sep 14, 2004						
Acquired By:	Amanda Mitchell						

NORWEST LABS

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Quality Control

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Report to: Earth Tech Canada Inc.
17203 - 103 Avenue
Edmonton, AB, Canada
T5S 1J4
Attn: Environmental Group
Sampled By: MAM
Company: ETC

Project
ID:
Name: Ekalugad
Location:
LSD:
P.O.: 131-1739
Acct. Code:

NWL Lot ID: 332098
Control Number: E 94775
Date Received: Sep 13, 2004
Date Reported: Oct 15, 2004
Report Number: 609481

Routine Water (Continued...)

Control Sample	Units	Measured	Mean	Lower Limit	Upper Limit	Passed QC
pH		6.86	6.90	6.83	6.97	✓
Electrical Conductivity	dS/m at 25 C	0.076	0.076	0.070	0.081	✓
Chloride	mg/L	15.0	14.9	13.2	16.6	✓
Nitrate - N	mg/L	0.5	0.50	0.44	0.56	✓
Nitrite - N	mg/L	0.50	0.495	0.437	0.553	✓
P-Alkalinity	mg/L	46	57	39	75	✓
T-Alkalinity	mg/L	126	128	119	137	✓

Material Used: Water Low
Date Acquired: Sep 14, 2004
Acquired By: Amanda Mitchell

Non-Halogenated Aromatics - Water

Blanks	Units	Measured	Mean	Lower Limit	Upper Limit	Passed QC
Benzene	mg/L	<0.001	0.000	-0.002	0.002	✓
Toluene	mg/L	<0.001	0.000	-0.002	0.002	✓
Ethylbenzene	mg/L	<0.001	0.000	-0.002	0.002	✓
Total Xylenes (m,p,o)	mg/L	<0.001	0.000	-0.002	0.002	✓

Material Used: Method Blank - VHC
Date Acquired: Sep 14, 2004
Acquired By:

Calibration Check	Units	Measured	Target	% Recovery	Criteria (%)	Passed QC
Benzene	ng	48.7	50	97	78-123	✓
Toluene	ng	50.9	50	102	78-123	✓
Ethylbenzene	ng	53.3	50	107	78-123	✓
Total Xylenes (m,p,o)	ng	159.2	150	106	78-123	✓

Material Used: Calibration Check - BTEX
Date Acquired: Sep 14, 2004
Acquired By:

NORWEST LABS

Norwest Labs
7217 Roper Road
Edmonton, AB. T6B 3J4
Phone: (780) 438-5522
Fax: (780) 438-0396

Quality Control

Bill to: Earth Tech Canada Inc.
Report to: Earth Tech Canada Inc.
17203 - 103 Avenue
Edmonton, AB, Canada
T5S 1J4
Attn: Environmental Group
Sampled By: MAM
Company: ETC

Project ID:
Name: Ekalugad
Location:
LSD:
P.O.: 131-1739
Acct. Code:

NWL Lot ID: 332098
Control Number: E 94775
Date Received: Sep 13, 2004
Date Reported: Oct 15, 2004
Report Number: 609481

Mono-Aromatic Hydrocarbons - Water

Blanks	Units	Measured	Mean	Lower Limit	Upper Limit	Passed QC
Benzene	mg/L	<0.001	0.000	-0.002	0.002	✓
Toluene	mg/L	<0.001	0.000	-0.002	0.002	✓
Ethylbenzene	mg/L	<0.001	0.000	-0.002	0.002	✓
Total Xylenes (m,p,o)	mg/L	<0.001	0.000	-0.002	0.002	✓
Material Used:	Method Blank - VHC					
Date Acquired:	Sep 15, 2004					
Acquired By:						

Calibration Check	Units	Measured	Target	% Recovery	Criteria (%)	Passed QC
Benzene	ng	50.0	50	100	78-123	✓
Toluene	ng	52.4	50	105	78-123	✓
Ethylbenzene	ng	54.5	50	109	78-123	✓
Total Xylenes (m,p,o)	ng	171.0	150	114	78-123	✓
Material Used:	Calibration Check - BTEX					
Date Acquired:	Sep 14, 2004					
Acquired By:						

Extractable Petroleum Hydrocarbons - Water

Blanks	Units	Measured	Mean	Lower Limit	Upper Limit	Passed QC
F2 C10-C16	mg/L	<0.1	0.0	-0.2	0.2	✓
F3 C16-C34	mg/L	<0.1	0.0	-0.2	0.2	✓
Material Used:	Method Blank - XHC					
Date Acquired:	Sep 16, 2004					
Acquired By:						

Calibration Check	Units	Measured	Target	% Recovery	Criteria (%)	Passed QC
F2 C10-C16	ug/mL	2449.7	2320	106	78-123	✓
F3 C16-C34	ug/mL	1271.4	1204	106	78-123	✓
Material Used:	Calibration Check - XHC					
Date Acquired:	Sep 15, 2004					
Acquired By:	My Linh Nguyen					

NORWEST LABS

Norwest Labs
7217 Roper Road
Edmonton, AB. T6B 3J4
Phone: (780) 438-5522
Fax: (780) 438-0396

Quality Control

Bill to: Earth Tech Canada Inc.
Report to: Earth Tech Canada Inc.
17203 - 103 Avenue
Edmonton, AB, Canada
T5S 1J4
Attn: Environmental Group
Sampled By: MAM
Company: ETC

Project
ID:
Name: Ekalugad
Location:
LSD:
P.O.: 131-1739
Acct. Code:

NWL Lot ID: 332098
Control Number: E 94775
Date Received: Sep 13, 2004
Date Reported: Oct 15, 2004
Report Number: 609481

Polynuclear Aromatic Hydrocarbons - Water

Blanks	Units	Measured	Mean	Lower Limit	Upper Limit	Passed QC
Naphthalene	ug/L	<0.01	0.00	-0.15	0.15	✓
Acenaphthylene	ug/L	<0.01	0.00	-0.15	0.15	✓
Acenaphthene	ug/L	<0.01	0.00	-0.15	0.15	✓
Fluorene	ug/L	<0.01	0.00	-0.15	0.15	✓
Phenanthrene	ug/L	<0.01	0.00	-0.15	0.15	✓
Anthracene	ug/L	<0.01	0.00	-0.15	0.15	✓
Acridine	ug/L	<0.01	0.00	-0.08	0.08	✓
Fluoranthene	ug/L	<0.02	0.00	-0.15	0.15	✓
Pyrene	ug/L	<0.02	0.00	-0.03	0.03	✓
Benzo(a)anthracene	ug/L	<0.01	0.00	-0.02	0.02	✓
Chrysene	ug/L	<0.01	0.00	-0.15	0.15	✓
Benzo(b)fluoranthene	ug/L	<0.01	0.00	-0.02	0.02	✓
Benzo(k)fluoranthene	ug/L	<0.01	0.00	-0.02	0.02	✓
Benzo(a)pyrene	ug/L	<0.01	0.00	-0.02	0.02	✓
Indeno(1,2,3-c,d)pyrene	ug/L	<0.01	0.00	-0.15	0.15	✓
Dibenzo(a,h)anthracene	ug/L	<0.01	0.00	-0.02	0.02	✓
Benzo(g,h,i)perylene	ug/L	<0.01	0.00	-0.15	0.15	✓

Material Used: Method Blank - SV
Date Acquired: Sep 20, 2004
Acquired By:

Calibration Check	Units	Measured	Target	% Recovery	Criteria (%)	Passed QC
Naphthalene	ng/mL	0.5	500	0	70-130	✓
Acenaphthylene	ng/mL	0.6	500	0	70-130	✓
Acenaphthene	ng/mL	0.5	500	0	70-130	✓
Fluorene	ng/mL	0.5	500	0	70-130	✓
Phenanthrene	ng/mL	0.5	500	0	70-130	✓
Anthracene	ng/mL	0.5	500	0	70-130	✓
Acridine	ng/mL	0.4	500	0	70-130	✓
Fluoranthene	ng/mL	0.5	500	0	70-130	✓
Pyrene	ng/mL	0.5	500	0	70-130	✓
Benzo(a)anthracene	ng/mL	0.5	500	0	70-130	✓
Chrysene	ng/mL	0.5	500	0	70-130	✓
Benzo(b)fluoranthene	ng/mL	0.5	500	0	70-130	✓
Benzo(k)fluoranthene	ng/mL	0.5	500	0	70-130	✓
Benzo(a)pyrene	ng/mL	0.5	500	0	70-130	✓
Indeno(1,2,3-c,d)pyrene	ng/mL	0.5	500	0	70-130	✓
Dibenzo(a,h)anthracene	ng/mL	0.5	500	0	70-130	✓
Benzo(g,h,i)perylene	ng/mL	0.4	500	0	70-130	✓

Material Used: Standard - PAHs
Date Acquired: Sep 20, 2004
Acquired By:

NORWEST LABS

Norwest Labs
7217 Roper Road
Edmonton, AB. T6B 3J4
Phone: (780) 438-5522
Fax: (780) 438-0396

Quality Control

Bill to: Earth Tech Canada Inc.
Report to: Earth Tech Canada Inc.
17203 - 103 Avenue
Edmonton, AB, Canada
T5S 1J4
Attn: Environmental Group
Sampled By: MAM
Company: ETC

Project
ID:
Name: Ekalugad
Location:
LSD:
P.O.: 131-1739
Acct. Code:

NWL Lot ID: 332098
Control Number: E 94775
Date Received: Sep 13, 2004
Date Reported: Oct 15, 2004
Report Number: 609481

PAH - Water - Surrogate Recovery

Blanks	Units	Measured	Mean	Lower Limit	Upper Limit	Passed QC
Nitrobenzene-d5	%	67	100	-110	310	✓
2-Fluorobiphenyl	%	39	100	-110	310	✓
p-Terphenyl-d14	%	54	100	-110	310	✓

Material Used: Method Blank - SV
Date Acquired: Sep 20, 2004
Acquired By:

Polychlorinated Biphenyls - Water

Blanks	Units	Measured	Mean	Lower Limit	Upper Limit	Passed QC
Aroclor 1016	ug/L	<0.1	0.0	-0.2	0.2	✓
Aroclor 1221	ug/L	<0.1	0.0	-0.2	0.2	✓
Aroclor 1232	ug/L	<0.1	0.0	-0.2	0.2	✓
Aroclor 1242	ug/L	<0.1	0.0	-0.2	0.2	✓
Aroclor 1248	ug/L	<0.1	0.0	-0.2	0.2	✓
Aroclor 1254	ug/L	<0.1	0.0	-0.2	0.2	✓
Aroclor 1260	ug/L	<0.1	0.0	-0.2	0.2	✓
Aroclor 1262	ug/L	<0.1	0.0	-0.2	0.2	✓
Aroclor 1268	ug/L	<0.1	0.0	-0.2	0.2	✓

Material Used: Method Blank - SV
Date Acquired: Sep 27, 2004
Acquired By:

Calibration Check	Units	Measured	Target	% Recovery	Criteria (%)	Passed QC
Aroclor 1260	ug/mL	1.1	1	110	70-130	✓

Material Used: Calibration Check - PCBs
Date Acquired: Sep 27, 2004
Acquired By: Inna Kazakov

Polychlorinated Biphenyls - Water - Surrogate

Blanks	Units	Measured	Mean	Lower Limit	Upper Limit	Passed QC
Decachlorobiphenyl	%	75	100	10	190	✓

Material Used: Method Blank - SV
Date Acquired: Sep 27, 2004
Acquired By:

NORWEST LABS

Norwest Labs
7217 Roper Road
Edmonton, AB. T6B 3J4
Phone: (780) 438-5522
Fax: (780) 438-0396

Methodology and Notes

Bill to: Earth Tech Canada Inc.
Report to: Earth Tech Canada Inc.
17203 - 103 Avenue
Edmonton, AB, Canada
T5S 1J4
Attn: Environmental Group
Sampled By: MAM
Company: ETC

Project ID:
Name: Ekalugad
Location:
LSD:
P.O.: 131-1739
Acct. Code:

NWL Lot ID: 332098
Control Number: E 94775
Date Received: Sep 13, 2004
Date Reported: Oct 15, 2004
Report Number: 609481

Method of Analysis:

MethodName	Reference		Method	Date Analysis Started	Location
Alkalinity, pH, and EC in water	APHA	*	Conductivity - Laboratory Method, 2510 B	14-Sep-04	Norwest Labs Edmonton
Alkalinity, pH, and EC in water	APHA	*	Electrometric Method, 4500-H+ B	14-Sep-04	Norwest Labs Edmonton
Alkalinity, pH, and EC in water	APHA	*	Titration Method, 2320 B	14-Sep-04	Norwest Labs Edmonton
Anions (Routine) by Ion Chromatography	APHA		Ion Chromatography with Chemical Suppression of Eluent Cond., 4110 B	14-Sep-04	Norwest Labs Edmonton
BTEX-CCME - Water	US EPA	*	US EPA method, 8021B/5035B	15-Sep-04	Norwest Labs Calgary
Chloride in Water	APHA	*	Automated Ferricyanide Method, 4500-Cl- E	14-Sep-04	Norwest Labs Edmonton
Chloride in Water	APHA	*	Automated Ferricyanide Method, 4500-Cl- E	14-Sep-04	Norwest Labs Edmonton
Mercury (Total) in water	MDMES	*	Determination of Mercury in Water by Cold Vapor Atomic Absor, 245.1	15-Sep-04	Norwest Labs Edmonton
Mercury (Total) in water	MDMES	*	Determination of Mercury in Water by Cold Vapor Atomic Absor, 245.1	21-Sep-04	Norwest Labs Edmonton
Metals ICP-MS (Dissolved) in water	US EPA	*	Determination of Trace Elements in Waters and Wastes by ICP-MS, 200.8	15-Oct-04	Norwest Labs Edmonton
Metals ICP-MS (Total) in water	US EPA	*	Determination of Trace Elements in Waters and Wastes by ICP-MS, 200.8	14-Sep-04	Norwest Labs Edmonton
Metals Trace (Dissolved) in water	APHA	*	Inductively Coupled Plasma (ICP) Method, 3120 B	14-Sep-04	Norwest Labs Edmonton
Metals Trace (Total) in water	APHA	*	Inductively Coupled Plasma (ICP) Method, 3120 B	14-Sep-04	Norwest Labs Edmonton
PAH - Water	US EPA	*	US EPA method, 8270	21-Sep-04	Norwest Labs Calgary
PCB - Water	US EPA	*	US EPA method, 8082	23-Sep-04	Norwest Labs Calgary
PCB - Water	US EPA	*	US EPA method, 8082	27-Sep-04	Norwest Labs Calgary
PCB - Water	US EPA	*	US EPA method, 8082	27-Sep-04	Norwest Labs Calgary
PCB - Water	US EPA	*	US EPA method, 8082	29-Sep-04	Norwest Labs Calgary
TEH-CCME - Water	Alta. Env. Method		Hydrocarbon Soil and Water Quality Guidelines, C51260500	16-Sep-04	Norwest Labs Calgary
TEH-CCME - Water	Alta. Env. Method		Hydrocarbon Soil and Water Quality Guidelines, C51260500	17-Sep-04	Norwest Labs Calgary

* Norwest method(s) is based on reference method

Please direct any inquiries regarding this report to our Client Services group.
Results relate only to samples as submitted

NORWEST LABS

Methodology and Notes

Norwest Labs
7217 Roper Road
Edmonton, AB. T6B 3J4
Phone: (780) 438-5522
Fax: (780) 438-0396

Bill to: Earth Tech Canada Inc.
Report to: Earth Tech Canada Inc.
17203 - 103 Avenue
Edmonton, AB, Canada
T5S 1J4
Attn: Environmental Group
Sampled By: MAM
Company: ETC

Project ID:
Name: Ekalugad
Location:
LSD:
P.O.: 131-1739
Acct. Code:

NWL Lot ID: 332098
Control Number: E 94775
Date Received: Sep 13, 2004
Date Reported: Oct 15, 2004
Report Number: 609481

References:

Alta. Env. Method	Alberta Environment Method
APHA	Standard Methods for the Examination of Water and Wastewater
MDMES	Mthds for the Determination of Metals in Enviromental Smpls
US EPA	US Environmental Protection Agency Test Methods

Comments:

NA-Not available. The extract from TEH was used to analyze sample #6 for PCB due to lack of the sample, therefore no surrogate was added. IK 04/09/27

Report 609481 is supplementary to report 594399 to include added TW21 - dissolved metals to samples 1 to 5 as per Matthew. llg 04/10/14

Some total metal results were less than dissolved metal results for Lot 332098. The results were checked and are within the method uncertainty.FM

Please direct any inquiries regarding this report to our Client Services group.
Results relate only to samples as submitted

332206

NORWEST LABS

Control Number E 94778

Environmental Sample Information Sheet

NOTE: Proper completion of this form is required in order to proceed with analysis

See reverse for your nearest Norwest location and proper sampling protocol

Billing Address:		Copy of Report To:	Copy of invoice: ☐
Company: Earth Tech Canada Inc.	QA/QC Report ☒	Company:	Mail invoice to this address for approval ☐
Address: 17203 - 103 Avenue, Edmonton, AB T5S 1J4		Address:	
Attention: Environmental Group	Report Result:	Attention:	Report Result:
Phone: (780) 488-6800	Fax ☐	Phone:	Fax ☐
Fax: (780) 488-2121	Mail ☐	Fax:	Mail ☐
Cell:	Courier ☐	Cell:	Courier ☐
e-mail: gwoollett@earthtech.ca	e-mail ☐	e-mail:	e-mail ☐

Information to be included on Report and Invoice

Project ID: 78850
Project Name: Ekalugad Fjord
Project Location: Ekalugad
Legal Location:
PO#: 131-1739
Proj. Acct. Code: 78850
Agreement ID: 40857

RUSH Please contact the laboratory to confirm rush dates and times before submitting samples.

Upon filling out this section, client accepts that surcharges will be attached to this analysis

Required on: all analyses ☐ or as indicated ☐

Date Required: ______
Signature: ______
Norwest Authorization: ______

Sample Custody (Please Print)

Sampled by: MAM Date 09/09/04
Company ETC Signature M. M[illegible]
Relinquished by: 717-2655 Matt
Company Date
Waybill number:
Received by:
Company Date

Special Instructions / Comments ☐ Check here if Norwest is required to report results directly to a regulatory body (Please include contact information)

as per Matt, client is requesting a fuel-type assessment with chromatogram - [illegible] Sept 13
Samples are various fuels.

Tests (Enter tests above, ✔ relevant samples below): T744 (metals); PCB2; CCME5; PAH2; ~~Product ID~~; ~~CTGM60~~; 1002050

	Sample Identification	Location	Depth (IN / CM / M)	Date / Time Sampled	Matrix	Sampling Method	Number of Containers	T744 (metals)	PCB2	CCME5	PAH2	Product ID	CTGM60	1002050	
1	MS Barrel #3		—				1						X		
2	2		—				1						X		
3	8		—				1						X		
4	1		—				1						X		
5	9		—				1						X		
6	3		—				1						X		
7	MS Barrel # 2		—				1						X		
8	MS Barrel # 1		—				1						X		
9	US - BS - 01 =2		—				2						X		
10	BA - BDI - 01		—				1						X		
11			—												
12			—												
13			—												
14			—												
15			—												

NOTE: All hazardous samples must be labelled according to WHMIS guidelines.

Accredited by the Standards Council of Canada for specific tests

Page ____ of ____ ##

NWL008 (08/01)

NORWEST LABS

Norwest Labs
7217 Roper Road
Edmonton, AB. T6B 3J4
Phone: (780) 438-5522
Fax: (780) 438-0396

Analytical Report

Bill to: Earth Tech Canada Inc.
Report to: Earth Tech Canada Inc.
17203 - 103 Avenue
Edmonton, AB, Canada
T5S 1J4
Attn: Environmental Group
Sampled By: MAM
Company: ETC

Project ID: 78850
Name: Ekalugad Fjord
Location: Ekalugad
LSD:
P.O.: 131-1739
Acct. Code: 78850

NWL Lot ID: 332206
Control Number: E 94778
Date Received: Sep 13, 2004
Date Reported: Sep 24, 2004
Report Number: 594547

NWL Number	332206-9
Sample Date	Sep 09, 2004
Sample Description	US-BS-01
Matrix	Oily waste

Analyte		Units	Results	Results	Results	Detection Limit
Metals Strong Acid Extractable						
Aluminum	Strong Acid Extractable	ug/g	35.8			1
Antimony	Strong Acid Extractable	ug/g	<1			2
Arsenic	Strong Acid Extractable	ug/g	<2			4
Barium	Strong Acid Extractable	ug/g	0.839			0.05
Beryllium	Strong Acid Extractable	ug/g	<0.02			0.05
Cadmium	Strong Acid Extractable	ug/g	<0.02			0.05
Calcium	Strong Acid Extractable	ug/g	20.0			1
[illegible]mium	Strong Acid Extractable	ug/g	0.769			0.1
Cobalt	Strong Acid Extractable	ug/g	<0.05			0.1
Copper	Strong Acid Extractable	ug/g	2.32			0.1
Iron	Strong Acid Extractable	ug/g	39.8			0.2
Lead	Strong Acid Extractable	ug/g	1.3			1
Lithium	Strong Acid Extractable	ug/g	1.7			0.6
Magnesium	Strong Acid Extractable	ug/g	<0.5			1
Manganese	Strong Acid Extractable	ug/g	0.650			0.05
Molybdenum	Strong Acid Extractable	ug/g	<0.5			1
Nickel	Strong Acid Extractable	ug/g	4.30			0.2
Potassium	Strong Acid Extractable	ug/g	<50			100
Selenium	Strong Acid Extractable	ug/g	<5			10
Sodium	Strong Acid Extractable	ug/g	42.0			5
Strontium	Strong Acid Extractable	ug/g	0.41			0.5
Tin	Strong Acid Extractable	ug/g	<0.5			1
Titanium	Strong Acid Extractable	ug/g	0.75			0.4
Uranium	Strong Acid Extractable	ug/g	<3			6
Vanadium	Strong Acid Extractable	ug/g	0.084			0.1
Zinc	Strong Acid Extractable	ug/g	6.80			0.1
Zirconium	Strong Acid Extractable	ug/g	<0.2			0.5
Polychlorinated Biphenyls - Oil						
Aroclor 1016		mg/kg	<0.5			0.5
Aroclor 1221		mg/kg	<0.5			0.5
Aroclor 1232		mg/kg	<0.5			0.5
Aroclor 1242		mg/kg	<0.5			0.5
Aroclor 1248		mg/kg	<0.5			0.5
Aroclor 1254		mg/kg	<0.5			0.5
Aroclor 1260		mg/kg	<0.5			0.5

NORWEST LABS

Norwest Labs
7217 Roper Road
Edmonton, AB. T6B 3J4
Phone: (780) 438-5522
Fax: (780) 438-0396

Analytical Report

Bill to: Earth Tech Canada Inc.
Report to: Earth Tech Canada Inc.
17203 - 103 Avenue
Edmonton, AB, Canada
T5S 1J4
Attn: Environmental Group
Sampled By: MAM
Company: ETC

Project ID: 78850
Name: Ekalugad Fjord
Location: Ekalugad
LSD:
P.O.: 131-1739
Acct. Code: 78850

NWL Lot ID: 332206
Control Number: E 94778
Date Received: Sep 13, 2004
Date Reported: Sep 24, 2004
Report Number: 594547

NWL Number	332206-9
Sample Date	Sep 09, 2004
Sample Description	US-BS-01
Matrix	Oily waste

Analyte		Units	Results	Results	Results	Detection Limit
Polychlorinated Biphenyls - Oil - Continued						
Aroclor 1262		mg/kg	<0.5			0.5
Aroclor 1268		mg/kg	<0.5			0.5
Total PCBs		mg/kg	<0.5			0.5
Polychlorinated Biphenyls - Oil - Surrogate						
Decachlorobiphenyl	Surrogate	%	56			50-150

Approved by: Darren Crichton

Darren Crichton, BSc, PChem
Operations Chemist

NORWEST LABS
Energy Resouce Group

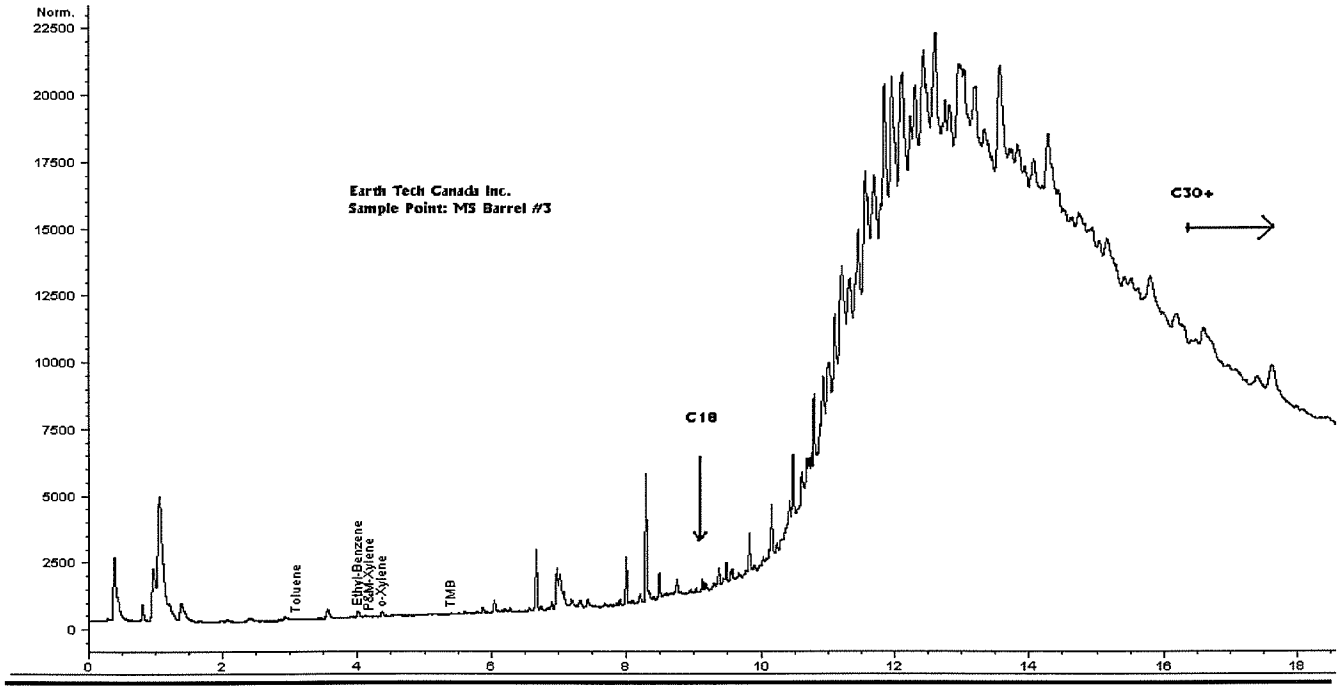
7217 Roper Road Edmonton, Alberta T6B 3J4
Phone (780) 438-5522

Hydrocarbon Characterization

332206-1
Laboratory Report Number

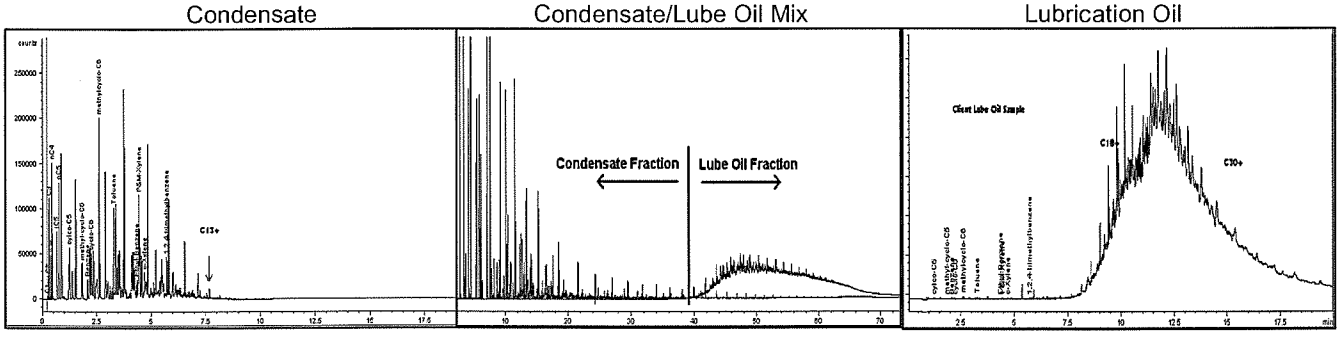
Container	Operator		Container Identity
Ekalugad Fjord	Earth Tech Canada Inc.		
Location	Ekalugad Well Name		K.B. Elev, m GR Elev, m
	MS Barrel #3	M.A.M.	ETC
Field/Area	Sample Point	Sampler	Company

Date Sampled	Date Received	Date Reported	Other Information
2004-09-09	2004-09-13	2004-09-22	



Typical Hydrocarbon Component Distribution

Condensate | Condensate/Lube Oil Mix | Lubrication Oil



Carbon Number Distribution Ranges

Gasoline	C4-C12	Diesel Fuel	C5-C22
Varsol	C8-C12	Lubricating Oils	C18-C40
Kerosene	C7-C16	Crude Oils	C3-C30+

Sample Distribution Assesment

Based on the component distribution, the sample appears to be a Lube oil.

Supervisor D. Aebig

Approved S. Montgomery

NORWEST LABS
Energy Resouce Group

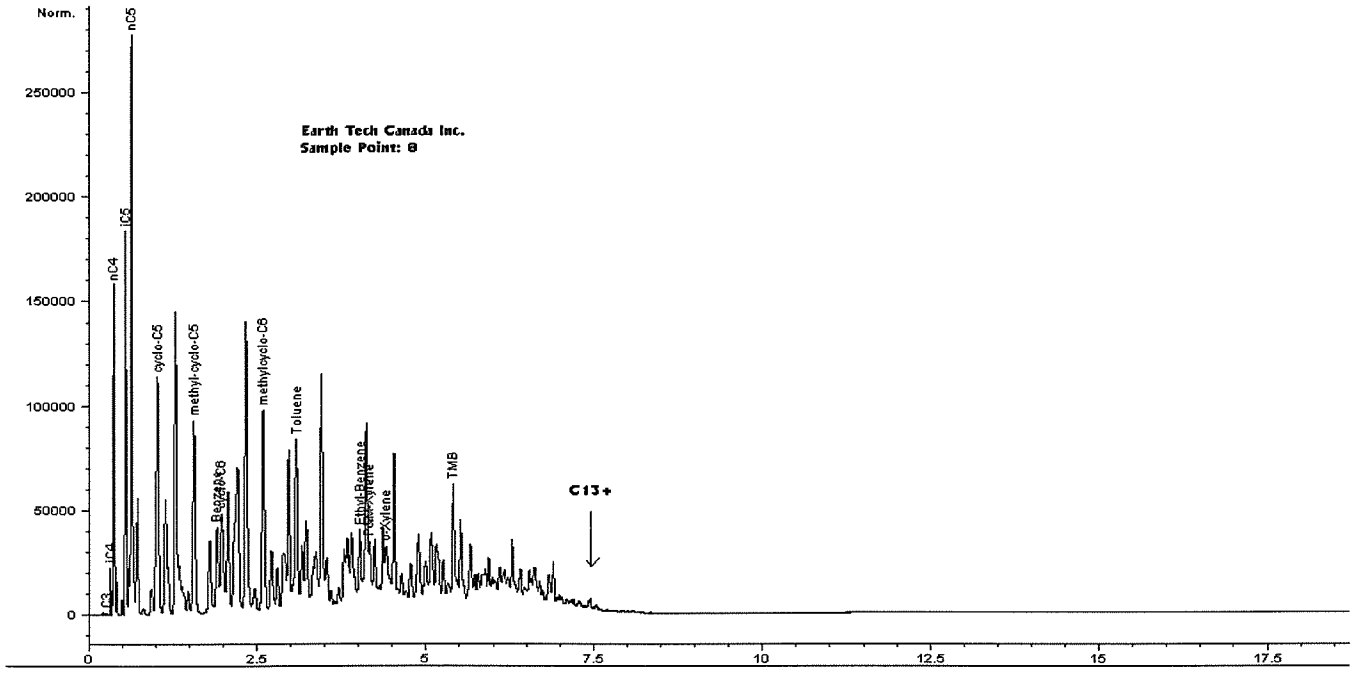
7217 Roper Road Edmonton, Alberta T6B 3J4
Phone (780) 438-5522

Hydrocarbon Characterization

332206-3
Laboratory Report Number

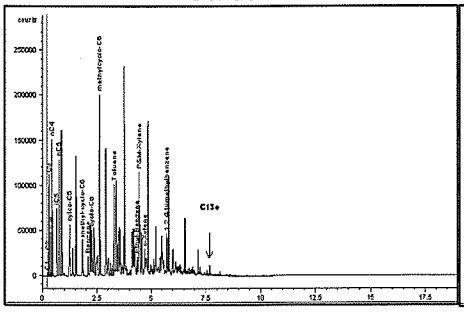
Container	Operator		Container Identity
Ekalugad Fjord	Earth Tech Canada Inc.		
Location	Ekalugad Well Name		K.B. Elev, m GR Elev, m
	8	M.A.M.	ETC
Field/Area	Sample Point	Sampler	Company

Date Sampled	Date Received	Date Reported	Other Information
2004-09-09	2004-09-13	2004-09-22	

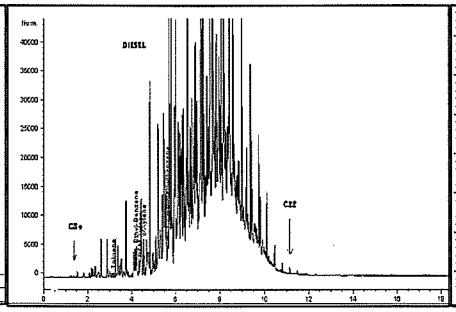


Typical Hydrocarbon Component Distribution

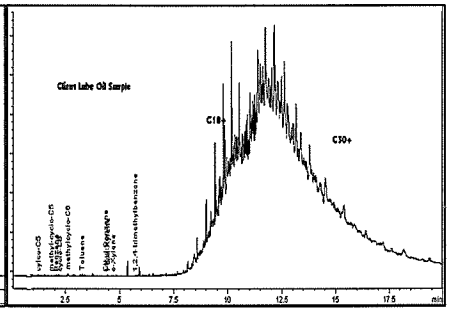
Condensate



Diesel



Lubrication Oil



Carbon Number Distribution Ranges

Gasoline	C4-C12	Diesel Fuel	C5-C22
Varsol	C8-C12	Lubricating Oils	C18-C40
Kerosene	C7-C16	Crude Oils	C3-C30+

Sample Distribution Assesment

Based on the component distribution, the sample appears to be a condensate.

Supervisor D. Aebig

Approved S. Montgomery

NORWEST LABS
Energy Resouce Group

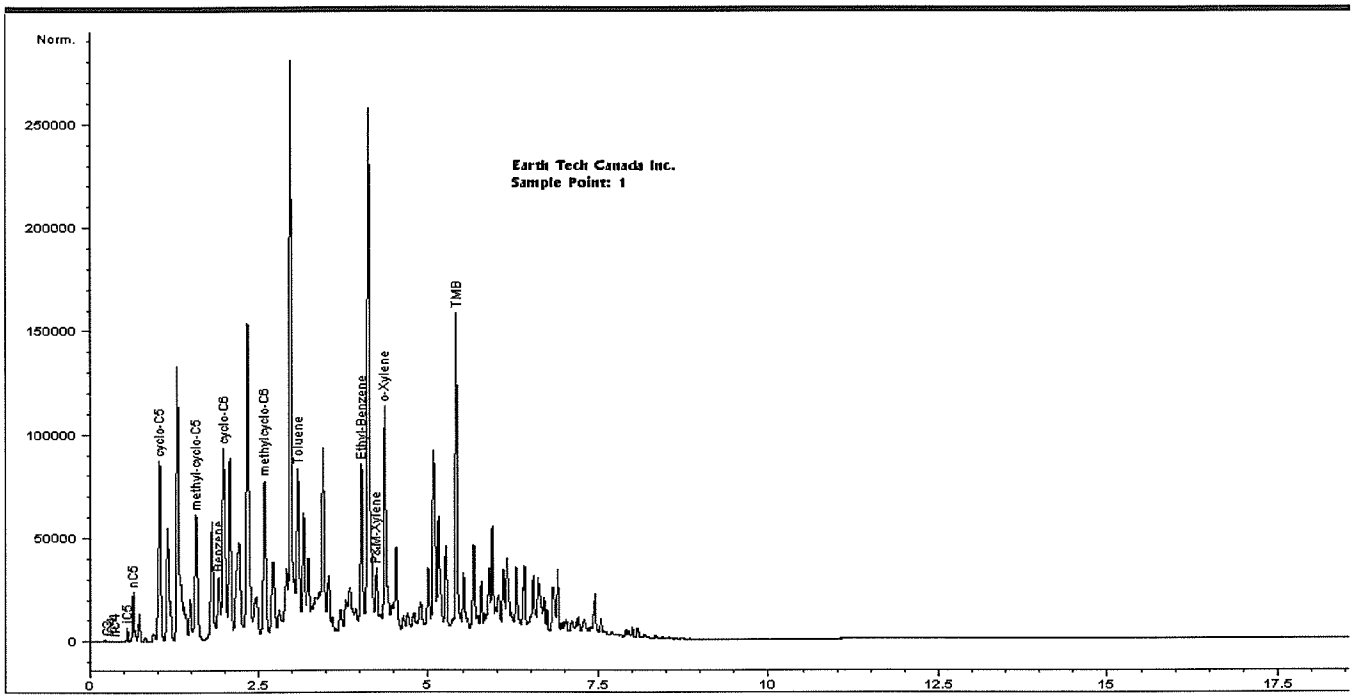
7217 Roper Road Edmonton, Alberta T6B 3J4
Phone (780) 438-5522

Hydrocarbon Characterization

332206-3
Laboratory Report Number

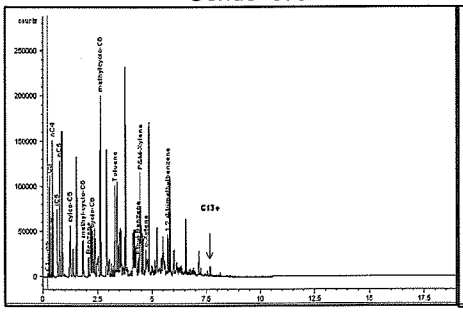
Container	Operator		Container Identity
Ekalugad Fjord	Earth Tech Canada Inc.		
Location	Well Name		K.B. Elev, m GR Elev, m
	1	M.A.M.	ETC
Field/Area	Sample Point	Sampler	Company

Date Sampled	Date Received	Date Reported	Other Information
2004-09-09	2004-09-13	2004-09-22	

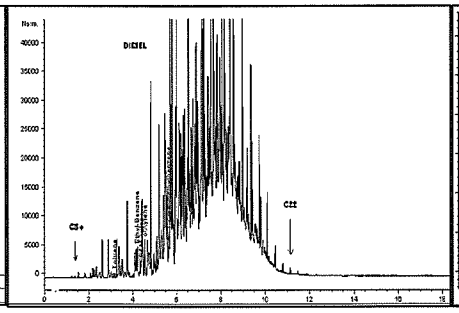


Typical Hydrocarbon Component Distribution

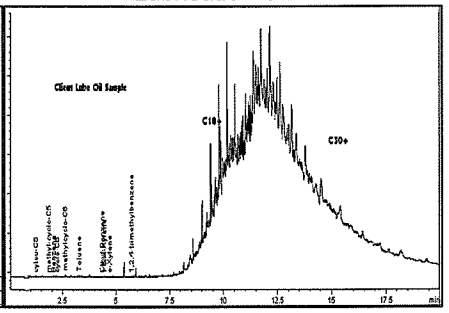
Condensate



Diesel



Lubrication Oil



Carbon Number Distribution Ranges

Gasoline	C4-C12	Diesel Fuel	C5-C22
Varsol	C8-C12	Lubricating Oils	C18-C40
Kerosene	C7-C16	Crude Oils	C3-C30+

Sample Distribution Assesment

Based on the component distribution, the sample appears to be a condensate.

Supervisor D. Aebig

Approved S. Montgomery

NORWEST LABS
Energy Resouce Group

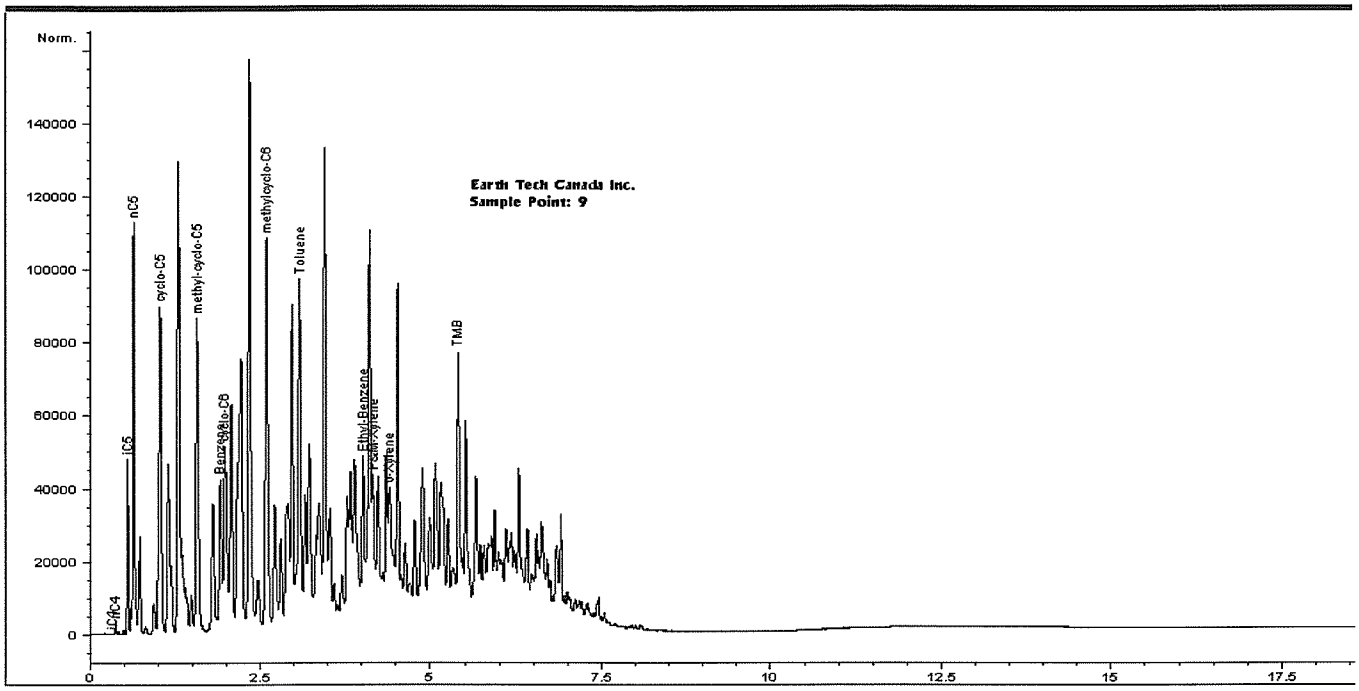
7217 Roper Road Edmonton, Alberta T6B 3J4
Phone (780) 438-5522

Hydrocarbon Characterization

332206-5
Laboratory Report Number

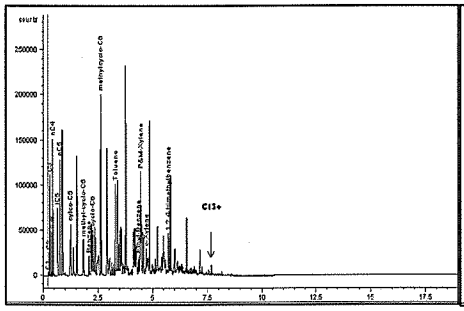
Container	Operator		Container Identity
Ekalugad Fjord	Earth Tech Canada Inc.		
Location	Ekalugad Well Name		K.B. Elev, m GR Elev, m
	9	M.A.M.	ETC
Field/Area	Sample Point	Sampler	Company

Date Sampled	Date Received	Date Reported	Other Information
2004-09-09	2004-09-13	2004-09-22	

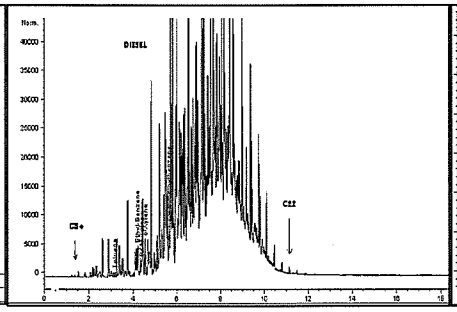


Typical Hydrocarbon Component Distribution

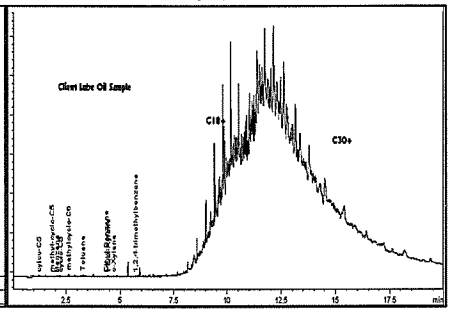
Condensate



Diesel



Lubrication Oil



Carbon Number Distribution Ranges

Gasoline	C4-C12	Diesel Fuel	C5-C22
Varsol	C8-C12	Lubricating Oils	C18-C40
Kerosene	C7-C16	Crude Oils	C3-C30+

Sample Distribution Assesment

Based on the component distribution, the sample appears to be a condensate.

Supervisor D. Aebig

Approved S. Montgomery

NORWEST LABS
Energy Resouce Group

7217 Roper Road Edmonton, Alberta T6B 3J4
Phone (780) 438-5522

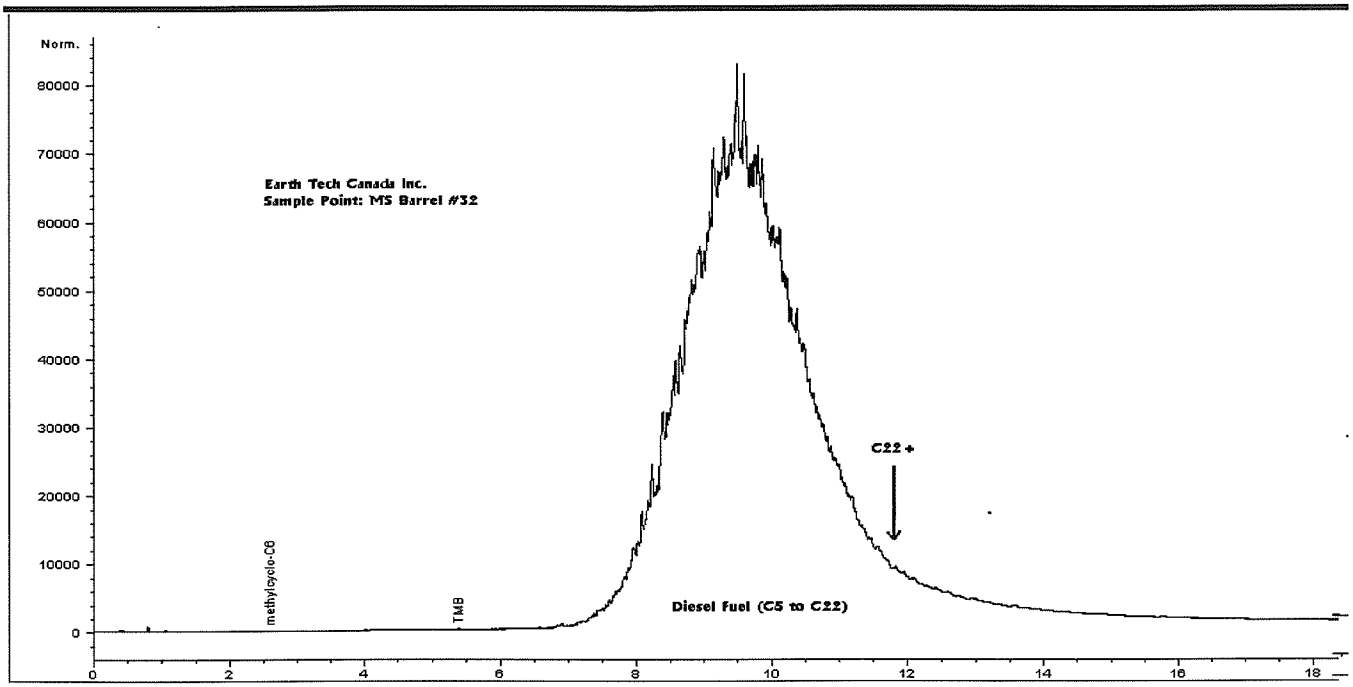
Hydrocarbon Characterization

332206-7
Laboratory Report Number

Container	Operator	Container Identity
Ekalugad Fjord	Ekalugad	
Location	Well Name	K.B. Elev, m GR Elev, m

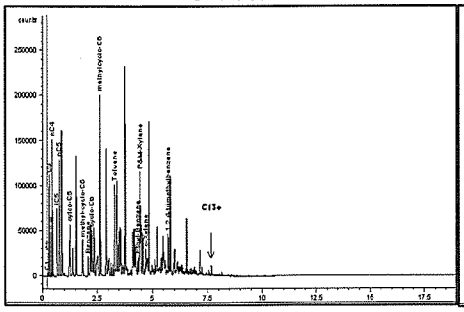
Field/Area	Sample Point	Sampler	Company
	MS Barrel #32	M.A.M.	ETC

Date Sampled	Date Received	Date Reported	Other Information
2004-09-09	2004-09-13	2004-09-22	

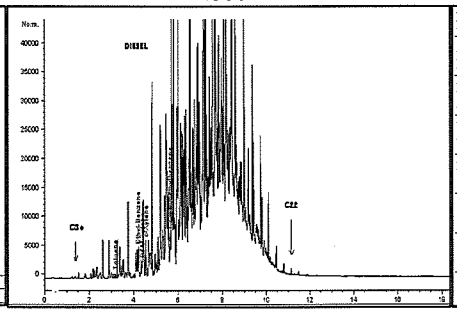


Typical Hydrocarbon Component Distribution

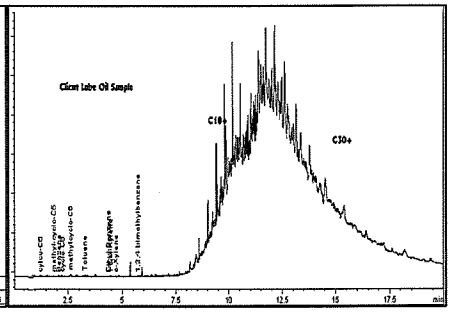
Condensate



Diesel



Lubrication Oil



Carbon Number Distribution Ranges

Gasoline	C4-C12	Diesel Fuel	C5-C22
Varsol	C8-C12	Lubricating Oils	C18-C40
Kerosene	C7-C16	Crude Oils	C3-C30+

Sample Distribution Assesment

Based on the component distribution, the sample appears to be a diesel fuel.

Supervisor D. Aebig

Approved S. Montgomery

NORWEST LABS
Energy Resouce Group

7217 Roper Road Edmonton, Alberta T6B 3J4
Phone (780) 438-5522

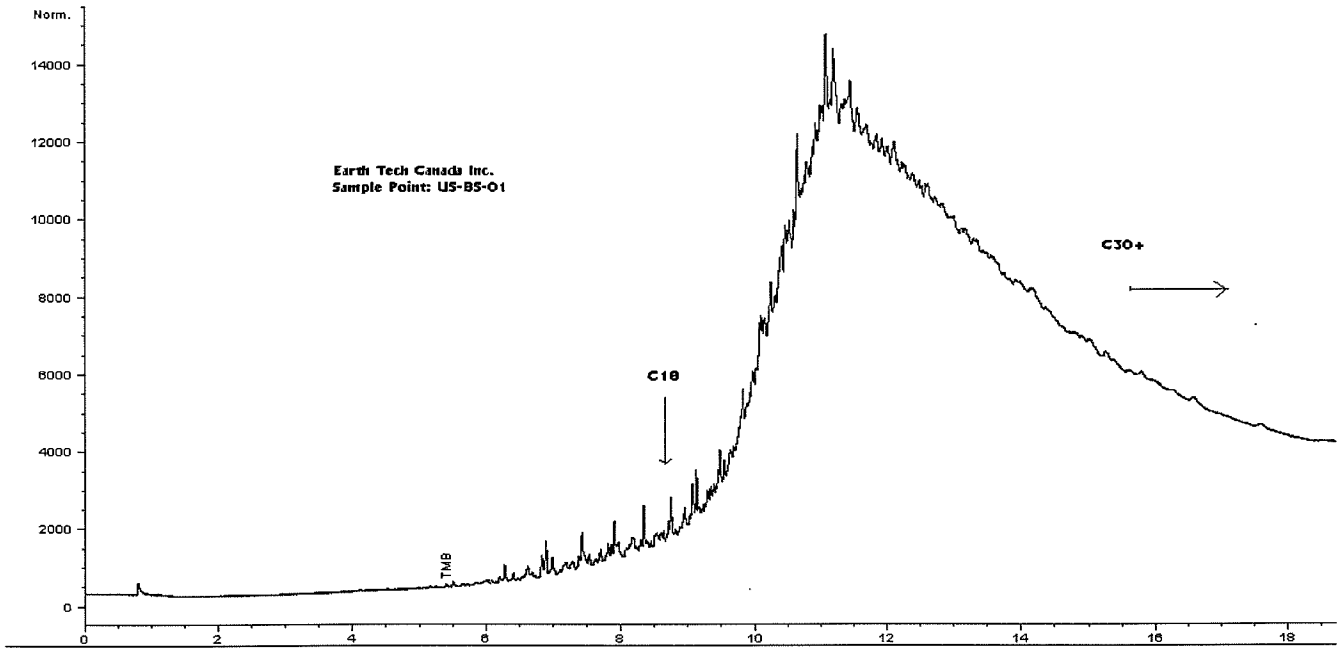
Hydrocarbon Characterization

332206-9
Laboratory Report Number

Container	Operator	Container Identity
Ekalugad Fjord	Ekalugad	
Location	Well Name	K.B. Elev, m GR Elev, m

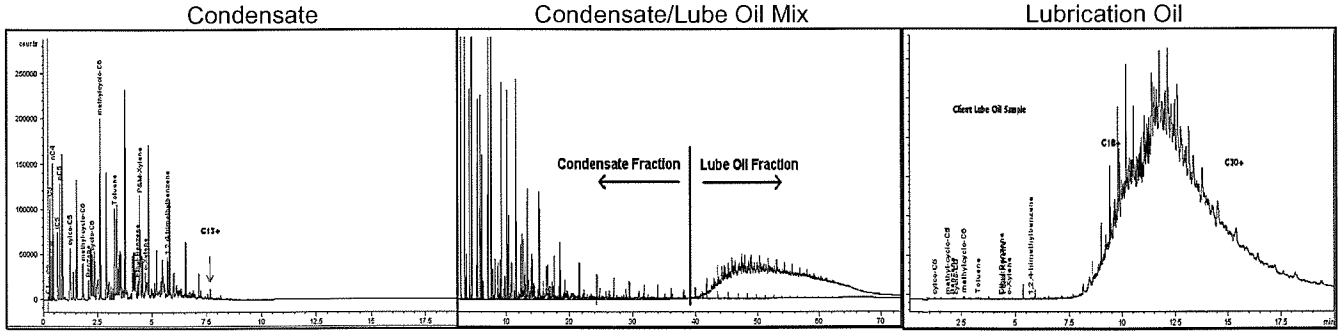
Field/Area	Sample Point	Sampler	Company
	US-BS-01	M.A.M.	ETC

Date Sampled	Date Received	Date Reported	Other Information
2004-09-09	2004-09-13	2004-09-22	



Typical Hydrocarbon Component Distribution

Condensate | Condensate/Lube Oil Mix | Lubrication Oil



Carbon Number Distribution Ranges

Gasoline	C4-C12	Diesel Fuel	C5-C22
Varsol	C8-C12	Lubricating Oils	C18-C40
Kerosene	C7-C16	Crude Oils	C3-C30+

Sample Distribution Assesment

Based on the component distribution, the sample appears to be a Lube oil.

Supervisor D. Aebig

Approved S. Montgomery

Agree. 40857 332075 (3pg)

Area	Sample ID	Depth	Jar 250	Jar 125	Bag	Hold	PCB2	CCMES	TT44(metals)	PAH2	M21	Notes
	WL-1001	015	1					1				
		85						1				
	WL-1002	3050	1					1				
	WL-1003	4050	1					1				
	WL-1004	3040	1		1			1			1	Metals Cr 6+
	WL-1005	030	1	1			1	1				
WL	WL-1005	75		2				1				
	WL-1006	4060	1					1				
	WL-1007	6080	1		1			1			1	Metals Cr6+
	WL-1008	0	1				1	1				
	WL-1008	30	2		1		1				1	Metals Cr6+
		4050			1	hold					1	Metals Cr6+
		70			1	hold					1	Metals Cr6+
	BAT-1008	025	1					1				
	BAT-1009	1030	1					1		1		
	BAT-1010	3050	1					1		1		
		50	1					1				
		150	1					1				Filed Duplicate
BAT	BAT-1011	90120	1					1				
	BAT-1012	80100	1					1				
	BAT-1013	150	1					1				
	BAT-1014	120150	1					1				
	BAT-1015	100120	1					1				
	BAT-1016	6080	1					1				
	BA-1017	4060			1				1		1	Cr 6+
	BA-1018	6080			1				1		1	Cr 6+
	BA-1019	40			1				1		1	Cr 6+
		100			1				1		1	Cr6+
BA	BA-1020	2540			1				1		1	Cr6+
	BA-1020	5060			1				1		1	Cr6+
	BA-1021	5070			1				1		1	Cr6+
	BA-1023	4060			1				1		1	Cr6+
	BA-1024	1030			1				1		1	Cr6+
	BA-1025	030			1				1		1	Metals Cr6+
	US-1026		1	1			1	1	1			
	US-1027		1	1			1		1			
	US-1028		1	1	1		1	1	1			
	US-1029		1	1			1	1	1			
	US-1030		1	1			1	1	1			
	US-1031		1	1			1		1			
	US-1032		1	1	1		1	1	1			
	US-1033		1	1	1		1	1	1			
	US-1034	3550		2			1					
	US-1035	015		2			1					
	US-1036	35		1			1					
		135		1			1					
	US-1037	45		2			1					
	US-1037	145					1					
	US-1038			2			1	1				
	US-1039	50		1			1	1	1			
	US-1040			2			1	1	1			
	US-1041	0	1	2			1	1				
	US-1041	surf			1				1			Duplicate of RMC5
	US-1042	surf	1	1	1		1	1	1			
	US-1043	surf	1	1	1		1	1				
	US-1044	surf	1	1	1				1			

HOLD PCB2 CCMES TT44 PAH2 M21

		2030	1		1				1			
	US-1045	3050	1	1				1				
		3040			1							
	US-1046	surf			1							
		2535		2	1		1	1				
	US-1047	0		2			1	1	1			
	US-1047	surf			1							
	US-1048	0										
	US-1048	2030		2			1	1	1			
	US-1049	30	1	1			1	1				
	US-1049	3040			1							
	US-1050	0	1	1			1	1				
		surf			1				1			
US	US-1050	3040			1		1		1			
	US-1051			2			1	1				
	US-1052			2			1	1				
		0			1							
	US-1053	surf			1				1			
		2030	1		1				1			
	US-1054	0	1	1	1				1			
	US-1055	0	1		1				1			
	US-1056	surf	1		1			1		1		
	US-1057	10	1		1			1				
	US-1058	3040	1		1			1		1		
	US-1059	2030	1					1		1		
	US-1060	20		2				1		1		
	US-1061	510		2				1		1		
	US-1062	1030		2				1		1		
	US-1063 (COMP)	0		3			1	1		1		
	US-1063	4050		3	1		1	1		1		
	US-1064											No Sample???
	US-1065	4050		2	1				1			
	US-1066	5060		2	1		1	1	1			
	US-1067	5060		2	1		1	1	1			
	US-1068	4050		2					1			
	US-1069	50		2				1		1		
	US-1070	50		2				1		1		
	US-1071	20		3	1			1				
		50		2				1				
	1071+10m Comp	040			1			1				
	US-1072			2			1	1				
	US-1073			2			1	1				
	US-1074			2			1	1				
	US-1075	1520		2			1	1	1			
	US-1076	0	2		1			1				
	US-1076	20	2		1			1				
	1077	010	1		1		1	1				
	US-1078	010		2	1		1	1				
	US-1079	1030		2	1		1	1				
	MS-1080			3	1		1	1		1		
	MS-1081	020	2				1					
	US-1082	020		2	1		1					
	US-1083	20	1		1		1					
	US-1084	1030	3		1		1			1		
	US-1085	10		2				1				
		85		2				1				
	MS-1086	0	2		1		1	1	1	1		PAH's
	MS-1086	100	2		1			1		1		
		1020	2		1		1	1	1	1		

HOLD PCB2 CCMES TT44 PAH2 M21

	US-1087	20		2				1					
	US-1088	10		2				1					
	US-1089	20		2				1					
	US-1090			2				1					
	MS-1090 B			2				1					
	MS-1091			2			1	1					
	1092			2				1					
	MS-1093			2				1					
	1094			2			1	1					
	MS-1095			2				1					
	BD6			3	1		1	1					
	RRMC29		1	1	1				1				
	Stains comp US		2				1	1		1			Upper site, north side of mountain staining composite
	RS-1			2	1		1	1	1	1			
	RS-2			3	1		1	1	1	1			
	WLS-1			2	1		1	1	1	1			
	WLS-2			2	1		1	1	1	1			
	FC Background				1		1	1	1				
	US-NWStains-Comp				1				1				
	stains comp			2									
		Total					58	88	45	22	15		

NORWEST LABS

Norwest Labs
7217 Roper Road
Edmonton, AB. T6B 3J4
Phone: (780) 438-5522
Fax: (780) 438-0396

Analytical Report

Bill to: Earth Tech Canada Inc.
Report to: Earth Tech Canada Inc.
17203 - 103 Avenue
Edmonton, AB, Canada
T5S 1J4
Attn: Environmental Group
Sampled By:
Company:

Project ID:
Name: Ekalugad
Location:
LSD:
P.O.:
Acct. Code:

NWL Lot ID: 332075
Control Number:
Date Received: Sep 13, 2004
Date Reported: Sep 28, 2004
Report Number: 594363

			NWL Number	332075-1	332075-2	332075-3	
			Sample Description	WL-1001 / 0-15	WL-1002 / 30-50	WL-1003 / 40-50	
			Matrix	Soil - general	Soil - general	Soil - general	
Analyte		**Units**		**Results**	**Results**	**Results**	**Detection Limit**
Mono-Aromatic Hydrocarbons - Soil							
Extraction Date				16-Sep-04	16-Sep-04	16-Sep-04	
Benzene	Dry Weight	mg/kg		<0.02	<0.02	<0.02	0.02
Toluene	Dry Weight	mg/kg		<0.02	<0.02	<0.02	0.02
Ethylbenzene	Dry Weight	mg/kg		<0.02	<0.02	<0.02	0.02
Total Xylenes (m,p,o)	Dry Weight	mg/kg		<0.02	<0.02	<0.02	0.02
Volatile Petroleum Hydrocarbons - Soil							
Extraction Date				16-Sep-04	16-Sep-04	16-Sep-04	
F1 C6-C10	Dry Weight	mg/kg		<1	<1	<1	1
F1 BTEX	Dry Weight	mg/kg		<1	<1	<1	1
Extractable Petroleum Hydrocarbons - Soxhlet							
Extraction Date				16-Sep-04	16-Sep-04	16-Sep-04	
F2 C10-C16	Dry Weight	mg/kg		13	<10	<10	10
F3 C16-C34	Dry Weight	mg/kg		37	77	69	10
F4 C34-C50	Dry Weight	mg/kg		27	46	73	10
F4HTGC C34-C50+	Dry Weight	mg/kg		40	63	230	10
% C50+		%		14.3	11.9	52.4	
Silica Gel Cleanup							
Silica Gel Cleanup				Done	Done	Done	
Soil % Moisture							
Moisture	Soil % Moisture	%		20.70	11.40	12.80	

NORWEST LABS

Norwest Labs
7217 Roper Road
Edmonton, AB. T6B 3J4
Phone: (780) 438-5522
Fax: (780) 438-0396

Analytical Report

Bill to: Earth Tech Canada Inc.
Report to: Earth Tech Canada Inc.
17203 - 103 Avenue
Edmonton, AB, Canada
T5S 1J4
Attn: Environmental Group
Sampled By:
Company:

Project ID:
Name: Ekalugad
Location:
LSD:
P.O.:
Acct. Code:

NWL Lot ID: 332075
Control Number:
Date Received: Sep 13, 2004
Date Reported: Sep 28, 2004
Report Number: 594363

			NWL Number	332075-4	332075-5	332075-6	
			Sample Description	WL-1004 / 30-40	WL-1005 / 0-30	WL-1005 / 75	
			Matrix	Soil - general	Soil - general	Soil - general	
Analyte		**Units**		**Results**	**Results**	**Results**	**Detection Limit**
Mono-Aromatic Hydrocarbons - Soil							
Extraction Date				16-Sep-04	16-Sep-04	16-Sep-04	
Benzene	Dry Weight	mg/kg		<0.02	<0.02	<0.02	0.02
Toluene	Dry Weight	mg/kg		<0.02	0.02	<0.02	0.02
Ethylbenzene	Dry Weight	mg/kg		<0.02	<0.02	<0.02	0.02
Total Xylenes (m,p,o)	Dry Weight	mg/kg		<0.02	<0.02	0.04	0.02
Volatile Petroleum Hydrocarbons - Soil							
Extraction Date				16-Sep-04	16-Sep-04	16-Sep-04	
F1 C6-C10	Dry Weight	mg/kg		<1	4	10	1
[illegible]TEX	Dry Weight	mg/kg		<1	4	10	1
Extractable Petroleum Hydrocarbons - Soxhlet							
Extraction Date				16-Sep-04	16-Sep-04	16-Sep-04	
F2 C10-C16	Dry Weight	mg/kg		<10	87	358	10
F3 C16-C34	Dry Weight	mg/kg		<10	11400	18000	10
F4 C34-C50	Dry Weight	mg/kg		<10	1370	2080	10
F4HTGC C34-C50+	Dry Weight	mg/kg		<10	1430	2160	10
% C50+		%		0.0	0.5	0.4	
Silica Gel Cleanup							
Silica Gel Cleanup				Done	Done	Done	
Soil % Moisture							
Moisture	Soil % Moisture	%		4.75	1.46	5.96	

			NWL Number	332075-4	332075-8	332075-10	
			Sample Description	WL-1004 / 30-40	WL-1007 / 60-80	WL-1008 / 30	
			Matrix	Soil - general	Soil - general	Soil - general	
Analyte		**Units**		**Results**	**Results**	**Results**	**Detection Limit**
Water Soluble Parameters							
Hexavalent Chromium	Water Soluble	mg/kg		<0.1	<0.1	<0.1	0.1

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Report to: Earth Tech Canada Inc.
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Edmonton, AB, Canada
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Attn: Environmental Group
Sampled By:
Company:

Project ID:
Name: Ekalugad
Location:
LSD:
P.O.:
Acct. Code:

NWL Lot ID: 332075
Control Number:
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	NWL Number	332075-5	332075-9	332075-10	
	Sample Description	WL-1005 / 0-30	WL-1008 / 0	WL-1008 / 30	
	Matrix	Soil - general	Soil - general	Soil - general	
Analyte		**Units**	**Results**	**Results**	**Results**	**Detection Limit**
Polychlorinated Biphenyls - Soil						
Aroclor 1016	Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1221	Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1232	Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1242	Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1248	Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1254	Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1260	Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1262	Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1268	Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Total PCBs	Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Polychlorinated Biphenyls - Soil - Surrogate						
Decachlorobiphenyl	Surrogate	%	83	63	74	50-150

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	NWL Number	332075-7	332075-8	332075-9	
	Sample Description	WL-1006 / 40-60	WL-1007 / 60-80	WL-1008 / 0	
	Matrix	Soil - general	Soil - general	Soil - general	
Analyte	**Units**	**Results**	**Results**	**Results**	**Detection Limit**
Mono-Aromatic Hydrocarbons - Soil					
Extraction Date		16-Sep-04	16-Sep-04	16-Sep-04	
Benzene Dry Weight	mg/kg	<0.02	<0.02	<0.02	0.02
Toluene Dry Weight	mg/kg	<0.02	<0.02	<0.02	0.02
Ethylbenzene Dry Weight	mg/kg	<0.02	<0.02	<0.02	0.02
Total Xylenes (m,p,o) Dry Weight	mg/kg	<0.02	<0.02	<0.02	0.02
Volatile Petroleum Hydrocarbons - Soil					
Extraction Date		16-Sep-04	16-Sep-04	16-Sep-04	
F1 C6-C10 Dry Weight	mg/kg	36	<1	2	1
F1-BTEX Dry Weight	mg/kg	36	<1	2	1
Extractable Petroleum Hydrocarbons - Soxhlet					
Extraction Date		16-Sep-04	16-Sep-04	16-Sep-04	
F2 C10-C16 Dry Weight	mg/kg	881	<10	<10	10
F3 C16-C34 Dry Weight	mg/kg	838	116	13700	10
F4 C34-C50 Dry Weight	mg/kg	288	52	8210	10
F4HTGC C34-C50+ Dry Weight	mg/kg	314	108	11500	10
% C50+	%	1.3	25.0	13.0	
Silica Gel Cleanup					
Silica Gel Cleanup		Done	Done	Done	
Soil % Moisture					
Moisture Soil % Moisture	%	4.88	19.80	2.48	

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	NWL Number	332075-11	332075-12	332075-13	
	Sample Description	BAT-1008 / 0-25	BAT-1009 / 10-30	BAT-1010 / 30-50	
	Matrix	Soil - general	Soil - general	Soil - general	
Analyte	**Units**	**Results**	**Results**	**Results**	**Detection Limit**
Mono-Aromatic Hydrocarbons - Soil					
Extraction Date		16-Sep-04	16-Sep-04	16-Sep-04	
Benzene Dry Weight	mg/kg	<0.02	<0.02	<0.02	0.02
Toluene Dry Weight	mg/kg	<0.02	<0.02	<0.02	0.02
Ethylbenzene Dry Weight	mg/kg	<0.02	<0.02	<0.02	0.02
Total Xylenes (m,p,o) Dry Weight	mg/kg	<0.02	<0.02	<0.02	0.02
Volatile Petroleum Hydrocarbons - Soil					
Extraction Date		16-Sep-04	16-Sep-04	16-Sep-04	
F1 C6-C10 Dry Weight	mg/kg	<1	<1	9	1
[illegible]RTEX Dry Weight	mg/kg	<1	<1	9	1
Extractable Petroleum Hydrocarbons - Soxhlet					
Extraction Date		16-Sep-04	16-Sep-04	16-Sep-04	
F2 C10-C16 Dry Weight	mg/kg	<10	<10	2280	10
F3 C16-C34 Dry Weight	mg/kg	<10	21	86	10
F4 C34-C50 Dry Weight	mg/kg	<10	<10	14	10
F4HTGC C34-C50+ Dry Weight	mg/kg	<10	<10	21	10
% C50+	%	0.0	0.0	0.0	
Silica Gel Cleanup					
Silica Gel Cleanup		Done	Done	Done	
Soil % Moisture					
Moisture Soil % Moisture	%	14.10	11.60	7.27	

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	NWL Number	332075-12	332075-13	332075-73	
	Sample Description	BAT-1009 / 10-30	BAT-1010 / 30-50	US-1056 / Surf	
	Matrix	Soil - general	Soil - general	Soil - general	
Analyte	**Units**	**Results**	**Results**	**Results**	**Detection Limit**
Polynuclear Aromatic Hydrocarbons - Soil					
Naphthalene Dry Weight	mg/kg	<0.05	<0.05	<0.05	0.05
Acenaphthylene Dry Weight	mg/kg	<0.05	<0.05	<0.05	0.05
Acenaphthene Dry Weight	mg/kg	<0.05	<0.05	<0.05	0.05
Fluorene Dry Weight	mg/kg	<0.05	<0.05	<0.05	0.05
Phenanthrene Dry Weight	mg/kg	<0.05	<0.05	<0.05	0.05
Anthracene Dry Weight	mg/kg	<0.05	<0.05	<0.05	0.05
Fluoranthene Dry Weight	mg/kg	<0.05	<0.05	<0.05	0.05
Pyrene Dry Weight	mg/kg	<0.05	<0.05	<0.05	0.05
[illegible]o(a)anthracene Dry Weight	mg/kg	<0.05	<0.05	<0.05	0.05
Chrysene Dry Weight	mg/kg	<0.05	<0.05	<0.05	0.05
Benzo(b)fluoranthene Dry Weight	mg/kg	<0.05	<0.05	<0.05	0.05
Benzo(j)fluoranthene Dry Weight	mg/kg	<0.05	<0.05	<0.05	0.05
Benzo(k)fluoranthene Dry Weight	mg/kg	<0.05	<0.05	<0.05	0.05
Benzo(a)pyrene Dry Weight	mg/kg	<0.05	<0.05	<0.05	0.05
Indeno(1,2,3-c,d)pyrene Dry Weight	mg/kg	<0.05	<0.05	<0.05	0.05
Dibenzo(a,h)anthracene Dry Weight	mg/kg	<0.05	<0.05	<0.05	0.05
Benzo(g,h,i)perylene Dry Weight	mg/kg	<0.05	<0.05	<0.05	0.05
CB(a)P Carcinogenic Potency Equivalent	mg/kg	<0.05	<0.05	<0.05	0.05
PAH - Soil - Surrogate Recovery					
Nitrobenzene-d5 PAH - Surrogate	%	78	>130	102	23-130
2-Fluorobiphenyl PAH - Surrogate	%	80	98	62	30-130
p-Terphenyl-d14 PAH - Surrogate	%	48	94	80	18-137

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	NWL Number	332075-14	332075-15	332075-16	
	Sample Description	BAT-1010 / 50	BAT-1010 / 150	BAT-1011 / 90-120	
	Matrix	Soil - general	Soil - general	Soil - general	
Analyte	**Units**	**Results**	**Results**	**Results**	**Detection Limit**
Mono-Aromatic Hydrocarbons - Soil					
Extraction Date		16-Sep-04	16-Sep-04	16-Sep-04	
Benzene Dry Weight	mg/kg	<0.02	<0.02	<0.02	0.02
Toluene Dry Weight	mg/kg	<0.02	<0.02	<0.02	0.02
Ethylbenzene Dry Weight	mg/kg	<0.02	<0.02	<0.02	0.02
Total Xylenes (m,p,o) Dry Weight	mg/kg	<0.02	<0.02	<0.02	0.02
Volatile Petroleum Hydrocarbons - Soil					
Extraction Date		16-Sep-04	16-Sep-04	16-Sep-04	
F1 C6-C10 Dry Weight	mg/kg	37	37	<1	1
F[illegible]TEX Dry Weight	mg/kg	37	37	<1	1
Extractable Petroleum Hydrocarbons - Soxhlet					
Extraction Date		16-Sep-04	16-Sep-04	16-Sep-04	
F2 C10-C16 Dry Weight	mg/kg	2140	2890	<10	10
F3 C16-C34 Dry Weight	mg/kg	59	462	<10	10
F4 C34-C50 Dry Weight	mg/kg	<10	23	<10	10
F4HTGC C34-C50+ Dry Weight	mg/kg	12	39	<10	10
% C50+	%	0.0	0.5	0.0	
Silica Gel Cleanup					
Silica Gel Cleanup		Done	Done	Done	
Soil % Moisture					
Moisture Soil % Moisture	%	13.40	13.00	7.35	

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			NWL Number	332075-17	332075-18	332075-19	
			Sample Description	BAT-1012 / 80-100	BAT-1013 / 150	BAT-1014 / 120-150	
			Matrix	Soil - general	Soil - general	Soil - general	
Analyte		**Units**		**Results**	**Results**	**Results**	**Detection Limit**
Mono-Aromatic Hydrocarbons - Soil							
Extraction Date				16-Sep-04	16-Sep-04	16-Sep-04	
Benzene	Dry Weight	mg/kg		<0.02	<0.02	<0.02	0.02
Toluene	Dry Weight	mg/kg		<0.02	<0.02	<0.02	0.02
Ethylbenzene	Dry Weight	mg/kg		0.28	0.08	<0.02	0.02
Total Xylenes (m,p,o)	Dry Weight	mg/kg		4.31	1.02	<0.02	0.02
Volatile Petroleum Hydrocarbons - Soil							
Extraction Date				16-Sep-04	16-Sep-04	16-Sep-04	
F1 C6-C10	Dry Weight	mg/kg		179	87	<1	1
[illegible]BTEX	Dry Weight	mg/kg		174	86	<1	1
Extractable Petroleum Hydrocarbons - Soxhlet							
Extraction Date				16-Sep-04	16-Sep-04	16-Sep-04	
F2 C10-C16	Dry Weight	mg/kg		2540	651	<10	10
F3 C16-C34	Dry Weight	mg/kg		154	90	<10	10
F4 C34-C50	Dry Weight	mg/kg		<10	<10	<10	10
F4HTGC C34-C50+	Dry Weight	mg/kg		<10	<10	<10	10
% C50+		%		0.0	0.0	0.0	
Silica Gel Cleanup							
Silica Gel Cleanup				Done	Done	Done	
Soil % Moisture							
Moisture	Soil % Moisture	%		9.11	9.41	12.10	

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			NWL Number	332075-20	332075-21	332075-32	
			Sample Description	BAT-1015 / 100-120	BAT-1016 / 60-80	US-1026	
			Matrix	Soil - general	Soil - general	Soil - general	
Analyte		**Units**		**Results**	**Results**	**Results**	**Detection Limit**
Mono-Aromatic Hydrocarbons - Soil							
Extraction Date				16-Sep-04	16-Sep-04	16-Sep-04	
Benzene	Dry Weight	mg/kg		<0.02	<0.02	<0.02	0.02
Toluene	Dry Weight	mg/kg		<0.02	<0.02	<0.02	0.02
Ethylbenzene	Dry Weight	mg/kg		<0.02	<0.02	<0.02	0.02
Total Xylenes (m,p,o)	Dry Weight	mg/kg		<0.02	<0.02	<0.02	0.02
Volatile Petroleum Hydrocarbons - Soil							
Extraction Date				16-Sep-04	16-Sep-04	16-Sep-04	
F1 C6-C10	Dry Weight	mg/kg		<1	<1	<1	1
F1-BTEX	Dry Weight	mg/kg		<1	<1	<1	1
Extractable Petroleum Hydrocarbons - Soxhlet							
Extraction Date				16-Sep-04	16-Sep-04	16-Sep-04	
F2 C10-C16	Dry Weight	mg/kg		<10	<10	11	10
F3 C16-C34	Dry Weight	mg/kg		<10	<10	128	10
F4 C34-C50	Dry Weight	mg/kg		<10	<10	28	10
F4HTGC C34-C50+	Dry Weight	mg/kg		<10	<10	32	10
% C50+		%		0.0	0.0	0.0	
Silica Gel Cleanup							
Silica Gel Cleanup				Done	Done	Done	
Soil % Moisture							
Moisture	Soil % Moisture	%		14.70	12.60	14.10	

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	NWL Number	332075-22	332075-23	332075-24	
	Sample Description	BA-1017 / 40-60	BA-1018 / 60-80	BA-1019 / 40	
	Matrix	Soil - general	Soil - general	Soil - general	
Analyte		**Units**	**Results**	**Results**	**Results**	**Detection Limit**
Hot Water Soluble						
Boron	Water Soluble	mg/kg	0.5	0.5	0.5	0.1
Metals Strong Acid Extractable						
Mercury	Strong Acid Extractable	ug/g	<0.01	<0.01	<0.01	0.01
Antimony	Strong Acid Extractable	ug/g	3.0	2.6	2.5	0.4
Arsenic	Strong Acid Extractable	ug/g	3.9	3.7	3.5	0.5
Barium	Strong Acid Extractable	ug/g	107	110	106	0.05
Beryllium	Strong Acid Extractable	ug/g	0.44	0.44	0.40	0.03
Cadmium	Strong Acid Extractable	ug/g	0.07	0.07	0.06	0.03
[illegible]mium	Strong Acid Extractable	ug/g	59.5	60.5	58.4	0.05
[illegible]balt	Strong Acid Extractable	ug/g	7.43	7.69	7.70	0.04
Copper	Strong Acid Extractable	ug/g	22.8	24.9	22.9	0.05
Lead	Strong Acid Extractable	ug/g	8.6	8.4	10.9	0.1
Molybdenum	Strong Acid Extractable	ug/g	0.8	0.8	1.1	0.1
Nickel	Strong Acid Extractable	ug/g	25.6	27.2	25.6	0.05
Selenium	Strong Acid Extractable	ug/g	<0.2	<0.2	<0.2	0.3
Silver	Strong Acid Extractable	ug/g	<0.05	<0.05	<0.05	0.05
Thallium	Strong Acid Extractable	ug/g	<0.3	<0.3	<0.3	0.4
Tin	Strong Acid Extractable	ug/g	2.2	2.0	2.2	0.3
Vanadium	Strong Acid Extractable	ug/g	53.7	54.5	52.0	0.05
Zinc	Strong Acid Extractable	ug/g	60.1	61.0	58.6	0.05
Water Soluble Parameters						
Hexavalent Chromium	Water Soluble	mg/kg	<0.1	0.2	0.1	0.1

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	NWL Number	332075-25	332075-26	332075-27	
	Sample Description	BA-1019 / 100	BA-1020 / 25-40	BA-1020 / 50-60	
	Matrix	Soil - general	Soil - general	Soil - general	
Analyte		**Units**	**Results**	**Results**	**Results**	**Detection Limit**
Hot Water Soluble						
Boron	Water Soluble	mg/kg	1.3	0.8	0.6	0.1
Metals Strong Acid Extractable						
Mercury	Strong Acid Extractable	ug/g	<0.01	<0.01	<0.01	0.01
Antimony	Strong Acid Extractable	ug/g	3.3	3.5	3.3	0.4
Arsenic	Strong Acid Extractable	ug/g	3.8	4.3	4.2	0.5
Barium	Strong Acid Extractable	ug/g	137	141	134	0.05
Beryllium	Strong Acid Extractable	ug/g	0.54	0.58	0.55	0.03
Cadmium	Strong Acid Extractable	ug/g	0.08	0.08	0.10	0.03
[illegible]mium	Strong Acid Extractable	ug/g	76.4	82.8	76.2	0.05
[illegible]alt	Strong Acid Extractable	ug/g	9.19	9.77	9.32	0.04
Copper	Strong Acid Extractable	ug/g	29.5	32.0	30.4	0.05
Lead	Strong Acid Extractable	ug/g	10.2	10.8	10.4	0.1
Molybdenum	Strong Acid Extractable	ug/g	0.9	1.1	1.0	0.1
Nickel	Strong Acid Extractable	ug/g	32.6	35.2	32.8	0.05
Selenium	Strong Acid Extractable	ug/g	<0.2	<0.2	<0.2	0.3
Silver	Strong Acid Extractable	ug/g	<0.05	<0.05	<0.05	0.05
Thallium	Strong Acid Extractable	ug/g	<0.3	<0.3	<0.3	0.4
Tin	Strong Acid Extractable	ug/g	2.2	2.6	2.7	0.3
Vanadium	Strong Acid Extractable	ug/g	68.2	72.2	69.0	0.05
Zinc	Strong Acid Extractable	ug/g	78.3	83.3	78.8	0.05
Water Soluble Parameters						
Hexavalent Chromium	Water Soluble	mg/kg	0.2	<0.1	0.1	0.1

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			NWL Number	332075-28	332075-29	332075-30	
			Sample Description	BA-1021 / 50-70	BA-1023 / 40-60	BA-1024 / 10-30	
			Matrix	Soil - general	Soil - general	Soil - general	
Analyte		**Units**		**Results**	**Results**	**Results**	**Detection Limit**
Hot Water Soluble							
Boron	Water Soluble	mg/kg		0.5	0.1	<0.1	0.1
Metals Strong Acid Extractable							
Mercury	Strong Acid Extractable	ug/g		<0.01	<0.01	<0.01	0.01
Antimony	Strong Acid Extractable	ug/g		2.8	1.1	0.8	0.4
Arsenic	Strong Acid Extractable	ug/g		4.2	2.5	1.4	0.5
Barium	Strong Acid Extractable	ug/g		120	50.1	24.5	0.05
Beryllium	Strong Acid Extractable	ug/g		0.48	0.21	0.15	0.03
Cadmium	Strong Acid Extractable	ug/g		0.06	0.06	0.05	0.03
Chromium	Strong Acid Extractable	ug/g		66.4	23.8	12.8	0.05
Cobalt	Strong Acid Extractable	ug/g		8.28	3.76	2.57	0.04
Copper	Strong Acid Extractable	ug/g		26.9	13.3	8.92	0.05
Lead	Strong Acid Extractable	ug/g		9.3	4.6	3.5	0.1
Molybdenum	Strong Acid Extractable	ug/g		0.8	0.3	0.3	0.1
Nickel	Strong Acid Extractable	ug/g		29.1	13.8	9.43	0.05
Selenium	Strong Acid Extractable	ug/g		<0.2	<0.2	<0.2	0.3
Silver	Strong Acid Extractable	ug/g		<0.05	<0.05	<0.05	0.05
Thallium	Strong Acid Extractable	ug/g		<0.3	<0.3	<0.3	0.4
Tin	Strong Acid Extractable	ug/g		2.3	1.9	2.0	0.3
Vanadium	Strong Acid Extractable	ug/g		59.5	20.7	11.3	0.05
Zinc	Strong Acid Extractable	ug/g		68.5	25.7	15.4	0.05
Water Soluble Parameters							
Hexavalent Chromium	Water Soluble	mg/kg		0.2	<0.1	<0.1	0.1

			NWL Number	332075-31			
			Sample Description	BA-1025 / 0-30			
			Matrix	Soil - general			
Analyte		**Units**		**Results**	**Results**	**Results**	**Detection Limit**
Water Soluble Parameters							
Hexavalent Chromium	Water Soluble	mg/kg		<0.1			0.1

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Analytical Report

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Attn: Environmental Group
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Company:

Project ID:
Name: Ekalugad
Location:
LSD:
P.O.:
Acct. Code:

NWL Lot ID: 332075
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	NWL Number	332075-31	332075-32	332075-33	
	Sample Description	BA-1025 / 0-30	US-1026	US-1027	
	Matrix	Soil - general	Soil - general	Soil - general	
Analyte	**Units**	**Results**	**Results**	**Results**	**Detection Limit**
Hot Water Soluble					
Boron Water Soluble	mg/kg	0.2	<0.1	0.1	0.1
Metals Strong Acid Extractable					
Mercury Strong Acid Extractable	ug/g	<0.01	<0.01	0.01	0.01
Antimony Strong Acid Extractable	ug/g	2.8	1.2	1.3	0.4
Arsenic Strong Acid Extractable	ug/g	3.6	1.1	2.1	0.5
Barium Strong Acid Extractable	ug/g	122	57.6	50.1	0.05
Beryllium Strong Acid Extractable	ug/g	0.46	0.20	0.33	0.03
Cadmium Strong Acid Extractable	ug/g	0.09	0.10	0.06	0.03
Chromium Strong Acid Extractable	ug/g	65.7	28.2	33.6	0.05
Cobalt Strong Acid Extractable	ug/g	8.50	3.59	4.86	0.04
Copper Strong Acid Extractable	ug/g	28.3	13.4	23.0	0.05
Lead Strong Acid Extractable	ug/g	9.6	5.6	7.1	0.1
Molybdenum Strong Acid Extractable	ug/g	0.4	0.5	1.0	0.1
Nickel Strong Acid Extractable	ug/g	30.3	13.2	18.4	0.05
Selenium Strong Acid Extractable	ug/g	<0.2	<0.2	<0.2	0.3
Silver Strong Acid Extractable	ug/g	<0.05	<0.05	<0.05	0.05
Thallium Strong Acid Extractable	ug/g	<0.3	<0.3	<0.3	0.4
Tin Strong Acid Extractable	ug/g	2.2	1.8	2.0	0.3
Vanadium Strong Acid Extractable	ug/g	57.9	24.9	29.2	0.05
Zinc Strong Acid Extractable	ug/g	70.1	43.7	42.6	0.05

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	NWL Number	332075-32	332075-33	332075-34	
	Sample Description	US-1026	US-1027	US-1028	
	Matrix	Soil - general	Soil - general	Soil - general	
Analyte	**Units**	**Results**	**Results**	**Results**	**Detection Limit**
Polychlorinated Biphenyls - Soil					
Aroclor 1016 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1221 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1232 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1242 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1248 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1254 Dry Weight	mg/kg	<0.1	<0.1	2.0	0.1
Aroclor 1260 Dry Weight	mg/kg	<0.1	<0.1	0.2	0.1
Aroclor 1262 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1268 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Total PCBs Dry Weight	mg/kg	<0.1	<0.1	2.2	0.1
Polychlorinated Biphenyls - Soil - Surrogate					
Decachlorobiphenyl Surrogate	%	79	65	92	50-150

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			NWL Number	332075-34	332075-35	332075-36	
			Sample Description	US-1028	US-1029	US-1030	
			Matrix	Soil - general	Soil - general	Soil - general	
Analyte		**Units**		**Results**	**Results**	**Results**	**Detection Limit**
Hot Water Soluble							
Boron	Water Soluble	mg/kg		0.5	<0.1	<0.1	0.1
Metals Strong Acid Extractable							
Mercury	Strong Acid Extractable	ug/g		0.04	<0.01	0.05	0.01
Antimony	Strong Acid Extractable	ug/g		1.7	1.4	1.3	0.4
Arsenic	Strong Acid Extractable	ug/g		1.3	1.9	1.3	0.5
Barium	Strong Acid Extractable	ug/g		40.6	42.2	36.0	0.05
Beryllium	Strong Acid Extractable	ug/g		0.25	0.23	0.23	0.03
Cadmium	Strong Acid Extractable	ug/g		0.46	0.05	0.08	0.03
Chromium	Strong Acid Extractable	ug/g		27.0	28.4	22.4	0.05
Cobalt	Strong Acid Extractable	ug/g		4.36	3.86	3.14	0.04
Copper	Strong Acid Extractable	ug/g		28.8	15.6	14.0	0.05
Lead	Strong Acid Extractable	ug/g		23.1	5.5	5.6	0.1
Molybdenum	Strong Acid Extractable	ug/g		0.5	0.6	0.5	0.1
Nickel	Strong Acid Extractable	ug/g		12.4	13.0	11.4	0.05
Selenium	Strong Acid Extractable	ug/g		<0.2	<0.2	<0.2	0.3
Silver	Strong Acid Extractable	ug/g		<0.05	<0.05	<0.05	0.05
Thallium	Strong Acid Extractable	ug/g		<0.3	<0.3	<0.3	0.4
Tin	Strong Acid Extractable	ug/g		2.9	2.1	2.1	0.3
Vanadium	Strong Acid Extractable	ug/g		21.5	26.2	20.2	0.05
Zinc	Strong Acid Extractable	ug/g		67.3	32.4	35.2	0.05
Mono-Aromatic Hydrocarbons - Soil							
Extraction Date				16-Sep-04	16-Sep-04	16-Sep-04	
Benzene	Dry Weight	mg/kg		<0.02	<0.02	<0.02	0.02
Toluene	Dry Weight	mg/kg		<0.02	<0.02	<0.02	0.02
Ethylbenzene	Dry Weight	mg/kg		<0.02	<0.02	<0.02	0.02
Total Xylenes (m,p,o)	Dry Weight	mg/kg		<0.02	<0.02	<0.02	0.02
Volatile Petroleum Hydrocarbons - Soil							
Extraction Date				16-Sep-04	16-Sep-04	16-Sep-04	
F1 C6-C10	Dry Weight	mg/kg		<1	<1	<1	1
F1 -BTEX	Dry Weight	mg/kg		<1	<1	<1	1
Extractable Petroleum Hydrocarbons - Soxhlet							
Extraction Date				16-Sep-04	16-Sep-04	16-Sep-04	
F2 C10-C16	Dry Weight	mg/kg		39	14	47	10
F3 C16-C34	Dry Weight	mg/kg		1050	31	564	10
C34-C50	Dry Weight	mg/kg		226	<10	84	10
F4HTGC C34-C50+	Dry Weight	mg/kg		271	12	101	10
% C50+		%		3.3	0.0	2.5	

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			NWL Number	332075-34	332075-35	332075-36	
			Sample Description	US-1028	US-1029	US-1030	
			Matrix	Soil - general	Soil - general	Soil - general	
Analyte		**Units**		**Results**	**Results**	**Results**	**Detection Limit**
Silica Gel Cleanup							
Silica Gel Cleanup				Done	Done	Done	
Soil % Moisture							
Moisture	Soil % Moisture	%		12.50	12.10	13.30	

			NWL Number	332075-35	332075-36	332075-37	
			Sample Description	US-1029	US-1030	US-1031	
			Matrix	Soil - general	Soil - general	Soil - general	
Analyte		**Units**		**Results**	**Results**	**Results**	**Detection Limit**
Polychlorinated Biphenyls - Soil							
Aroclor 1016	Dry Weight	mg/kg		<0.1	<0.1	<0.1	0.1
Aroclor 1221	Dry Weight	mg/kg		<0.1	<0.1	<0.1	0.1
Aroclor 1232	Dry Weight	mg/kg		<0.1	<0.1	<0.1	0.1
Aroclor 1242	Dry Weight	mg/kg		<0.1	<0.1	<0.1	0.1
Aroclor 1248	Dry Weight	mg/kg		<0.1	<0.1	<0.1	0.1
Aroclor 1254	Dry Weight	mg/kg		<0.1	0.5	<0.1	0.1
Aroclor 1260	Dry Weight	mg/kg		<0.1	<0.1	<0.1	0.1
Aroclor 1262	Dry Weight	mg/kg		<0.1	<0.1	<0.1	0.1
Aroclor 1268	Dry Weight	mg/kg		<0.1	<0.1	<0.1	0.1
Total PCBs	Dry Weight	mg/kg		<0.1	0.5	<0.1	0.1
Polychlorinated Biphenyls - Soil - Surrogate							
Decachlorobiphenyl	Surrogate	%		86	88	84	50-150

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	NWL Number	332075-37	332075-38	332075-39	
	Sample Description	US-1031	US-1032	US-1033	
	Matrix	Soil - general	Soil - general	Soil - general	
Analyte	**Units**	**Results**	**Results**	**Results**	**Detection Limit**
Hot Water Soluble					
Boron Water Soluble	mg/kg	<0.1	<0.1	<0.1	0.1
Metals Strong Acid Extractable					
Mercury Strong Acid Extractable	ug/g	0.01	<0.01	0.02	0.01
Antimony Strong Acid Extractable	ug/g	1.3	1.4	1.3	0.4
Arsenic Strong Acid Extractable	ug/g	1.8	1.0	1.9	0.5
Barium Strong Acid Extractable	ug/g	39.6	36.8	42.8	0.05
Beryllium Strong Acid Extractable	ug/g	0.26	0.15	0.27	0.03
Cadmium Strong Acid Extractable	ug/g	0.05	0.05	0.07	0.03
Chromium Strong Acid Extractable	ug/g	28.3	23.8	30.7	0.05
Cobalt Strong Acid Extractable	ug/g	4.04	3.02	3.86	0.04
Copper Strong Acid Extractable	ug/g	17.6	15.0	17.9	0.05
Lead Strong Acid Extractable	ug/g	6.0	4.0	6.7	0.1
Molybdenum Strong Acid Extractable	ug/g	0.6	0.5	0.7	0.1
Nickel Strong Acid Extractable	ug/g	14.1	10.8	14.2	0.05
Selenium Strong Acid Extractable	ug/g	<0.2	<0.2	<0.2	0.3
Silver Strong Acid Extractable	ug/g	<0.05	<0.05	<0.05	0.05
Thallium Strong Acid Extractable	ug/g	<0.3	<0.3	<0.3	0.4
Tin Strong Acid Extractable	ug/g	1.8	2.0	1.9	0.3
Vanadium Strong Acid Extractable	ug/g	26.6	21.8	27.6	0.05
Zinc Strong Acid Extractable	ug/g	33.3	28.8	36.6	0.05

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	NWL Number	332075-38	332075-39	332075-40	
	Sample Description	US-1032	US-1033	US-1034 / 35-50	
	Matrix	Soil - general	Soil - general	Soil - general	
Analyte	**Units**	**Results**	**Results**	**Results**	**Detection Limit**
Polychlorinated Biphenyls - Soil					
Aroclor 1016 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1221 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1232 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1242 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1248 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1254 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1260 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1262 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1268 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Total PCBs Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Polychlorinated Biphenyls - Soil - Surrogate					
Decachlorobiphenyl Surrogate	%	74	89	96	50-150

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	NWL Number	332075-38	332075-39	332075-45	
	Sample Description	US-1032	US-1033	US-1038	
	Matrix	Soil - general	Soil - general	Soil - general	
Analyte	**Units**	**Results**	**Results**	**Results**	**Detection Limit**
Mono-Aromatic Hydrocarbons - Soil					
Extraction Date		16-Sep-04	16-Sep-04	16-Sep-04	
Benzene Dry Weight	mg/kg	<0.02	<0.02	<0.02	0.02
Toluene Dry Weight	mg/kg	<0.02	<0.02	<0.02	0.02
Ethylbenzene Dry Weight	mg/kg	<0.02	<0.02	<0.02	0.02
Total Xylenes (m,p,o) Dry Weight	mg/kg	<0.02	<0.02	0.05	0.02
Volatile Petroleum Hydrocarbons - Soil					
Extraction Date		16-Sep-04	16-Sep-04	16-Sep-04	
F1 C6-C10 Dry Weight	mg/kg	<1	<1	58	1
F[illegible]TEX Dry Weight	mg/kg	<1	<1	58	1
Extractable Petroleum Hydrocarbons - Soxhlet					
Extraction Date		16-Sep-04	16-Sep-04	16-Sep-04	
F2 C10-C16 Dry Weight	mg/kg	<10	94	2990	10
F3 C16-C34 Dry Weight	mg/kg	11	397	1940	10
F4 C34-C50 Dry Weight	mg/kg	<10	22	366	10
F4HTGC C34-C50+ Dry Weight	mg/kg	<10	25	473	10
% C50+	%	0.0	0.0	2.0	
Silica Gel Cleanup					
Silica Gel Cleanup		Done	Done	Done	
Soil % Moisture					
Moisture Soil % Moisture	%	6.68	11.80	10.50	

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	NWL Number	332075-41	332075-42	332075-43	
	Sample Description	US-1035 / 0-15	US-1036 / 35	US-1036 / 135	
	Matrix	Soil - general	Soil - general	Soil - general	
Analyte	**Units**	**Results**	**Results**	**Results**	**Detection Limit**
Polychlorinated Biphenyls - Soil					
Aroclor 1016 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1221 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1232 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1242 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1248 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1254 Dry Weight	mg/kg	0.6	0.7	0.3	0.1
Aroclor 1260 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1262 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
lor 1268 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Total PCBs Dry Weight	mg/kg	0.6	0.7	0.3	0.1
Polychlorinated Biphenyls - Soil - Surrogate					
Decachlorobiphenyl Surrogate	%	91	107	82	50-150

	NWL Number	332075-44	332075-45	332075-46	
	Sample Description	US-1037 / 45	US-1038	US-1039 / 50	
	Matrix	Soil - general	Soil - general	Soil - general	
Analyte	**Units**	**Results**	**Results**	**Results**	**Detection Limit**
Polychlorinated Biphenyls - Soil					
Aroclor 1016 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1221 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1232 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1242 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1248 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1254 Dry Weight	mg/kg	0.1	0.5	<0.1	0.1
Aroclor 1260 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1262 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1268 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Total PCBs Dry Weight	mg/kg	0.1	0.5	<0.1	0.1
Polychlorinated Biphenyls - Soil - Surrogate					
Decachlorobiphenyl Surrogate	%	99	85	90	50-150

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			NWL Number	332075-46	332075-47	332075-48	
			Sample Description	US-1039 / 50	US-1040	US-1041 / 0	
			Matrix	Soil - general	Soil - general	Soil - general	
Analyte		**Units**		**Results**	**Results**	**Results**	**Detection Limit**
Mono-Aromatic Hydrocarbons - Soil							
Extraction Date				16-Sep-04	16-Sep-04	16-Sep-04	
Benzene	Dry Weight	mg/kg		<0.02	<0.02	<0.02	0.02
Toluene	Dry Weight	mg/kg		<0.02	<0.02	<0.02	0.02
Ethylbenzene	Dry Weight	mg/kg		<0.02	0.02	<0.02	0.02
Total Xylenes (m,p,o)	Dry Weight	mg/kg		<0.02	0.23	0.03	0.02
Volatile Petroleum Hydrocarbons - Soil							
Extraction Date				16-Sep-04	16-Sep-04	16-Sep-04	
F1 C6-C10	Dry Weight	mg/kg		<1	103	47	1
[illegible]RTEX	Dry Weight	mg/kg		<1	103	47	1
Extractable Petroleum Hydrocarbons - Soxhlet							
Extraction Date				16-Sep-04	16-Sep-04	16-Sep-04	
F2 C10-C16	Dry Weight	mg/kg		180	8050	2350	10
F3 C16-C34	Dry Weight	mg/kg		346	936	466	10
F4 C34-C50	Dry Weight	mg/kg		47	17	66	10
F4HTGC C34-C50+	Dry Weight	mg/kg		52	17	79	10
% C50+		%		0.0	0.0	0.5	
Silica Gel Cleanup							
Silica Gel Cleanup				Done	Done	Done	
Soil % Moisture							
Moisture	Soil % Moisture	%		11.70	12.40	6.97	

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Analytical Report

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Report to: Earth Tech Canada Inc.
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Edmonton, AB, Canada
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Attn: Environmental Group
Sampled By:
Company:

Project ID:
Name: Ekalugad
Location:
LSD:
P.O.:
Acct. Code:

NWL Lot ID: 332075
Control Number:
Date Received: Sep 13, 2004
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	NWL Number	332075-46	332075-47	332075-49	
	Sample Description	US-1039 / 50	US-1040	US-1041 / Surf	
	Matrix	Soil - general	Soil - general	Soil - general	
Analyte	**Units**	**Results**	**Results**	**Results**	**Detection Limit**
Hot Water Soluble					
Boron Water Soluble	mg/kg	0.1	0.2	<0.1	0.1
Metals Strong Acid Extractable					
Mercury Strong Acid Extractable	ug/g	<0.01	0.04	0.10	0.01
Antimony Strong Acid Extractable	ug/g	1.0	2.9	1.5	0.4
Arsenic Strong Acid Extractable	ug/g	<0.5	1.0	<0.5	0.5
Barium Strong Acid Extractable	ug/g	16.0	34.4	16.7	0.05
Beryllium Strong Acid Extractable	ug/g	0.13	0.34	0.25	0.03
Cadmium Strong Acid Extractable	ug/g	0.06	0.42	0.11	0.03
Calcium Strong Acid Extractable	ug/g	11.9	23.2	15.3	0.05
Cobalt Strong Acid Extractable	ug/g	1.97	3.63	2.83	0.04
Copper Strong Acid Extractable	ug/g	8.29	14.1	10.2	0.05
Lead Strong Acid Extractable	ug/g	3.0	10.9	10.3	0.1
Molybdenum Strong Acid Extractable	ug/g	0.2	0.4	0.3	0.1
Nickel Strong Acid Extractable	ug/g	7.48	12.2	8.17	0.05
Selenium Strong Acid Extractable	ug/g	<0.2	<0.2	<0.2	0.3
Silver Strong Acid Extractable	ug/g	<0.05	<0.05	<0.05	0.05
Thallium Strong Acid Extractable	ug/g	<0.3	<0.3	<0.3	0.4
Tin Strong Acid Extractable	ug/g	2.0	2.1	2.1	0.3
Vanadium Strong Acid Extractable	ug/g	9.60	19.1	8.46	0.05
Zinc Strong Acid Extractable	ug/g	13.6	49.2	16.3	0.05

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	NWL Number	332075-47	332075-48	332075-50	
	Sample Description	US-1040	US-1041 / 0	US-1042 / Surf	
	Matrix	Soil - general	Soil - general	Soil - general	
Analyte	**Units**	**Results**	**Results**	**Results**	**Detection Limit**
Polychlorinated Biphenyls - Soil					
Aroclor 1016 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1221 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1232 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1242 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1248 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1254 Dry Weight	mg/kg	0.4	0.2	<0.1	0.1
Aroclor 1260 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1262 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1268 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Total PCBs Dry Weight	mg/kg	0.4	0.2	<0.1	0.1
Polychlorinated Biphenyls - Soil - Surrogate					
Decachlorobiphenyl Surrogate	%	84	96	77	50-150

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	NWL Number	332075-50	332075-51	332075-54	
	Sample Description	US-1042 / Surf	US-1043 / Surf	US-1045 / 30-50	
	Matrix	Soil - general	Soil - general	Soil - general	
Analyte	**Units**	**Results**	**Results**	**Results**	**Detection Limit**
Mono-Aromatic Hydrocarbons - Soil					
Extraction Date		16-Sep-04	16-Sep-04	16-Sep-04	
Benzene Dry Weight	mg/kg	<0.02	<0.02	<0.02	0.02
Toluene Dry Weight	mg/kg	<0.02	<0.02	<0.02	0.02
Ethylbenzene Dry Weight	mg/kg	<0.02	<0.02	<0.02	0.02
Total Xylenes (m,p,o) Dry Weight	mg/kg	0.04	<0.02	<0.02	0.02
Volatile Petroleum Hydrocarbons - Soil					
Extraction Date		16-Sep-04	16-Sep-04	16-Sep-04	
F1 C6-C10 Dry Weight	mg/kg	<1	<1	<1	1
[illegible]TEX Dry Weight	mg/kg	<1	<1	<1	1
Extractable Petroleum Hydrocarbons - Soxhlet					
Extraction Date		16-Sep-04	16-Sep-04	16-Sep-04	
F2 C10-C16 Dry Weight	mg/kg	16	<10	<10	10
F3 C16-C34 Dry Weight	mg/kg	84	33	259	10
F4 C34-C50 Dry Weight	mg/kg	17	<10	36	10
F4HTGC C34-C50+ Dry Weight	mg/kg	20	11	40	10
% C50+	%	0.0	0.0	0.0	
Silica Gel Cleanup					
Silica Gel Cleanup		Done	Done	Done	
Soil % Moisture					
Moisture Soil % Moisture	%	12.30	11.00	7.44	

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	NWL Number	332075-50	332075-52	332075-53	
	Sample Description	US-1042 / Surf	US-1044 / Surf	US-1044 / 20-30	
	Matrix	Soil - general	Soil - general	Soil - general	
Analyte	**Units**	**Results**	**Results**	**Results**	**Detection Limit**
Hot Water Soluble					
Boron Water Soluble	mg/kg	<0.1	<0.1	<0.1	0.1
Metals Strong Acid Extractable					
Mercury Strong Acid Extractable	ug/g	0.01	0.01	0.02	0.01
Antimony Strong Acid Extractable	ug/g	1.1	1.4	1.5	0.4
Arsenic Strong Acid Extractable	ug/g	1.2	1.8	1.6	0.5
Barium Strong Acid Extractable	ug/g	32.0	60.3	56.2	0.05
Beryllium Strong Acid Extractable	ug/g	0.18	0.28	0.23	0.03
Cadmium Strong Acid Extractable	ug/g	0.06	0.06	0.07	0.03
Chromium Strong Acid Extractable	ug/g	21.3	33.7	30.5	0.05
Cobalt Strong Acid Extractable	ug/g	2.51	4.50	4.00	0.04
Copper Strong Acid Extractable	ug/g	9.39	15.5	13.0	0.05
Lead Strong Acid Extractable	ug/g	5.5	7.0	5.0	0.1
Molybdenum Strong Acid Extractable	ug/g	0.3	0.6	0.6	0.1
Nickel Strong Acid Extractable	ug/g	9.06	15.0	13.6	0.05
Selenium Strong Acid Extractable	ug/g	<0.2	<0.2	<0.2	0.3
Silver Strong Acid Extractable	ug/g	<0.05	<0.05	<0.05	0.05
Thallium Strong Acid Extractable	ug/g	<0.3	<0.3	<0.3	0.4
Tin Strong Acid Extractable	ug/g	2.2	2.0	2.1	0.3
Vanadium Strong Acid Extractable	ug/g	19.2	31.0	28.4	0.05
Zinc Strong Acid Extractable	ug/g	25.3	38.7	33.6	0.05

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	NWL Number	332075-51	332075-57	332075-58	
	Sample Description	US-1043 / Surf	US-1046 / 25-35	US-1047 / 0	
	Matrix	Soil - general	Soil - general	Soil - general	
Analyte	**Units**	**Results**	**Results**	**Results**	**Detection Limit**
Polychlorinated Biphenyls - Soil					
Aroclor 1016 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1221 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1232 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1242 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1248 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1254 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1260 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1262 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1268 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Total PCBs Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Polychlorinated Biphenyls - Soil - Surrogate					
Decachlorobiphenyl Surrogate	%	84	79	79	50-150

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	NWL Number	332075-57	332075-58	332075-60	
	Sample Description	US-1046 / 25-35	US-1047 / 0	US-1048 / 20-30	
	Matrix	Soil - general	Soil - general	Soil - general	
Analyte	**Units**	**Results**	**Results**	**Results**	**Detection Limit**
Mono-Aromatic Hydrocarbons - Soil					
Extraction Date		16-Sep-04	16-Sep-04	16-Sep-04	
Benzene Dry Weight	mg/kg	<0.02	<0.02	<0.02	0.02
Toluene Dry Weight	mg/kg	<0.02	<0.02	<0.02	0.02
Ethylbenzene Dry Weight	mg/kg	<0.02	<0.02	<0.02	0.02
Total Xylenes (m,p,o) Dry Weight	mg/kg	<0.02	<0.02	0.07	0.02
Volatile Petroleum Hydrocarbons - Soil					
Extraction Date		16-Sep-04	16-Sep-04	16-Sep-04	
F1 C6-C10 Dry Weight	mg/kg	<1	<1	113	1
F[illegible]TEX Dry Weight	mg/kg	<1	<1	113	1
Extractable Petroleum Hydrocarbons - Soxhlet					
Extraction Date		16-Sep-04	16-Sep-04	16-Sep-04	
F2 C10-C16 Dry Weight	mg/kg	136	<10	1060	10
F3 C16-C34 Dry Weight	mg/kg	151	11	138	10
F4 C34-C50 Dry Weight	mg/kg	27	<10	16	10
F4HTGC C34-C50+ Dry Weight	mg/kg	31	<10	21	10
% C50+	%	0.0	0.0	0.0	
Silica Gel Cleanup					
Silica Gel Cleanup		Done	Done	Done	
Soil % Moisture					
Moisture Soil % Moisture	%	10.10	10.70	10.70	

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NWL Lot ID: 332075
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	NWL Number	332075-58	332075-60	332075-64	
	Sample Description	US-1047 / 0	US-1048 / 20-30	US-1050 / Surf	
	Matrix	Soil - general	Soil - general	Soil - general	
Analyte	**Units**	**Results**	**Results**	**Results**	**Detection Limit**
Hot Water Soluble					
Boron Water Soluble	mg/kg	<0.1	<0.1	0.1	0.1
Metals Strong Acid Extractable					
Mercury Strong Acid Extractable	ug/g	<0.01	<0.01	<0.01	0.01
Antimony Strong Acid Extractable	ug/g	1.4	1.2	1.5	0.4
Arsenic Strong Acid Extractable	ug/g	2.2	1.1	1.0	0.5
Barium Strong Acid Extractable	ug/g	47.0	49.9	43.4	0.05
Beryllium Strong Acid Extractable	ug/g	0.27	0.22	0.16	0.03
Cadmium Strong Acid Extractable	ug/g	0.06	0.07	0.18	0.03
Chromium Strong Acid Extractable	ug/g	32.8	30.0	52.6	0.05
Cobalt Strong Acid Extractable	ug/g	4.20	4.06	6.03	0.04
Copper Strong Acid Extractable	ug/g	16.2	13.4	19.2	0.05
Lead Strong Acid Extractable	ug/g	5.8	4.9	21.4	0.1
Molybdenum Strong Acid Extractable	ug/g	0.7	0.4	0.4	0.1
Nickel Strong Acid Extractable	ug/g	14.5	12.4	24.6	0.05
Selenium Strong Acid Extractable	ug/g	<0.2	<0.2	<0.2	0.3
Silver Strong Acid Extractable	ug/g	<0.05	<0.05	<0.05	0.05
Thallium Strong Acid Extractable	ug/g	<0.3	<0.3	<0.3	0.4
Tin Strong Acid Extractable	ug/g	2.0	2.2	2.4	0.3
Vanadium Strong Acid Extractable	ug/g	29.0	27.1	31.1	0.05
Zinc Strong Acid Extractable	ug/g	38.3	35.0	47.6	0.05

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			NWL Number	332075-60	332075-61	332075-63	
			Sample Description	US-1048 / 20-30	US-1049 / 30	US-1050 / 0	
			Matrix	Soil - general	Soil - general	Soil - general	
Analyte		**Units**		**Results**	**Results**	**Results**	**Detection Limit**
Polychlorinated Biphenyls - Soil							
Aroclor 1016	Dry Weight	mg/kg		<0.1	<0.1	<0.1	0.1
Aroclor 1221	Dry Weight	mg/kg		<0.1	<0.1	<0.1	0.1
Aroclor 1232	Dry Weight	mg/kg		<0.1	<0.1	<0.1	0.1
Aroclor 1242	Dry Weight	mg/kg		<0.1	<0.1	<0.1	0.1
Aroclor 1248	Dry Weight	mg/kg		<0.1	<0.1	<0.1	0.1
Aroclor 1254	Dry Weight	mg/kg		<0.1	<0.1	0.2	0.1
Aroclor 1260	Dry Weight	mg/kg		<0.1	<0.1	<0.1	0.1
Aroclor 1262	Dry Weight	mg/kg		<0.1	<0.1	<0.1	0.1
Aroclor 1268	Dry Weight	mg/kg		<0.1	<0.1	<0.1	0.1
Total PCBs	Dry Weight	mg/kg		<0.1	<0.1	0.2	0.1
Polychlorinated Biphenyls - Soil - Surrogate							
Decachlorobiphenyl	Surrogate	%		81	79	76	50-150

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			NWL Number	332075-61	332075-63	332075-66	
			Sample Description	US-1049 / 30	US-1050 / 0	US-1051	
			Matrix	Soil - general	Soil - general	Soil - general	
Analyte		**Units**		**Results**	**Results**	**Results**	**Detection Limit**
Mono-Aromatic Hydrocarbons - Soil							
Extraction Date				16-Sep-04	16-Sep-04	16-Sep-04	
Benzene	Dry Weight	mg/kg		<0.02	<0.02	<0.02	0.02
Toluene	Dry Weight	mg/kg		<0.02	<0.02	<0.02	0.02
Ethylbenzene	Dry Weight	mg/kg		<0.02	<0.02	<0.02	0.02
Total Xylenes (m,p,o)	Dry Weight	mg/kg		<0.02	<0.02	<0.02	0.02
Volatile Petroleum Hydrocarbons - Soil							
Extraction Date				16-Sep-04	16-Sep-04	16-Sep-04	
F1 C6-C10	Dry Weight	mg/kg		<1	<1	<1	1
F[illegible]TEX	Dry Weight	mg/kg		<1	<1	<1	1
Extractable Petroleum Hydrocarbons - Soxhlet							
Extraction Date				16-Sep-04	16-Sep-04	16-Sep-04	
F2 C10-C16	Dry Weight	mg/kg		<10	16	524	10
F3 C16-C34	Dry Weight	mg/kg		29	768	17200	10
F4 C34-C50	Dry Weight	mg/kg		<10	209	2200	10
F4HTGC C34-C50+	Dry Weight	mg/kg		11	256	2450	10
% C50+		%		0.0	4.5	1.2	
Silica Gel Cleanup							
Silica Gel Cleanup				Done	Done	Done	
Soil % Moisture							
Moisture	Soil % Moisture	%		10.40	8.83	9.31	

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			NWL Number	332075-65	332075-69	332075-70	
			Sample Description	US-1050 / 3040	US-1053 / Surf	US-1053 / 20-30	
			Matrix	Soil - general	Soil - general	Soil - general	
Analyte		**Units**		**Results**	**Results**	**Results**	**Detection Limit**
Hot Water Soluble							
Boron	Water Soluble	mg/kg		<0.1	<0.1	<0.1	0.1
Metals Strong Acid Extractable							
Mercury	Strong Acid Extractable	ug/g		0.04	0.02	<0.01	0.01
Antimony	Strong Acid Extractable	ug/g		1.4	1.9	1.8	0.4
Arsenic	Strong Acid Extractable	ug/g		1.1	1.6	1.9	0.5
Barium	Strong Acid Extractable	ug/g		42.7	60.7	63.1	0.05
Beryllium	Strong Acid Extractable	ug/g		0.14	0.55	0.78	0.03
Cadmium	Strong Acid Extractable	ug/g		0.08	0.08	0.06	0.03
Chromium	Strong Acid Extractable	ug/g		51.5	49.0	49.3	0.05
Cobalt	Strong Acid Extractable	ug/g		5.77	5.22	6.66	0.04
Copper	Strong Acid Extractable	ug/g		16.4	26.9	37.2	0.05
Lead	Strong Acid Extractable	ug/g		9.5	21.0	8.3	0.1
Molybdenum	Strong Acid Extractable	ug/g		0.5	0.8	0.9	0.1
Nickel	Strong Acid Extractable	ug/g		23.6	19.5	24.4	0.05
Selenium	Strong Acid Extractable	ug/g		<0.2	<0.2	<0.2	0.3
Silver	Strong Acid Extractable	ug/g		<0.05	<0.05	<0.05	0.05
Thallium	Strong Acid Extractable	ug/g		<0.3	<0.3	<0.3	0.4
Tin	Strong Acid Extractable	ug/g		2.2	2.2	2.0	0.3
Vanadium	Strong Acid Extractable	ug/g		32.2	40.4	42.3	0.05
Zinc	Strong Acid Extractable	ug/g		43.7	55.5	54.2	0.05

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Analytical Report

Bill to: Earth Tech Canada Inc.
Report to: Earth Tech Canada Inc.
17203 - 103 Avenue
Edmonton, AB, Canada
T5S 1J4
Attn: Environmental Group
Sampled By:
Company:

Project ID:
Name: Ekalugad
Location:
LSD:
P.O.:
Acct. Code:

NWL Lot ID: 332075
Control Number:
Date Received: Sep 13, 2004
Date Reported: Sep 28, 2004
Report Number: 594363

	NWL Number	332075-66	332075-67	332075-80	
	Sample Description	US-1051	US-1052	US-1063(COMP) / 0	
	Matrix	Soil - general	Soil - general	Soil - general	
Analyte	**Units**	**Results**	**Results**	**Results**	**Detection Limit**
Polychlorinated Biphenyls - Soil					
Aroclor 1016 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1221 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1232 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1242 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1248 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1254 Dry Weight	mg/kg	1.0	1.1	<0.1	0.1
Aroclor 1260 Dry Weight	mg/kg	0.3	<0.1	<0.1	0.1
Aroclor 1262 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1268 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Total PCBs Dry Weight	mg/kg	1.3	1.1	<0.1	0.1
Polychlorinated Biphenyls - Soil - Surrogate					
Decachlorobiphenyl Surrogate	%	81	69	70	50-150

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	NWL Number	332075-67	332075-73	332075-74	
	Sample Description	US-1052	US-1056 / Surf	US-1057 / 10	
	Matrix	Soil - general	Soil - general	Soil - general	
Analyte	**Units**	**Results**	**Results**	**Results**	**Detection Limit**
Mono-Aromatic Hydrocarbons - Soil					
Extraction Date		16-Sep-04	16-Sep-04	16-Sep-04	
Benzene Dry Weight	mg/kg	<0.02	<0.02	<0.02	0.02
Toluene Dry Weight	mg/kg	<0.02	<0.02	<0.02	0.02
Ethylbenzene Dry Weight	mg/kg	<0.02	<0.02	<0.02	0.02
Total Xylenes (m,p,o) Dry Weight	mg/kg	<0.02	<0.02	<0.02	0.02
Volatile Petroleum Hydrocarbons - Soil					
Extraction Date		16-Sep-04	16-Sep-04	16-Sep-04	
F1 C6-C10 Dry Weight	mg/kg	2	<1	1	1
[illegible]TEX Dry Weight	mg/kg	2	<1	1	1
Extractable Petroleum Hydrocarbons - Soxhlet					
Extraction Date		16-Sep-04	16-Sep-04	16-Sep-04	
F2 C10-C16 Dry Weight	mg/kg	126	938	2050	10
F3 C16-C34 Dry Weight	mg/kg	31900	1070	819	10
F4 C34-C50 Dry Weight	mg/kg	8180	146	25	10
F4HTGC C34-C50+ Dry Weight	mg/kg	10400	189	26	10
% C50+	%	5.2	1.9	0.0	
Silica Gel Cleanup					
Silica Gel Cleanup		Done	Done	Done	
Soil % Moisture					
Moisture Soil % Moisture	%	21.90	10.80	10.60	

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			NWL Number	332075-71	332075-72	332075-82	
			Sample Description	US-1054 / 0	US-1055 / 0	US-1065 / 40-50	
			Matrix	Soil - general	Soil - general	Soil - general	
Analyte		**Units**		**Results**	**Results**	**Results**	**Detection Limit**
Hot Water Soluble							
Boron	Water Soluble	mg/kg		<0.1	<0.1	<0.1	0.1
Metals Strong Acid Extractable							
Mercury	Strong Acid Extractable	ug/g		0.02	<0.01	<0.01	0.01
Antimony	Strong Acid Extractable	ug/g		1.4	1.3	1.2	0.4
Arsenic	Strong Acid Extractable	ug/g		1.3	1.5	1.7	0.5
Barium	Strong Acid Extractable	ug/g		76.7	175	44.2	0.05
Beryllium	Strong Acid Extractable	ug/g		0.45	0.60	0.33	0.03
Cadmium	Strong Acid Extractable	ug/g		0.07	0.14	0.05	0.03
[illegible]mium	Strong Acid Extractable	ug/g		44.0	42.9	30.9	0.05
Cobalt	Strong Acid Extractable	ug/g		5.17	6.25	4.84	0.04
Copper	Strong Acid Extractable	ug/g		24.2	29.2	24.5	0.05
Lead	Strong Acid Extractable	ug/g		15.6	8.3	6.4	0.1
Molybdenum	Strong Acid Extractable	ug/g		0.6	0.7	0.8	0.1
Nickel	Strong Acid Extractable	ug/g		18.5	28.8	16.0	0.05
Selenium	Strong Acid Extractable	ug/g		<0.2	<0.2	<0.2	0.3
Silver	Strong Acid Extractable	ug/g		<0.05	<0.05	<0.05	0.05
Thallium	Strong Acid Extractable	ug/g		<0.3	<0.3	<0.3	0.4
Tin	Strong Acid Extractable	ug/g		2.2	2.1	2.1	0.3
Vanadium	Strong Acid Extractable	ug/g		36.1	35.9	27.2	0.05
Zinc	Strong Acid Extractable	ug/g		56.1	56.5	36.1	0.05

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			NWL Number	332075-75	332075-76	332075-77	
			Sample Description	US-1058 / 30-40	US-1059 / 20-30	US-1060 / 20	
			Matrix	Soil - general	Soil - general	Soil - general	
Analyte		**Units**		**Results**	**Results**	**Results**	**Detection Limit**
Mono-Aromatic Hydrocarbons - Soil							
Extraction Date				16-Sep-04	16-Sep-04	16-Sep-04	
Benzene	Dry Weight	mg/kg		<0.02	<0.02	<0.02	0.02
Toluene	Dry Weight	mg/kg		<0.02	<0.02	<0.02	0.02
Ethylbenzene	Dry Weight	mg/kg		<0.02	<0.02	<0.02	0.02
Total Xylenes (m,p,o)	Dry Weight	mg/kg		0.03	<0.02	<0.02	0.02
Volatile Petroleum Hydrocarbons - Soil							
Extraction Date				16-Sep-04	16-Sep-04	16-Sep-04	
F1 C6-C10	Dry Weight	mg/kg		57	29	1	1
BTEX	Dry Weight	mg/kg		57	29	1	1
Extractable Petroleum Hydrocarbons - Soxhlet							
Extraction Date				16-Sep-04	16-Sep-04	17-Sep-04	
F2 C10-C16	Dry Weight	mg/kg		2820	2920	1130	10
F3 C16-C34	Dry Weight	mg/kg		181	229	188	10
F4 C34-C50	Dry Weight	mg/kg		<10	<10	<10	10
F4HTGC C34-C50+	Dry Weight	mg/kg		<10	<10	<10	10
% C50+		%		0.0	0.0	0.0	
Silica Gel Cleanup							
Silica Gel Cleanup				Done	Done	Done	
Soil % Moisture							
Moisture	Soil % Moisture	%		7.14	12.40	9.18	
Polynuclear Aromatic Hydrocarbons - Soil							
Naphthalene	Dry Weight	mg/kg		<0.05	<0.05	<0.05	0.05
Acenaphthylene	Dry Weight	mg/kg		<0.05	<0.05	<0.05	0.05
Acenaphthene	Dry Weight	mg/kg		<0.05	<0.05	<0.05	0.05
Fluorene	Dry Weight	mg/kg		0.46	<0.05	<0.05	0.05
Phenanthrene	Dry Weight	mg/kg		0.27	<0.05	<0.05	0.05
Anthracene	Dry Weight	mg/kg		<0.05	<0.05	<0.05	0.05
Fluoranthene	Dry Weight	mg/kg		<0.05	<0.05	<0.05	0.05
Pyrene	Dry Weight	mg/kg		<0.05	<0.05	<0.05	0.05
Benzo(a)anthracene	Dry Weight	mg/kg		<0.05	<0.05	<0.05	0.05
Chrysene	Dry Weight	mg/kg		<0.05	<0.05	<0.05	0.05
Benzo(b)fluoranthene	Dry Weight	mg/kg		<0.05	<0.05	<0.05	0.05
Benzo(j)fluoranthene	Dry Weight	mg/kg		<0.05	<0.05	<0.05	0.05
Benzo(k)fluoranthene	Dry Weight	mg/kg		<0.05	<0.05	<0.05	0.05
Benzo(a)pyrene	Dry Weight	mg/kg		<0.05	<0.05	<0.05	0.05
Indeno(1,2,3-c,d)pyrene	Dry Weight	mg/kg		<0.05	<0.05	<0.05	0.05
Dibenzo(a,h)anthracene	Dry Weight	mg/kg		<0.05	<0.05	<0.05	0.05

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Attn: Environmental Group
Sampled By:
Company:

Project ID:
Name: Ekalugad
Location:
LSD:
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Acct. Code:

NWL Lot ID: 332075
Control Number:
Date Received: Sep 13, 2004
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	NWL Number	332075-75	332075-76	332075-77	
	Sample Description	US-1058 / 30-40	US-1059 / 20-30	US-1060 / 20	
	Matrix	Soil - general	Soil - general	Soil - general	
Analyte		**Units**	**Results**	**Results**	**Results**	**Detection Limit**
Polynuclear Aromatic Hydrocarbons - Soil - Conti						
Benzo(g,h,i)perylene	Dry Weight	mg/kg	<0.05	<0.05	<0.05	0.05
CB(a)P	Carcinogenic Potency Equivalent	mg/kg	<0.05	<0.05	<0.05	0.05
PAH - Soil - Surrogate Recovery						
Nitrobenzene-d5	PAH - Surrogate	%	>130	132	114	23-130
2-Fluorobiphenyl	PAH - Surrogate	%	85	84	78	30-130
p-Terphenyl-d14	PAH - Surrogate	%	53	54	61	18-137

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NWL Lot ID: 332075
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			NWL Number	332075-78	332075-79	332075-80	
			Sample Description	US-1061 / 5-10	US-1062 / 10-30	US-1063(COMP) / 0	
			Matrix	Soil - general	Soil - general	Soil - general	
Analyte		**Units**		**Results**	**Results**	**Results**	**Detection Limit**
Mono-Aromatic Hydrocarbons - Soil							
Extraction Date				16-Sep-04	16-Sep-04	16-Sep-04	
Benzene	Dry Weight	mg/kg		<0.02	<0.02	<0.02	0.02
Toluene	Dry Weight	mg/kg		<0.02	<0.02	<0.02	0.02
Ethylbenzene	Dry Weight	mg/kg		<0.02	<0.02	<0.02	0.02
Total Xylenes (m,p,o)	Dry Weight	mg/kg		<0.02	<0.02	<0.02	0.02
Volatile Petroleum Hydrocarbons - Soil							
Extraction Date				16-Sep-04	16-Sep-04	16-Sep-04	
F1 C6-C10	Dry Weight	mg/kg		2	26	2	1
F[illegible]TEX	Dry Weight	mg/kg		2	26	2	1
Extractable Petroleum Hydrocarbons - Soxhlet							
Extraction Date				17-Sep-04	17-Sep-04	17-Sep-04	
F2 C10-C16	Dry Weight	mg/kg		2630	1110	42	10
F3 C16-C34	Dry Weight	mg/kg		1990	152	29200	10
F4 C34-C50	Dry Weight	mg/kg		73	<10	10100	10
F4HTGC C34-C50+	Dry Weight	mg/kg		104	<10	14200	10
% C50+		%		0.7	0.0	9.3	
Silica Gel Cleanup							
Silica Gel Cleanup				Done	Done	Done	
Soil % Moisture							
Moisture	Soil % Moisture	%		15.80	13.10	5.13	
Polynuclear Aromatic Hydrocarbons - Soil							
Naphthalene	Dry Weight	mg/kg		<0.05	<0.05	<0.05	0.05
Acenaphthylene	Dry Weight	mg/kg		<0.05	<0.05	<0.05	0.05
Acenaphthene	Dry Weight	mg/kg		<0.05	<0.05	<0.05	0.05
Fluorene	Dry Weight	mg/kg		<0.05	<0.05	<0.05	0.05
Phenanthrene	Dry Weight	mg/kg		<0.05	<0.05	<0.05	0.05
Anthracene	Dry Weight	mg/kg		<0.05	<0.05	<0.05	0.05
Fluoranthene	Dry Weight	mg/kg		<0.05	<0.05	<0.05	0.05
Pyrene	Dry Weight	mg/kg		<0.05	<0.05	<0.05	0.05
Benzo(a)anthracene	Dry Weight	mg/kg		<0.05	<0.05	<0.05	0.05
Chrysene	Dry Weight	mg/kg		<0.05	<0.05	0.22	0.05
Benzo(b)fluoranthene	Dry Weight	mg/kg		<0.05	<0.05	<0.05	0.05
Benzo(j)fluoranthene	Dry Weight	mg/kg		<0.05	<0.05	<0.05	0.05
Benzo(k)fluoranthene	Dry Weight	mg/kg		<0.05	<0.05	<0.05	0.05
[illegible].o(a)pyrene	Dry Weight	mg/kg		<0.05	<0.05	<0.05	0.05
Indeno(1,2,3-c,d)pyrene	Dry Weight	mg/kg		<0.05	<0.05	<0.05	0.05
Dibenzo(a,h)anthracene	Dry Weight	mg/kg		<0.05	<0.05	<0.05	0.05

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Company:

Project ID:
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NWL Lot ID: 332075
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	NWL Number	332075-78	332075-79	332075-80	
	Sample Description	US-1061 / 5-10	US-1062 / 10-30	US-1063(COMP) / 0	
	Matrix	Soil - general	Soil - general	Soil - general	
Analyte		**Units**	**Results**	**Results**	**Results**	**Detection Limit**
Polynuclear Aromatic Hydrocarbons - Soil - Conti						
Benzo(g,h,i)perylene	Dry Weight	mg/kg	<0.05	<0.05	<0.05	0.05
CB(a)P	Carcinogenic Potency Equivalent	mg/kg	<0.05	<0.05	<0.05	0.05
PAH - Soil - Surrogate Recovery						
Nitrobenzene-d5	PAH - Surrogate	%	51	>130	122	23-130
2-Fluorobiphenyl	PAH - Surrogate	%	90	92	53	30-130
p-Terphenyl-d14	PAH - Surrogate	%	79	61	56	18-137

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			NWL Number	332075-81	332075-83	332075-84	
			Sample Description	US-1063 / 40-50	US-1066 / 50-60	US-1067 / 50-60	
			Matrix	Soil - general	Soil - general	Soil - general	
Analyte		**Units**		**Results**	**Results**	**Results**	**Detection Limit**
Mono-Aromatic Hydrocarbons - Soil							
Extraction Date				16-Sep-04	16-Sep-04	16-Sep-04	
Benzene	Dry Weight	mg/kg		<0.02	<0.02	<0.02	0.02
Toluene	Dry Weight	mg/kg		<0.02	<0.02	<0.02	0.02
Ethylbenzene	Dry Weight	mg/kg		<0.02	<0.02	<0.02	0.02
Total Xylenes (m,p,o)	Dry Weight	mg/kg		<0.02	<0.02	<0.02	0.02
Volatile Petroleum Hydrocarbons - Soil							
Extraction Date				16-Sep-04	16-Sep-04	16-Sep-04	
F1 C6-C10	Dry Weight	mg/kg		2	<1	<1	1
F1-BTEX	Dry Weight	mg/kg		2	<1	<1	1
Extractable Petroleum Hydrocarbons - Soxhlet							
Extraction Date				17-Sep-04	17-Sep-04	17-Sep-04	
F2 C10-C16	Dry Weight	mg/kg		165	<10	<10	10
F3 C16-C34	Dry Weight	mg/kg		16300	32	<10	10
F4 C34-C50	Dry Weight	mg/kg		3420	10	<10	10
F4HTGC C34-C50+	Dry Weight	mg/kg		4550	12	11	10
% C50+		%		5.4	0.0	0.0	
Silica Gel Cleanup							
Silica Gel Cleanup				Done	Done	Done	
Soil % Moisture							
Moisture	Soil % Moisture	%		9.92	10.40	10.60	
Polychlorinated Biphenyls - Soil							
Aroclor 1016	Dry Weight	mg/kg		<0.1	<0.1	<0.1	0.1
Aroclor 1221	Dry Weight	mg/kg		<0.1	<0.1	<0.1	0.1
Aroclor 1232	Dry Weight	mg/kg		<0.1	<0.1	<0.1	0.1
Aroclor 1242	Dry Weight	mg/kg		<0.1	<0.1	<0.1	0.1
Aroclor 1248	Dry Weight	mg/kg		<0.1	<0.1	<0.1	0.1
Aroclor 1254	Dry Weight	mg/kg		<0.1	<0.1	<0.1	0.1
Aroclor 1260	Dry Weight	mg/kg		<0.1	<0.1	<0.1	0.1
Aroclor 1262	Dry Weight	mg/kg		<0.1	<0.1	<0.1	0.1
Aroclor 1268	Dry Weight	mg/kg		<0.1	<0.1	<0.1	0.1
Total PCBs	Dry Weight	mg/kg		<0.1	<0.1	<0.1	0.1
Polychlorinated Biphenyls - Soil - Surrogate							
Decachlorobiphenyl	Surrogate	%		65	77	86	50-150

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	NWL Number	332075-81	332075-86	332075-87	
	Sample Description	US-1063 / 40-50	US-1069 / 50	US-1070 / 50	
	Matrix	Soil - general	Soil - general	Soil - general	
Analyte	**Units**	**Results**	**Results**	**Results**	**Detection Limit**
Polynuclear Aromatic Hydrocarbons - Soil					
Naphthalene Dry Weight	mg/kg	<0.05	<0.05	<0.05	0.05
Acenaphthylene Dry Weight	mg/kg	<0.05	<0.05	<0.05	0.05
Acenaphthene Dry Weight	mg/kg	<0.05	<0.05	<0.05	0.05
Fluorene Dry Weight	mg/kg	<0.05	0.17	<0.05	0.05
Phenanthrene Dry Weight	mg/kg	<0.05	0.06	<0.05	0.05
Anthracene Dry Weight	mg/kg	<0.05	<0.05	<0.05	0.05
Fluoranthene Dry Weight	mg/kg	<0.05	<0.05	<0.05	0.05
Pyrene Dry Weight	mg/kg	<0.05	<0.05	<0.05	0.05
[illegible]:o(a)anthracene Dry Weight	mg/kg	<0.05	<0.05	<0.05	0.05
Chrysene Dry Weight	mg/kg	0.60	<0.05	<0.05	0.05
Benzo(b)fluoranthene Dry Weight	mg/kg	<0.05	<0.05	<0.05	0.05
Benzo(j)fluoranthene Dry Weight	mg/kg	<0.05	<0.05	<0.05	0.05
Benzo(k)fluoranthene Dry Weight	mg/kg	<0.05	<0.05	<0.05	0.05
Benzo(a)pyrene Dry Weight	mg/kg	<0.05	<0.05	<0.05	0.05
Indeno(1,2,3-c,d)pyrene Dry Weight	mg/kg	<0.05	<0.05	<0.05	0.05
Dibenzo(a,h)anthracene Dry Weight	mg/kg	<0.05	<0.05	<0.05	0.05
Benzo(g,h,i)perylene Dry Weight	mg/kg	<0.05	<0.05	<0.05	0.05
CB(a)P Carcinogenic Potency Equivalent	mg/kg	<0.05	<0.05	<0.05	0.05
PAH - Soil - Surrogate Recovery					
Nitrobenzene-d5 PAH - Surrogate	%	84	>130	88	23-130
2-Fluorobiphenyl PAH - Surrogate	%	62	63	80	30-130
p-Terphenyl-d14 PAH - Surrogate	%	95	60	62	18-137

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Analytical Report

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Report to: Earth Tech Canada Inc.
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Attn: Environmental Group
Sampled By:
Company:

Project ID:
Name: Ekalugad
Location:
LSD:
P.O.:
Acct. Code:

NWL Lot ID: 332075
Control Number:
Date Received: Sep 13, 2004
Date Reported: Sep 28, 2004
Report Number: 594363

	NWL Number	332075-83	332075-84	332075-85	
	Sample Description	US-1066 / 50-60	US-1067 / 50-60	US-1068 / 40-50	
	Matrix	Soil - general	Soil - general	Soil - general	
Analyte	**Units**	**Results**	**Results**	**Results**	**Detection Limit**
Hot Water Soluble					
Boron Water Soluble	mg/kg	0.2	<0.1	<0.1	0.1
Metals Strong Acid Extractable					
Mercury Strong Acid Extractable	ug/g	<0.01	<0.01	<0.01	0.01
Antimony Strong Acid Extractable	ug/g	1.4	1.5	1.2	0.4
Arsenic Strong Acid Extractable	ug/g	1.6	1.9	2.0	0.5
Barium Strong Acid Extractable	ug/g	53.6	60.6	43.6	0.05
Beryllium Strong Acid Extractable	ug/g	0.28	0.55	0.26	0.03
Cadmium Strong Acid Extractable	ug/g	0.09	0.06	0.05	0.03
[illegible]mium Strong Acid Extractable	ug/g	35.8	45.0	29.4	0.05
Cobalt Strong Acid Extractable	ug/g	4.66	6.76	4.34	0.04
Copper Strong Acid Extractable	ug/g	19.0	32.9	17.8	0.05
Lead Strong Acid Extractable	ug/g	5.7	6.8	6.0	0.1
Molybdenum Strong Acid Extractable	ug/g	0.7	1.0	0.7	0.1
Nickel Strong Acid Extractable	ug/g	16.4	23.4	14.7	0.05
Selenium Strong Acid Extractable	ug/g	<0.2	<0.2	0.3	0.3
Silver Strong Acid Extractable	ug/g	<0.05	<0.05	<0.05	0.05
Thallium Strong Acid Extractable	ug/g	<0.3	<0.3	<0.3	0.4
Tin Strong Acid Extractable	ug/g	2.3	2.1	1.9	0.3
Vanadium Strong Acid Extractable	ug/g	30.7	39.1	26.2	0.05
Zinc Strong Acid Extractable	ug/g	42.4	51.7	34.7	0.05

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	NWL Number	332075-86	332075-87	332075-88	
	Sample Description	US-1069 / 50	US-1070 / 50	US-1071 / 20	
	Matrix	Soil - general	Soil - general	Soil - general	
Analyte	**Units**	**Results**	**Results**	**Results**	**Detection Limit**
Mono-Aromatic Hydrocarbons - Soil					
Extraction Date		16-Sep-04	16-Sep-04	16-Sep-04	
Benzene Dry Weight	mg/kg	<0.02	<0.02	<0.02	0.02
Toluene Dry Weight	mg/kg	<0.02	<0.02	<0.02	0.02
Ethylbenzene Dry Weight	mg/kg	<0.02	<0.02	<0.02	0.02
Total Xylenes (m,p,o) Dry Weight	mg/kg	<0.02	<0.02	<0.02	0.02
Volatile Petroleum Hydrocarbons - Soil					
Extraction Date		16-Sep-04	16-Sep-04	16-Sep-04	
F1 C6-C10 Dry Weight	mg/kg	46	1	<1	1
F[illegible]TEX Dry Weight	mg/kg	46	1	<1	1
Extractable Petroleum Hydrocarbons - Soxhlet					
Extraction Date		17-Sep-04	17-Sep-04	17-Sep-04	
F2 C10-C16 Dry Weight	mg/kg	2770	29	<10	10
F3 C16-C34 Dry Weight	mg/kg	165	143	284	10
F4 C34-C50 Dry Weight	mg/kg	11	34	40	10
F4HTGC C34-C50+ Dry Weight	mg/kg	14	38	196	10
% C50+	%	0.0	0.0	32.5	
Silica Gel Cleanup					
Silica Gel Cleanup		Done	Done	Done	
Soil % Moisture					
Moisture Soil % Moisture	%	5.00	12.20	16.60	

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			NWL Number	332075-89	332075-91	332075-92	
			Sample Description	US-1071 / 50	US-1072	US-1073	
			Matrix	Soil - general	Soil - general	Soil - general	
Analyte		**Units**		**Results**	**Results**	**Results**	**Detection Limit**
Mono-Aromatic Hydrocarbons - Soil							
Extraction Date				16-Sep-04	16-Sep-04	16-Sep-04	
Benzene	Dry Weight	mg/kg		<0.02	<0.02	<0.02	0.02
Toluene	Dry Weight	mg/kg		<0.02	<0.02	<0.02	0.02
Ethylbenzene	Dry Weight	mg/kg		<0.02	<0.02	<0.02	0.02
Total Xylenes (m,p,o)	Dry Weight	mg/kg		<0.02	<0.02	<0.02	0.02
Volatile Petroleum Hydrocarbons - Soil							
Extraction Date				16-Sep-04	16-Sep-04	16-Sep-04	
F1 C6-C10	Dry Weight	mg/kg		<1	4	5	1
BTEX	Dry Weight	mg/kg		<1	4	5	1
Extractable Petroleum Hydrocarbons - Soxhlet							
Extraction Date				17-Sep-04	17-Sep-04	17-Sep-04	
F2 C10-C16	Dry Weight	mg/kg		<10	3610	8800	10
F3 C16-C34	Dry Weight	mg/kg		1210	788	27000	10
F4 C34-C50	Dry Weight	mg/kg		47	53	3370	10
F4HTGC C34-C50+	Dry Weight	mg/kg		51	67	4310	10
% C50+		%		0.0	0.3	2.3	
Silica Gel Cleanup							
Silica Gel Cleanup				Done	Done	Done	
Soil % Moisture							
Moisture	Soil % Moisture	%		11.40	8.92	7.05	

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			NWL Number	332075-91	332075-92	332075-93	
			Sample Description	US-1072	US-1073	US-1074	
			Matrix	Soil - general	Soil - general	Soil - general	
Analyte		**Units**		**Results**	**Results**	**Results**	**Detection Limit**
Polychlorinated Biphenyls - Soil							
Aroclor 1016	Dry Weight	mg/kg		<0.1	<0.1	<0.1	0.1
Aroclor 1221	Dry Weight	mg/kg		<0.1	<0.1	<0.1	0.1
Aroclor 1232	Dry Weight	mg/kg		<0.1	<0.1	<0.1	0.1
Aroclor 1242	Dry Weight	mg/kg		<0.1	<0.1	0.4	0.1
Aroclor 1248	Dry Weight	mg/kg		<0.1	<0.1	<0.1	0.1
Aroclor 1254	Dry Weight	mg/kg		<0.1	0.1	0.6	0.1
Aroclor 1260	Dry Weight	mg/kg		<0.1	<0.1	0.2	0.1
Aroclor 1262	Dry Weight	mg/kg		<0.1	<0.1	<0.1	0.1
lor 1268	Dry Weight	mg/kg		<0.1	<0.1	<0.1	0.1
Total PCBs	Dry Weight	mg/kg		<0.1	0.1	1.2	0.1
Polychlorinated Biphenyls - Soil - Surrogate							
Decachlorobiphenyl	Surrogate	%		87	89	86	50-150

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	NWL Number	332075-93	332075-94	332075-95	
	Sample Description	US-1074	US-1075 / 15-20	US-1076 / 0	
	Matrix	Soil - general	Soil - general	Soil - general	
Analyte	**Units**	**Results**	**Results**	**Results**	**Detection Limit**
Mono-Aromatic Hydrocarbons - Soil					
Extraction Date		16-Sep-04	16-Sep-04	16-Sep-04	
Benzene Dry Weight	mg/kg	<0.02	<0.02	<0.02	0.02
Toluene Dry Weight	mg/kg	<0.02	<0.02	<0.02	0.02
Ethylbenzene Dry Weight	mg/kg	<0.02	<0.02	<0.02	0.02
Total Xylenes (m,p,o) Dry Weight	mg/kg	<0.02	<0.02	<0.02	0.02
Volatile Petroleum Hydrocarbons - Soil					
Extraction Date		16-Sep-04	16-Sep-04	16-Sep-04	
F1 C6-C10 Dry Weight	mg/kg	3	15	4	1
BTEX Dry Weight	mg/kg	3	15	4	1
Extractable Petroleum Hydrocarbons - Soxhlet					
Extraction Date		17-Sep-04	17-Sep-04	17-Sep-04	
F2 C10-C16 Dry Weight	mg/kg	1440	288	6540	10
F3 C16-C34 Dry Weight	mg/kg	6610	481	15600	10
F4 C34-C50 Dry Weight	mg/kg	1020	72	686	10
F4HTGC C34-C50+ Dry Weight	mg/kg	1470	99	1010	10
% C50+	%	4.7	3.1	1.4	
Silica Gel Cleanup					
Silica Gel Cleanup		Done	Done	Done	
Soil % Moisture					
Moisture Soil % Moisture	%	16.40	10.20	11.00	

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	NWL Number	332075-94	332075-107	332075-109	
	Sample Description	US-1075 / 15-20	MS-1086 / 0	MS-1086 / 10-20	
	Matrix	Soil - general	Soil - general	Soil - general	
Analyte	**Units**	**Results**	**Results**	**Results**	**Detection Limit**
Hot Water Soluble					
Boron Water Soluble	mg/kg	0.2	<0.1	<0.1	0.1
Metals Strong Acid Extractable					
Mercury Strong Acid Extractable	ug/g	<0.01	<0.01	<0.01	0.01
Antimony Strong Acid Extractable	ug/g	1.0	1.0	0.5	0.4
Arsenic Strong Acid Extractable	ug/g	1.0	0.9	0.7	0.5
Barium Strong Acid Extractable	ug/g	39.5	45.9	29.0	0.05
Beryllium Strong Acid Extractable	ug/g	0.20	0.15	0.20	0.03
Cadmium Strong Acid Extractable	ug/g	0.27	0.12	0.04	0.03
Chromium Strong Acid Extractable	ug/g	82.2	41.7	15.8	0.05
Cobalt Strong Acid Extractable	ug/g	7.53	3.78	2.47	0.04
Copper Strong Acid Extractable	ug/g	25.8	17.0	12.0	0.05
Lead Strong Acid Extractable	ug/g	16.1	132	10.2	0.1
Molybdenum Strong Acid Extractable	ug/g	0.5	1.3	0.2	0.1
Nickel Strong Acid Extractable	ug/g	34.7	12.2	8.42	0.05
Selenium Strong Acid Extractable	ug/g	<0.2	<0.2	<0.2	0.3
Silver Strong Acid Extractable	ug/g	<0.05	<0.05	<0.05	0.05
Thallium Strong Acid Extractable	ug/g	<0.3	<0.3	<0.3	0.4
Tin Strong Acid Extractable	ug/g	2.4	2.8	2.1	0.3
Vanadium Strong Acid Extractable	ug/g	31.4	19.3	13.6	0.05
Zinc Strong Acid Extractable	ug/g	46.7	74.3	21.3	0.05

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			NWL Number	332075-94	332075-97	332075-98	
			Sample Description	US-1075 / 15-20	US-1077 / 0-10	US-1078 / 0-10	
			Matrix	Soil - general	Soil - general	Soil - general	
Analyte		**Units**		**Results**	**Results**	**Results**	**Detection Limit**
Polychlorinated Biphenyls - Soil							
Aroclor 1016	Dry Weight	mg/kg		<0.1	<0.1	<0.1	0.1
Aroclor 1221	Dry Weight	mg/kg		<0.1	<0.1	<0.1	0.1
Aroclor 1232	Dry Weight	mg/kg		<0.1	<0.1	<0.1	0.1
Aroclor 1242	Dry Weight	mg/kg		<0.1	<0.1	<0.1	0.1
Aroclor 1248	Dry Weight	mg/kg		<0.1	<0.1	<0.1	0.1
Aroclor 1254	Dry Weight	mg/kg		0.1	1.6	0.5	0.1
Aroclor 1260	Dry Weight	mg/kg		<0.1	0.1	<0.1	0.1
Aroclor 1262	Dry Weight	mg/kg		<0.1	<0.1	<0.1	0.1
Aroclor 1268	Dry Weight	mg/kg		<0.1	<0.1	<0.1	0.1
Total PCBs	Dry Weight	mg/kg		0.1	1.7	0.5	0.1
Polychlorinated Biphenyls - Soil - Surrogate							
Decachlorobiphenyl	Surrogate	%		83	85	90	50-150

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	NWL Number	332075-96	332075-97	332075-98	
	Sample Description	US-1076 / 20	US-1077 / 0-10	US-1078 / 0-10	
	Matrix	Soil - general	Soil - general	Soil - general	
Analyte	**Units**	**Results**	**Results**	**Results**	**Detection Limit**
Mono-Aromatic Hydrocarbons - Soil					
Extraction Date		16-Sep-04	16-Sep-04	16-Sep-04	
Benzene Dry Weight	mg/kg	0.02	<0.02	<0.02	0.02
Toluene Dry Weight	mg/kg	0.02	<0.02	<0.02	0.02
Ethylbenzene Dry Weight	mg/kg	0.02	<0.02	<0.02	0.02
Total Xylenes (m,p,o) Dry Weight	mg/kg	0.09	<0.02	0.02	0.02
Volatile Petroleum Hydrocarbons - Soil					
Extraction Date		16-Sep-04	16-Sep-04	16-Sep-04	
F1 C6-C10 Dry Weight	mg/kg	<1	<1	<1	1
BTEX Dry Weight	mg/kg	<1	<1	<1	1
Extractable Petroleum Hydrocarbons - Soxhlet					
Extraction Date		17-Sep-04	17-Sep-04	17-Sep-04	
F2 C10-C16 Dry Weight	mg/kg	214	524	19	10
F3 C16-C34 Dry Weight	mg/kg	599	8630	930	10
F4 C34-C50 Dry Weight	mg/kg	99	726	219	10
F4HTGC C34-C50+ Dry Weight	mg/kg	122	1780	262	10
% C50+	%	2.4	9.7	3.5	
Silica Gel Cleanup					
Silica Gel Cleanup		Done	Done	Done	
Soil % Moisture					
Moisture Soil % Moisture	%	9.43	12.00	9.45	

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	NWL Number	332075-99	332075-100	332075-101	
	Sample Description	US-1079 / 10-30	MS-1080	MS-1081 / 0-20	
	Matrix	Soil - general	Soil - general	Soil - general	
Analyte	**Units**	**Results**	**Results**	**Results**	**Detection Limit**
Polychlorinated Biphenyls - Soil					
Aroclor 1016 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1221 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1232 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1242 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1248 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1254 Dry Weight	mg/kg	0.6	<0.1	0.2	0.1
Aroclor 1260 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1262 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1268 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Total PCBs Dry Weight	mg/kg	0.6	<0.1	0.2	0.1
Polychlorinated Biphenyls - Soil - Surrogate					
Decachlorobiphenyl Surrogate	%	74	78	86	50-150

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			NWL Number	332075-99	332075-100	332075-105	
			Sample Description	US-1079 / 10-30	MS-1080	US-1085 / 10	
			Matrix	Soil - general	Soil - general	Soil - general	
Analyte		**Units**		**Results**	**Results**	**Results**	**Detection Limit**
Mono-Aromatic Hydrocarbons - Soil							
Extraction Date				16-Sep-04	16-Sep-04	16-Sep-04	
Benzene	Dry Weight	mg/kg		<0.02	<0.02	<0.02	0.02
Toluene	Dry Weight	mg/kg		<0.02	<0.02	<0.02	0.02
Ethylbenzene	Dry Weight	mg/kg		<0.02	<0.02	<0.02	0.02
Total Xylenes (m,p,o)	Dry Weight	mg/kg		<0.02	0.02	<0.02	0.02
Volatile Petroleum Hydrocarbons - Soil							
Extraction Date				16-Sep-04	16-Sep-04	16-Sep-04	
F1 C6-C10	Dry Weight	mg/kg		<1	<1	<1	1
BTEX	Dry Weight	mg/kg		<1	<1	<1	1
Extractable Petroleum Hydrocarbons - Soxhlet							
Extraction Date				17-Sep-04	17-Sep-04	17-Sep-04	
F2 C10-C16	Dry Weight	mg/kg		673	537	22	10
F3 C16-C34	Dry Weight	mg/kg		16500	17100	9330	10
F4 C34-C50	Dry Weight	mg/kg		1290	3830	21000	10
F4HTGC C34-C50+	Dry Weight	mg/kg		1450	7610	57300	10
% C50+		%		0.9	14.9	54.5	
Silica Gel Cleanup							
Silica Gel Cleanup				Done	Done	Done	
Soil % Moisture							
Moisture	Soil % Moisture	%		8.51	3.06	4.82	

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Analytical Report

Bill to: Earth Tech Canada Inc.
Report to: Earth Tech Canada Inc.
17203 - 103 Avenue
Edmonton, AB, Canada
T5S 1J4
Attn: Environmental Group
Sampled By:
Company:

Project ID:
Name: Ekalugad
Location:
LSD:
P.O.:
Acct. Code:

NWL Lot ID: 332075
Control Number:
Date Received: Sep 13, 2004
Date Reported: Sep 28, 2004
Report Number: 594363

	NWL Number	332075-100	332075-104	332075-107	
	Sample Description	MS-1080	US-1084 / 10-30	MS-1086 / 0	
	Matrix	Soil - general	Soil - general	Soil - general	
Analyte	**Units**	**Results**	**Results**	**Results**	**Detection Limit**
Polynuclear Aromatic Hydrocarbons - Soil					
Naphthalene Dry Weight	mg/kg	<0.05	<0.05	0.07	0.05
Acenaphthylene Dry Weight	mg/kg	<0.05	<0.05	0.23	0.05
Acenaphthene Dry Weight	mg/kg	0.07	<0.05	<0.05	0.05
Fluorene Dry Weight	mg/kg	0.84	<0.05	0.11	0.05
Phenanthrene Dry Weight	mg/kg	6.54	<0.05	0.83	0.05
Anthracene Dry Weight	mg/kg	<0.05	<0.05	<0.05	0.05
Fluoranthene Dry Weight	mg/kg	0.30	<0.05	0.07	0.05
Pyrene Dry Weight	mg/kg	<0.05	<0.05	0.12	0.05
B[illegible]o(a)anthracene Dry Weight	mg/kg	<0.05	<0.05	0.09	0.05
Chrysene Dry Weight	mg/kg	0.34	<0.05	0.24	0.05
Benzo(b)fluoranthene Dry Weight	mg/kg	0.05	<0.05	<0.05	0.05
Benzo(j)fluoranthene Dry Weight	mg/kg	<0.05	<0.05	<0.05	0.05
Benzo(k)fluoranthene Dry Weight	mg/kg	<0.05	<0.05	<0.05	0.05
Benzo(a)pyrene Dry Weight	mg/kg	<0.05	<0.05	<0.05	0.05
Indeno(1,2,3-c,d)pyrene Dry Weight	mg/kg	<0.05	<0.05	<0.05	0.05
Dibenzo(a,h)anthracene Dry Weight	mg/kg	<0.05	<0.05	<0.05	0.05
Benzo(g,h,i)perylene Dry Weight	mg/kg	<0.05	<0.05	<0.05	0.05
CB(a)P Carcinogenic Potency Equivalent	mg/kg	<0.05	<0.05	<0.05	0.05
PAH - Soil - Surrogate Recovery					
Nitrobenzene-d5 PAH - Surrogate	%	120	98	41	23-130
2-Fluorobiphenyl PAH - Surrogate	%	38	95	37	30-130
p-Terphenyl-d14 PAH - Surrogate	%	113	60	79	18-137

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	NWL Number	332075-102	332075-103	332075-104	
	Sample Description	MS-1082 / 0-20	US-1083 / 20	US-1084 / 10-30	
	Matrix	Soil - general	Soil - general	Soil - general	
Analyte	**Units**	**Results**	**Results**	**Results**	**Detection Limit**
Polychlorinated Biphenyls - Soil					
Aroclor 1016 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1221 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1232 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1242 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1248 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1254 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1260 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1262 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
/ or 1268 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Total PCBs Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Polychlorinated Biphenyls - Soil - Surrogate					
Decachlorobiphenyl Surrogate	%	91	90	93	50-150

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	NWL Number	332075-106	332075-107	332075-108	
	Sample Description	US-1085 / 85	MS-1086 / 0	MS-1086 / 100	
	Matrix	Soil - general	Soil - general	Soil - general	
Analyte	**Units**	**Results**	**Results**	**Results**	**Detection Limit**
Mono-Aromatic Hydrocarbons - Soil					
Extraction Date		16-Sep-04	16-Sep-04	16-Sep-04	
Benzene Dry Weight	mg/kg	<0.02	<0.02	<0.02	0.02
Toluene Dry Weight	mg/kg	<0.02	0.04	0.03	0.02
Ethylbenzene Dry Weight	mg/kg	<0.02	<0.02	<0.02	0.02
Total Xylenes (m,p,o) Dry Weight	mg/kg	<0.02	0.03	0.02	0.02
Volatile Petroleum Hydrocarbons - Soil					
Extraction Date		16-Sep-04	16-Sep-04	16-Sep-04	
F1 C6-C10 Dry Weight	mg/kg	<1	<1	<1	1
BTEX Dry Weight	mg/kg	<1	<1	<1	1
Extractable Petroleum Hydrocarbons - Soxhlet					
Extraction Date		17-Sep-04	17-Sep-04	17-Sep-04	
F2 C10-C16 Dry Weight	mg/kg	<10	348	66	10
F3 C16-C34 Dry Weight	mg/kg	28	26300	12400	10
F4 C34-C50 Dry Weight	mg/kg	21	15600	9900	10
F4HTGC C34-C50+ Dry Weight	mg/kg	26	20400	17700	10
% C50+	%	0.0	10.3	26.0	
Silica Gel Cleanup					
Silica Gel Cleanup		Done	Done	Done	
Soil % Moisture					
Moisture Soil % Moisture	%	9.92	5.42	5.62	

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	NWL Number	332075-107	332075-109	332075-115	
	Sample Description	MS-1086 / 0	MS-1086 / 10-20	MS-1091	
	Matrix	Soil - general	Soil - general	Soil - general	
Analyte	**Units**	**Results**	**Results**	**Results**	**Detection Limit**
Polychlorinated Biphenyls - Soil					
Aroclor 1016 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1221 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1232 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1242 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1248 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1254 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1260 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1262 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1268 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Total PCBs Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Polychlorinated Biphenyls - Soil - Surrogate					
Decachlorobiphenyl Surrogate	%	60	73	77	50-150

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	NWL Number	332075-108	332075-109	332075-120	
	Sample Description	MS-1086 / 100	MS-1086 / 10-20	BD6	
	Matrix	Soil - general	Soil - general	Soil - general	
Analyte	**Units**	**Results**	**Results**	**Results**	**Detection Limit**
Polynuclear Aromatic Hydrocarbons - Soil					
Naphthalene Dry Weight	mg/kg	0.06	<0.05	0.63	0.05
Acenaphthylene Dry Weight	mg/kg	0.22	0.61	<0.05	0.05
Acenaphthene Dry Weight	mg/kg	<0.05	<0.05	<0.05	0.05
Fluorene Dry Weight	mg/kg	0.11	0.15	0.10	0.05
Phenanthrene Dry Weight	mg/kg	0.76	0.79	0.59	0.05
Anthracene Dry Weight	mg/kg	<0.05	0.08	0.06	0.05
Fluoranthene Dry Weight	mg/kg	0.05	0.10	0.08	0.05
Pyrene Dry Weight	mg/kg	0.08	0.12	0.15	0.05
[illegible]o(a)anthracene Dry Weight	mg/kg	0.06	<0.05	0.07	0.05
Chrysene Dry Weight	mg/kg	0.23	0.10	0.63	0.05
Benzo(b)fluoranthene Dry Weight	mg/kg	0.15	<0.05	0.09	0.05
Benzo(j)fluoranthene Dry Weight	mg/kg	<0.05	<0.05	<0.05	0.05
Benzo(k)fluoranthene Dry Weight	mg/kg	<0.05	<0.05	<0.05	0.05
Benzo(a)pyrene Dry Weight	mg/kg	<0.05	<0.05	<0.05	0.05
Indeno(1,2,3-c,d)pyrene Dry Weight	mg/kg	<0.05	<0.05	<0.05	0.05
Dibenzo(a,h)anthracene Dry Weight	mg/kg	<0.05	<0.05	<0.05	0.05
Benzo(g,h,i)perylene Dry Weight	mg/kg	<0.05	<0.05	<0.05	0.05
CB(a)P Carcinogenic Potency Equivalent	mg/kg	<0.05	<0.05	<0.05	0.05
PAH - Soil - Surrogate Recovery					
Nitrobenzene-d5 PAH - Surrogate	%	58	94	52	23-130
2-Fluorobiphenyl PAH - Surrogate	%	40	60	22	30-130
p-Terphenyl-d14 PAH - Surrogate	%	46	87	57	18-137

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Attn: Environmental Group
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NWL Lot ID: 332075
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	NWL Number	332075-109	332075-110	332075-111	
	Sample Description	MS-1086 / 10-20	US-1087 / 20	US-1088 / 10	
	Matrix	Soil - general	Soil - general	Soil - general	
Analyte	**Units**	**Results**	**Results**	**Results**	**Detection Limit**
Mono-Aromatic Hydrocarbons - Soil					
Extraction Date		16-Sep-04	16-Sep-04	16-Sep-04	
Benzene Dry Weight	mg/kg	<0.02	<0.02	<0.02	0.02
Toluene Dry Weight	mg/kg	<0.02	<0.02	<0.02	0.02
Ethylbenzene Dry Weight	mg/kg	<0.02	<0.02	<0.02	0.02
Total Xylenes (m,p,o) Dry Weight	mg/kg	<0.02	<0.02	<0.02	0.02
Volatile Petroleum Hydrocarbons - Soil					
Extraction Date		16-Sep-04	16-Sep-04	16-Sep-04	
F1 C6-C10 Dry Weight	mg/kg	<1	<1	<1	1
[ ]TEX Dry Weight	mg/kg	<1	<1	<1	1
Extractable Petroleum Hydrocarbons - Soxhlet					
Extraction Date		17-Sep-04	17-Sep-04	17-Sep-04	
F2 C10-C16 Dry Weight	mg/kg	287	<10	<10	10
F3 C16-C34 Dry Weight	mg/kg	14700	29	19	10
F4 C34-C50 Dry Weight	mg/kg	6530	12	10	10
F4HTGC C34-C50+ Dry Weight	mg/kg	11600	16	12	10
% C50+	%	19.1	0.0	0.0	
Silica Gel Cleanup					
Silica Gel Cleanup		Done	Done	Done	
Soil % Moisture					
Moisture Soil % Moisture	%	2.80	9.91	8.72	

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			NWL Number	332075-112	332075-113	332075-114	
			Sample Description	US-1089 / 20	MS-1090	MS-1090B	
			Matrix	Soil - general	Soil - general	Soil - general	
Analyte		**Units**		**Results**	**Results**	**Results**	**Detection Limit**
Mono-Aromatic Hydrocarbons - Soil							
Extraction Date				16-Sep-04	16-Sep-04	16-Sep-04	
Benzene	Dry Weight	mg/kg		<0.02	<0.02	<0.02	0.02
Toluene	Dry Weight	mg/kg		<0.02	<0.02	<0.02	0.02
Ethylbenzene	Dry Weight	mg/kg		<0.02	<0.02	<0.02	0.02
Total Xylenes (m,p,o)	Dry Weight	mg/kg		<0.02	<0.02	<0.02	0.02
Volatile Petroleum Hydrocarbons - Soil							
Extraction Date				16-Sep-04	16-Sep-04	16-Sep-04	
F1 C6-C10	Dry Weight	mg/kg		4	<1	<1	1
BTEX	Dry Weight	mg/kg		4	<1	<1	1
Extractable Petroleum Hydrocarbons - Soxhlet							
Extraction Date				17-Sep-04	17-Sep-04	17-Sep-04	
F2 C10-C16	Dry Weight	mg/kg		100	44	35	10
F3 C16-C34	Dry Weight	mg/kg		76	6650	4500	10
F4 C34-C50	Dry Weight	mg/kg		40	15100	5740	10
F4HTGC C34-C50+	Dry Weight	mg/kg		49	30800	9360	10
% C50+		%		0.0	41.8	26.1	
Silica Gel Cleanup							
Silica Gel Cleanup				Done	Done	Done	
Soil % Moisture							
Moisture	Soil % Moisture	%		9.18	12.50	14.80	

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	NWL Number	332075-115	332075-116	332075-117	
	Sample Description	MS-1091	MS-1092	MS-1093	
	Matrix	Soil - general	Soil - general	Soil - general	
Analyte	**Units**	**Results**	**Results**	**Results**	**Detection Limit**
Mono-Aromatic Hydrocarbons - Soil					
Extraction Date		16-Sep-04	16-Sep-04	16-Sep-04	
Benzene Dry Weight	mg/kg	<0.02	<0.02	<0.02	0.02
Toluene Dry Weight	mg/kg	<0.02	<0.02	<0.02	0.02
Ethylbenzene Dry Weight	mg/kg	<0.02	<0.02	<0.02	0.02
Total Xylenes (m,p,o) Dry Weight	mg/kg	0.03	<0.02	<0.02	0.02
Volatile Petroleum Hydrocarbons - Soil					
Extraction Date		16-Sep-04	16-Sep-04	16-Sep-04	
F1 C6-C10 Dry Weight	mg/kg	3	<1	<1	1
BTEX Dry Weight	mg/kg	3	<1	<1	1
Extractable Petroleum Hydrocarbons - Soxhlet					
Extraction Date		17-Sep-04	17-Sep-04	17-Sep-04	
F2 C10-C16 Dry Weight	mg/kg	302	516	<10	10
F3 C16-C34 Dry Weight	mg/kg	726	284	59	10
F4 C34-C50 Dry Weight	mg/kg	175	39	15	10
F4HTGC C34-C50+ Dry Weight	mg/kg	221	47	20	10
% C50+	%	3.7	0.0	0.0	
Silica Gel Cleanup					
Silica Gel Cleanup		Done	Done	Done	
Soil % Moisture					
Moisture Soil % Moisture	%	11.10	15.40	10.60	

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	NWL Number	332075-118	332075-119	332075-120	
	Sample Description	MS-1094	MS-1095	BD6	
	Matrix	Soil - general	Soil - general	Soil - general	
Analyte	**Units**	**Results**	**Results**	**Results**	**Detection Limit**
Mono-Aromatic Hydrocarbons - Soil					
Extraction Date		16-Sep-04	16-Sep-04	16-Sep-04	
Benzene Dry Weight	mg/kg	<0.02	<0.02	<0.02	0.02
Toluene Dry Weight	mg/kg	<0.02	<0.02	<0.02	0.02
Ethylbenzene Dry Weight	mg/kg	<0.02	<0.02	<0.02	0.02
Total Xylenes (m,p,o) Dry Weight	mg/kg	<0.02	<0.02	<0.02	0.02
Volatile Petroleum Hydrocarbons - Soil					
Extraction Date		16-Sep-04	16-Sep-04	16-Sep-04	
F1 C6-C10 Dry Weight	mg/kg	<1	<1	<1	1
BTEX Dry Weight	mg/kg	<1	<1	<1	1
Extractable Petroleum Hydrocarbons - Soxhlet					
Extraction Date		17-Sep-04	17-Sep-04	17-Sep-04	
F2 C10-C16 Dry Weight	mg/kg	20	<10	76	10
F3 C16-C34 Dry Weight	mg/kg	972	36	17800	10
F4 C34-C50 Dry Weight	mg/kg	221	18	13800	10
F4HTGC C34-C50+ Dry Weight	mg/kg	289	23	26300	10
% C50+	%	5.4	0.0	28.1	
Silica Gel Cleanup					
Silica Gel Cleanup		Done	Done	Done	
Soil % Moisture					
Moisture Soil % Moisture	%	14.80	9.81	20.50	

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	NWL Number	332075-118	332075-120	332075-122	
	Sample Description	MS-1094	BD6	Stains Comp US	
	Matrix	Soil - general	Soil - general	Soil - general	
Analyte	**Units**	**Results**	**Results**	**Results**	**Detection Limit**
Polychlorinated Biphenyls - Soil					
Aroclor 1016 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1221 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1232 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1242 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1248 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1254 Dry Weight	mg/kg	<0.1	0.2	0.5	0.1
Aroclor 1260 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1262 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1268 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Total PCBs Dry Weight	mg/kg	<0.1	0.2	0.5	0.1
Polychlorinated Biphenyls - Soil - Surrogate					
Decachlorobiphenyl Surrogate	%	82	58	74	50-150

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Acct. Code:

NWL Lot ID: 332075
Control Number:
Date Received: Sep 13, 2004
Date Reported: Sep 28, 2004
Report Number: 594363

	NWL Number	332075-120	332075-121	332075-123	
	Sample Description	BD6	RRMC29	RS-1	
	Matrix	Soil - general	Soil - general	Soil - general	
Analyte	**Units**	**Results**	**Results**	**Results**	**Detection Limit**
Hot Water Soluble					
Boron Water Soluble	mg/kg	0.4	0.4	<0.1	0.1
Metals Strong Acid Extractable					
Mercury Strong Acid Extractable	ug/g	0.03	0.03	<0.01	0.01
Antimony Strong Acid Extractable	ug/g	5.6	1.4	0.6	0.4
Arsenic Strong Acid Extractable	ug/g	1.5	1.4	<0.5	0.5
Barium Strong Acid Extractable	ug/g	411	59.0	18.8	0.05
Beryllium Strong Acid Extractable	ug/g	0.22	0.21	0.13	0.03
Cadmium Strong Acid Extractable	ug/g	4.30	1.12	0.05	0.03
[illegible]nium Strong Acid Extractable	ug/g	38.1	47.8	9.87	0.05
Cobalt Strong Acid Extractable	ug/g	4.49	4.28	1.55	0.04
Copper Strong Acid Extractable	ug/g	381	45.5	8.58	0.05
Lead Strong Acid Extractable	ug/g	946	120	3.8	0.1
Molybdenum Strong Acid Extractable	ug/g	1.6	0.7	0.1	0.1
Nickel Strong Acid Extractable	ug/g	17.0	16.4	4.83	0.05
Selenium Strong Acid Extractable	ug/g	0.3	<0.2	<0.2	0.3
Silver Strong Acid Extractable	ug/g	1.89	<0.05	0.06	0.05
Thallium Strong Acid Extractable	ug/g	<0.3	<0.3	<0.3	0.4
Tin Strong Acid Extractable	ug/g	17.8	3.4	2.0	0.3
Vanadium Strong Acid Extractable	ug/g	17.4	22.3	8.60	0.05
Zinc Strong Acid Extractable	ug/g	931	80.2	14.9	0.05

NORWEST LABS

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Analytical Report

Bill to: Earth Tech Canada Inc.
Report to: Earth Tech Canada Inc.
17203 - 103 Avenue
Edmonton, AB, Canada
T5S 1J4
Attn: Environmental Group
Sampled By:
Company:

Project ID:
Name: Ekalugad
Location:
LSD:
P.O.:
Acct. Code:

NWL Lot ID: 332075
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	NWL Number	332075-122	332075-123	332075-124	
	Sample Description	Stains Comp US	RS-1	RS-2	
	Matrix	Soil - general	Soil - general	Soil - general	
Analyte	**Units**	**Results**	**Results**	**Results**	**Detection Limit**
Mono-Aromatic Hydrocarbons - Soil					
Extraction Date		16-Sep-04	16-Sep-04	16-Sep-04	
Benzene Dry Weight	mg/kg	<0.02	<0.02	<0.02	0.02
Toluene Dry Weight	mg/kg	<0.02	<0.02	<0.02	0.02
Ethylbenzene Dry Weight	mg/kg	<0.02	<0.02	<0.02	0.02
Total Xylenes (m,p,o) Dry Weight	mg/kg	<0.02	<0.02	<0.02	0.02
Volatile Petroleum Hydrocarbons - Soil					
Extraction Date		16-Sep-04	16-Sep-04	16-Sep-04	
F1 C6-C10 Dry Weight	mg/kg	<1	<1	<1	1
[illegible]TEX Dry Weight	mg/kg	<1	<1	<1	1
Extractable Petroleum Hydrocarbons - Soxhlet					
Extraction Date		17-Sep-04	17-Sep-04	17-Sep-04	
F2 C10-C16 Dry Weight	mg/kg	406	<10	<10	10
F3 C16-C34 Dry Weight	mg/kg	14100	28	27	10
F4 C34-C50 Dry Weight	mg/kg	8300	11	18	10
F4HTGC C34-C50+ Dry Weight	mg/kg	11600	16	22	10
% C50+	%	12.5	0.0	0.0	
Silica Gel Cleanup					
Silica Gel Cleanup		Done	Done	Done	
Soil % Moisture					
Moisture Soil % Moisture	%	19.10	10.40	10.70	
Polynuclear Aromatic Hydrocarbons - Soil					
Naphthalene Dry Weight	mg/kg	<0.05	<0.05	<0.05	0.05
Acenaphthylene Dry Weight	mg/kg	<0.05	<0.05	<0.05	0.05
Acenaphthene Dry Weight	mg/kg	<0.05	<0.05	<0.05	0.05
Fluorene Dry Weight	mg/kg	<0.05	<0.05	<0.05	0.05
Phenanthrene Dry Weight	mg/kg	0.06	<0.05	<0.05	0.05
Anthracene Dry Weight	mg/kg	<0.05	<0.05	<0.05	0.05
Fluoranthene Dry Weight	mg/kg	0.07	<0.05	<0.05	0.05
Pyrene Dry Weight	mg/kg	0.16	<0.05	<0.05	0.05
Benzo(a)anthracene Dry Weight	mg/kg	0.05	<0.05	<0.05	0.05
Chrysene Dry Weight	mg/kg	0.28	<0.05	<0.05	0.05
Benzo(b)fluoranthene Dry Weight	mg/kg	0.10	<0.05	<0.05	0.05
Benzo(j)fluoranthene Dry Weight	mg/kg	<0.05	<0.05	<0.05	0.05
B[illegible]zo(k)fluoranthene Dry Weight	mg/kg	0.07	<0.05	<0.05	0.05
[illegible]o(a)pyrene Dry Weight	mg/kg	0.09	<0.05	<0.05	0.05
Indeno(1,2,3-c,d)pyrene Dry Weight	mg/kg	0.14	<0.05	<0.05	0.05
Dibenzo(a,h)anthracene Dry Weight	mg/kg	<0.05	<0.05	<0.05	0.05

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17203 - 103 Avenue
Edmonton, AB, Canada
T5S 1J4
Attn: Environmental Group
Sampled By:
Company:

Project ID:
Name: Ekalugad
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Acct. Code:

NWL Lot ID: 332075
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	NWL Number	332075-122	332075-123	332075-124	
	Sample Description	Stains Comp US	RS-1	RS-2	
	Matrix	Soil - general	Soil - general	Soil - general	
Analyte	**Units**	**Results**	**Results**	**Results**	**Detection Limit**
Polynuclear Aromatic Hydrocarbons - Soil - Conti					
Benzo(g,h,i)perylene Dry Weight	mg/kg	0.26	<0.05	<0.05	0.05
CB(a)P Carcinogenic Potency Equivalent	mg/kg	0.14	<0.05	<0.05	0.05
PAH - Soil - Surrogate Recovery					
Nitrobenzene-d5 PAH - Surrogate	%	51	94	68	23-130
2-Fluorobiphenyl PAH - Surrogate	%	26	76	54	30-130
p-Terphenyl-d14 PAH - Surrogate	%	44	57	50	18-137

	NWL Number	332075-123	332075-124	332075-125	
	Sample Description	RS-1	RS-2	WLS-1	
	Matrix	Soil - general	Soil - general	Soil - general	
Analyte	**Units**	**Results**	**Results**	**Results**	**Detection Limit**
Polychlorinated Biphenyls - Soil					
Aroclor 1016 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1221 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1232 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1242 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1248 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1254 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1260 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1262 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1268 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Total PCBs Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Polychlorinated Biphenyls - Soil - Surrogate					
Decachlorobiphenyl Surrogate	%	103	86	99	50-150

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17203 - 103 Avenue
Edmonton, AB, Canada
T5S 1J4
Attn: Environmental Group
Sampled By:
Company:

Project ID:
Name: Ekalugad
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LSD:
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NWL Lot ID: 332075
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	NWL Number	332075-124	332075-125	332075-126	
	Sample Description	RS-2	WLS-1	WLS-2	
	Matrix	Soil - general	Soil - general	Soil - general	
Analyte	**Units**	**Results**	**Results**	**Results**	**Detection Limit**
Hot Water Soluble					
Boron Water Soluble	mg/kg	0.4	<0.1	<0.1	0.1
Metals Strong Acid Extractable					
Mercury Strong Acid Extractable	ug/g	<0.01	<0.01	<0.01	0.01
Antimony Strong Acid Extractable	ug/g	0.5	0.8	0.5	0.4
Arsenic Strong Acid Extractable	ug/g	0.8	2.2	<0.5	0.5
Barium Strong Acid Extractable	ug/g	18.2	29.4	25.8	0.05
Beryllium Strong Acid Extractable	ug/g	0.15	0.16	0.22	0.03
Cadmium Strong Acid Extractable	ug/g	0.03	0.06	0.03	0.03
·mium Strong Acid Extractable	ug/g	12.7	17.2	11.2	0.05
Cobalt Strong Acid Extractable	ug/g	1.87	2.90	1.46	0.04
Copper Strong Acid Extractable	ug/g	6.86	11.3	4.39	0.05
Lead Strong Acid Extractable	ug/g	2.2	3.2	1.5	0.1
Molybdenum Strong Acid Extractable	ug/g	0.1	0.5	<0.1	0.1
Nickel Strong Acid Extractable	ug/g	5.72	9.98	4.77	0.05
Selenium Strong Acid Extractable	ug/g	<0.2	<0.2	<0.2	0.3
Silver Strong Acid Extractable	ug/g	<0.05	<0.05	<0.05	0.05
Thallium Strong Acid Extractable	ug/g	<0.3	<0.3	<0.3	0.4
Tin Strong Acid Extractable	ug/g	2.1	2.0	1.9	0.3
Vanadium Strong Acid Extractable	ug/g	11.8	15.0	9.11	0.05
Zinc Strong Acid Extractable	ug/g	14.7	20.3	15.6	0.05

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			NWL Number	332075-125	332075-126		
			Sample Description	WLS-1	WLS-2		
			Matrix	Soil - general	Soil - general		
Analyte		**Units**		**Results**	**Results**	**Results**	**Detection Limit**
Polynuclear Aromatic Hydrocarbons - Soil							
Naphthalene	Dry Weight	mg/kg		<0.05	<0.05		0.05
Acenaphthylene	Dry Weight	mg/kg		<0.05	<0.05		0.05
Acenaphthene	Dry Weight	mg/kg		<0.05	<0.05		0.05
Fluorene	Dry Weight	mg/kg		<0.05	<0.05		0.05
Phenanthrene	Dry Weight	mg/kg		<0.05	<0.05		0.05
Anthracene	Dry Weight	mg/kg		<0.05	<0.05		0.05
Fluoranthene	Dry Weight	mg/kg		<0.05	<0.05		0.05
Pyrene	Dry Weight	mg/kg		<0.05	<0.05		0.05
[illegible]zo(a)anthracene	Dry Weight	mg/kg		<0.05	<0.05		0.05
Chrysene	Dry Weight	mg/kg		<0.05	<0.05		0.05
Benzo(b)fluoranthene	Dry Weight	mg/kg		<0.05	<0.05		0.05
Benzo(j)fluoranthene	Dry Weight	mg/kg		<0.05	<0.05		0.05
Benzo(k)fluoranthene	Dry Weight	mg/kg		<0.05	<0.05		0.05
Benzo(a)pyrene	Dry Weight	mg/kg		<0.05	<0.05		0.05
Indeno(1,2,3-c,d)pyrene	Dry Weight	mg/kg		<0.05	<0.05		0.05
Dibenzo(a,h)anthracene	Dry Weight	mg/kg		<0.05	<0.05		0.05
Benzo(g,h,i)perylene	Dry Weight	mg/kg		<0.05	<0.05		0.05
CB(a)P	Carcinogenic Potency Equivalent	mg/kg		<0.05	<0.05		0.05
PAH - Soil - Surrogate Recovery							
Nitrobenzene-d5	PAH - Surrogate	%		86	127		23-130
2-Fluorobiphenyl	PAH - Surrogate	%		72	106		30-130
p-Terphenyl-d14	PAH - Surrogate	%		66	135		18-137

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17203 - 103 Avenue
Edmonton, AB, Canada
T5S 1J4
Attn: Environmental Group
Sampled By:
Company:

Project ID:
Name: Ekalugad
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NWL Lot ID: 332075
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			NWL Number	332075-125	332075-126	332075-127	
			Sample Description	WLS-1	WLS-2	FC Background	
			Matrix	Soil - general	Soil - general	Soil - general	
Analyte		**Units**		**Results**	**Results**	**Results**	**Detection Limit**
Mono-Aromatic Hydrocarbons - Soil							
Extraction Date				16-Sep-04	16-Sep-04	16-Sep-04	
Benzene	Dry Weight	mg/kg		<0.02	<0.02	<0.02	0.02
Toluene	Dry Weight	mg/kg		<0.02	<0.02	<0.02	0.02
Ethylbenzene	Dry Weight	mg/kg		<0.02	<0.02	<0.02	0.02
Total Xylenes (m,p,o)	Dry Weight	mg/kg		<0.02	<0.02	<0.02	0.02
Volatile Petroleum Hydrocarbons - Soil							
Extraction Date				16-Sep-04	16-Sep-04	16-Sep-04	
F1 C6-C10	Dry Weight	mg/kg		<1	<1	<1	1
[illegible]TEX	Dry Weight	mg/kg		<1	<1	<1	1
Extractable Petroleum Hydrocarbons - Soxhlet							
Extraction Date				17-Sep-04	17-Sep-04	17-Sep-04	
F2 C10-C16	Dry Weight	mg/kg		<10	<10	<10	10
F3 C16-C34	Dry Weight	mg/kg		26	<10	36	10
F4 C34-C50	Dry Weight	mg/kg		12	<10	46	10
F4HTGC C34-C50+	Dry Weight	mg/kg		17	<10	94	10
% C50+		%		0.0	0.0	36.6	
Silica Gel Cleanup							
Silica Gel Cleanup				Done	Done	Done	
Soil % Moisture							
Moisture	Soil % Moisture	%		17.80	13.20	25.10	

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NWL Lot ID: 332075
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	NWL Number	332075-126	332075-127	332075-130	
	Sample Description	WLS-2	FC Background	US-1037 / 145	
	Matrix	Soil - general	Soil - general	Soil - general	
Analyte	**Units**	**Results**	**Results**	**Results**	**Detection Limit**
Polychlorinated Biphenyls - Soil					
Aroclor 1016 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1221 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1232 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1242 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1248 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1254 Dry Weight	mg/kg	<0.1	<0.1	0.2	0.1
Aroclor 1260 Dry Weight	mg/kg	<0.1	<0.1	0.4	0.1
Aroclor 1262 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1268 Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Total PCBs Dry Weight	mg/kg	<0.1	<0.1	0.6	0.1
Polychlorinated Biphenyls - Soil - Surrogate					
Decachlorobiphenyl Surrogate	%	97	96	116	50-150

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NWL Lot ID: 332075
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	NWL Number	332075-127	332075-128		
	Sample Description	FC Background	US-NW Stains Comp		
	Matrix	Soil - general	Soil - general		
Analyte		**Units**	**Results**	**Results**	**Results**	**Detection Limit**
Hot Water Soluble						
Boron	Water Soluble	mg/kg	0.3	0.2		0.1
Metals Strong Acid Extractable						
Mercury	Strong Acid Extractable	ug/g	<0.01	0.05		0.01
Antimony	Strong Acid Extractable	ug/g	2.4	1.4		0.4
Arsenic	Strong Acid Extractable	ug/g	2.0	<0.5		0.5
Barium	Strong Acid Extractable	ug/g	126	66.9		0.05
Beryllium	Strong Acid Extractable	ug/g	0.39	0.12		0.03
Cadmium	Strong Acid Extractable	ug/g	0.10	0.11		0.03
mium	Strong Acid Extractable	ug/g	72.5	21.0		0.05
Cobalt	Strong Acid Extractable	ug/g	10.7	3.74		0.04
Copper	Strong Acid Extractable	ug/g	25.8	8.34		0.05
Lead	Strong Acid Extractable	ug/g	10.5	11.8		0.1
Molybdenum	Strong Acid Extractable	ug/g	1.0	0.3		0.1
Nickel	Strong Acid Extractable	ug/g	29.9	7.95		0.05
Selenium	Strong Acid Extractable	ug/g	0.3	<0.2		0.3
Silver	Strong Acid Extractable	ug/g	0.07	<0.05		0.05
Thallium	Strong Acid Extractable	ug/g	<0.3	<0.3		0.4
Tin	Strong Acid Extractable	ug/g	2.6	2.0		0.3
Vanadium	Strong Acid Extractable	ug/g	63.8	17.3		0.05
Zinc	Strong Acid Extractable	ug/g	82.4	28.5		0.05

Approved by: Anthony Neumann

Anthony Neumann, MSc
Laboratory Operations Manager

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Methodology and Notes

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Method of Analysis:

MethodName	Reference		Method	Date Analysis Started	Location
1:5 Water Soluble Extraction	APHA	*	Colorimetric Method, 3500-Cr B	17-Sep-04	Norwest Labs Edmonton
1:5 Water Soluble Extraction	APHA	*	Colorimetric Method, 3500-Cr B	21-Sep-04	Norwest Labs Edmonton
Boron in general soil	McKeague	*	Hot Water Soluble Boron - Azomethine-H Method, 4.61	15-Sep-04	Norwest Labs Edmonton
Boron in general soil	McKeague	*	Hot Water Soluble Boron - Azomethine-H Method, 4.61	15-Sep-04	Norwest Labs Edmonton
Boron in general soil	McKeague	*	Hot Water Soluble Boron - Azomethine-H Method, 4.61	16-Sep-04	Norwest Labs Edmonton
Boron in general soil	McKeague	*	Hot Water Soluble Boron - Azomethine-H Method, 4.61	16-Sep-04	Norwest Labs Edmonton
on in general soil	McKeague	*	Hot Water Soluble Boron - Azomethine-H Method, 4.61	22-Sep-04	Norwest Labs Edmonton
BTEX-CCME - Soil	CCME		Reference Method - Canada-Wide Standard for PHC in Soil, CWS PHC	18-Sep-04	Norwest Labs Calgary
BTEX-CCME - Soil	CCME		Reference Method - Canada-Wide Standard for PHC in Soil, CWS PHC	20-Sep-04	Norwest Labs Calgary
Mercury (Hot Block) in Soil	US EPA	*	Determination of Hg in Sediment by Cold Vapor Atomic Absorption Spec, 245.5	15-Sep-04	Norwest Labs Edmonton
Mercury (Hot Block) in Soil	US EPA	*	Determination of Hg in Sediment by Cold Vapor Atomic Absorption Spec, 245.5	16-Sep-04	Norwest Labs Edmonton
Mercury (Hot Block) in Soil	US EPA	*	Determination of Hg in Sediment by Cold Vapor Atomic Absorption Spec, 245.5	17-Sep-04	Norwest Labs Edmonton
Metals Trace (Hot Block) in soil	SW-846	*	Acid Digestion of Sediments, Sludges, and Soils, EPA 3050B	14-Sep-04	Norwest Labs Edmonton
Metals Trace (Hot Block) in soil	SW-846	*	Acid Digestion of Sediments, Sludges, and Soils, EPA 3050B	14-Sep-04	Norwest Labs Edmonton
Metals Trace (Hot Block) in soil	SW-846	*	Acid Digestion of Sediments, Sludges, and Soils, EPA 3050B	14-Sep-04	Norwest Labs Edmonton
PAH - Soil	US EPA	*	US EPA method, 8270	20-Sep-04	Norwest Labs Calgary
PAH - Soil	US EPA	*	US EPA method, 8270	20-Sep-04	Norwest Labs Calgary
PCB - Soil	US EPA	*	US EPA method, 8082	24-Sep-04	Norwest Labs Calgary
PCB - Soil	US EPA	*	US EPA method, 8082	27-Sep-04	Norwest Labs Calgary
TEH-CCME-Soil (Soxhlet)	CCME		Reference Method - Canada-Wide Standard for PHC in Soil, CWS PHC	18-Sep-04	Norwest Labs Calgary

Please direct any inquiries regarding this report to our Client Services group.
Results relate only to samples as submitted

NORWEST LABS

332243 (3pg) Control Number E 94767

Environmental Sample Information Sheet

NOTE: Proper completion of this form is required in order to proceed with analysis
See reverse for your nearest Norwest location and proper sampling protocol

Billing Address: x
Company: Earth Tech Canada Inc.
Address: 17203 - 103 Avenue
Edmonton, AB T5S 1J4
QA/QC Report [X]
Attention: Environmental Group
Phone: (780) 488-6800
Fax: (780) 488-2121
Cell:
e-mail: gwoollett@earthtech.ca
Report Result: Fax [ ] Mail [ ] Courier [ ] e-mail [ ]

Copy of Report To:
Company:
Address:
Attention:
Phone:
Fax:
Cell:
e-mail:
Copy of invoice: [ ]
Mail invoice to this address for approval [ ]
Report Result: Fax [ ] Mail [ ] Courier [ ] e-mail [ ]

Information to be included on Report and Invoice
Project ID: 78850
Project Name: Ekalugad materials
Project Location: Ekalugad
Legal Location:
PO#: 131-1739
Proj. Acct. Code: 78850
Agreement ID: 40857

RUSH Please contact the laboratory to confirm rush dates and times before submitting samples.
Upon filling out this section, client accepts that surcharges will be attached to this analysis
Required on: all analyses [ ] or as indicated [ ]
Date Required:
Signature:
Norwest Authorization:

Sample Custody (Please Print)
Sampled by: MAM Date 09/09/04
Company ETC Signature [signature]
Relinquished by:
Company Date
Waybill number:
Received by:
Company Date

Special Instructions / Comments [ ] Check here if Norwest is required to report results directly to a regulatory body (Please include contact information)

	Sample Identification	Location	Depth (IN CM M)	Date / Time Sampled	Matrix	Sampling Method	Number of Containers	Lead in paint	PCB in paint	Asbestos
1	US-MTPS-01		—					X	X	
2	US-MTPS-02		—					X	X	
3	US-MTPS-03		—					X	X	
4	US-MTPS-04		—					X	X	
5	US-MTPS-05		—					X	X	
6	US-MTPS-05C		—					X	X	
7	US-MTPS-06		—					X	X	
8	US-MTPS-06A		—					X	X	
9	US-MTPS-07		—					X	X	
10	US-WPS-08		—					X	X	
11	US-WPS-09		—					X	X	
12	US-WPS-10		—					X	X	
13	US-WPS-11		—					X	X	
14	US-WPS-12		—					X		
15	US-WPS-13		—					X		

Enter tests above (✔ relevant samples below)

NOTE: All hazardous samples must be labelled according to WHMIS guidelines.
Accredited by the Standards Council of Canada for specific tests

Page 3 of 4

NWL008 (08/01)

NORWEST LABS

Control Number E 94768

Environmental Sample Information Sheet

NOTE: Proper completion of this form is required in order to proceed with analysis

See reverse for your nearest Norwest location and proper sampling protocol

Billing Address:		**Copy of Report To:**	**Copy of invoice:** ☐
Company: Earth Tech Canada Inc.	QA/QC Report ☒	Company:	Mail invoice to this address for approval ☐
Address: 17203 - 103 Avenue, Edmonton, AB T5S 1J4		Address:	
Attention: Environmental Group	Report Result:	Attention:	Report Result:
Phone: (780) 488-6800	Fax ☐	Phone:	Fax ☐
Fax: (780) 488-2121	Mail ☐	Fax:	Mail ☐
Cell:	Courier ☐	Cell:	Courier ☐
e-mail: gwoollett@earthtech.ca	e-mail ☐	e-mail:	e-mail ☐

Information to be included on Report and Invoice

Project ID: 78850
Project Name: Ekalugad Fjord
Project Location: Ekalugad
Legal Location:
PO#: 131-1739
Proj. Acct. Code: 78850
Agreement ID: 40857

RUSH Please contact the laboratory to confirm rush dates and times before submitting samples.

Upon filling out this section, client accepts that surcharges will be attached to this analysis

Required on: all analyses **or** as indicated ☐ or ☐

Date Required: _____

Signature: _____

Norwest Authorization: _____

Sample Custody (Please Print)

Sampled by: MAM Date 09/09/04

Company ETC Signature

Relinquished by:

Company Date

Waybill number:

Received by:

Company Date

Special Instructions / Comments ☐ Check here if Norwest is required to report results directly to a regulatory body (Please include contact information)

	Sample Identification	Location	Depth IN CM M	Date / Time Sampled	Matrix	Sampling Method	Number of Containers: Lead in paint	PCB in paint	Asbestos	PCB in concrete				
							↓ Enter tests above (✔ relevant samples below)							
1	US-~~WPS~~-GPS-14		—				X	X						
2	US-GPS-15		—				X	X						
3	US-GCS-16		—						X					
4	US-GPS-17		—				X	X						
5	US-MTEPS-18		—				X							
6	US-MTPS-19		—				X							
7	US-MTEPS-20		—				X	X						
8	US-IHPS-21		—				X	X						
9	US-ANTPS-22		—				X	X						
10	US-2HP-23		—				X	X						
11	MS-HHPS-24		—				X	X						
12	~~US-MTAS-01~~		—						X					
	~~US-MTAS-02~~		—						X					
14	~~US-MTAS-03~~		—						X					
15	~~US-MTAS-04~~		—						X					

NOTE: All hazardous samples must be labelled according to WHMIS guidelines.

Accredited by the Standards Council of Canada for specific tests

NORWEST LABS

Control Number E 94776

Environmental Sample Information Sheet

NOTE: Proper completion of this form is required in order to proceed with analysis
See reverse for your nearest Norwest location and proper sampling protocol

Billing Address:		Copy of Report To:		Copy of invoice:
Company: Earth Tech Canada Inc.		Company: ~~Earth Tech~~		
Address:	QA/QC Report ☒	Address:		Mail invoice to this address for approval ☐
17203 - 103 Avenue Edmonton, AB T5S 1J4				
Attention: Environmental Group	Report Result:	Attention:		Report Result:
Phone: (780) 488-6800	Fax ☐	Phone:		Fax ☐
Fax: (780) 488-2121	Mail ☐	Fax:		Mail ☐
Cell:	Courier ☐	Cell:		Courier ☐
e-mail: gwoollett@earthtech.ca	e-mail ☐	e-mail:		e-mail ☐

Information to be included on Report and Invoice

Project ID: 78850
Project Name: Ekalugad Fjord
Project Location: Ekalugad
Legal Location:
PO#: 131-1739
Proj. Acct. Code:
Agreement ID: 40857

RUSH Please contact the laboratory to confirm rush dates and times before submitting samples.

Upon filling out this section, client accepts that surcharges will be attached to this analysis

Required on: all analyses **or** as indicated ☐ or ☐

Date Required: _____
Signature: _____
Norwest Authorization: _____

Sample Custody (Please Print)

Sampled by: MAM Date Sept 9 '04
Company ETC Signature M. M
Relinquished by:
Company Date
Waybill number:
Received by:
Company Date

Special Instructions / Comments ☐ Check here if Norwest is required to report results directly to a regulatory body (Please include contact information)

	Sample Identification	Location	Depth IN CM M	Date / Time Sampled	Matrix	Sampling Method	Number of Containers: Lead in paint	PCB in paint	Asbestos	
							↓ Enter tests above (✔ relevant samples below)			
~~1~~	~~MAM~~ US MTAS-05		—						X	
~~2~~	US MTAS-06		—						X	
~~3~~	US GAS -07		—						X	
27 4	WL-HUT		—				X	X		
28 5	BAT-LBP-01		—				X	X		
29 6	BAT-LBP-02		—				X	X		
7			—							
8			—							
9			—							
10			—							
11			—							
12			—							
			—							
14			—							
15			—							

NOTE: All hazardous samples must be labelled according to WHMIS guidelines.
Accredited by the Standards Council of Canada for specific tests

NORWEST LABS

Report Transmission Cover Page

Norwest Labs
7217 Roper Road
Edmonton, AB. T6B 3J4
Phone: (780) 438-5522
Fax: (780) 438-0396

Bill to: Earth Tech Canada Inc.
Report to: Earth Tech Canada Inc.
17203 - 103 Avenue
Edmonton, AB, Canada
T5S 1J4
Attn: Environmental Group
Sampled By: MAM
Company: ETC

Project ID: 78850
Name: Ekalugad Materials
Location: Ekalugad
LSD:
P.O.: 131-1739
Acct. Code: 78850

NWL Lot ID: 332243
Control Number: E 94767
Date Received: Sep 13, 2004
Date Reported: Sep 24, 2004
Report Number: 594632

Lot Notes

Sample Notes:

Notes to Clients

Lot Notes:

09/16/04 HMG - Samples -10,11,12,14,15,20,21 were cancelled for PCBs due to insufficient sample volumes.

Insufficient sample available to complete analysis for lead in paint. DL Sept 24 04.

Sample Notes:

Batch Notes:

Method Notes:

Method Result Notes:

Reports associated with this Lot

Id/Format/Reported Date	Id/Format/Reported Date	Id/Format/Reported Date
594632 Envir2QC 3 Smp & DL		

Comment:
See Methodology and Notes page of Analytical Report for all comments pertaining to this report.

If this report transmission is not satisfactory, please send report requirements to the address at the top of this page.

NORWEST LABS

Analytical Report

Norwest Labs
7217 Roper Road
Edmonton, AB. T6B 3J4
Phone: (780) 438-5522
Fax: (780) 438-0396

Bill to: Earth Tech Canada Inc.
Report to: Earth Tech Canada Inc.
17203 - 103 Avenue
Edmonton, AB, Canada
T5S 1J4
Attn: Environmental Group
Sampled By: MAM
Company: ETC

Project ID: 78850
Name: Ekalugad Materials
Location: Ekalugad
LSD:
P.O.: 131-1739
Acct. Code: 78850

NWL Lot ID: 332243
Control Number: E 94767
Date Received: Sep 13, 2004
Date Reported: Sep 24, 2004
Report Number: 594632

	NWL Number	332243-1	332243-2	332243-3	
	Sample Description	US-MTPS-01	US-MTPS-02	US-MTPS-03	
	Matrix	Waste - industrial	Waste - industrial	Waste - industrial	
Analyte	**Units**	**Results**	**Results**	**Results**	**Detection Limit**
Polychlorinated Biphenyls - Oil					
Aroclor 1016	mg/kg	<0.5	<0.5	<0.5	0.5
Aroclor 1221	mg/kg	<0.5	<0.5	<0.5	0.5
Aroclor 1232	mg/kg	<0.5	<0.5	<0.5	0.5
Aroclor 1242	mg/kg	<0.5	<0.5	<0.5	0.5
Aroclor 1248	mg/kg	<0.5	<0.5	<0.5	0.5
Aroclor 1254	mg/kg	4760	3910	4660	0.5
Aroclor 1260	mg/kg	<0.5	<0.5	<0.5	0.5
Aroclor 1262	mg/kg	<0.5	<0.5	<0.5	0.5
lor 1268	mg/kg	<0.5	<0.5	<0.5	0.5
Total PCBs	mg/kg	4760.0	3910.0	4660.0	0.5
Polychlorinated Biphenyls - Oil - Surrogate					
Decachlorobiphenyl Surrogate	%	110	105	125	50-150

	NWL Number	332243-4	332243-5	332243-6	
	Sample Description	US-MTPS-04	US-MTPS-05	US-MTPS-05C	
	Matrix	Waste - industrial	Waste - industrial	Waste - industrial	
Analyte	**Units**	**Results**	**Results**	**Results**	**Detection Limit**
Polychlorinated Biphenyls - Oil					
Aroclor 1016	mg/kg	<0.5	<0.5	<0.5	0.5
Aroclor 1221	mg/kg	<0.5	<0.5	<0.5	0.5
Aroclor 1232	mg/kg	<0.5	<0.5	<0.5	0.5
Aroclor 1242	mg/kg	<0.5	<0.5	<0.5	0.5
Aroclor 1248	mg/kg	<0.5	<0.5	<0.5	0.5
Aroclor 1254	mg/kg	3520	14000	42600	0.5
Aroclor 1260	mg/kg	<0.5	<0.5	<0.5	0.5
Aroclor 1262	mg/kg	<0.5	<0.5	<0.5	0.5
Aroclor 1268	mg/kg	<0.5	<0.5	<0.5	0.5
Total PCBs	mg/kg	3520.0	14000.0	42600.0	0.5
Polychlorinated Biphenyls - Oil - Surrogate					
Decachlorobiphenyl Surrogate	%	123	140	104	50-150

NORWEST LABS

Norwest Labs
7217 Roper Road
Edmonton, AB. T6B 3J4
Phone: (780) 438-5522
Fax: (780) 438-0396

Analytical Report

Bill to: Earth Tech Canada Inc.
Report to: Earth Tech Canada Inc.
17203 - 103 Avenue
Edmonton, AB, Canada
T5S 1J4
Attn: Environmental Group
Sampled By: MAM
Company: ETC

Project ID: 78850
Name: Ekalugad Materials
Location: Ekalugad
LSD:
P.O.: 131-1739
Acct. Code: 78850

NWL Lot ID: 332243
Control Number: E 94767
Date Received: Sep 13, 2004
Date Reported: Sep 24, 2004
Report Number: 594632

	NWL Number	332243-7	332243-8	332243-9	
	Sample Description	US-MTPS-06	US-MTPS-06A	US-MTPS-07	
	Matrix	Waste - industrial	Waste - industrial	Waste - industrial	
Analyte	**Units**	**Results**	**Results**	**Results**	**Detection Limit**
Polychlorinated Biphenyls - Oil					
Aroclor 1016	mg/kg	<0.5	<0.5	<0.5	0.5
Aroclor 1221	mg/kg	<0.5	<0.5	<0.5	0.5
Aroclor 1232	mg/kg	<0.5	<0.5	<0.5	0.5
Aroclor 1242	mg/kg	<0.5	<0.5	<0.5	0.5
Aroclor 1248	mg/kg	<0.5	<0.5	<0.5	0.5
Aroclor 1254	mg/kg	2480	3.3	11700	0.5
Aroclor 1260	mg/kg	6590	<0.5	<0.5	0.5
Aroclor 1262	mg/kg	<0.5	<0.5	<0.5	0.5
lor 1268	mg/kg	<0.5	<0.5	<0.5	0.5
Total PCBs	mg/kg	9070.0	3.3	11700.0	0.5
Polychlorinated Biphenyls - Oil - Surrogate					
Decachlorobiphenyl Surrogate	%	125	130	127	50-150

	NWL Number	332243-13	332243-16	332243-17	
	Sample Description	US-WPS-11	US-GPS-14	US-GPS-15	
	Matrix	Waste - industrial	Waste - industrial	Waste - industrial	
Analyte	**Units**	**Results**	**Results**	**Results**	**Detection Limit**
Polychlorinated Biphenyls - Oil					
Aroclor 1016	mg/kg	<0.5	<0.5	<0.5	0.5
Aroclor 1221	mg/kg	<0.5	<0.5	<0.5	0.5
Aroclor 1232	mg/kg	<0.5	<0.5	<0.5	0.5
Aroclor 1242	mg/kg	<0.5	<0.5	<0.5	0.5
Aroclor 1248	mg/kg	<0.5	<0.5	<0.5	0.5
Aroclor 1254	mg/kg	3890	18000	1660	0.5
Aroclor 1260	mg/kg	<0.5	<0.5	<0.5	0.5
Aroclor 1262	mg/kg	<0.5	<0.5	<0.5	0.5
Aroclor 1268	mg/kg	<0.5	<0.5	<0.5	0.5
Total PCBs	mg/kg	3890.0	18000.0	1660.0	0.5
Polychlorinated Biphenyls - Oil - Surrogate					
Decachlorobiphenyl Surrogate	%	89	120	129	50-150

NORWEST LABS

Norwest Labs
7217 Roper Road
Edmonton, AB. T6B 3J4
Phone: (780) 438-5522
Fax: (780) 438-0396

Analytical Report

Bill to: Earth Tech Canada Inc.
Report to: Earth Tech Canada Inc.
17203 - 103 Avenue
Edmonton, AB, Canada
T5S 1J4
Attn: Environmental Group
Sampled By: MAM
Company: ETC

Project ID: 78850
Name: Ekalugad Materials
Location: Ekalugad
LSD:
P.O.: 131-1739
Acct. Code: 78850

NWL Lot ID: 332243
Control Number: E 94767
Date Received: Sep 13, 2004
Date Reported: Sep 24, 2004
Report Number: 594632

	NWL Number	332243-18	332243-19	332243-22	
	Sample Description	US-GCS-16	US-GPS-17	US-MTEPS-20	
	Matrix	Waste - industrial	Waste - industrial	Waste - industrial	
Analyte	**Units**	**Results**	**Results**	**Results**	**Detection Limit**
Polychlorinated Biphenyls - Oil					
Aroclor 1016	mg/kg	<0.5	<0.5	<0.5	0.5
Aroclor 1221	mg/kg	<0.5	<0.5	<0.5	0.5
Aroclor 1232	mg/kg	<0.5	<0.5	<0.5	0.5
Aroclor 1242	mg/kg	<0.5	<0.5	<0.5	0.5
Aroclor 1248	mg/kg	<0.5	<0.5	<0.5	0.5
Aroclor 1254	mg/kg	35.9	352	2.5	0.5
Aroclor 1260	mg/kg	<0.5	<0.5	<0.5	0.5
Aroclor 1262	mg/kg	<0.5	<0.5	<0.5	0.5
lor 1268	mg/kg	<0.5	<0.5	<0.5	0.5
Total PCBs	mg/kg	35.9	352.0	2.5	0.5
Polychlorinated Biphenyls - Oil - Surrogate					
Decachlorobiphenyl Surrogate	%	103	100	107	50-150

	NWL Number	332243-23	332243-24	332243-25	
	Sample Description	US-IHPS-21	US-ANTPS-22	US-2HP-23	
	Matrix	Waste - industrial	Waste - industrial	Waste - industrial	
Analyte	**Units**	**Results**	**Results**	**Results**	**Detection Limit**
Polychlorinated Biphenyls - Oil					
Aroclor 1016	mg/kg	<0.5	<0.5	<0.5	0.5
Aroclor 1221	mg/kg	<0.5	<0.5	<0.5	0.5
Aroclor 1232	mg/kg	<0.5	<0.5	<0.5	0.5
Aroclor 1242	mg/kg	<0.5	<0.5	<0.5	0.5
Aroclor 1248	mg/kg	<0.5	<0.5	<0.5	0.5
Aroclor 1254	mg/kg	109	2.2	8.0	0.5
Aroclor 1260	mg/kg	<0.5	<0.5	<0.5	0.5
Aroclor 1262	mg/kg	<0.5	<0.5	<0.5	0.5
Aroclor 1268	mg/kg	<0.5	<0.5	<0.5	0.5
Total PCBs	mg/kg	109.0	2.2	8.0	0.5
Polychlorinated Biphenyls - Oil - Surrogate					
Decachlorobiphenyl Surrogate	%	104	116	110	50-150

NORWEST LABS

Norwest Labs
7217 Roper Road
Edmonton, AB. T6B 3J4
Phone: (780) 438-5522
Fax: (780) 438-0396

Analytical Report

Bill to: Earth Tech Canada Inc.
Report to: Earth Tech Canada Inc.
17203 - 103 Avenue
Edmonton, AB, Canada
T5S 1J4
Attn: Environmental Group
Sampled By: MAM
Company: ETC

Project ID: 78850
Name: Ekalugad Materials
Location: Ekalugad
LSD:
P.O.: 131-1739
Acct. Code: 78850

NWL Lot ID: 332243
Control Number: E 94767
Date Received: Sep 13, 2004
Date Reported: Sep 24, 2004
Report Number: 594632

	NWL Number	332243-26	332243-27	332243-28	
	Sample Description	MS-HHPS-24	WL-HUT	BAT-LBP-01	
	Matrix	Waste - industrial	Waste - industrial	Waste - industrial	
Analyte	**Units**	**Results**	**Results**	**Results**	**Detection Limit**
Polychlorinated Biphenyls - Oil					
Aroclor 1016	mg/kg	<0.5	<0.5	<0.5	0.5
Aroclor 1221	mg/kg	<0.5	<0.5	<0.5	0.5
Aroclor 1232	mg/kg	<0.5	<0.5	<0.5	0.5
Aroclor 1242	mg/kg	<0.5	<0.5	<0.5	0.5
Aroclor 1248	mg/kg	<0.5	<0.5	<0.5	0.5
Aroclor 1254	mg/kg	50.8	68.8	2.7	0.5
Aroclor 1260	mg/kg	<0.5	<0.5	<0.5	0.5
Aroclor 1262	mg/kg	<0.5	<0.5	<0.5	0.5
lor 1268	mg/kg	<0.5	<0.5	<0.5	0.5
Total PCBs	mg/kg	50.8	68.8	2.7	0.5
Polychlorinated Biphenyls - Oil - Surrogate					
Decachlorobiphenyl Surrogate	%	114	118	118	50-150

	NWL Number	332243-29			
	Sample Description	BAT-LBP-02			
	Matrix	Waste - industrial			
Analyte	**Units**	**Results**	**Results**	**Results**	**Detection Limit**
Polychlorinated Biphenyls - Oil					
Aroclor 1016	mg/kg	<0.5			0.5
Aroclor 1221	mg/kg	<0.5			0.5
Aroclor 1232	mg/kg	<0.5			0.5
Aroclor 1242	mg/kg	<0.5			0.5
Aroclor 1248	mg/kg	<0.5			0.5
Aroclor 1254	mg/kg	6.0			0.5
Aroclor 1260	mg/kg	<0.5			0.5
Aroclor 1262	mg/kg	<0.5			0.5
Aroclor 1268	mg/kg	<0.5			0.5
Total PCBs	mg/kg	6.0			0.5
Polychlorinated Biphenyls - Oil - Surrogate					
Decachlorobiphenyl Surrogate	%	117			50-150

Approved by: R L Neumann

Randy Neumann, BSc
Vice President, Environmental

NORWEST LABS

Norwest Labs
7217 Roper Road
Edmonton, AB. T6B 3J4
Phone: (780) 438-5522
Fax: (780) 438-0396

Quality Control

Bill to: Earth Tech Canada Inc.
Report to: Earth Tech Canada Inc.
17203 - 103 Avenue
Edmonton, AB, Canada
T5S 1J4
Attn: Environmental Group
Sampled By: MAM
Company: ETC

Project
ID: 78850
Name: Ekalugad Materials
Location: Ekalugad
LSD:
P.O.: 131-1739
Acct. Code: 78850

NWL Lot ID: 332243
Control Number: E 94767
Date Received: Sep 13, 2004
Date Reported: Sep 24, 2004
Report Number: 594632

Metals Strong Acid Extractable

Blanks	Units	Measured	Mean	Lower Limit	Upper Limit	Passed QC
Lead	ug/g		0.0	0.0	0.0	✓
Material Used:	Edmonton Method Blank					
Date Acquired:	Sep 24, 2004					
Acquired By:						

Replicates	Units	Replicate1	Replicate2	% RSD Criteria	Absolute Criteria	Passed QC
Lead	ug/g	UNDEFINED		20.0	0.3	✓
Material Used:	Edmonton Duplicate					
Date Acquired:	Sep 24, 2004					
Acquired By:						

Control Sample	Units	Measured	Mean	Lower Limit	Upper Limit	Passed QC
Lead	ug/g		11.9	9.7	14.1	✓
Material Used:	Metals Soils					
Date Acquired:	Sep 24, 2004					
Acquired By:						

Polychlorinated Biphenyls - Soil

Blanks	Units	Measured	Mean	Lower Limit	Upper Limit	Passed QC
Aroclor 1016	mg/kg		0.0	-0.2	0.2	✓
Aroclor 1221	mg/kg		0.0	-0.2	0.2	✓
Aroclor 1232	mg/kg		0.0	-0.2	0.2	✓
Aroclor 1242	mg/kg		0.0	-0.2	0.2	✓
Aroclor 1248	mg/kg		0.0	-0.2	0.2	✓
Aroclor 1254	mg/kg		0.0	-0.2	0.2	✓
Aroclor 1260	mg/kg		0.0	-0.2	0.2	✓
Aroclor 1262	mg/kg		0.0	-0.2	0.2	✓
Aroclor 1268	mg/kg		0.0	-0.2	0.2	✓
Material Used:	Method Blank - SV					
Date Acquired:	Sep 16, 2004					
Acquired By:						

Polychlorinated Biphenyls - Soil - Surrogate

Blanks	Units	Measured	Mean	Lower Limit	Upper Limit	Passed QC
Decachlorobiphenyl	%		100	10	190	✓
Material Used:	Method Blank - SV					
Date Acquired:	Sep 16, 2004					
Acquired By:						

NORWEST LABS

Norwest Labs
7217 Roper Road
Edmonton, AB. T6B 3J4
Phone: (780) 438-5522
Fax: (780) 438-0396

Quality Control

Bill to: Earth Tech Canada Inc.
Report to: Earth Tech Canada Inc.
17203 - 103 Avenue
Edmonton, AB, Canada
T5S 1J4
Attn: Environmental Group
Sampled By: MAM
Company: ETC

Project
ID: 78850
Name: Ekalugad Materials
Location: Ekalugad
LSD:
P.O.: 131-1739
Acct. Code: 78850

NWL Lot ID: 332243
Control Number: E 94767
Date Received: Sep 13, 2004
Date Reported: Sep 24, 2004
Report Number: 594632

Polychlorinated Biphenyls - Oil

Blanks	Units	Measured	Mean	Lower Limit	Upper Limit	Passed QC
Aroclor 1016	mg/kg	<0.5	0.0	-0.8	0.8	✓
Aroclor 1221	mg/kg	<0.5	0.0	-0.8	0.8	✓
Aroclor 1232	mg/kg	<0.5	0.0	-0.8	0.8	✓
Aroclor 1242	mg/kg	<0.5	0.0	-0.8	0.8	✓
Aroclor 1248	mg/kg	<0.5	0.0	-0.8	0.8	✓
Aroclor 1254	mg/kg	<0.5	0.0	-0.8	0.8	✓
Aroclor 1260	mg/kg	<0.5	0.0	-0.8	0.8	✓
Aroclor 1262	mg/kg	<0.5	0.0	-0.8	0.8	✓
Aroclor 1268	mg/kg	<0.5	0.0	-0.8	0.8	✓
Material Used:	Method Blank - SV					
Date Acquired:	Sep 17, 2004					
Acquired By:						

ibration Check	Units	Measured	Target	% Recovery	Criteria (%)	Passed QC
Aroclor 1254	ug/mL	0.9	1	90	70-130	✓
Material Used:	Calibration Check - PCBs					
Date Acquired:	Sep 17, 2004					
Acquired By:	Inna Kazakov					

Polychlorinated Biphenyls - Oil - Surrogate

Blanks	Units	Measured	Mean	Lower Limit	Upper Limit	Passed QC
Decachlorobiphenyl	%	70	100	10	190	✓
Material Used:	Method Blank - SV					
Date Acquired:	Sep 17, 2004					
Acquired By:						

September 24, 2004

Ms. Darlene Lintott
Norwest Labs
7217 Roper Road
Edmonton, AB
T6B 3J4

Dear Darlene,

RE: Analysis of tissue samples for PCBs

On September 15, 2004, Pacific Rim Laboratories Inc. (PRL) received five tissue samples from Norwest Labs. The samples were analysed for polychlorinated biphenyls (PCB). The analyses are now complete and the data is reported on the attached sheets.

If you have any questions about your data report, please do not hesitate to contact me.

Sincerely,
Pacific Rim Laboratories Inc.

David Hope
CEO

Pacific Rim Laboratories Inc. #103, 19575-55A Avenue, Surrey, BC V3S 8P8
Tel: + 604.532.8711 Fax: + 604.532.8712 Email: info@pacificrimlabs.com
www.pacificrimlabs.com

SAMPLE RECEIPT FORM / CHEMICAL ANALYSIS FORM

FILE #: PR40277

CLIENT: Norwest Labs
7217 Roper Road
Edmonton, Alberta
Canada T6B 3J4

Phone – 780-438-5522
Fax – 780-438-0396

RECEIVED BY: P. Aceveda **DATE/TIME:** September 15, 2004 (3:30 p.m.)
CONDITION: okay

# of Containers	Sample Type	Sample (Client Codes)	Lab Codes	Test Requested
1	tissue	330954-1 (Fish #1)	PR40277	PCB
1	tissue	330954-2 (Fish #2)	PR40278	PCB
1	tissue	330954-3 (Fish #3)	PR40279	PCB
1	tissue	330954-5 (Fish #4)	PR40280	PCB
1	tissue	330954-5 (Fish #5)	PR40281	PCB

STORAGE: Stored at 4 °C
ANALYTES: HRGC/HRMS analysis for PCB

SPECIAL INSTRUCTIONS: none

METHODOLOGY
Reference Method: PCB: SOP LAB02; EPA Method 1668a
Data summarized in Data Report Attached

Report sent to: Darlene Lintott Date: September 24, 2004

Comments: Surrogate recoveries, the lab blank and all other QA/QC data associated with this analysis were acceptable according to the reference method.

Acronyms used in reporting Polychlorinated Biphenyls (PCBs)

MoCB = Monochlorobiphenyl
DiCB = Dichlorobiphenyl
TrCB = Trichlorobiphenyl
TeCB = Tetrachlorobiphenyl
PeCB = Pentachlorobiphenyl
HxCB = Hexachlorobiphenyl
HpCB = Heptachlorobiphenyl
OcCB = Octachlorobiphenyl
NoCB = Nonachlorobiphenyl
DeCB = Decachlorobiphenyl

Acceptable recoveries for PCB Surrogates - EPA 1668a

	Min (%)	Max (%)
	25%	150%

DATA REPORT

Client:	Norwest Labs - Edmonton	Contact:	Darlene Lintott
Client ID:	330954-1 (Fish #1)	Date Extracted:	16-Sep-04
PRL ID:	PR40277	Date Analysed:	22-Sep-04

Polychlorinated Biphenyls

Homolog Totals	ng/g	DL ng/g
Trichlorobiphenyls	0.25	0.05
Tetrachlorobiphenyls	0.73	0.1
Pentachlorobiphenyls	0.87	0.2
Hexachlorobiphenyls	0.77	0.2
Heptachlorobiphenyls	ND	0.1
Octachlorobiphenyls	ND	0.05
Nonachlorobiphenyls	ND	0.05
Decachlorobiphenyl	ND	0.05

Total PCB **2.6** **ng/g**

Lipid **3.1%**

Internal Standard Recovery

Chemical Name	IUPAC #	%
$^{13}C_{12}$-2,2',6'-TrCB	19L	54.1
$^{13}C_{12}$-3,4,4'-TrCB	37L	94.4
$^{13}C_{12}$-3,3',4,4'-TeCB	77L	59.9
$^{13}C_{12}$-2',3,4,4',5-PeCB	123L	57.1
$^{13}C_{12}$-3,3',4,4',5-PeCB	126L	57.2
$^{13}C_{12}$-2,3,3',4,4',5-HxCB	156L	53.5
$^{13}C_{12}$-3,3',4,4',5,5'-HxCB	169L	51.0
$^{13}C_{12}$-2,2',3,4',5,6,6'-HpCB	188L	INT
$^{13}C_{12}$-2,3,3',4,4',5,5'-HpCB	189L	49.0
$^{13}C_{12}$-2,2',3,3',5,5',6,6'-OcCB	202L	49.6
$^{13}C_{12}$-2,3,3',4,4',5,5',6-OcCB	205L	77.8
$^{13}C_{12}$-2,2',3,3',4,4',5,5',6-NoCB	206L	53.5
$^{13}C_{12}$-DeCB	209L	45.7

ND - none detected

INT - Matrix Interference. Not used for calculation

24/09/04

Authorization

ASSOCIATION OF THE CHEMICAL PROFESSION OF ONTARIO
CERTIFIED
Patrick Pond
CHEMIST

ND - none detected NDR - none detected based on peak ratio

INT - Matrix Interference. Not used for calculation

Pacific Rim Laboratories Inc. #103, 19575-55A Avenue, Surrey, BC V3S 8P8
Tel: + 604.532.8711 Fax: + 604.532.8712 Email: info@pacificrimlabs.com
www.pacificrimlabs.com

DATA REPORT

Client:	Norwest Labs - Edmonton	Contact:	Darlene Lintott
Client ID:	330954-2 (Fish #2)	Date Extracted:	16-Sep-04
PRL ID:	PR40278	Date Analysed:	22-Sep-04

Polychlorinated Biphenyls

Homolog Totals	ng/g	DL ng/g
Trichlorobiphenyls	ND	0.05
Tetrachlorobiphenyls	0.20	0.1
Pentachlorobiphenyls	ND	0.2
Hexachlorobiphenyls	0.20	0.2
Heptachlorobiphenyls	ND	0.1
Octachlorobiphenyls	ND	0.05
Nonachlorobiphenyls	ND	0.05
Decachlorobiphenyl	ND	0.05

Total PCB **0.40 ng/g**

Lipid **2.7%**

Internal Standard Recovery

Chemical Name	IUPAC #	%
$^{13}C_{12}$-2,2',6'-TrCB	19L	35.1
$^{13}C_{12}$-3,4,4'-TrCB	37L	75.4
$^{13}C_{12}$-3,3',4,4'-TeCB	77L	57.5
$^{13}C_{12}$-2',3,4,4',5-PeCB	123L	49.0
$^{13}C_{12}$-3,3',4,4',5-PeCB	126L	42.1
$^{13}C_{12}$-2,3,3',4,4',5-HxCB	156L	47.2
$^{13}C_{12}$-3,3',4,4',5,5'-HxCB	169L	46.5
$^{13}C_{12}$-2,2',3,4',5,6,6'-HpCB	188L	INT
$^{13}C_{12}$-2,3,3',4,4',5,5'-HpCB	189L	46.2
$^{13}C_{12}$-2,2',3,3',5,5',6,6'-OcCB	202L	48.2
$^{13}C_{12}$-2,3,3',4,4',5,5',6-OcCB	205L	77.8
$^{13}C_{12}$-2,2',3,3',4,4',5,5',6-NoCB	206L	57.1
$^{13}C_{12}$-DeCB	209L	40.0

ND - none detected

INT - Matrix Interference. Not used for calculation

24/09/04

Authorization

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DATA REPORT

Client:	Norwest Labs - Edmonton	Contact:	Darlene Lintott
Client ID:	330954-3 (Fish #3)	Date Extracted:	16-Sep-04
PRL ID:	PR40279	Date Analysed:	22-Sep-04

Polychlorinated Biphenyls

Homolog Totals	ng/g	DL ng/g
Trichlorobiphenyls	0.19	0.05
Tetrachlorobiphenyls	0.50	0.1
Pentachlorobiphenyls	0.34	0.2
Hexachlorobiphenyls	0.34	0.2
Heptachlorobiphenyls	ND	0.1
Octachlorobiphenyls	ND	0.05
Nonachlorobiphenyls	ND	0.05
Decachlorobiphenyl	ND	0.05

Total PCB **1.37 ng/g**

Lipid **3.1%**

Internal Standard Recovery

Chemical Name	IUPAC #	%
$^{13}C_{12}$-2,2',6'-TrCB	19L	35.9
$^{13}C_{12}$-3,4,4'-TrCB	37L	83.9
$^{13}C_{12}$-3,3',4,4'-TeCB	77L	58.2
$^{13}C_{12}$-2',3,4,4',5-PeCB	123L	59.7
$^{13}C_{12}$-3,3',4,4',5-PeCB	126L	52.5
$^{13}C_{12}$-2,3,3',4,4',5-HxCB	156L	50.5
$^{13}C_{12}$-3,3',4,4',5,5'-HxCB	169L	51.2
$^{13}C_{12}$-2,2',3,4',5,6,6'-HpCB	188L	INT
$^{13}C_{12}$-2,3,3',4,4',5,5'-HpCB	189L	50.1
$^{13}C_{12}$-2,2',3,3',5,5',6,6'-OcCB	202L	45.1
$^{13}C_{12}$-2,3,3',4,4',5,5',6-OcCB	205L	77.8
$^{13}C_{12}$-2,2',3,3',4,4',5,5',6-NoCB	206L	48.5
$^{13}C_{12}$-DeCB	209L	44.8

ND - none detected

INT - Matrix Interference. Not used for calculation

Authorization 24/09/04

ASSOCIATION OF THE CHEMICAL PROFESSION OF ONTARIO
Patrick Pond
CHEMIST

ND - none detected NDR - none detected based on peak ratio

INT - Matrix Interference. Not used for calculation

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Tel: + 604.532.8711 Fax: + 604.532.8712 Email: info@pacificrimlabs.com
www.pacificrimlabs.com

DATA REPORT

Client:	Norwest Labs - Edmonton	Contact:	Darlene Lintott
Client ID:	330954-4 (Fish #4)	Date Extracted:	16-Sep-04
PRL ID:	PR40280	Date Analysed:	22-Sep-04

Polychlorinated Biphenyls

Homolog Totals	ng/g	DL ng/g
Trichlorobiphenyls	0.121	0.05
Tetrachlorobiphenyls	0.26	0.1
Pentachlorobiphenyls	ND	0.2
Hexachlorobiphenyls	ND	0.2
Heptachlorobiphenyls	ND	0.1
Octachlorobiphenyls	ND	0.05
Nonachlorobiphenyls	ND	0.05
Decachlorobiphenyl	ND	0.05

Total PCB **0.38 ng/g**

Lipid **1.9%**

Internal Standard Recovery

Chemical Name	IUPAC #	%
$^{13}C_{12}$-2,2',6'-TrCB	19L	35.2
$^{13}C_{12}$-3,4,4'-TrCB	37L	59.0
$^{13}C_{12}$-3,3',4,4'-TeCB	77L	52.5
$^{13}C_{12}$-2',3,4,4',5-PeCB	123L	52.2
$^{13}C_{12}$-3,3',4,4',5-PeCB	126L	50.8
$^{13}C_{12}$-2,3,3',4,4',5-HxCB	156L	51.5
$^{13}C_{12}$-3,3',4,4',5,5'-HxCB	169L	51.6
$^{13}C_{12}$-2,2',3,4',5,6,6'-HpCB	188L	INT
$^{13}C_{12}$-2,3,3',4,4',5,5'-HpCB	189L	42.8
$^{13}C_{12}$-2,2',3,3',5,5',6,6'-OcCB	202L	42.0
$^{13}C_{12}$-2,3,3',4,4',5,5',6-OcCB	205L	77.8
$^{13}C_{12}$-2,2',3,3',4,4',5,5',6-NoCB	206L	44.0
$^{13}C_{12}$-DeCB	209L	38.4

ND - none detected

INT - Matrix Interference. Not used for calculation

ASSOCIATION OF CHEMICAL PROFESSION OF ONTARIO CHARTERED Patrick Pond CHEMIST

24/09/04

Authorization

ND - none detected NDR - none detected based on peak ratio

INT - Matrix Interference. Not used for calculation

DATA REPORT

Client:	Norwest Labs - Edmonton	Contact:	Darlene Lintott
Client ID:	330954-5 (Fish #5)	Date Extracted:	16-Sep-04
PRL ID:	PR40281	Date Analysed:	22-Sep-04

Polychlorinated Biphenyls

Homolog Totals	ng/g	DL ng/g
Trichlorobiphenyls	0.12	0.05
Tetrachlorobiphenyls	0.24	0.1
Pentachlorobiphenyls	ND	0.2
Hexachlorobiphenyls	ND	0.2
Heptachlorobiphenyls	ND	0.1
Octachlorobiphenyls	ND	0.05
Nonachlorobiphenyls	ND	0.05
Decachlorobiphenyl	ND	0.05

Total PCB **0.36 ng/g**

Lipid **2.5%**

Internal Standard Recovery

Chemical Name	IUPAC #	%
$^{13}C_{12}$-2,2',6'-TrCB	19L	51.0
$^{13}C_{12}$-3,4,4'-TrCB	37L	83.8
$^{13}C_{12}$-3,3',4,4'-TeCB	77L	75.1
$^{13}C_{12}$-2',3,4,4',5-PeCB	123L	73.5
$^{13}C_{12}$-3,3',4,4',5-PeCB	126L	70.2
$^{13}C_{12}$-2,3,3',4,4',5-HxCB	156L	69.7
$^{13}C_{12}$-3,3',4,4',5,5'-HxCB	169L	65.5
$^{13}C_{12}$-2,2',3,4',5,6,6'-HpCB	188L	INT
$^{13}C_{12}$-2,3,3',4,4',5,5'-HpCB	189L	55.8
$^{13}C_{12}$-2,2',3,3',5,5',6,6'-OcCB	202L	56.0
$^{13}C_{12}$-2,3,3',4,4',5,5',6-OcCB	205L	77.8
$^{13}C_{12}$-2,2',3,3',4,4',5,5',6-NoCB	206L	62.4
$^{13}C_{12}$-DeCB	209L	46.9

ND - none detected

INT - Matrix Interference. Not used for calculation

Patrick Pond 24/09/04

Authorization

ASSOCIATION OF ONTARIO CHEMICAL PROFESSION
Patrick Pond
CHEMIST

ND - none detected NDR - none detected based on peak ratio

INT - Matrix Interference. Not used for calculation

DATA REPORT - Revised

Client:	Norwest Labs - Edmonton	Contact:	Darlene Lintott
Client ID:	Blank	Date Extracted:	16-Sep-04
PRL ID:	PC04393B	Date Analysed:	22-Sep-04

Polychlorinated Biphenyls

Homolog Totals	ng/g	DL ng/g
Trichlorobiphenyls	ND	0.05
Tetrachlorobiphenyls	ND	0.1
Pentachlorobiphenyls	ND	0.2
Hexachlorobiphenyls	ND	0.2
Heptachlorobiphenyls	ND	0.1
Octachlorobiphenyls	ND	0.05
Nonachlorobiphenyls	ND	0.05
Decachlorobiphenyl	ND	0.05

Total PCB **0.00 ng/g**

Lipid **<0.5%**

Internal Standard Recovery

Chemical Name	IUPAC #	%
$^{13}C_{12}$-2,2',6'-TrCB	19L	42.2
$^{13}C_{12}$-3,4,4'-TrCB	37L	71.6
$^{13}C_{12}$-3,3',4,4'-TeCB	77L	80.4
$^{13}C_{12}$-2',3,4,4',5-PeCB	123L	79.5
$^{13}C_{12}$-3,3',4,4',5-PeCB	126L	87.1
$^{13}C_{12}$-2,3,3',4,4',5-HxCB	156L	79.8
$^{13}C_{12}$-3,3',4,4',5,5'-HxCB	169L	80.3
$^{13}C_{12}$-2,2',3,4',5,6,6'-HpCB	188L	INT
$^{13}C_{12}$-2,3,3',4,4',5,5'-HpCB	189L	77.4
$^{13}C_{12}$-2,2',3,3',5,5',6,6'-OcCB	202L	67.0
$^{13}C_{12}$-2,3,3',4,4',5,5',6-OcCB	205L	78.0
$^{13}C_{12}$-2,2',3,3',4,4',5,5',6-NoCB	206L	68.6
$^{13}C_{12}$-DeCB	209L	74.2

ND - none detected

Authorization

ASSOCIATION OF THE CHEMICAL PROFESSION OF ONTARIO
CHARTERED
Patrick Pond
CHEMIST

ND - none detected NDR - none detected based on peak ratio

Pacific Rim Laboratories Inc. #103, 19575-55A Avenue, Surrey, BC V3S 8P8
Tel: + 604.532.8711 Fax: + 604.532.8712 Email: info@pacificrimlabs.com
www.pacificrimlabs.com

NORWEST LABS

330954 Control Number E 196933

Environmental Sample Information Sheet

NOTE: Proper completion of this form is required in order to proceed with analysis
See reverse for your nearest Norwest location and proper sampling protocol

Billing Address:
Company: Earth Tech
Address:
QA/QC Report ☒
Attention: Matthew McElwaine
Phone:
Fax:
Cell:
e-mail:
Report Result: Fax ☐ Mail ☐ Courier ☐ e-mail ☐ e-Service ☐

Copy of Report To:
Company:
Address:
EARTH TEC — A tyco INTERNATIONAL LTD. COMPANY.
OCT 05 2004
Edmonton, AB
GTW
Attention:
Phone:
Fax:
Cell:
e-mail:
Report Result: Fax ☐ Mail ☐ Courier ☐ e-mail ☐ e-service ☐

Copy of invoice: ☐
Mail invoice to this address for approval ☐

Information to be included on Report and Invoice
Project ID: 78850
Project Name: Fox C
Project Location: Ekalugad Fjord
Legal Location:
PO#:
Proj. Acct. Code:
Agreement ID: 4038

RUSH Please contact the laboratory to confirm rush dates and times before submitting samples.
Upon filling out this section, client accepts that surcharges will be attached to this analysis
Required on: all analyses **or** as indicated ☐ or ☐
Date Required:
Signature:
Norwest Authorization:

Sample Custody (Please Print)
Relinquished by:
Company Signature
I authorize Norwest Labs to proceed with the work indicated on this form:
Date:
Initial:
Received by: ☐ Coolers
Waybill # Date ☐ Boxes
Company Time ☐ Samples

Special Instructions / Comments ☐ Check here if Norwest is required to report results directly to a regulatory body (Please include contact information)

Same as previous,
Soils on hold

Received By: AH Date: 9-7-4
Company: NWLE Time:

	Sample Identification	Location	Depth IN CM M	Date / Time Sampled	Matrix	Sampling Method	Number of Containers / Enter tests above (✔ relevant samples below)
1	Fish #1		—				
2	#2		—				
3	#3		—				
4	#4		—				
5	#5		—				
6			—				
7			—				
8			—				
9			—				
10			—				
11			—				
12			—				
13			—				
14			—				
15			—				

NOTE: All hazardous samples must be labelled according to WHMIS guidelines.
Accredited by the Standards Council of Canada for specific tests

Page ____ of ____ ##

NWL008 (08/03)

NORWEST LABS

Norwest Labs
7217 Roper Road
Edmonton, AB. T6B 3J4
Phone: (780) 438-5522
Fax: (780) 438-0396

Analytical Report

Bill to: Earth Tech Canada Inc.
Report to: Earth Tech Canada Inc.
17203-103 Ave
Edmonton, AB, Canada
T5S 1J4
Attn: Greg Wright
Sampled By:
Company:

Project
ID: 78850
Name: Fox C
Location: Ekalugad Fjord
LSD:
P.O.:
Acct. Code:

NWL Lot ID: 330954
Control Number: E 196933
Date Received: Sep 08, 2004
Date Reported: Sep 27, 2004
Report Number: 592315

		NWL Number	330954-1	330954-2	330954-3	
		Sample Description	Fish #1	Fish #2	Fish #3	
		Matrix	Tissue	Tissue	Tissue	
Analyte		**Units**	**Results**	**Results**	**Results**	**Detection Limit**
Metals Total						
Aluminum	Total	ug/g	<0.2	<0.25	<0.25	2.5
Antimony	Total	ug/g	<0.01	<0.01	<0.01	0.1
Arsenic	Total	ug/g	1.75	0.87	0.51	0.1
Barium	Total	ug/g	<0.05	<0.05	<0.05	0.5
Beryllium	Total	ug/g	<0.005	<0.005	<0.005	0.05
Bismuth	Total	ug/g	<0.025	<0.025	<0.025	0.25
Cadmium	Total	ug/g	0.0046	0.0050	0.0080	0.005
Calcium	Total	ug/g	53	67	64	100
Chromium	Total	ug/g	0.039	0.068	0.044	0.25
Cobalt	Total	ug/g	0.007	0.009	0.009	0.05
Copper	Total	ug/g	0.36	0.44	0.38	0.5
Iron	Total	ug/g	4.3	2.2	3.0	5
Lead	Total	ug/g	0.028	0.013	0.012	0.05
Lithium	Total	ug/g	<0.05	<0.05	<0.05	0.5
Magnesium	Total	ug/g	274	268	277	100
Manganese	Total	ug/g	<0.2	<0.2	<0.2	2.5
Molybdenum	Total	ug/g	<0.05	<0.05	<0.05	0.5
Nickel	Total	ug/g	<0.02	0.025	0.048	0.25
Phosphorus	Total	ug/g	2760	2930	2810	15
Potassium	Total	ug/g	4110	4370	4060	200
Selenium	Total	ug/g	0.45	0.48	0.45	0.1
Silicon	Total	ug/g	<2	<2	<2	25
Silver	Total	ug/g	<0.005	<0.005	<0.005	0.05
Sodium	Total	ug/g	472	388	376	200
Strontium	Total	ug/g	0.22	0.25	0.22	0.5
Tin	Total	ug/g	0.70	0.75	0.75	0.5
Titanium	Total	ug/g	0.323	0.296	0.345	0.25
Uranium	Total	ug/g	<0.025	<0.025	<0.025	0.25
Vanadium	Total	ug/g	0.084	0.066	0.078	0.05
Zinc	Total	ug/g	5.02	5.54	5.09	0.5
Zirconium	Total	ug/g	<0.05	<0.05	<0.05	0.5
Mercury	Total	ug/g	0.085	0.027	0.035	0.01

NORWEST LABS

Norwest Labs
7217 Roper Road
Edmonton, AB. T6B 3J4
Phone: (780) 438-5522
Fax: (780) 438-0396

Analytical Report

Bill to: Earth Tech Canada Inc.
Report to: Earth Tech Canada Inc.
17203-103 Ave
Edmonton, AB, Canada
T5S 1J4
Attn: Greg Wright
Sampled By:
Company:

Project
ID: 78850
Name: Fox C
Location: Ekalugad Fjord
LSD:
P.O.:
Acct. Code:

NWL Lot ID: 330954
Control Number: E 196933
Date Received: Sep 08, 2004
Date Reported: Sep 27, 2004
Report Number: 592315

		NWL Number	330954-4	330954-5		
		Sample Description	Fish #4	Fish #5		
		Matrix	Tissue	Tissue		
Analyte		**Units**	**Results**	**Results**	**Results**	**Detection Limit**
Metals Total						
Aluminum	Total	ug/g	<0.2	<0.25		2.5
Antimony	Total	ug/g	<0.01	<0.01		0.1
Arsenic	Total	ug/g	0.43	0.77		0.1
Barium	Total	ug/g	<0.05	<0.05		0.5
Beryllium	Total	ug/g	<0.005	<0.005		0.05
Bismuth	Total	ug/g	<0.025	<0.025		0.25
Cadmium	Total	ug/g	0.0058	0.0036		0.005
Calcium	Total	ug/g	61	63		100
Chromium	Total	ug/g	0.061	0.037		0.25
Cobalt	Total	ug/g	0.008	0.017		0.05
Copper	Total	ug/g	0.46	0.37		0.5
Iron	Total	ug/g	3.8	2.5		5
Lead	Total	ug/g	0.012	0.011		0.05
Lithium	Total	ug/g	<0.05	<0.05		0.5
Magnesium	Total	ug/g	262	276		100
Manganese	Total	ug/g	<0.2	<0.2		2.5
Molybdenum	Total	ug/g	<0.05	<0.05		0.5
Nickel	Total	ug/g	0.026	<0.02		0.25
Phosphorus	Total	ug/g	2820	2830		15
Potassium	Total	ug/g	4250	4270		200
Selenium	Total	ug/g	0.38	0.37		0.1
Silicon	Total	ug/g	3.3	<2		25
Silver	Total	ug/g	<0.005	<0.005		0.05
Sodium	Total	ug/g	360	359		200
Strontium	Total	ug/g	0.25	0.23		0.5
Tin	Total	ug/g	0.73	0.72		0.5
Titanium	Total	ug/g	0.319	0.282		0.25
Uranium	Total	ug/g	<0.025	<0.025		0.25
Vanadium	Total	ug/g	0.072	0.078		0.05
Zinc	Total	ug/g	5.18	4.93		0.5
Zirconium	Total	ug/g	<0.05	<0.05		0.5
Mercury	Total	ug/g	0.037	0.027		0.01

NORWEST LABS

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Quality Control

Bill to: Earth Tech Canada Inc.
Report to: Earth Tech Canada Inc.
17203-103 Ave
Edmonton, AB, Canada
T5S 1J4
Attn: Greg Wright
Sampled By:
Company:

Project
ID: 78850
Name: Fox C
Location: Ekalugad Fjord
LSD:
P.O.:
Acct. Code:

NWL Lot ID: 330954
Control Number: E 196933
Date Received: Sep 08, 2004
Date Reported: Sep 27, 2004
Report Number: 592315

Metals Total

Blanks	Units	Measured	Mean	Lower Limit	Upper Limit	Passed QC
Aluminum	ug/g	<0.25	0.0	0.0	0.0	✓
Antimony	ug/g	<0.01	0.0	0.0	0.0	✓
Arsenic	ug/g	0.03	0.0	0.0	0.0	✓
Barium	ug/g	<0.05	0.0	0.0	0.0	✓
Beryllium	ug/g	<0.005	0.00	0.00	0.00	✓
Bismuth	ug/g	<0.02	0.00	-0.02	0.02	✓
Cadmium	ug/g	0.0005	0.000	-0.001	0.001	✓
Calcium	ug/g	<10	0	0	0	✓
Chromium	ug/g	<0.025	0.00	0.00	0.00	✓
Cobalt	ug/g	<0.005	0.00	0.00	0.00	✓
Copper	ug/g	<0.05	0.0	0.0	0.0	✓
Iron	ug/g	<0.5	0	0	0	✓
Lead	ug/g	0.012	0.00	-0.01	0.01	✓
Lithium	ug/g	<0.05	0.0	0.0	0.0	✓
Magnesium	ug/g	<10	0	0	0	✓
Manganese	ug/g	<0.2	0.0	0.0	0.0	✓
Molybdenum	ug/g	<0.05	0.0	0.0	0.0	✓
Nickel	ug/g	<0.02	0.00	0.00	0.00	✓
Phosphorus	ug/g	15	0	0	0	✓
Potassium	ug/g	<20	0	-1	1	✓
Selenium	ug/g	<0.01	0.0	-0.1	0.1	✓
Silicon	ug/g	<2	0	0	0	✓
Silver	ug/g	<0.005	0.00	0.00	0.00	✓
Sodium	ug/g	<20	0	0	0	✓
Strontium	ug/g	<0.05	0.0	0.0	0.0	✓
Sulphur	ug/g	15	0	-1	1	✓
Thorium	ug/g	nn	0.000	-0.005	0.005	✓
Tin	ug/g	0.76	0.0	0.0	0.0	✓
Titanium	ug/g	<0.02	0.00	0.00	0.00	✓
Uranium	ug/g	<0.025	0.00	-0.06	0.06	✓
Vanadium	ug/g	0.011	0.00	0.00	0.00	✓
Zinc	ug/g	0.19	0.0	0.0	0.0	✓
Zirconium	ug/g	<0.05	0.0	0.0	0.0	✓
Mercury	ug/g	<0.005	0.000	-0.099	0.099	✓

Material Used: Metals Blank - solids
Date Acquired: Sep 16, 2004
Acquired By: Marie England

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Sampled By:
Company:

Project
ID: 78850
Name: Fox C
Location: Ekalugad Fjord
LSD:
P.O.:
Acct. Code:

NWL Lot ID: 330954
Control Number: E 196933
Date Received: Sep 08, 2004
Date Reported: Sep 27, 2004
Report Number: 592315

Metals Total (Continued...)

Replicates	Units	Replicate1	Replicate2	% RSD Criteria	Absolute Criteria	Passed QC
Aluminum	uq/q	<0.25	920	30.0	0.1	✓
Antimony	ug/g	<0.01	0.06	30.0	0.1	✓
Arsenic	uq/q	0.77	1.55	30.0	0.2	✓
Barium	uq/q	<0.05	9.33	30.0	0.0	✓
Beryllium	uq/q	<0.005	0.018	30.00	0.00	✓
Bismuth	uq/q	<0.025	<0.050	30.00	0.20	✓
Cadmium	uq/q	0.0036	3.50	30.000	0.003	✓
Calcium	uq/q	63	11700	30	0	✓
Chromium	uq/q	0.037	11.9	30.00	0.01	✓
Cobalt	uq/q	0.017	2.53	30.00	0.01	✓
Copper	ug/g	0.37	8.54	30.0	0.0	✓
Iron	uq/q	2.5	617	30	0	✓
Lead	ug/g	0.011	0.448	30.00	0.05	✓
Lithium	uq/q	<0.05	0.69	30.0	0.0	✓
Magnesium	ug/g	276	4660	30	0	✓
Manganese	uq/q	<0.2	403	30.0	0.0	✓
Molybdenum	ug/g	<0.05	0.53	30.0	0.1	✓
Nickel	uq/q	<0.02	12.0	30.00	0.01	✓
Phosphorus	uq/q	2830	2020	30	0	✓
Potassium	uq/q	4270	13700	30	5	✓
Selenium	uq/q	0.37	<0.02	30.0	0.5	✓
Silicon	uq/q	<2	558	30	0	✓
Silver	uq/q	<0.005	0.063	30.00	0.02	✓
Sodium	uq/q	359	280	30	0	✓
Strontium	uq/q	0.23	30.6	30.0	0.0	✓
Sulphur	ug/g	2550	6240	30	5	✓
Thorium	uq/q	n	n	30.000	0.025	✓
Tin	ug/g	0.72	3.91	30.0	0.1	✓
Titanium	uq/q	0.282	27.6	30.00	0.02	✓
Uranium	ug/g	<0.025	0.696	30.00	0.30	✓
Vanadium	uq/q	0.078	1.35	30.00	0.01	✓
Zinc	ug/g	4.93	375	30.0	0.0	✓
Zirconium	uq/q	<0.05	1.14	30.0	0.0	✓

Material Used: Metals Int. Duplicate - solids
Date Acquired: Sep 13, 2004
Acquired By: Marie England

NORWEST LABS

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Project
ID: 78850
Name: Fox C
Location: Ekalugad Fjord
LSD:
P.O.:
Acct. Code:

NWL Lot ID: 330954
Control Number: E 196933
Date Received: Sep 08, 2004
Date Reported: Sep 27, 2004
Report Number: 592315

Metals Total (Continued...)

Control Sample	Units	Measured	Mean	Lower Limit	Upper Limit	Passed QC
Aluminum	ug/g	4.5	10.9	9.3	12.5	✓
Arsenic	ug/g	19.3	18.0	15.3	20.7	✓
Cadmium	ug/g	0.0548	0.043	0.036	0.050	✓
Chromium	ug/g	16.1	34.7	29.5	39.9	✓
Cobalt	ug/g	0.10	0.18	0.15	0.21	✓
Copper	ug/g	2.11	2.3	2.0	2.7	✓
Iron	ug/g	92.1	142	121	163	✓
Lead	ug/g	0.080	0.07	0.06	0.07	✓
Manganese	ug/g	2.1	3.7	3.1	4.2	✓
Nickel	ug/g	8.73	19.4	16.5	22.3	✓
Selenium	ug/g	1.14	1.4	1.2	1.6	✓
Silver	ug/g	0.040	0.04	0.03	0.05	✓
Zinc	ug/g	26.7	25.6	21.8	29.4	✓
Mercury	ug/g	3.98	4.64	3.94	5.34	✓
Material Used:	S0136 NRC DORM-2 - metals in dogfish					
Date Acquired:	Sep 16, 2004					
Acquired By:	Marie England					
Aluminum	ug/g	57.8	197	168	227	✓
Arsenic	ug/g	8.08	7.7	6.5	8.8	✓
Cadmium	ug/g	2.48	2.48	2.11	2.85	✓
Calcium	ug/g	702	838	712	964	✓
Cobalt	ug/g	0.391	0.37	0.32	0.43	✓
Copper	ug/g	72.8	71.6	60.9	82.3	✓
Iron	ug/g	214	206	175	237	✓
Lead	ug/g	0.318	0.31	0.26	0.35	✓
Magnesium	ug/g	962	1085	923	1247	✓
Manganese	ug/g	18.5	18.5	15.7	21.3	✓
Nickel	ug/g	0.912	1.04	0.88	1.20	✓
Potassium	ug/g	6050	6520	5542	7498	✓
Selenium	ug/g	1.69	2.1	1.8	2.4	✓
Silver	ug/g	0.646	0.67	0.57	0.77	✓
Sodium	ug/g	2980	3297	2802	3792	✓
Sulphur	ug/g	6670	6887	5855	7919	✓
Thorium	ug/g	n	0.037	0.031	0.042	✓
Vanadium	ug/g	0.612	0.58	0.49	0.66	✓
Zinc	ug/g	1470	1424	1210	1638	✓
Mercury	ug/g	0.030	0.037	0.031	0.043	✓
Material Used:	S0139 NIST 1566b - metals in oyster					
Date Acquired:	Sep 16, 2004					
Acquired By:	Marie England					

APPENDIX F

WASTE AUDIT

Table 1 Summary of Waste Materials
Beach Area FOX-C DEW Line Site

Site Name	Location	Waste Items	Comments	Non Hazardous Volume m^3	Hazardous Volume m^3
Barrel Dump #1	North side of road Approx. 500 m from Water	**NON-HAZARDOUS**			
		300 empty barrels	diesel, gas, fuel oil, lube oil, aircraft fuel	45	
		10 bags cement powder		1	
		scrap steel debris, misc. Cat parts		10	
		Hyster Crane boom for Cat		1	
		scrap wood		3	
		Cat Tracks		2	
Barrel Dump #2	200 m NW of vehicles near beach	**NON-HAZARDOUS**			
		520 empty barrels	labeled as diesel	78	
Barrel Dump #3	Between vehicles and beach	**NON-HAZARDOUS**			
		100 empty barrels		15	
Vehicle Dump	Beach	**NON-HAZARDOUS**			
		Three D4 cats		21	
		D6 cat		15	
		D2 cat		3	
		Tracked bombardier		10	
		Tandem rear axle dump truck		10	
		3 generators	Fluids in generator (glycol, fuel, oil etc.) must be disposed of as required	5	
		scattered metal debris (parts)		5	
		scattered wood debris			
		35 empty barrels		2	
		HAZARDOUS			
		misc. oil, fuel, air filters	May contain residual amounts of oil		1
AST Site	Beach	**NON-HAZARDOUS**			
		2- 75,000 L ASTs and fittings	Assumed cut into sections	10	
		Concrete tank pads		8	
		Aboveground piping (70 m, 200 mm dia.) and fittings	Assumed cut into sections	3	
		scattered wood debris		1	
		rubber Hose and fittings		2	
		40 barrels		6	
		propane tank	Potentially hazardous if not empty		0.5

Total Barrel Count	**995**
Total Estimated NON HAZARDOUS Volume (m3)	**256**
Total Estimated HAZARDOUS Volume (m3)	**1.5**

Table 2 Summary of Waste Materials
Water Lake Area FOX-C DEW LIne Site

Site Name	Location	Non-Hazardous Waste Items	Comments	Non Hazardous Volume m^3	Hazardous Volume m^3
Water Lake Barrel Dump #1	Approx. 500 m east of Lake (Sample location WL1001)	NON-HAZARDOUS			
		250 empty barrels		30	
		Scattered wood debris		1	
Water Lake Area	East side of Water Lake	NON-HAZARDOUS			
		wooden cable spool		1	
		spool of 50 mm cable (rubber coated)		1	
		scattered wood debris		12	
		scattered metal debris		8	
		fire extinguishers		0.5	
		remains of cloths dryer, file cabinet		0.5	
		2-D6 crane attachments (Hystaway)		10	
		Cat tracks (40 m total length)		8	
		Misc. vehicle parts, axles, rims, tires		3	
		200 barrels (scattered over area)	Some barrels buried in outwash area	30	
		wire (various sizes)		1	
		angle iron		0.25	
		steel pulley and hook		0.25	
		20 mm dia. Cable		0.5	
		oil fired heater for tent/building		0.5	
		rubber hose (various sizes)		0.5	
		misc. domestic waste (rusted cans, wood)		2	
		metal strapping (various sizes)		1.5	
		weathered canvas		0.5	
		10 m of heavy duty chain (200 mm length links)		1	
		partially burned wood		0.5	
		HAZARDOUS			
		blasting caps (randomly scattered)	Safety concern?		0.1
		misc. Cat filters (air, oil and fuel), various sizes	May contain residual amounts of oil		2
		7-1/2 full to full barrels (river outwash area)	Confirm method of disposal		4
		Paint on Small Hut	PCBs (68.8 ppm). Paint is weathered and substrate is plywood and two by fours		1

Table 2 Summary of Waste Materials
Water Lake Area FOX-C DEW LIne Site

Site Name	Location	Non-Hazardous Waste Items	Comments	Non Hazardous Volume m^3	Hazardous Volume m^3
Water Lake	West shore of Water Lake	**NON-HAZARDOUS**			
		6 barrels		1	
Vehicle Dump	Approximately 750 m east of Lake (adjacent to road to upper site)	**NON-HAZARDOUS**			
		2 - Tracked bombardiers		20	
		2 generators	Fluids in generator (glycol, fuel, oil etc.) must be disposed of as required	10	
		D3 Cat		5	
		cement mixer		5	
		partially buried crane in slide area	Potential Fisheries issue to remove	5	
		steel cable		0.5	
		rubber hose		0.5	
		metal cladding		0.5	
		remains of large diameter spool (wood)		0.5	
		scattered wood debris		2	
		scattered metal debris		2	
		70 barrels in area		10.5	
		HAZARDOUS			
		wood timber creosote treated (12 x 8)			1

Total Barrel Count	**533**
Total Estimated NON HAZARDOUS Volume (m^3)	**175.9**
Total Estimated HAZARDOUS Volume (m^3)	**8.1**

Table 4 Summary of Waste Materials
Mid-Station FOX C DEW Line Site

Site Name	Location	Waste Items	Comments	Non Hazardous Volume m^3	Hazardous Volume m^3
Access Road	Road between Upper and Mid Station	**NON-HAZARDOUS**			
		150 barrels		22.5	
		scattered wood debris		5	
		scattered metal debris		5	
Heli pad	Level Pad	**NON-HAZARDOUS**			
		110 barrels on pad, 250 below	some partially burned	54	
		scattered wood debris		1	
		4 compressed gas cylinders	Potentially hazardous if not vented prior to disposal, painted green	1	
		HAZARDOUS			
		13 barrels -1/2 full to full (previously opened)	Confirm method of disposal		3
Helipad Dump	Dump, North side of pad (two levels)	**NON-HAZARDOUS**			
		Approx. 500 barrels visible, some buried	Footprint of approx. 2000 m^2, some barrels at bottom of cliff	3300	
		cat tracks			
		rebar			
		domestic waste			
		wood debris			
		misc. filters			
		vehicle parts			
		HAZARDOUS			
		approx 6-1/2 full Barrels to partially full (previously opened)	Confirm method of disposal		3
Mid station Barrel Dump #1	Below pad (to south)	**NON-HAZARDOUS**			
		approx 1000 barrels in pile		150	
		scattered metal debris below barrels		5	
		HAZARDOUS			
		3 full barrels along road	Confirm method of disposal		1
Mid station Barrel Dump #2		**NON-HAZARDOUS**			
		15-10 gallon barrels		1.5	
		scattered metal debris above barrels		0.5	
		scattered wood debris above barrels		0.5	
		HAZARDOUS			
		120 barrels, some containing lube oil	split open on site		18

Table 4 Summary of Waste Materials
Mid-Station FOX C DEW Line Site

Site Name	Location	Waste Items	Comments	Non Hazardous Volume m^3	Hazardous Volume m^3
Mid station Barrel Dump #3		**NON-HAZARDOUS**			
		225 empty barrels (stacked)		33.75	
		scattered metal debris below barrels		5	
		scattered wood debris below barrels		5	
		wooden cable spools		4	
		remains of aluminum antenna		1	
		rubber hoses		1	
		electrical wire		1	
		metal piping		2	
		fire extinguishers		0.5	
		generators, misc. equipment	Fluids in generator (glycol, fuel, oil etc.) must be disposed of as required	1	
		concrete		1	
		wooden crates		2	
		steel rods		2	
		HAZARDOUS			
		1 full barrel labeled lubricating oil	Confirm method of disposal		0.5
		1 full barrel labeled RCAF Diesel, blue	Confirm method of disposal		0.5
Quonset Building #1		**NON-HAZARDOUS**			
		Wooden Quonset hut (PCB Paint)	Approx 20 m x 5 m warehouse	40	
		weathered canvas		5	
		snow fencing	14 rolls (unused)	5	
		heaters		3	
		misc. metal products		10	
		steel shelving/scaffolding		10	
		steel cable		2	
		fire extinguishers		0.5	
		scattered wood debris		10	
		steel pipe products		5	
		HAZARDOUS			
		filter canisters	potentially containing hydrocarbons		1
		Paint on Quonset Structural wood	PCBs (50.8 ppm), paint is weathered and substrate is plywood, door frames, two by fours and and larger structural wood		1

Table 4 Summary of Waste Materials
Mid-Station FOX C DEW Line Site

Site Name	Location	Waste Items	Comments	Non Hazardous Volume m^3	Hazardous Volume m^3
Mid station Barrel Dump #4		**NON-HAZARDOUS**			
		200 barrels		30	
Mid station Barrel Dump #5	**Across from 3 Quonset structures**	**NON-HAZARDOUS**			
		approx 3000 barrels		450	
		cat tracks		8	
		large plate steel box 2 m high		3	
		scattered metal debris		5	
		scattered wood debris		5	
Quonset Buildings #2, #3, #4		**NON-HAZARDOUS**			
		3 -wooden Quonset huts	wood floor	50	
		weathered canvas		5	
		cat tracks		10	
		cat blade		3	
		Hyster cat hoist		0.5	
		crated engine		0.5	
		rubber tires		3	
		misc. metal products		10	
		misc. wooden products		1	
		aluminum tubing (45 m)		1	
		aluminum pipe fittings		1	
		steel grader blades		3	
		bags of cement		2	
		rubber hose (30 m)		1	
		truck frame		2	
		steel valves and pipe fittings		3	
		metal strapping		3	
		misc. steel rods, and bits		6	
		dump truck box (steel)		3	
		clam shell bucket		2	
		shovel/excavator boom and bucket		3	
		misc. excavator/truck parts		5	
		50 barrels		7.5	
		weathered plywood		3	
		HAZARDOUS			
		misc. Cat filters (air, oil and fuel), various sizes	may contain residual amounts of oil		2

Table 4 Summary of Waste Materials
Mid-Station FOX C DEW Line Site

Site Name	Location	Waste Items	Comments	Non Hazardous Volume m^3	Hazardous Volume m^3
Mid station Barrel Dump #6		**NON-HAZARDOUS**			
		175 barrels	Between BD#6 and BD#7	26.25	
		dozer blades		2	
		cat tracks		3	
		misc. metal products		2	
		scattered wood debris/crates		5	
		rubber hose		1	
		HAZARDOUS			
		approximately 5 partially full barrels	Confirm method of disposal, approximately 5 partially full barrels		1
Mid station Barrel Dump #7	Along access road	**NON-HAZARDOUS**			
		300 barrels	barrels piled on both sides of road	45	
Mid station Barrel Dump #8	75 m above Barrel Dump #2	**NON-HAZARDOUS**			
		150 barrels		15	
		scattered wood debris		1	
Access Road	Between Barrel Dump #7 and Water Lake access road	**NON-HAZARDOUS**			
		250 barrels		37.5	
		scattered wood debris		5	
		scattered metal debris		10	
		wooden sleds		5	
		steel dragline bucket		5	
		HAZARDOUS			
		approximately 10 partially full barrels	Confirm method of disposal		4
		large diameter metal culverts, galvanized steel			5
		blasting caps (randomly scattered)	Potential safety concern?		0.2

Total Barrel Count	**6265**
Helipad dump volume estimate	**3300**
Total Estimated NON HAZARDOUS Volume (m3)	**4488**
Total Estimated HAZARDOUS Volume (m3)	**40.2**

Table 5 Summary of Waste Materials
Upper Station Fox -C DEW Line Site

Location	Waste Items	Comments	Non Hazardous Volume m^3	Hazardous Volume m^3	Asbestos Pipe Insulation	Asbestos Insulation (m^2)	Asbestos Floor Tile (m^2)	PCB Paint (m^2)
Garage Area (Exterior)	**NON-HAZARDOUS**							
	D8 Cat		2					
	Tracked bombardier		10					
	Blade for Cat		3					
	Cab for cat dozer		1					
	vehicle jack		0.5					
	square steel tank on stand		2					
	steel rack		1					
	Misc. Cat Parts		3					
	wooden ladder		0.5					
	150 mm dia. rubber hose (30m)		0.5					
	Aluminum yard light		0.5					
	Aluminum hose fittings		0.25					
	scattered wood debris		0.25					
	10 scattered barrels		0.5					
	misc. vehicle parts and metal debris		2					
	HAZARDOUS		2					
	4 lead acid batteries			0.5				
Garage Area (Interior), Includes Building Materials	**NON-HAZARDOUS**							
	Foundation Concrete		24					
	Structural Steel		30					
	Glass Wool Insulation	Assumed insulation is flattened	5					
	Metal Decking		3					
	Interior cladding (interior cladding paint contains PCBs)		10					
	Interior Shelving		2					
	Tracked bombardier		5					
	Compressed gas cylinders	Potentially hazardous if not vented prior to disposal						
	HVAC Units and Ducting		4					
	Miscellaneous Shelving and Equipment		6					
	Generator Units (2) and day tanks	Fluids in generator (glycol, fuel, oil etc.) must be disposed of as required, day tank paint contains PCBs and is flaking	4					

Table 5 Summary of Waste Materials
Upper Station Fox -C DEW Line Site

Location	Waste Items	Comments	Non Hazardous Volume m^3	Hazardous Volume m^3	Asbestos Pipe Insulation	Asbestos Insulation (m^2)	Asbestos Floor Tile (m^2)	PCB Paint (m^2)
	HAZARDOUS							
	PCB paint	PCB paint inside garage is on interior metal cladding and, in some areas, plywood. Paint is flaked and flakes of paint are on the garage floor						466
	Asbestos Insulation					10		
	Generator Units Fuel/Oil			0.5				
	8 Lead Acid Starter Batteries			0.5				
	Potential Mercury Inside Gauges and thermometers							
Paint Shed Area	**NON-HAZARDOUS**							
	Wooden remains of shed		4					
	Misc. Cat parts		1					
	Metal strapping		0.5					
	Aluminum pipe fittings		0.5					
	Wooden spool		0.5					
	electrical wire (50 m)		0.5					
	Truck (USAF)		10					
	2 fuel tanks on skids		10					
	wooden skids		3					
	scattered wood debris		5					
	scattered metal debris		5					
	10 scattered barrels		2					
	truck box		3					
	compressed gas cylinders	Potentially hazardous if not vented prior to disposal	1					
	HAZARDOUS							
	22 Paint Cans of Paint	Confirm method disposal		4				
	2-1 gallon cans of paint thinner	Confirm method disposal		0.25				
	Fuel within fuel tanks on skid	each with approx capacity of 10,500 L, rusted shut, one gauge indicates 1825 gallons in one tank		7				

Table 5 Summary of Waste Materials
Upper Station Fox -C DEW Line Site

Location	Waste Items	Comments	Non Hazardous Volume m^3	Hazardous Volume m^3	Asbestos Pipe Insulation	Asbestos Insulation (m^2)	Asbestos Floor Tile (m^2)	PCB Paint (m^2)
Warehouse Area (Exterior)	**NON-HAZARDOUS**							
	Hyster hoist for Cat		0.5					
	Cat tracks		2					
	tracks for bombardier		1					
	10 m of 150 mm link heavy chain		1					
	weather station remains		1					
	18 underground electrical cables		5					
	scattered wood debris		5					
	scattered metal debris		5					
	2- 1080 L ASTs and piping		1					
	20 scattered barrels		3					
	Compressed gas cylinders	Potentially hazardous if not vented prior to disposal						
	HAZARDOUS							
	2- 1080 L ASTs Fuel	bottom tank has 25 mm of fuel		0.2				
Warehouse Area (Interior), Includes building materials	**NON-HAZARDOUS**							
	Concrete footings	poured in place	25					
	Support beams (Steel)		5					
	Aluminum Cladding		4					
	Shelving Units in Storage Area		4					
	General Domestic Garbage		2					
	Glass Wool Insulation		2					
	Furniture, beds and desks		2					
	HAZARDOUS							
	PCB Paint	Interior walls on plywood, paint is flaking						215
	Asbestos Insulation	In W 4 on heating unit duct (exposed asbestos)				30		
	Asbestos Floor Tile	On floor in north room of warehouse					25	
Modular Train Exterior	**NON-HAZARDOUS**							
	rubber hose		1					
	scattered metal debris		3					
	scattered wood debris		3					

Table 5 Summary of Waste Materials
Upper Station Fox -C DEW Line Site

Location	Waste Items	Comments	Non Hazardous Volume m^3	Hazardous Volume m^3	Asbestos Pipe Insulation	Asbestos Insulation (m^2)	Asbestos Floor Tile (m^2)	PCB Paint (m^2)
Modular Train (Interior), Includes Building Materials	**NON-HAZARDOUS**							
	Glass Wool Insulation	Assumed insulation is flattened	8.6					
	Plywood (Interior Plywood coated with PCB Paint)		20					
	Wood Studs, widow/door top and bottom plates		30					
	Aluminum Cladding		10					
	Day Tanks							
	Wood Support Structure		83					
	Glass		1					
	HVAC Metal		4					
	Water Tanks	3 large rectangle steel water tanks	15					
	Generators (2)	Fluids in generator (glycol, fuel, oil etc.) must be disposed of as required	4					
	Electrical Equipment	Metal switchboards, compressors and shelving	5					
	Cabinets and Furniture		5					
	Red Compressed Gas Tanks (6)	Potentially hazardous if not vented prior to disposal	2					
	Day Tanks		1					
	HAZARDOUS							
	PCB Paint	PCB paint inside module train is on all interior plywood, concrete floors and steel water tanks. Paint condition varies from flaked to good condition.						940
	Asbestos Piping Insulation	Throughout piping in rooms of the module train			225			
	Asbestos Insulation (Non Piping)	On 2 water tanks in W 1				20		
	Asbestos Floor Tile						20	
	14 Lead Acid Starter Batteries			1				
	Thermometers and Valves	May contain mercury						
	Fuel Within Day Tanks			0.5				

Table 5 Summary of Waste Materials
Upper Station Fox -C DEW Line Site

Location	Waste Items	Comments	Non Hazardous Volume m^3	Hazardous Volume m^3	Asbestos Pipe Insulation	Asbestos Insulation (m^2)	Asbestos Floor Tile (m^2)	PCB Paint (m^2)
Dump/Outfall Area	**NON-HAZARDOUS**	Scattered debris over large area						
	40 scattered barrels		6					
	wooden crates and wood debris		2					
	wire cable		1					
	occasional piles of domestic waste/tin cans		5					
	burned wood		1					
	metal strapping		1					
	misc./scattered metal debris		1					
	rubber hose/steel pipe materials		0.5					
	HAZARDOUS							
	misc. Cat filters (air, oil and fuel), various sizes	May contain residual amounts of oil		1				
	approx. 2 barrels partially full	Confirm method of disposal		2				
Quonset Building	**NON-HAZARDOUS**							
	Wooden remains of Quonset		10					
	weathered canvas		3					
	heating oil tank (1400 L) empty		0.5					
	oil fired furnace		0.5					
	steel water tank (2270 L)		0.5					
	misc. house contents		5					
	75 barrels		11.25					
Antenna Base Area	**NON-HAZARDOUS**							
	135 m antenna structure	cut in scetions	50					
	7 concrete supports		300					
	50 mm support cables (1,800 m)		10					
	Cab for tractor/truck with glass		1					
	misc. electrical equipment on antenna		10					
	scattered metal debris		10					
	scattered wood debris		15					
	remains of small 10 m antenna		1					
	support cables		2					

Table 5 Summary of Waste Materials
Upper Station Fox -C DEW Line Site

Location	Waste Items	Comments	Non Hazardous Volume m^3	Hazardous Volume m^3	Asbestos Pipe Insulation	Asbestos Insulation (m^2)	Asbestos Floor Tile (m^2)	PCB Paint (m^2)
Inuit House Area	**NON-HAZARDOUS**							
	Cement Mixer		5					
	2- generators/pump		3					
	200 barrels		30					
	wooden house remains	building partially demolished	10					
	stove		1					
	misc. house contents		10					
	scattered wood debris around site		5					
	scattered metal debris around site		1					
	HAZARDOUS							
	creosote treated timbers	Approx 50 m of 150 mm x 150 mm		2				
	Paint on Inuit house	PCBs (109 ppm), paint is on all wood associted with inuit house, paint is weathered						10
Fuel Storage Area	**NON-HAZARDOUS**							
	2- 75,700 L ASTs and fittings	water level-bottom of man way, both tanks	10					
	Concrete tank pads		8					
	AG/UG piping to warehouse/mod. train	approx. 200 m of 75 mm dia. steel piping	4					
	remains of metal pump house	roof and three walls missing	1					
	piping		0.5					
	pump		0.5					
	water tank (17,100 L)		3					
	25 scattered barrels		3.75					
	scattered wood debris		1					
	rubber bladder/rubber hose (150 mm dia.)	50 m of hose - 75 mm dia.	1					
	HAZARDOUS							
	Paint on Sides of ASTs and Pump house	Paint is on the metal tanks and is weathered						300

Table 5 Summary of Waste Materials
Upper Station Fox -C DEW Line Site

Location	Waste Items	Comments	Non Hazardous Volume m^3	Hazardous Volume m^3	Asbestos Pipe Insulation	Asbestos Insulation (m^2)	Asbestos Floor Tile (m^2)	PCB Paint (m^2)
Dump Area Below Garage	**NON-HAZARDOUS**							
	scattered wood debris		2					
	scattered metal debris		2					
	weathered canvas		1					
	barrels on pallets buried in fill		4					
	steel cable (various sizes)		2					
	40 scattered barrels		6					
	HAZARDOUS							
	200 leaking 10 gallon barrels	Confirm method of disposal of tar material		5				

PCB Paint Area	1931
Total barrels	137
Total Estimated NON HAZARDOUS Volume (m^3)	994.1
Total Estimated HAZARDOUS Volume including Asbestos	54.45

Table 3 Summary of Waste Materials
River Area between Water Lake and Beach
FOX-C DEW Line Site

Site Name	Location	Waste Items	Comments	Non Hazardous Volume m^3
River Area	River bed, and banks	**NON-HAZARDOUS**		
		Approximately 200 barrels visible	Empty barrels, rusted, no labels	30
Dump	Approx. 400 m downstream of Water Lake	**NON-HAZARDOUS**		
		75 barrels visible	Potential Fisheries issue to remove	11
		Domestic waste (tin cans, glass, wood, paper)	waste material along river bank	400
Barrel Dump	On river back, approx. 400 m north of Water Lake	**NON-HAZARDOUS**		
		Approximately 175 empty barrels	Empty barrels, rusted, no labels	26
		scattered over east slope		

Total Barrel Count	**450**
Total Estimated Volume Non Hazardous	**467**

APPENDIX G

REFERENCE REPORTS

Environmental Study of Abandoned DEW Line Sites:

II. Six Intermediate Sites in the Eastern Arctic

prepared by

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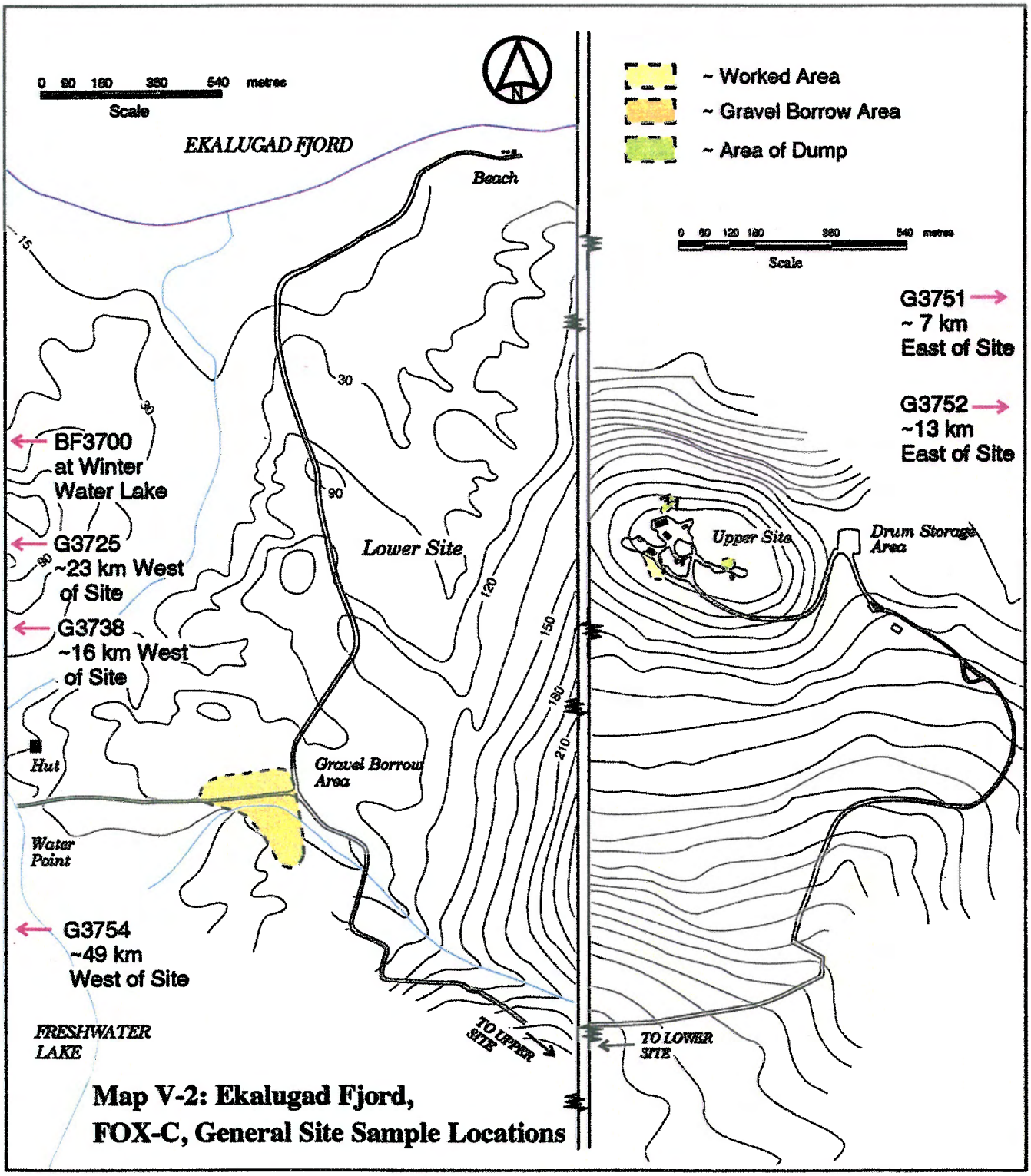
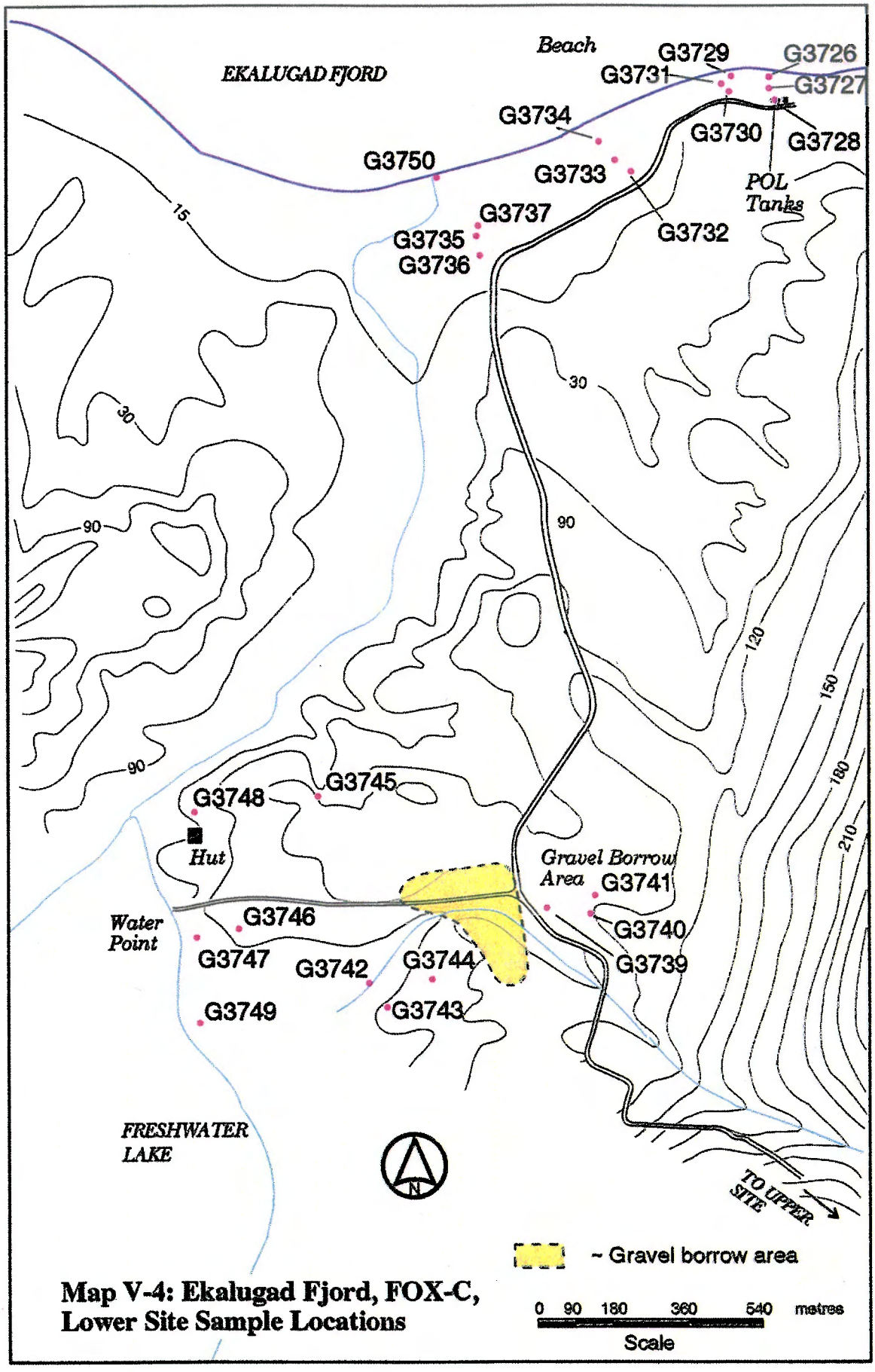
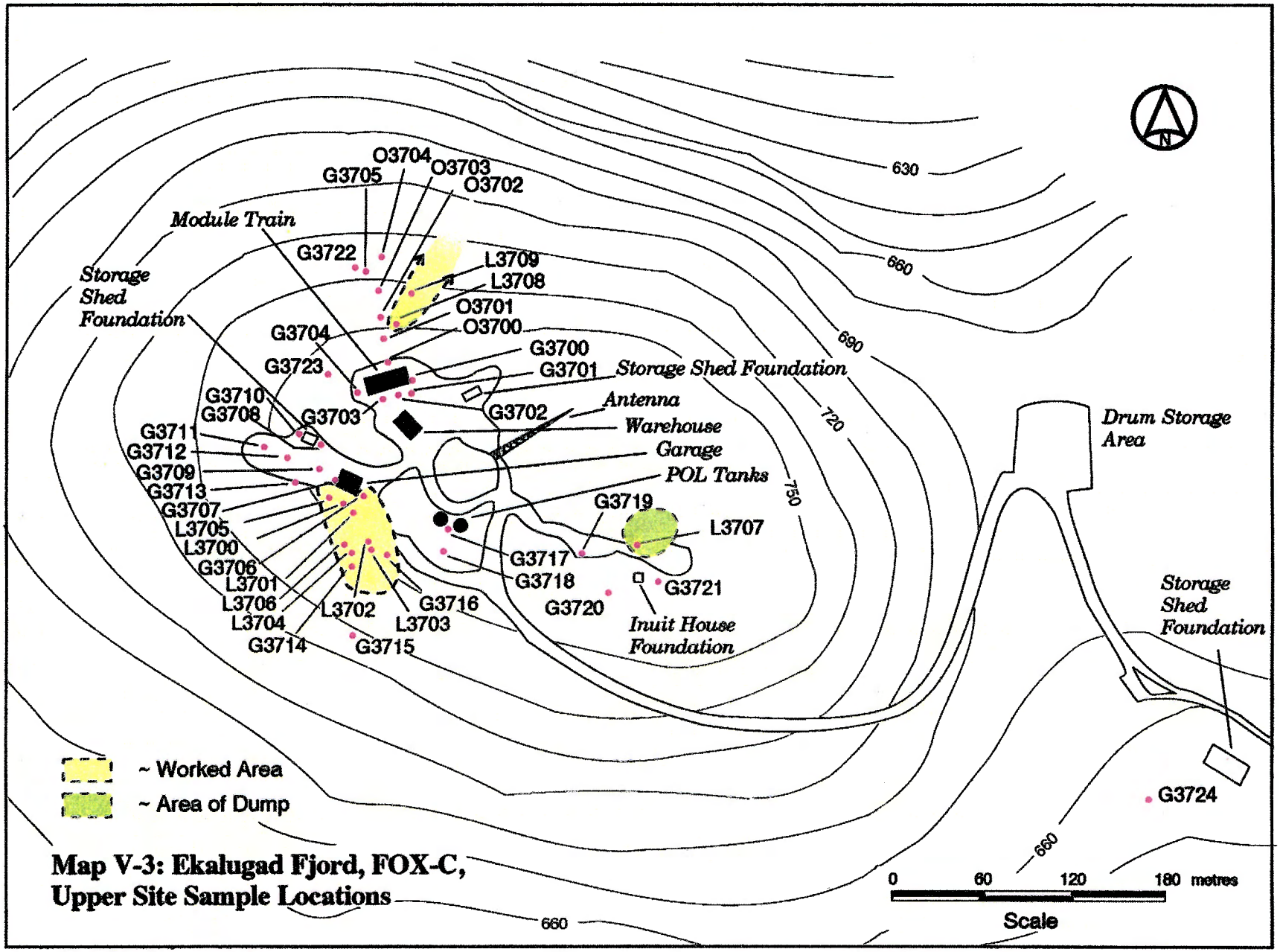
Environmental Sciences Group, RRMC
March 1994



Map V-2: Ekalugad Fjord,
FOX-C, General Site Sample Locations



Map V-4: Ekalugad Fjord, FOX-C, Lower Site Sample Locations



Map V-3: Ekalugad Fjord, FOX-C, Upper Site Sample Locations

VII. SAMPLING LOCATIONS, WILDLIFE OBSERVATIONS, PLANT LIST AND ANALYTICAL RESULTS FOR EKALUGAD FJORD, FOX-C

A. Sampling Locations and Descriptions for FOX-C

1. Freshwater Lake and Remote Background

One freshwater lake sample was collected. Site background samples were not possible at this location due to the restrictive topography and the accumulated snow. Nine remote background samples, however, were collected from five different locations, ranging from 7.2 to 51 kilometres from FOX-C.

BF3700
- The east end of the winter water lake. Fish were observed in the lake, and feathers were noted around the sampling location. No marker was placed.
- Sand, stones and roots; moss on the surface.
- No vegetation was sampled.
- Vegetation present: *Carex* sp., species of moss.
- 68^{O} 42.82' N, 68^{O} 47.31' W.

G3725
- Sediment sample. 24 km west of FOX-C, in a river tributary, in a large river valley. No marker was placed.
- Sand, silt and stones.
- No vegetation was sampled.
- 68^{O} 43.51' N, 69^{O} 09.82' W.

G3738A
- 16 km west of FOX-C, at the edge of a river bed. No marker was placed.
- Sand with a few rocks.
- *Cassiope tetragona* was sampled.
- Other vegetation present: *Polygonum* sp., *Salix* sp., *Carex* sp., species of grass, moss and lichen.
- 68^{O} 42.78' N, 68^{O} 00.32' W.

G3738B - Field duplicate of G3738A.

G3751A - 7.2 km east of FOX-C, ~ 1/3 of the way to Florence Point, in lowlands below rocky slopes. Approximately 150 m from a radio antenna which was down on the beach. No marker was placed.
- Sand, clay and stones.
- *Salix arctica* was sampled.
- Other vegetation present: *Vaccinium* sp., *Cassiope* sp., *Pedicularis* sp., *Salix herbacea*, *Carex* sp., species of lichen.
- 68^{O} 43.81' N, 68^{O} 23.16' W.

G3751B - Field duplicate of G3751A.

G3752A - 13 km east of FOX-C, on a plateau above beach and below some hills, ~ 1 m from a creek. Valley area which receives drainage from the surrounding hills; overlooks Ekalugad Fjord. No marker was placed.
- Fine sand, silt, clay and stones.
- *Salix arctica* was sampled.
- Other vegetation present: *Carex* sp., *Pedicularis* sp., *Cassiope* sp., *Salix herbacea*.
- 68^{O} 42.53' N, 68^{O} 13.27' W.

G3752B - Field duplicate of G3752A.

G3754A - 51 km west of FOX-C and 57.4 km east of FOX-3. At the top of a gradual slope leading down to a river valley. A large lake was present to the west and northwest. A caribou was observed nearby. No marker was placed.
- Sand over clay; black lichen on the surface.
- No vegetation was sampled.

- Vegetation present: *Carex* sp., *Ranunculus* sp., *Cassiope* sp., *Oxyria* sp., *Saxifraga nivalis*, *Poa* sp., reindeer lichen, species of moss.
- 68° 40.82' N, 69° 48.57' W.

G3754B - Field duplicate of G3754A.

2. Area A: Station Proximity

The operations station is located approximately 3 km from the beaching area and is at an elevation of 770 m asl. The vegetation at this upper site is restricted mainly to patches of moss and lichen, therefore, plant material for analytical purposes was limited.

G3700 - ~ 8 m from the east end of the module train (boiler room). RRMC tag # 1.
- Coarse sand and stones.
- No vegetation was present in the sampling area.
- 68° 43.888' N, 68° 35.320' W.

G3701 - South side of the module train, at the back end of the staircase. Some debris present which included metal bed frames, cans, other metal and wood debris. RRMC tag # 2.
- Coarse sand with a few stones.
- No vegetation was sampled.
- Vegetation present: small patch of moss ~ 0.5 m from sampling location.
- 68° 43.832' N, 68° 35.323' W.

G3702 - ~ 0.5 m from the front end of the stairs on the south side of the module train. Some glass, metal and wood debris around the sampling area. RRMC tag # 3.
- Coarse sand and stones.
- No vegetation was sampled.

- Vegetation present: Small patches of moss.
- No GPS coordinates were taken.

G3703
- 1 m from the door at the west end of the module train, on the south side of the building. Some glass and small pieces of metal littered the area. RRMC tag # 4.
- Coarse sand and crushed pebbles.
- No vegetation was present in the sampling area.
- No GPS coordinates were taken.

G3704
- 1 m from the back end of the staircase at the west end of the module train (generator end). RRMC tag # 5.
- Coarse sand and stones, very wet.
- No vegetation was present in the sampling area.
- No GPS coordinates were taken.

G3705
- Large, black stained area (10 m x 3 m). Sample collected beside old rusted barrel, ~ 80 m north of the module train, down the cliff. Barrel had been punctured several times. Debris in the area included old grommets, nails, piping and other assorted metal pieces. RRMC tag # 10..
- Coarse sand, stones and pebbles; hydrocarbon odour present.
- *Rhacomtrium lanuginosum* was sampled.
- No other vegetation was present in the sampling area.
- No GPS coordinates were taken.

G3706A
- Stain (4 m x 4 m). 1.5 m east of the garage, 2 m from the door. Debris in the area included chains, jack, barrel, broom, door, metal rings and a variety of wood and metal pieces. RRMC tag # 21.
- Sand and stones; there was a hydrocarbon odour to the substrate.
- No vegetation was present in the sampling area.
- 68^{O} 43.589' N, 68^{O} 34.841' W.

G3706B - Field duplicate of G3706A.

G3707 - Stain (2 m x 2.5 m). 2 m west of the garage, near an old transformer mount. 4 batteries, 1 bulldozer and 2 barrels were noted near the garage. RRMC tag # 22.
- Sand and stones; hydrocarbon odour present.
- No vegetation was present in the sampling area.
- 68^{O} 43.885' N, 68^{O} 35.411' W.

G3708 - Stain (3 m x 1 m). Tar stain at the edge of the remnants of an old shed. The shed still contained numerous paint cans and a variety of metal debris. The shed was located ~ 25 m northwest of the garage. RRMC tag # 23.
- Sand and stones.
- No vegetation was present in the sampling area.
- 68^{O} 43.855' N, 68^{O} 35.310' W.

G3709 - Drainage from the paint shed, ~ 10 m south of G3708, adjacent to a large paint spill. RRMC tag # 24.
- Sand and stones, wet.
- No vegetation was present in the sampling area.
- 68^{O} 43.860' N, 68^{O} 35.370' W.

G3710 - Drainage catchment, ~ 4 m west of the paint shed. Sampled adjacent to a large puddled area. Slight sheen on the surface of the puddle. Scattered wood debris and nails were observed around the sampling location. RRMC tag # 25.
- Sand.
- No vegetation was present in the sampling area.
- 68^{O} 43.874' N, 68^{O} 35.418' W.

G3711
- In the middle of a large worked area, ~ 50 m west of the garage. RRMC tag # 26.
- Sand and stones; hydrocarbon odour.
- No vegetation was present in the sampling area.
- 68^{O} 43.852' N, 68^{O} 35.459' W.

G3712
- Light stain at upper end of drainage path leading to G3711 (worked area). ~ 30 m west of the garage and 8 m west of 2 diesel fuel tanks. RRMC tag # 27.
- Sand, stones and some clay.
- No vegetation was present in the sampling area.
- 68^{O} 43.868' N, 68^{O} 35.439' W.

G3713
- ~ 10 m south of gravel pad, below G3712, and 30 m southwest of the garage. RRMC tag # 28.
- Sand and stones.
- No vegetation was sampled.
- Vegetation present: species of moss.
- 68^{O} 43.852' N, 68^{O} 35.428' W.

G3714
- In drainage path down from the landfill area, ~ 50 m south of the garage. RRMC tag # 31.
- Sand.
- No vegetation was sampled.
- Vegetation present: species of moss.
- 68^{O} 43.809' N, 68^{O} 35.402' W.

G3715
- Stained area in drainage path from landfill and gravel pad. Stain originated in the landfill. ~ 100 m south of the garage, southwest of the POL tanks. RRMC tag # 32.
- Sand and stones.

- No vegetation was sampled.
- Vegetation present: species of moss and lichen.
- 68^{O} 43.830' N, 68^{O} 35.416' W.

G3716 - Stain, ~ 15 m east of a barrel pile which contained 170+ barrels. 2 m from remnants of storage shed (metal walls, wood frame). RRMC tag # 33.
- Sand and stones; strong hydrocarbon odour.
- No vegetation present in the sampling area.
- No GPS coordinates were taken.

G3717A - At the southeast corner of the pump house between the POL tanks, on the POL berm. Both of the POL tanks were empty of fuel but contained ~ 5 m of water. Some barrels were observed in the around the POL tank area. RRMC tag # 34.
- Sand; some hydrocarbon odour.
- No vegetation was present in the sampling area.
- 68^{O} 43.857' N, 68^{O} 35.250' W.

G3717B - Field duplicate of G3717A.

G3718 - Drainage area from POL tank pad. ~ 20 m south of the pad, in line with the eastern most tank. This small catchment area was located about 8 m above the road. Some metal cable and bits of other debris were observed scattered about the area. RRMC tag # 35.
- Sand and crushed stones with rocks and boulders underneath.
- No vegetation was sampled.
- Vegetation present: species of lichen.
- 68^{O} 43.835' N, 68^{O} 35.236' W.

G3719
- 1 m from the south side of the remnants of the Inuit house. A lot of domestic garbage was noted in the area including wood, nails, beds and bed stuffing, plastic, glass, kitchen equipment and utensils. RRMC tag # 36.
- Sand and stones; moss and a black lichen on the surface.
- No vegetation was sampled.
- Vegetation present: species of grass, moss and lichen.
- 68^{O} 43.820' N, 68^{O} 35.124' W.

G3720
- Drainage path, approximately 30 m south of the Inuit house, down slope. A lot of debris was noted on the side of the hill including 2 barrels, metal cupboards, a bed and a variety of other wood and metal debris. No marker was placed.
- Sand and rocks.
- No vegetation was sampled.
- Vegetation present: species of grass and moss.
- 68^{O} 43.845' N, 68^{O} 35.985' W.

G3721
- Stain (14 m x 3 m), extends down the side of the hill. Approximately 60 m east of the Inuit house, 30 m south of a gravel crusher. There were 24 barrels in the immediate vicinity, some of which were sealed and contained product. RRMC tag # 72.
- Sand and stones; hydrocarbon odour.
- No vegetation was present in the sampling area.
- 68^{O} 43.826' N, 68^{O} 35.030' W.

G3722
- Stain, sampled at base of stain, ~ 10 m from barrel where stain originated. Located on the north side of the module train, over the cliff. RRMC tag # 78.
- Sand and stones.
- No vegetation was sampled.

- Vegetation present: species of moss.
- No GPS coordinates were taken.

G3723
- Series of stains west and northwest of the module train. The stains continue down slope from the station pad to the next plateau. The sample was collected below the stained area, down slope west of the module train. Debris present included barrels, 15 fuel filters and metal. RRMC tag # 79.
- Fine sand and stones.
- Black oily substance; strong hydrocarbon odour.
- No vegetation was present in the sampling area.
- No GPS coordinates were taken.

A Quonset hut was located 0.5 km southeast of the operations site, down the road on the way to the beaching area. The hut was full of building materials, metal sheets, large rubberized metal, snow fencing, equipment, machinery, duct piping, plywood, etc. A large drainage course created by snow melt was flowing through the hut. The entire southeast face of the hill was covered with barrels, many of which were covered with snow and therefore could not be counted.

G3724
- Along the road down to the beaching area, approximately 0.5 km southeast of the upper site and 8 m south of an old Quonset hut. 400+ barrels in a pile above the sampling area and 100+ barrels within 150 m of the sampling location. Hundreds of barrels were observed all over the hillside. A variety of wood and metal debris was observed in the vicinity. RRMC tag # 60.
- Sand, silt and rocks.
- No vegetation was present in the sampling area.
- No GPS coordinates were taken.

3 Area B: Outfall

The sewage outfall area extended in a north from the module train down the cliff face. The outfall pipe was not connected to the train and pieces of the pipe could be seen from the building down the cliff for about 15 m. The portion of the pipe closest to the module train was buried in a snow pile at the time of the site visit. The rest of the pipe has been removed or has broken off and gone down the cliff out of sight. Snow melt could be seen and heard in small rivulets running through and under the porous substrate of sand and stones, down over the cliff edge. Vegetation, as in all other areas at the upper site, was quite sparse.

O3700 - On the north side of the module train at the east end of the train. ~ 3 m from the staircase and 0.5 m from the outfall pipe. RRMC tag # 6.
- Coarse sand, stones and pebbles with bits of moss.
- No vegetation was sampled.
- Vegetation present: species of moss.
- No GPS coordinates were taken.

O3701 - Outfall drainage area, 15 m from the east end of the module train. Sample area was on a slightly sloped portion of the cliff face, < 1 m from the outfall pipe. Some rust colouration on the rocks in the area. Small metal debris (cans) present. RRMC tag # 7.
- Coarse sand, pebbles, rocks with bits of moss.
- No vegetation was sampled.
- Vegetation present: species of moss.
- No GPS coordinates were taken.

O3702 - ~ 15 m north of O3701, 30 m north of the module train, drainage depression. This part of the drainage area was about 15 m from the end of the remnants of the outfall pipe. Rocky terrain down cliff, rust colouration on the rock surfaces. Numerous snow patches around sample

location. Debris consisting of drums, metal containers, cans, pieces of pipe and wood, was evident on the cliff just above the sample location. RRMC tag # 8

- Coarse sand and small pebbles; slight hydrocarbon odour present.
- No vegetation was present in the sampling area.
- No GPS coordinates were taken.

O3703 - On a flat ledge on the cliff face, ~ 25 m north of O3702 and 55 m north of the module train. Visible debris included wood, steel brackets, cans, pipes and glass. The sample was taken at the bottom of a large snow patch, ~ 10 m from a punctured barrel that had leaked an oily substance. RRMC tag # 9.

- Coarse sand, stones and pebbles.
- No vegetation was sampled.
- Vegetation present: species of moss.
- No GPS coordinates were taken.

O3704 - ~ 100 m north of module train, down cliff in outfall drainage area. 1.5 m from direct drainage path in a depression plateau of cliff face. Some metal debris, cans and barrels were in the area. RRMC tag # 11.

- Coarse sand and large stones.
- No vegetation was sampled.
- Vegetation present: species of moss.
- No GPS coordinates were taken.

4. Area C: Dumps

One dump is located in the area south of the garage. An extensively stained area was present beginning near the garage, extending down the station pad to the south, continuing south through the dump and on towards the POL tanks. The stain appeared to have been created from several sources including buried drums and waste oil containers.

The stain was black with a strong hydrocarbon odour. Samples L3700 - L3706 were collected in this stained area.

L3700 - ~ 15 m south of the garage below the station pad. Debris present included clothing, metal, wires, nails, wood, paper, canvas and piping. Some rust coloured staining was also evident (from rusted barrels). RRMC tag # 12.
- Coarse sand and stones, some rocks.
- No vegetation was present in the sampling area.
- No GPS coordinates were taken.

L3701 - ~ 8 m east of L3700, 15 m southeast of the garage. Debris included metal, stainless steel, rubber coated wires, sled, metal cables and wood. RRMC tag # 13.
- Coarse sand and stones.
- No vegetation was present in the sampling area.
- No GPS coordinates were taken.

L3702 - 30 m southeast of the garage, 3 m west of a cache of small metal containers. Approximately 200 of these 10 gallon containers had a black tar-like substance which had spilled from them and migrated down the slope. Debris included wires, canvas, wood and metal. RRMC tag # 14.
- Gravel/crushed stones and sand. There was an orange-brown gooey coating on the soil surface and an oily sheen on the surface of the pooled water by the sample location.
- No vegetation was present in the sampling area.
- No GPS coordinates were taken.

L3703A - 1 m from the 10 gallon container cache, on the south side. ~ 40 m southeast of the garage and 10 m southeast of L3702. Plastic debris was present in the area. RRMC tag # 15.

- Sand, stones and rocks.
- No vegetation was present in the sampling area.
- No GPS coordinates were taken.

L3703B - Field duplicate of L3703A.

L3704 - Level area down slope from 10 gallon container cache. 20 m west of L3703. Debris present included wood, paint brushes and other small pieces. RRMC tag # 16.
- Sand, silt and stones. The soil was a muddy grey colour below the stained surface. An oily sheen was evident on the surface of a pool of water adjacent to the sampling location.
- No vegetation was present in the sampling area.
- No GPS coordinates were taken.

L3705 - Stain (~ 4 m x 6 m), greater than 20 cm deep, oily odour. ~ 20 m southwest of the garage and 10 m down from the top of the gravel pad. RRMC tag # 29.
- Sand and stones.
- No vegetation was present in the sampling area.
- No GPS coordinates were taken.

L3706 - Surface stain in drainage path from the dump. ~ 40 m down from the top of the gravel pad, south of the garage. Sampled 1 m from the base of one of the concrete antenna support blocks. RRMC tag # 30.
- Sand, hydrocarbon odour.
- No vegetation present in the sampling area.
- No GPS coordinates were taken.

L3707 - In drainage coming from small dump ~ 35 m northeast of the Inuit house. The landfill appeared to contain barrels (four were visible) and a variety of wood and metal debris. RRMC tag # 75.
- Sand and stones.
- No vegetation present in the sampling area.
- No GPS coordinates were taken.

L3708 - In drainage below the dump, north of the module train on the edge of the gravel pad. ~ 30 m northwest of the train. Debris in the area included plastic, metal, cardboard, wood, cans, wires, piping, glass, metal strapping and barrel tops. RRMC tag # 76.
- Sand and stones.
- No vegetation was present in the sampling area.
- No GPS coordinates were taken.

L3709 - In drainage course from landfill, north of the module train. Some metal cans were present in the sampling area. RRMC tag # 77.
- Sand and stones with moss on the surface.
- No vegetation was sampled.
- Vegetation present: species of moss.
- No GPS coordinates were taken.

5. Area D: Beach

The cargo beaching area is located at the lower site. The two 75,700 litre POL tanks were still present and in relatively good condition. Both tanks were missing the front cover plates. The refueling pipeline was still connected and was supported by 14 barrels. There was a variety of debris on the tank pad including two drums, cable, some wood, an empty propane tank and an old stove, as well as 12 drums around the edge of the pad. The beaching area is on the south shore of the body of water known as Ekalugad Fjord. Kangok Fjord is located on the other side of the mountain from the beaching area.

G3726
- Sampled by connection of POL intake pipe, 26.4 m from the beach front. RRMC tag # 37.
- Some clay and silt (wet).
- No vegetation was sampled. Vegetation was sparse at the sampling location.
- Vegetation present: *Oxyria* sp., *Saxifraga oppositifolia*, *Carex* sp., *Poa* sp., species of moss and lichen.
- 68^{O} 44.598' N, 68^{O} 39.080' W.

G3727
- 29.3 m south of G3726, 27.4 m north of the POL tanks. 1 m to the side of the pipeline, beside the electrical cable. Some wooden boards and one of the metal cover plates to the POL tanks were present in the area. RRMC tag # 38.
- Sand and small stones (wet).
- No vegetation was sampled.
- Vegetation present: *Carex* sp., *Oxyria* sp. and species of moss.
- 68^{O} 44.594' N, 68^{O} 39.014' W.

G3728
- Under intake valve of western situated POL tank. Some silver spray paint on the ground (from the tanks). RRMC tag # 39.
- Coarse sand, stones and crushed stones, with finer sand underneath.
- No vegetation was present in the sampling area.
- 68^{O} 44.583' N, 68^{O} 39.030' W.

Just to the west of the beach POL tanks there was a vehicle and barrel dump area. 126 barrels were counted that were stacked or scattered along the beach front. Other items present included two batteries, pile of bed coils, cables, three diesel generators and parts, four oil and gas mix containers (plastic), one USAF dump truck, one bombardier, four snow plows, one cab for snow plows, numerous vehicle or generator filters, treads, metal plates, wood frames, three fire extinguishers, and various other wood and metal pieces.

G3729
- 11.6 m from the water front, amongst the 126 barrels. RRMC tag # 40.
- Coarse sand and stones, some roots, with a black lichen on the surface.
- Two Thayer's Gulls, three seals, Snow Goose and caribou droppings, caribou tracks and seal bones were all observed in the area.
- No vegetation was sampled.
- Vegetation present: *Carex* sp., *Trisetum* sp., *Saxifraga oppositifolia*, *Oxyria* sp., *Luzula* sp., species of seaweed, moss and lichen.
- 68^{o} 44.605' N, 68^{o} 39.210' W.

G3730
- ~ 6 m north of the vehicle pile. RRMC tag # 41.
- Clay, silt, some stones and some organic material. There was a black lichen covering the surface.
- No vegetation was sampled.
- Vegetation present: *Oxyria* sp., *Carex* sp., *Trisetum* sp., *Saxifraga oppositifolia*, *Luzula* sp., species of moss and lichen.
- 68^{o} 44.580' N, 68^{o} 39.230' W.

G3731
- ~ 30 m from water front and 20 m north of vehicle pile (down slope). 1 m beside drainage path from vehicle pile towards barrels at beach front. RRMC tag # 42.
- Brown sand (2 cm) on orange sand (2 cm) on grey clay.
- No vegetation was sampled.
- Vegetation present: *Salix* sp., *Carex* sp., *Trisetum* sp., species of moss and lichen.
- 68^{o} 44.583' N, 68^{o} 39.232' W.

There was a large pile of approximately 600 barrels to the west of the POL tanks. The barrels were empty and had once contained diesel fuel. G3732-G3734 were all collected in the area of this barrel pile.

G3732
- West end of the barrel pile. RRMC tag # 43.

- Clay with some sand, some roots present. A black lichen covered the surface of the soil.
- *Salix arctica* was sampled.
- Other vegetation present: *Polygonum* sp., *Papaver* sp., *Saxafraga oppositifolia*, *Carex* sp., species of moss and lichen.

G3733
- In a drainage path from the barrel pile towards the beach. ~ 47 m to the water front and 12 m from the barrel pile. RRMC tag # 44.
- Sand, silt and some small pebbles.
- No vegetation was sampled.
- Vegetation present: *Salix* sp., *Polygonum* sp., *Oxyria* sp., *Carex* sp., *Draba* sp., *Alopecurus* sp., species of mushroom, moss and lichen.
- 68^{o} 44.520' N, 68^{o} 39.335' W.

G3734A
- ~ 15 m north of the barrel pile and 15 m south of the beach front. RRMC tag # 45.
- Clay, some small stones and some roots.
- No vegetation was sampled.
- Vegetation present: *Salix* sp., *Papaver* sp., *Polygonum* sp., *Festuca* sp., *Ranunculus* sp., *Saxifraga oppositifolia*, species of moss and lichen.
- 68^{o} 44.555' N, 68^{o} 39.339' W.

G3734B
- Field duplicate of G3734A.

G3750
- ~ 1.5 km west of the beach POL tanks, at the mouth of a large river (result of snow melt). 13 barrels as well as other wood and metal debris were observed in the area. RRMC tag # 61.
- Coarse sand.
- No vegetation was present in the sampling area.
- 68^{o} 44.476' N, 68^{o} 39.880' W.

6. Area E: Station Road Debris Piles

Road pile # 1 was located about 40 m west of the station road, at the bottom of the road close to the beaching area, just over 1 km west of the beach POL tanks. There were approximately 500 barrels in this dump site, some diesel fuel, lubricating oil and aviation gas. G3735-G3737 were collected in and around this debris site.

G3735A
- Sampled in the middle of the barrel pile. RRMC tag # 46.
- Clay with a black lichen on the surface. There were some specks of orange paint from the barrels mixed in with the soil.
- Four Snow Buntings were observed.
- No vegetation was sampled.
- Vegetation present: *Festuca* sp., *Ranunculus* sp., *Saxifraga oppositifolia*, species moss and lichen.
- 68^{O} 44.333' N, 68^{O} 39.715' W.

G3735B
- Field duplicate of G3735A.

G3736
- 22 m north of the barrel pile, down a hill. RRMC tag # 47.
- Sand, some stones and roots with a black lichen on the surface.
- *Salix* sp. was sampled.
- Other vegetation present: *Saxifraga oppositifolia*, *Polygonum* sp., *Silene* sp., *Pedicularis* sp., *Festuca* sp., *Carex* sp., *Dryas* sp., *Cassiope* sp., *Cerastium* sp., species of moss and lichen
- 68^{O} 44.342' N, 68^{O} 39.755' W.

G3737
- 22 m south of the barrel pile, 5 m east of some caterpillar tracks. Debris present in the area includes parts of machinery, treads, bolts, coils, cables and some other metal pieces. Could have been a pallet line area or a storage area for machinery parts. RRMC tag # 48.
- Clay, some stones and roots.

- No vegetation was sampled.
- Vegetation present: *Festuca* sp.
- 68^{O} 44.315' N, 68^{O} 39.697' W.

Road pile # 2 was located in a level area ~ 1 km up the road from road pile # 1. There were 54 barrels, two generators, trailer, cement mixer, two bombardiers, one backhoe as well as other assorted metal debris.

G3739A
- Sample was taken in-between the vehicles. RRMC tag # 51.
- Coarse, wet sand and clay with some small stones. Rust colour on the surface of the soil.
- No vegetation was sampled.
- Vegetation present: *Carex* sp., species of moss and lichen.
- 68^{O} 43.424' N, 68^{O} 39.186' W.

G3739B
- Field duplicate of G3739A.

G3740
- Drainage course north of the road and dump # 2, feeds to Ekalugad Fjord. ~ 15 barrels were noted in the area of the sample. RRMC tag # 52.
- Wet sand.
- No vegetation was sampled.
- Vegetation present: *Carex* sp., species of moss and lichen.
- 68^{O} 43.553' N, 68^{O} 39.054' W.

G3741
- ~ 40 m north of G3740. Up the bank of the drainage course north of the road. RRMC tag # 53.
- Coarse, wet sand with small pebbles.
- No vegetation was sampled.
- Vegetation present: *Cassiope* sp., species of moss and lichen.
- 68^{O} 43.596' N, 68^{O} 39.060' W.

7. Area F: Station Road to Water Lake

G3742A - Approximately 500 diesel fuel barrels. Most have been punctured and it appears that they were drained at this location. Sample was taken in the middle of the barrel pile. RRMC tag # 62.
- Sand with some humus, and a black lichen on the surface; a hydrocarbon odour was evident.
- Caribou tracks were observed throughout the area.
- No vegetation was sampled.
- Vegetation present: *Salix* sp., *Carex* sp., species of moss and lichen.
- 68° 43.479' N, 68° 39.873' W.

G3742B - Field duplicate of G3742A.

G3743 - South end of barrel pile. RRMC tag # 63.
- Sand, crushed pebbles and humus, and a black lichen on the surface; strong hydrocarbon odour present.
- No vegetation was sampled.
- Vegetation present: *Salix arctica*, *Carex* sp., *Cassiope* sp., species of moss and lichen.
- 68° 43.475' N, 68° 39.908' W.

G3744 - Pile of wood to the east of large barrel pile. May have been a storage shed, or may just be a wood pile dump. Sampled on west side of the wood pile. RRMC tag # 64.
- Coarse sand, orange colour, with pebbles and stones.
- No vegetation was sampled.
- Vegetation present: *Carex* sp.
- 68° 43.496' N, 68° 39.651' W.

G3745 - Barrel pile down steep hill towards river, ~ 400 m north of the previous barrel pile. About 75 barrels in pile down hill at base of a snow bank; several had rolled right down to the river. Approximately 100 more barrels visible at the top of the hill with lids cut off, and an unknown number buried under the snow and the sand. Sample was collected amongst the 75 barrels at the base of the hill. RRMC tag # 65.

- Coarse to fine sand (orange to brown colour). A black lichen was on the surface.
- No vegetation was sampled.
- Vegetation present: *Carex* sp., species of moss and lichen.
- 68^{O} 43.607' N, 68^{O} 39.085' W.

A variety of debris was observed around the water lake area including two cranes on wooden pallets, cables, tarps, treads, truck tires, axles, numerous drums, cans, old washer and dryer, approximately 10 fire extinguishers, as well as miscellaneous pieces of metal and wood scattered throughout the area. There were drums right down to the lake front and in the lake itself. The lake becomes deep very quickly, so it was not possible to determine how much, if any, debris had been deposited there.

G3746A - Drainage course from up the hill down towards the water lake. A variety of metal debris was noted throughout the drainage course (cans, cables, axles). RRMC tag # 66.

- Sand and stones.
- No vegetation was sampled.
- Vegetation present: *Carex* sp., *Cassiope* sp., species of moss and lichen.
- 68^{O} 43.366' N, 68^{O} 40.256' W.

G3746B - Field duplicate of G3746A.

G3747
- Drainage course down hill to water lake. ~ 10 m from the lake front. Barrels, wood and metal debris were observed throughout this drainage course. RRMC tag # 67.
- Sand and stones.
- No vegetation was sampled.
- Vegetation present: *Carex* sp., *Umbilicaria* sp., species of moss.
- 68^{O} 43.340' N, 68^{O} 40.503' W.

G3748
- Drainage course down to water lake, on the north side of the wooden hut present in the area. More than 30 barrels were visible in the drainage course as well as other metal and wood debris. There were most likely more barrels buried under the snow. RRMC tag # 68.
- Sand, small pebbles, black lichen on the surface.
- No vegetation was sampled.
- Vegetation present: *Carex* sp., species of moss and lichen.
- 68^{O} 43.472' N, 68^{O} 40.494' W.

G3749
- Beside stack of about 10 drums, ~ 200 m from the lake front. Extensively stained area (very obvious) with a heavy hydrocarbon odour. RRMC tag # 69.
- Sand and stones.
- No vegetation was sampled.
- Vegetation present: *Carex* sp. and species of moss.
- 68^{O} 43.315' N, 68^{O} 40.301' W.

D. FOX-C Inorganic Element Results for Soil in Each Area of the Site

Sample	Cu	Ni	Co	Cd	Pb	Zn	Cr	As	Location
				ppm					
1. Freshwater Lake and Remote Background									
BF3700	13.6	11.3	<5.0	<1.0	<10	21	24	0.7	East end of winter water lake
G3725	7.0	<5.0	<5.0	<1.0	<10	8.3	<20	2.1	23 km west of FOX-C, river tributary
G3738A	13.6	<5.0	<5.0	<1.0	<10	12.9	<20	1.3	16 km west of FOX-C, edge of river bed
G3738B	8.8	<5.0	<5.0	<1.0	<10	16.6	<20	2.6	Field duplicate of G3738A
G3751A	17.9	17	7.8	<1.0	<10	42	41	0.9	7 km east of FOX-C, lowland area
G3751B	18.1	16	7.9	<1.0	<10	45	40	1.0	Field duplicate of G3751A
G3752A	28	24	9.5	<1.0	<10	50	53	0.6	13 km east of FOX-C, plateau above beach
G3752B	33	27	10.9	<1.0	<10	56	51	0.6	Field duplicate of G3752A
G3754A	9.2	8.2	<5.0	<1.0	<10	29	31	1.8	51 km west of FOX-C, on a slope
G3754B	9.1	8.0	<5.0	<1.0	<10	28	28	2.0	Field duplicate of G3754A
Mean (n=10)	15.8	11.9	5.1	0.5	5.0	31	30	1.4	
Std Dev	8.7	8.9	3.5	0	0	16.6	16.4	0.7	
Minimum	7.0	8.0	7.8	<1.0	<10	8.3	28	0.6	
Maximum	33	27	10.9	<1.0	<10	56	53	2.6	
2. Area A: Station Proximity									
G3700	19.7	16	5.3	<1.0	<10	39	30	0.9	~8 m from the east end of the module train
G3701	15.5	7.6	<5.0	1.4	<10	63	<20	5.1	South side of module train, back end of staircase
G3702	25	12.8	5.4	<1.0	20	72	26	1.4	South side of module train, front end of staircase
G3703	18.1	9.4	<5.0	<1.0	<10	11.8	<20	1.0	South side of module train, door at west end
G3704	29	10.7	5.7	<1.0	<10	316	<20	<0.2	West end of module train, back end of staircase
G3705	91	7.5	<5.0	<1.0	690	430	116	1.6	Stain, ~80 m north of module train, by barrel
G3706A	193	41	10.9	4.4	1060	1400	94	1.6	Stain, ~1.5 m east of the garage
G3706B	278	33	19.3	11	337	358	95	0.9	Field duplicate of G3706A
G3707	53	28	9.9	3.3	148	314	91	1.0	Stain, ~2 m west of the garage
G3708	23	20	7.7	<1.0	56	50	60	0.8	Stain, at edge of old shed, ~25 m NW of the garage
G3709	23	18.2	6.7	<1.0	14.4	35	39	0.9	Drainage, ~10 m south of G3708
G3710	17.6	14.6	6.7	<1.0	14.4	40	28	0.9	Drainage, ~4 m west of old shed
G3711	13.7	6.0	<5.0	<1.0	<10	28	29	1.6	Worked area, ~50 m west of the garage
G3712	16.3	11.5	<5.0	<1.0	<10	37	30	0.7	Upper end of drainage to G3711, ~30 m west of garage
G3713	14.4	10.2	<5.0	<1.0	<10	21	19.8	0.8	~10 m south of the station pad, below G3712
G3714	18.6	12.3	5.2	<1.0	36	2.7	35	1.3	Drainage from dump area, ~50 m south of garage
G3715	25	17	5.6	<1.0	21	42	37	1.7	Stain in drainage path from dump and station pad
G3716	24	10.7	<5.0	<1.0	130	195	32	0.7	Stain, ~15 m east of 170+ barrel pile
G3717A	23	<5.0	<5.0	1.0	<10	71	<20	1.2	Southeast corner of pumphouse, between POL tanks
G3717B	9.1	<5.0	<5.0	<1.0	<10	67	<20	1.5	Field duplicate of G3717A
G3718									Drainage, ~20 m south of POL tank pad
G3719	10	10.7	<5.0	<1.0	<10	39	29	0.6	South side of remnants of Inuit house
G3720	24	24	8.9	<1.0	<10	40	46	1.3	Drainage, ~30 m south of Inuit house

FOX-C Inorganic Element Results for Soil in Each Area of the Site (cont'd)

Sample	Cu	Ni	Co	Cd	Pb	Zn	Cr	As	Location
				ppm					
2. Area A: Station Proximity (cont'd)									
G3721	34	25	8.7	<1.0	11.8	204	67	0.6	Stain, ~100 m east of Inuit house
G3722	14.6	12.7	<5.0	<1.0	<10	60	38	0.6	Stain, ~8 m from barrel
G3723	17	11.3	5.4	<1.0	22	148	30	0.9	Stained area, west and northwest of the module train
G3724	38	27	10.1	<1.0	<10	51	63	2.0	~0.5 km southeast of upper site, along road to beach
Mean (n=26)	19.4	12.8	4.5	0.5	19.7	72	32	1.0	
Std Dev	10.3	8.6	3.1	0.2	35	67	19.6	0.5	
Minimum	9.1	6.0	<5.0	<1.0	<10	2.7	<20	<0.2	
Maximum	278	41	19.3	11	1060	1400	116	5.1	
3. Area B: Outfall									
O3700	9.6	9.5	<5.0	<1.0	<10	28	<20	0.7	North side of module train, ~0.5 m from outfall pipe
O3701	109	14.9	5.2	1.2	30	129	46	1.2	Drainage, ~15 m from the module train
O3702	27	10.5	<5.0	<1.0	22	79	26	0.9	Drainage depression, ~30 m north of the module train
O3703	50	11.9	5.2	1.2	16.4	97	46	0.9	Flat ledge on cliff face, ~55 m north of module train
O3704	30	9.4	<5.0	<1.0	<10	30	35	1.9	Depression plateau, ~100 m from module train
Mean (n=5)	45	11.2	5.2	1.2	23	73	38	1.1	
Std Dev	38	2.3	0	0	6.8	44	9.7	0.5	
Minimum	9.6	9.4	<5.0	<1.0	<10	28	<20	0.7	
Maximum	109	14.9	5.2	1.2	30	129	46	1.9	
4. Area C: Upper Site Dumps									
L3700	40	21	7.1	<1.0	58	68	46	1.0	Stained area, ~15 m south of the garage
L3701	33	16.9	7.2	<1.0	70	146	56	0.5	Stained area, ~15 m southeast of the garage
L3702	19.9	12.2	<5.0	<1.0	31	63	29	0.8	Stained area, ~30 m southeast of the garage
L3703A	17.1	11.6	9.3	<1.0	52	47	28	1.0	Stained area, ~40 m southeast of the garage
L3703B	22	11.6	6.5	<1.0	43	44	27	0.7	Field duplicate of L3703A
L3704	30	13.2	<5.0	<1.0	57	143	29	0.6	Stained area, ~20 m west of L3703, south of garage
L3705	45	24	7.1	1.8	87	72	67	0.7	Stained area, ~20 m south of the garage
L3706	14.6	8.4	<5.0	<1.0	<10	29	24	1.1	Stain in drainage path, ~30 m south of the garage
L3707									Drainage from dump, ~20 m NE of the Inuit house
L3708	18.9	12.4	5.0	<1.0	44	231	41	0.6	Drainage from dump, ~30 m north of the module train
L3709	16.7	6.9	<5.0	<1.0	13.8	23	<20	0.4	Drainage from dump, north of the module train
Mean (n=10)	23	12.6	4.7	0.6	42	79	32	0.7	
Std Dev	12.7	6.6	2.9	0.4	27	68	19.3	0.3	
Minimum	14.6	6.9	<5.0	<1.0	<10	23	<20	0.4	
Maximum	45	24	9.3	1.8	87	231	67	1.1	

FOX-C Inorganic Element Results for Soil in Each Area of the Site (cont'd)

Sample	Cu	Ni	Co	Cd	Pb	Zn	Cr	As	Location
				ppm					
5. Area D: Beach									
G3726	15.5	14.3	8.3	<1.0	<10	38	44	2.5	POL tank intake pipeline, 26.4 m from the beach
G3727	24	<5.0	<5.0	<1.0	<10	9.5	<20	1.4	27.4 m north of the POL tanks, along the pipeline
G3728	12.5	7.9	<5.0	<1.0	17.5	50	<20	1.5	Under intake valve of western situated POL tank
G3729	9.1	7.0	<5.0	<1.0	<10	25	26	1.6	Vehicle pile near POL tanks, 11.6 m from the shore
G3730	19.1	18.8	6.9	1.3	<10	52	59	2.4	~6 m north of the vehicle pile near the POL tanks
G3731	7.5	<5.0	<5.0	<1.0	<10	19.2	26	1.7	~20 m north of the vehicle pile, ~30 m from shore
G3732	22	25	8.3	<1.0	14.7	70	90	2.5	West end of 575+ barrel pile, west of POL tanks
G3733	5.8	6.3	<5.0	<1.0	11.7	22	27	1.7	In drainage path, 12 m west of the barrel pile
G3734A	22	26	10.9	<1.0	<10	61	79	1.2	Drainage, ~15 m north of 575+ barrel pile
G3734B	24	28	10.8	<1.0	<10	61	81	1.4	Field duplicate of G3734A
G3750									~1.5 km west of the POL tanks, mouth of a river
Mean (n=10)	16.2	13.8	5.8	0.6	7.9	41	45	1.8	
Std Dev	7.0	10	3.6	0.3	4.9	21	30	0.5	
Minimum	5.8	<5.0	<5.0	<1.0	<10	9.5	<20	1.2	
Maximum	24	28	10.9	1.3	17.5	70	90	2.5	
6. Area E: Station Road Debris Piles									
G3735A	27	32	13	<1.0	25	74	92	1.6	Road pile #1. 500+ barrel pile, ~40 m west of road
G3735B	30	32	12.8	<1.0	17.3	73	93	1.6	Field duplicate of G3735A
G3736	9.6	7.9	<5.0	<1.0	<10	18.4	24	1.9	22 m north of 500+ barrel pile
G3737									22 m south of 500+ barrel pile
G3739A	13.8	8.0	<5.0	<1.0	<10	30	25	1.1	Road pile #2 - adjacent to vehicles
G3739B	22	12.8	5.6	<1.0	<10	37	39	0.8	Field duplicate of G3739A
G3740									Drainage course, north of dump site
G3741									On bank of drainage course, ~40 m north of G3740
Mean (n=5)	17.1	15.5	6.1	0.4	9.6	39	46	1.2	
Std Dev	11.4	13.5	5.6	0.2	9.5	30	39	0.7	
Minimum	9.6	7.9	<5.0	<1.0	<10	18.4	24	0.8	
Maximum	30	32	13	<1.0	25	74	93	1.9	
7. Area F: Station Road to Water Lake									
G3742A	7.5	<5.0	<5.0	<1.0	22	27	<20	0.9	In the middle of a 450+ diesel fuel barrel pile
G3742B	8.4	<5.0	<5.0	<1.0	22	46	<20	0.9	Field duplicate of G3742A
G3743	9.3	<5.0	<5.0	<1.0	23	20	<20	1.7	South end of 450+ barrel pile
G3744	13.5	6.3	<5.0	<1.0	<10	16	27	2.0	Wood pile dump, east of 450+ barrel pile

FOX-C Inorganic Element Results for Soil in Each Area of the Site (cont'd)

Sample	Cu	Ni	Co	Cd	Pb	Zn	Cr	As	Location
				ppm					
7. Area F: Station Road to Water Lake (cont'd)									
G3745	14	<5.0	<5.0	<1.0	<10	10.5	21	1.7	Barrel pile, down hill ~400 m north of 450+ barrel pile
G3746A	3.8	<5.0	<5.0	<1.0	<10	10.5	<20	0.5	Drainage course down towards summer water lake
G3746B	3.9	<5.0	<5.0	<1.0	<10	11.2	<20	0.4	Field duplicate of G3746A
G3747	6.7	<5.0	<5.0	<1.0	14.6	10.6	<20	0.4	Drainage course to water lake, ~10 m from lake front
G3748	6.6	<5.0	<5.0	<1.0	<10	13.7	<20	0.5	Drainage course to water lake, north of wooden hut
G3749	7.0	<5.0	<5.0	<1.0	<10	11.3	<20	0.7	Stain, 200 m from lake front, beside a pile of barrels
Mean (n=10)	8.1	2.9	2.5	0.5	11.2	17.7	12.8	1.0	
Std Dev	3.5	1.2	0	0	8.3	11.3	6.1	0.6	
Minimum	3.8	<5.0	<5.0	<1.0	<10	10.5	<20	0.4	
Maximum	14	6.3	<5.0	<1.0	23	46	27	2.0	

E. FOX-C Inorganic Element Results for Vegetation in Each Area of the Site

Sample	Species	Cu	Ni	Co	Cd	Pb	Zn	Cr	As	Location
					ppm					
1. Freshwater Lake and Remote Background										
G3738 P	*Cassiope tetragona*	31	19	<5	<0.5	<15	20	43	0.6	16 km west of FOX-C, edge of river bed
G3751 P	*Salix arctica*	13	17	<5	2.3	<15	186	<10	<0.2	7 km east of FOX-C, lowland area
G3752 P	*Salix arctica*	10	10	<5	2.1	<15	128	<10	<0.2	13 km east of FOX-C, plateau above beach
Mean (n=3)		18	15	2.5	1.6	7.5	111	17.7	0.3	
Std Dev		11.4	4.7	0	1.1	0	84	22	0.3	
Minimum		10	10	<5	<0.5	<15	20	<10	<0.2	
Maximum		31	19	<5	2.3	<15	186	43	0.6	
2. Area A: Station Proximity										
G3705 P	*Rhacomtrium lanuginosum*	63	32	<5	0.6	56	106	112	0.6	Stain, ~80 m north of module train, by barrel
3. Area D: Beach										
G3732 PS	*Salix arctica, roots*	16	8.0	<5	1.3	<15	309	<10	<0.2	West end of 575+ barrel pile
G3732 PR	*Salix arctica,shoots*	26	15	<5	1.1	<15	217	12	<0.2	West end of 575+ barrel pile
Mean (n=2)		21	12	2.5	1.2	7.5	263	8.5	0.1	
Std Dev		7.1	4.9	0	0.1	0	65	4.9	0	
Minimum		16	8.0	<5	1.1	<15	217	<10	<0.2	
Maximum		26	15	<5	1.3	<15	309	12	<0.2	
4. Area E: Station Road Debris Piles										
G3736 P	*Salix arctica*	13	8.0	<5	<0.5	<15	207	19	<0.2	22 m north of 500+ barrel pile

F. FOX-C Aroclor PCB Results for Soil and Water in Each Area of the Site

Sample	Aroclor 1242	Aroclor 1254	Aroclor 1260	Aroclor Total	Location
			ppb		
1. Freshwater Lake and Remote Background					
BF3700	<1.4	<1.1	<0.80		East end of winter water lake
G3725	<0.60	<0.60	<0.40		23 km west of FOX-C, river tributary
G3738A	<0.80	<0.70	<0.60		16 km west of FOX-C, edge of river bed
G3738B†	0.04	0.04	0.03	0.11	Field duplicate of G3738A
G3751A	<0.70	<0.50	<0.40		7 km east of FOX-C, lowland area
G3751B	<0.70	<0.50	<0.40		Field duplicate of G3751A
G3752A	<0.80	<0.60	<0.40		13 km east of FOX-C, plateau above beach
G3752B	<0.70	<0.60	<0.40		Field duplicate of G3752A
G3754A	<0.70	<0.60	<0.40		51 km west of FOX-C, on a slope
G3754B	<0.90	<0.50	<0.40		Field duplicate of G3754A
Mean (n=10)				0.90	
Std Dev				0.40	
Minimum				<1.6	
Maximum				0.11	
2. Area A: Station Proximity					
G3700*	<2.6	120	35	160	~8 m from the east end of the module train
G3701	<2.8	110	50	160	South side of module train, back end of staircase
G3702*	180	4100	1300	5600	South side of module train, front end of staircase
G3703	<1.6	41	21	62	South side of module train, door at west end
G3704	NDR(3.3)	170	32	200	West end of module train, back end of staircase
G3705*	81	2100	160	2300	Stain, ~80 m north of module train, by barrel
G3706A	120	3000	460	3600	Stain, ~1.5 m east of the garage
G3706B	150	2500	400	3000	Field duplicate of G3706A
G3707*	170	3200	430	3800	Stain, ~2 m west of the garage
G3708	<2.4	60	14	74	Stain, at edge of old shed, ~25 m NW of the garage
G3709	5.9	110	20	140	Drainage, ~10 m south of G3708
G3710	<1.4	89	20	110	Drainage, ~4 m west of old shed
G3711*	NDR(10)	20	7.1	37	Worked area, ~50 m west of the garage
G3712	<1.0	10	2.9	13	Upper end of drainage to G3711, ~30 m west of garage
G3713	<1.1	15	5.7	21	~10 m south of the station pad, below G3712
G3714	<1.2	5.8	5.3	11	Drainage from dump area, ~50 m south of garage
G3715	NDR(2.9)	140	95	240	Stain in drainage path from dump and station pad
G3716*	11	380	69	460	Stain, ~15 m east of 170+ barrel pile
G3717A	<0.90	0.80	<0.60	0.80	Southeast corner of pumphouse, between POL tanks
G3717B	4.4	NDR(0.70)	<0.50	4.4	Field duplicate of G3717A
G3718					Drainage, ~20 m south of POL tank pad
G3719*	1.0	100	18	120	South side of remnants of Inuit house

* Indicates that congener data is available

† This sample was analyzed using high resolution MS; all others analyzed using ECD or low resolution MS

NDR = Peak detected but did not meet quantification criteria

FOX-C Aroclor PCB Results for Soil and Water in Each Area of the Site

Sample	Aroclor 1242	Aroclor 1254	Aroclor 1260	Aroclor Total	Location
			ppb		
2. Area A: Station Proximity (cont'd)					
G3720	<1.2	20	3.0	23	Drainage, ~30 m south of Inuit house
G3721	<3.0	11	<2.6	11	Stain, ~100 m east of Inuit house
G3722*	44	1800	190	2000	Stain, ~8 m from barrel
G3723*	NDR(12)	1300	200	1500	Stained area, west and northwest of the module train
G3724	<0.90	1.9	<0.60	1.9	~0.5 km southeast of upper site, along road to beach
Mean (n=26)				910	
Std Dev				1500	
Minimum				0.80	
Maximum				5600	
3. Area B: Outfall					
O3700*	NDR(2.9)	600	120	720	North side of module train, ~0.5 m from outfall pipe
O3701*	NDR(21)	400	38	460	Drainage, ~15 m from the module train
O3702*	NDR(58)	1800	170	2000	Drainage depression, ~30 m north of the module train
O3703*	NDR(35)	2500	220	2800	Flat ledge on cliff face, ~55 m north of module train
O3704	<0.5	8.8	1.3	10	Depression plateau, ~100 m from module train
Mean (n=5)				1200	
Std Dev				1200	
Minimum				10	
Maximum				2800	
4. Area C: Upper Site Dumps					
L3700*	NDR(77)	700	110	890	Stained area, ~15 m south of the garage
L3701	290	1400	380	2100	Stained area, ~15 m southeast of the garage
L3702	36	670	140	850	Stained area, ~30 m southeast of the garage
L3703A*	NDR(32)	38	NDR(5.6)	76	Stained area, ~40 m southeast of the garage
L3703B*	NDR(30)	44	<8.8	44	Field duplicate of L3703A
L3704	130	2600	530	3300	Stained area, ~20 m west of L3703, south of garage
L3705*	54	660	110	820	Stained area, ~20 m south of the garage
L3706	5.0	74	13	92	Stain in drainage path, ~30 m south of the garage
L3707					Drainage from dump, ~20 m NE of the Inuit house
L3708*	<3.5	130	20	150	Drainage from dump, ~30 m north of the module train
L3709	8.4	1100	130	1200	Drainage from dump, north of the module train
Mean (n=10)				950	
Std Dev				1000	
Minimum				74	
Maximum				3300	

* Indicates that congener data is available
NDR = Peak detected but did not meet quantification criteria

FOX-C Aroclor PCB Results for Soil and Water in Each Area of the Site

Sample	Aroclor 1242	Aroclor 1254	Aroclor 1260	Aroclor Total	Location
			ppb		
5. Area D: Beach					
G3726*	NDR(17)	<1.4	<1.1		POL tank intake pipeline, 26.4 m from the beach
G3727	NDR(1.6)	<0.20	<0.10		27.4 m north of the POL tanks, along the pipeline
G3728	NDR(14)	<1.7	<1.5		Under intake valve of western situated POL tank
G3729*	<0.20	NDR(0.40)	NDR(0.70)		Vehicle pile near POL tanks, 11.6 m from the shore
G3730	NDR(0.40)	<0.30	NDR(1.0)		~6 m north of the vehicle pile near the POL tanks
G3731	NDR(0.40)	0.40	NDR(0.20)	1.0	~20 m north of the vehicle pile, ~30 m from the shore
G3732	<0.20	<0.20	0.80	0.80	West end of 575+ barrel pile, west of POL tanks
G3733	<0.20	0.40	<0.20	0.40	In drainage path, 12 m west of the barrel pile
G3734A	<1.0	<0.60	<0.60		Drainage, ~15 m north of 575+ barrel pile
G3734B	<1.4	<0.90	<0.90		Field duplicate of G3734A
G3750					~1.5 km west of the POL tanks, mouth of a river
Mean (n=10)				4.4	
Std Dev				6.7	
Minimum				<2.2	
Maximum				17	
6. Area E: Station Road Debris Piles					
G3735A	<1.2	<1.1	<1.0		Road pile #1. 500+ barrel pile, ~40 m west of road
G3735B	<0.90	1.3	<0.80	1.3	Field duplicate of G3735A
G3736	<0.60	<0.40	<0.30		22 m north of 500+ barrel pile
G3737					22 m south of 500+ barrel pile
G3739A	<0.70	<0.80	NDR(1.4)	1.4	Road pile #2 - adjacent to vehicles
G3739B	<0.70	0.70	1.0	1.7	Field duplicate of G3739A
G3740†	0.06	0.08	0.04	0.18	Drainage course, north of dump site
G3741					On bank of drainage course, ~40 m north of G3740
Mean (n=6)				1.5	
Std Dev				0.90	
Minimum				<1.3	
Maximum				1.7	

* Indicates that congener data is available
† This sample was analyzed using high resolution MS; all others analyzed using ECD or low resolution MS
NDR = Peak detected but did not meet quantification criteria

FOX-C Aroclor PCB Results for Soil and Water in Each Area of the Site

Sample	Aroclor 1242	Aroclor 1254	Aroclor 1260	Aroclor Total	Location
			ppb		
7. Area F: Station Road to Water Lake					
G3742A	<4.2	<2.7	<2.0		In the middle of a 450+ diesel fuel barrel pile
G3742B	<4.1	<3.0	<2.3		Field duplicate of G3742A
G3743	<0.60	1.0	<0.30	1.0	South end of 450+ barrel pile
G3744	<0.10	<0.20	<0.10		Wood pile dump, east of 450+ barrel pile
G3745	<0.20	<0.90	<0.30		Barrel pile, down hill ~400 m north of 450+ barrel pile
G3746A	<2.6	<1.7	<1.3		Drainage course down towards summer water lake
G3746B	<3.1	2.9	<1.5	2.9	Field duplicate of G3746A
G3747	<3.0	<1.9	<1.5		Drainage course to water lake, ~10 m from lake front
G3748	<3.9	<2.2	<1.8		Drainage course to water lake, north of wooden hut
G3749	<1.5	1.2	1.0	2.2	Stain, 200 m from lake front, beside a pile of barrels
Mean (n=10)				3.0	
Std Dev				1.7	
Minimum				<0.40	
Maximum				2.9	

G. FOX-C Aroclor PCB Results for Vegetation in Each Area of the Site

Sample	Species	Aroclor 1242	Aroclor 1254	Aroclor 1260	Aroclor Total	Location
			ppb			
1. Freshwater Lake and Remote Background						
G3738 P	*Cassiope tetragona*	<2.7	8.3	<2.1	8.3	16 km west of FOX-C, edge of river bed
G3751 P	*Salix arctica*	<0.50	1.3	<0.80	1.3	7 km east of FOX-C, lowland area
G3752 P	*Salix arctica*	<0.40	1.8	<0.60	1.8	13 km east of FOX-C, plateau above beach
Mean (n=3)					5.0	
Std Dev					5.0	
Minimum					1.3	
Maximum					8.3	
2. Area A: Station Proximity						
G3705 P	*Rhacomtrium lanuginosum*	NDR(1.0)	170	16	190	Stain, ~80 m north of module train, by barrel
3. Area D: Beach						
G3732 PS	*Salix arctica, roots*	<1.0	5.5	<1.2	5.5	West end of 575+ barrel pile
G3732 PR	*Salix arctica, shoots*	<1.1	4.1	2.8	6.9	West end of 575+ barrel pile
Mean (n=2)					6.2	
Std Dev					1.0	
Minimum					5.5	
Maximum					6.9	
4. Area E: Station Road Debris Piles						
G3736 P	*Salix arctica*	<0.50	2.1	<0.70	2.1	22 m north of 500+ barrel pile

NDR = Peak detected but did not meet quantification criteria

H. FOX-C Soil PCB Congener Results

Sample:	G3700	G3702	G3705	G3706A	G3706B	G3707	G3711
Congener				ng/g (ppb)			
18	<0.27	15	3.7	8.6	8.9	12	<0.22
15/17	<0.27	5.8	NDR(13)	4.8	6.0	8.5	NDR(2.5)
54	<0.29	<0.11	<0.08	<2.2	<3.8	<1.7	<0.03
31	<0.16	13	8.8	14	<3.0	18	NDR(1.4)
28	<0.16	12	7.4	28	49	16	NDR(0.94)
52	3.5	150	150	180	140	160	1.3
49	0.71	33	36	47	37	47	NDR(0.29)
44	0.87	70	66	69	51	76	0.59
40/103	0.19	4.8	3.8	2.7	2.2	10	NDR(0.04)
61/94/74	<0.10	23	23	30	22	30	NDR(0.87)
66/80/95	11	290	200	240	180	220	2.2
121	<0.08	<0.15	<0.14	<0.64	<1.0	<0.78	<0.07
56/60	2.2	4.6	16	87	66	77	NDR(0.97)
90/101	14	290	180	290	240	290	1.9
86/97	3.6	140	77	97	74	84	0.71
87	6.0	240	140	230	170	200	1.3
77/154/110	36	580	320	370	290	510	NDR(5.9)
151	2.2	72	20	52	37	38	0.38
135/144	3.4	71	23	72	53	57	0.32
149	9.7	320	100	180	140	140	1.7
118	6.8	310	180	360	280	290	2.5
143	<0.08	<0.20	<0.33	<0.64	<1.0	16	<0.03
114	0.30	4.3	2.9	13	9.1	12	NDR(0.18)
132/153	11	220	110	180	150	170	1.1
105	7.4	110	62	93	62	110	0.99
141/179	2.3	69	28	60	42	40	NDR(0.4)
137	0.93	13	8.6	22	14	15	0.68
138/158	16	280	140	310	240	260	1.2
129/126	1.2	12	8.1	22	14	20	0.04
187/182/159	1.4	49	7.4	19	14	16	0.30
183	0.96	35	4.5	14	10	9.5	0.13
128	3.6	48	28	43	28	62	0.23
185	0.12	5.8	0.64	1.7	1.3	1.1	0.02
174/181	1.2	46	8.4	20	14	13	0.29
202/171/156	<0.07	42	15	33	21	23	NDR(0.34)
173/201	0.46	3.5	0.14	6.9	4.9	5.6	NDR(0.01)
180	2.9	120	12	55	42	41	0.68
191	<0.07	2.3	0.30	1.4	<1.2	0.78	<0.03
170	1.7	63	10	38	27	26	0.35
199	0.71	21	1.6	5.6	5.0	5.2	0.09
203/196	0.58	26	1.4	5.1	4.4	3.7	0.08
189	<0.08	2.0	0.36	1.4	<1.6	1.0	<0.04
208/195	<0.05	5.1	0.41	1.1	1.1	0.93	0.02
207	<0.09	0.82	<0.26	<0.85	<1.3	NDR(0.66)	<0.005
194	0.47	16	1.2	5.3	4.7	4.5	0.11
205	<0.07	1.2	<0.18	<0.97	<1.5	<0.63	<0.007
206	0.36	3.9	0.42	1.8	1.9	1.3	0.02

NDR = Peak detected but did not meet quantification criteria

FOX-C Soil PCB Congener Results (cont'd)

Sample:	G3716	G3719	G3722	G3723	G3726	G3729	O3700
Congener				ng/g (ppb)			
18	0.72	0.07	4.0	1.3	NDR(1.5)	NDR(0.02)	0.16
15/17	0.36	<0.04	2.0	0.43	NDR(1.0)	<0.01	NDR(0.16)
54	<0.10	<0.03	<0.45	<0.30	<0.29	<0.02	<0.03
31	1.1	0.09	4.7	1.2	NDR(1.3)	0.009	NDR(0.26)
28	1.2	0.08	3.5	1.0	NDR(0.68)	NDR(0.01)	NDR(0.23)
52	18	2.7	110	53	<0.17	<0.02	11
49	5.6	0.72	26	14	<0.19	<0.03	2.4
44	8.9	1.5	47	25	<0.21	<0.03	5.6
40/103	1.4	0.10	3.7	2.5	NDR(0.19)	<0.02	0.40
61/94/74	2.8	0.33	15	9.2	NDR(0.35)	<0.02	2.6
66/80/95	27	6.8	130	75	<0.14	0.07	33
121	<0.05	<0.02	<0.36	<0.30	<0.05	<0.01	<0.20
56/60	10	2.8	37	26	<0.13	<0.02	3.5
90/101	37	8.5	160	110	0.05	0.04	44
86/97	12	3.2	48	34	<0.07	<0.02	22
87	26	8.1	110	80	<0.08	NDR(0.03)	39
77/154/110	72	17	280	220	NDR(0.41)	NDR(0.12)	72
151	5.3	1.5	23	17	<0.03	0.03	8.9
135/144	7.5	2.6	32	21	<0.03	<0.02	10
149	19	7.2	84	57	0.12	0.09	47
118	35	13	150	130	<0.06	NDR(0.04)	70
143	2.0	0.72	<0.70	<0.52	<0.03	<0.02	<0.11
114	1.5	0.43	15	6.2	<0.05	<0.01	1.2
132/153	24	6.7	82	70	0.10	0.11	47
105	13	5.9	60	54	<0.05	0.02	31
141/179	5.2	2.5	24	18	<0.05	<0.03	12
137	1.7	0.79	8.0	6.2	<0.03	<0.03	3.6
138/158	36	14	130	110	0.12	0.09	61
129/126	2.6	0.92	10	9.4	<0.04	<0.03	3.4
187/182/159	3.0	0.69	7.3	9.0	<0.05	0.03	5.4
183	1.3	0.53	5.2	4.6	<0.05	<0.02	3.3
128	8.6	3.5	31	26	<0.04	0.06	14
185	0.17	0.07	NDR(0.91)	0.68	<0.06	<0.02	0.47
174/181	1.8	0.75	8.0	7.2	<0.06	0.03	5.0
202/171/156	2.4	1.0	12	9.7	<0.04	<0.03	7.2
173/201	0.69	0.19	2.7	2.4	<0.02	<0.007	0.27
180	7.7	1.9	17	20	0.07	0.08	11
191	0.13	0.03	NDR(0.47)	0.35	<0.06	<0.02	0.22
170	4.1	1.2	12	11	<0.08	NDR(0.04)	6.8
199	1.0	0.17	2.7	4.5	<0.05	<0.01	2.7
203/196	0.74	0.15	2.2	3.7	<0.04	<0.01	2.7
189	0.17	NDR(0.05)	0.58	0.43	<0.06	<0.02	<0.39
208/195	0.19	0.04	0.49	0.83	<0.03	<0.009	0.84
207	<0.08	<0.02	<0.26	<0.13	<0.04	<0.01	0.22
194	1.1	0.14	1.7	4.0	<0.06	<0.02	2.1
205	<0.09	NDR(0.05)	<0.27	0.32	<0.05	<0.01	NDR(0.13)
206	0.30	0.08	1.5	1.0	<0.06	<0.02	1.3

NDR = Peak detected but did not meet quantification criteria

FOX-C Soil PCB Congener Results (cont'd)

Sample:	O3701	O3702	O3703	L3700	L3701	L3702	L3704
Congener				ng/g (ppb)			
18	NDR(0.72)	3.1	<1.4	NDR(2.2)	17	4.3	8.4
15/17	NDR(15)	NDR(19)	NDR(7.9)	NDR(29)	100	2.0	4.5
54	<0.09	<0.20	<0.30	<0.73	3.4	<1.2	<2.3
31	NDR(2.4)	5.2	NDR(3.5)	NDR(4.7)	3.5	1.8	11
28	NDR(2.4)	NDR(4.4)	NDR(4.6)	NDR(9.8)	120	3.8	23
52	12	84	96	44	80	46	94
49	1.8	19	21	11	28	12	29
44	4.0	38	42	22	43	15	38
40/103	0.15	2.2	NDR(2.8)	NDR(2.7)	7.2	0.87	3.0
61/94/74	0.84	13	12	12	16	4.5	16
66/80/95	32	130	180	82	100	56	140
121	<0.02	<1.0	<0.45	<0.81	<0.49	<0.37	<0.76
56/60	NDR(0.18)	5.4	4.3	NDR(5.0)	46	20	57
90/101	31	150	210	66	120	78	190
86/97	14	62	91	28	42	24	63
87	24	104	160	51	99	57	150
77/154/110	68	220	350	88	230	95	250
151	4.1	16	24	8.4	17	13	34
135/144	5.2	19	29	8.9	27	18	47
149	26	90	140	47	71	50	130
118	16	140	160	100	200	66	210
143	<0.12	<0.54	<0.38	<0.78	<0.49	<0.36	<0.76
114	NDR(0.22)	1.9	2.6	NDR(1.1)	6.3	2.7	7.2
132/153	30	140	150	68	77	54	200
105	6.2	30	55	30	66	42	45
141/179	5.6	24	32	14	23	14	37
137	1.7	7.4	10	3.4	7.2	4.8	12
138/158	34	160	200	84	130	88	230
129/126	1.6	6.8	9.0	NDR(5.4)	11	5.1	14
187/182/159	2.0	8.8	10	11	12	6.8	21
183	0.90	4.0	5.2	3.4	9.5	4.3	10
128	8.6	34	42	16	36	10	27
185	0.10	0.54	0.63	<0.91	1.1	0.59	1.4
174/181	1.6	7.4	9.6	4.1	32	6.1	15
202/171/156	2.2	13	17	NDR(12)	12	7.3	16
173/201	0.40	0.20	<0.18	<0.50	NDR(11)	1.6	4.1
180	3.3	15	18	11	43	19	56
191	0.17	0.76	<0.45	<1.4	0.78	<0.45	1.3
170	2.2	22	14	7.8	23	9.3	31
199	0.60	3.4	3.8	3.0	8.4	2.6	6.9
203/196	0.44	2.6	2.8	2.9	7.1	2.3	5.8
189	0.20	<0.89	0.98	<1.2	<0.83	<0.6	<1.2
208/195	0.09	0.69	0.79	<0.60	1.7	0.52	1.4
207	<0.06	<0.26	<0.53	<0.80	1.6	<0.48	<1.0
194	0.40	2.8	3.7	3.0	7.3	2.4	7.0
205	<0.03	<0.48	<0.45	<1.2	<0.75	<0.55	<1.2
206	0.18	0.93	1.1	<1.1	1.8	0.65	1.4

NDR = Peak detected but did not meet quantification criteria

FOX-C Soil PCB Congener Results (cont'd)

Sample:	L3703A	L3703B	L3705	L3708
Congener		ng/g (ppb)		
18	1.6	<1.3	4.7	<0.37
15/17	5.1	5.4	2.5	<0.37
54	2.1	2.6	<3.5	<0.37
31	1.4	NDR(1.6)	4.8	NDR(0.26)
28	0.70	<0.89	4.7	NDR(0.25)
52	2.2	2.4	24	7.0
49	2.2	2.8	8.6	3.6
44	7.4	11	11	2.2
40/103	NDR(0.86)	NDR(1.4)	0.96	0.29
61/94/74	NDR(0.53)	NDR(0.83)	3.6	0.46
66/80/95	3.8	4.9	31	7.9
121	<0.20	<0.61	<0.21	<0.09
56/60	1.8	2.2	11	2.2
90/101	3.6	4.0	37	12
86/97	1.2	1.5	14	3.2
87	2.3	2.6	28	6.8
77/154/110	7.6	9.2	69	19
151	0.42	NDR(0.96)	4.6	1.3
135/144	0.88	1.1	7.7	2.2
149	1.6	1.6	23	6.9
118	3.7	3.6	43	8.2
143	<0.2	<0.61	<0.72	<0.29
114	<0.26	<0.76	18	0.28
132/153	2.1	2.2	24	8.4
105	2.6	2.9	15	6.3
141/179	0.99	1.4	5.7	1.2
137	NDR(0.59)	0.83	3.4	0.52
138/158	3.2	3.0	42	12
129/126	NDR(0.23)	<0.64	2.9	0.71
187/182/159	0.46	0.56	3.5	0.89
183	<0.22	<0.69	2.2	0.53
128	1.4	1.6	9.2	2.1
185	<0.19	<0.57	0.33	<0.07
174/181	NDR(0.20)	<0.56	3.3	0.79
202/171/156	0.36	<0.51	3.9	0.92
173/201	<0.22	<0.65	1.1	<0.09
180	0.68	<0.75	10	1.8
191	<0.25	<0.74	<0.21	<0.09
170	<0.26	<0.77	5.9	1.0
199	<0.27	<0.78	1.9	0.37
203/196	<0.22	<0.65	1.9	0.34
189	<0.32	<0.93	<0.28	<0.11
208/195	<0.16	<0.46	0.58	<0.06
207	<0.26	<0.76	<0.26	<0.12
194	<0.25	<0.72	2.4	0.36
205	<0.27	<0.79	0.70	<0.12
206	<0.26	<0.76	1.1	0.42

NDR = Peak detected but did not meet quantification criteria

I. FOX-C Pesticide Results for Soils

Sample:	G3704	G3706A	G3706B	G3708	G3717A	G3721	G3722
Sample Weight:	9.27g	1.75g	1.77g	8.76g	9.60g	1.89g	3.94g
Compound				ng/g (ppb)			
Hexachlorobenzene	<0.1	1.1	1.4	NDR(0.1)	NDR(0.1)	0.4	0.4
alpha BHC	<0.2	1.6	<2.6	<0.1	1.6	0.6	0.8
beta BHC	<0.1	<0.8	<4.1	<0.1	NDR(1.4)	0.4	<0.1
gamma BHC	<0.1	<0.4	<2.0	<0.1	<0.5	<0.1	<0.1
Heptachlor	<0.1	3.0	3.2	<0.1	<0.1	<0.2	2
Aldrin	<0.1	<0.5	<0.8	<0.1	<0.1	<0.1	<0.2
Oxychlordane	<0.1	<3.7	<3.1	0.3	NDR(1.9)	<0.2	0.2
trans-Chlordane	0.4	<2.2	<7.9	0.2	<0.1	0.2	0.6
cis-Chlordane	<0.1	NDR(3.1)	<8.5	0.1	<0.1	<0.3	NDR(0.2)
o,p'-DDE	4.8	32	23	0.5	NDR(0.5)	<0.6	1.3
p,p'-DDE	<0.1	NDR(1.9)	NDR(2.0)	NDR(0.1)	NDR(0.2)	0.7	<0.2
trans-Nonachlor	0.2	3.0	<9.2	<0.1	<0.1	<0.4	1.6
cis-Nonachlor	0.1	3.5	6.7	0.3	<0.1	<0.2	<0.1
o,p'-DDD	15	200	170	1	<0.1	<0.3	2.2
p,p'-DDD	2.2	69	156	NDR(3.3)	<0.1	13	14
p,p'-DDT	5.8	110	99	21	<0.2	2.0	2.3
Mirex	<0.1	<0.7	<1.1	<0.1	<0.1	<0.1	<0.4
Heptachlor Epoxide	<0.1	<1.1	<1.3	<0.1	<0.1	<0.5	<0.4
alpha-Endosulphan	<0.1	<1.3	<1.5	<0.1	<0.1	<0.6	<0.4
Dieldrin	<0.1	<1.1	<1.3	<0.1	<0.1	<0.7	0.7
Endrin	<0.1	<2.7	<3.1	<0.4	<0.1	<1.8	<1.5
Methoxychlor	<0.1	<3.1	<10	<0.9	<0.1	<5.4	<1.3

Sample:	G3723	G3734A	G3738A	G3739A	G3746A	G3748	G3752A
Sample Weight:	4.42g	16.83g	19.13g	8.70g	8.85g	7.48g	15.34g
Compound				ng/g (ppb)			
Hexachlorobenzene	1.1	0.1	<0.1	0.1	<0.1	<0.1	0.1
alpha BHC	3.9	<0.1	<0.1	NDR(0.1)	<0.1	<0.1	0.2
beta BHC	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1
gamma BHC	0.1	NDR(0.1)	NDR(0.1)	NDR(0.4)	<0.1	<0.1	NDR(0.2)
Heptachlor	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	<0.2	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1
Oxychlordane	0.2	<0.1	<0.1	<0.1	<0.1	0.2	<0.1
trans-Chlordane	0.6	<0.1	<0.1	<0.1	<0.1	0.6	<0.1
cis-Chlordane	<0.3	<0.1	<0.1	<0.1	0.1	0.7	<0.1
o,p'-DDE	24	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
p,p'-DDE	0.8	<0.1	<0.1	<0.1	0.2	0.8	<0.1
trans-Nonachlor	1.3	<0.1	<0.1	<0.1	<0.1	0.1	<0.1
cis-Nonachlor	0.3	<0.1	<0.1	<0.1	<0.1	0.2	<0.1
o,p'-DDD	2.9	<0.1	<0.1	0.2	0.1	<0.1	<0.1
p,p'-DDD	11	<0.1	<0.1	NDR(0.2)	0.2	<0.1	<0.1
p,p'-DDT	59	<0.1	<0.1	<0.2	<0.5	<0.4	0.3
Mirex	<0.3	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1
Heptachlor Epoxide	<0.8	<0.1	<0.1	<0.1	<0.1	0.1	<0.1
alpha-Endosulphan	23	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	<1.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	<2.9	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1
Methoxychlor	<8.6	<0.1	<0.1	<0.1	<0.2	<0.4	<0.1

NDR = Peak detected but did not meet quantification criteria

FOX-C Pesticide Results for Soils (cont'd)

Sample:	L3701	L3702	L3703A	L3705	L3706	L3708
Sample Weight:	4.55g	4.33g	5.33g	4.08g	4.45g	1.52g
Compound			ng/g (ppb)			
Hexachlorobenzene	2.1	0.4	8.6	NDR(0.8)	NDR(0.3)	<0.1
alpha BHC	2.2	0.4	4.7	NDR(12)	NDR(12)	<0.4
beta BHC	<0.5	<0.2	<4.6	NDR(16)	NDR(1.2)	<0.3
gamma BHC	<0.2	<0.1	3.6	NDR(19)	NDR(30)	<0.1
Heptachlor	11	1.2	<0.4	<1.1	<0.3	<0.1
Aldrin	<0.4	<0.3	<0.3	<0.4	<0.1	0.3
Oxychlordane	<0.4	<1.5	<40	NDR(160)	NDR(27)	<0.2
trans-Chlordane	<0.6	<0.8	<12	1	0.4	0.2
cis-Chlordane	<0.9	<1.0	<12	0.3	0.2	<0.2
o,p'-DDE	33	7.8	<19	NDR(49)	NDR(4.6)	0.3
p,p'-DDE	23	<0.3	<0.3	<0.1	NDR(2.1)	0.4
trans-Nonachlor	1.5	<1.1	<13	<0.1	<0.1	<0.2
cis-Nonachlor	<0.6	1.1	<14	<0.2	<0.1	<0.2
o,p'-DDD	<1.5	66	98	<0.1	<0.1	1.0
p,p'-DDD	64	13	191	<0.2	<0.1	1.1
p,p'-DDT	38	36	<31	NDR(51)	NDR(9.3)	3.8
Mirex	<0.6	<0.4	<0.5	NDR(63)	NDR(3.2)	<0.1
Heptachlor Epoxide	<0.5	<0.4	<1.2	NDR(0.5)	<0.2	<0.2
alpha-Endosulphan	<0.6	<0.4	<1.2	<0.5	<0.2	<0.2
Dieldrin	<0.6	<0.5	<1.3	<0.5	<0.2	<0.2
Endrin	<3.0	<2.2	<3.1	<1.5	<0.5	<0.6
Methoxychlor	<2.2	<2.1	<11	<4.5	<1.5	<0.6

NDR = Peak detected but did not meet quantification criteria

J. FOX-C Acid/Base/Neutral Extractable (ABN) Results for Soils

Sample:	G3706A	G3706B	G3746B	G3707	O3700	O3702	O3703	L3701	L3702	L3704
Compound					µg/g (ppm)					
Bis(2-chloroethoxy) methane	<2.0	<2.0	<0.1	<20	<0.06	<2.0	<0.1	<0.06	<2.0	<2.0
Bis(2-chloroethyl) ether	<2.0	<2.0	<0.1	<20	<0.06	<2.0	<0.1	<0.06	<2.0	<2.0
Bis(2-chloroisopropyl) ether	<1.0	<1.0	<0.1	<10	<0.05	<1.0	<0.1	<0.05	<1.0	<1.0
4-Bromophenyl phenyl ether	<10	<10	<0.03	<10	<0.03	<1.0	<0.1	<0.03	<1.0	<10
2-Chloronaphthalene	<20	<20	<0.1	<20	<0.07	<2.0	<0.2	<0.07	<2.0	<20
4-Chlorophenyl phenyl ether	<10	<10	<0.04	<10	<0.04	<1.0	<0.1	<0.04	<1.0	<10
2,4-Dinitrotoluene	<20	<20	<0.1	<20	<0.07	<2.0	<0.2	<0.07	<2.0	<20
2,6-Dinitrotoluene	<40	<40	<0.2	<40	<0.2	<4.0	<0.4	<0.2	<4.0	<40
Isophorone	<2.0	<2.0	<0.1	<20	<0.1	<2.0	<0.2	<0.1	<2.0	<2.0
Nitrobenzene	<2.0	<2.0	<0.1	<20	<0.09	<2.0	<0.2	<0.09	<2.0	<2.0
N-Nitrosodi-n-propylamine	<20	<20	<0.8	<200	<0.8	<20	<2.0	<0.8	<20	<20
N-Nitrosodiphenylamine	<10	<10	<0.04	<10	<0.03	<1.0	<0.1	<0.03	<1.0	<10
Hexachlorobenzene	<10	<10	<0.04	<10	<0.04	<1.0	<0.1	<0.04	<1.0	<10
Hexachlorobutadiene	<40	<40	<0.2	<40	<0.2	<4.0	<0.4	<0.2	<4.0	<40
Hexachlorocyclopentadiene	<200	<200	<1.0	<200	<1.0	<20	<2.0	<1.0	<20	<200
Hexachloroethane	<4.0	<4.0	<0.2	<40	<0.2	<4.0	<0.4	<0.2	<4.0	<4.0
1,2,4-Trichlorobenzene	<1.0	<1.0	<0.1	<10	<0.05	<1.0	<0.1	<0.05	<1.0	<1.0
2,4-Dimethylphenol	<4.0	<4.0	<0.2	<4.0	<0.2	<4.0	<0.4	<0.2	<4.0	<4.0
4,6-Dinitro-o-cresol	<200	<200	<1.0	<200	<1.0	<20	<2.0	<1.0	<20	<200
2,4-Dinitrophenol	<200	<200	<1.0	<200	<1.0	<20	<2.0	<1.0	<20	<200
2-Nitrophenol	<4.0	<4.0	<0.2	<4.0	<0.2	<4.0	<0.4	<0.2	<4.0	<4.0
4-Nitrophenol	<40	<40	<0.2	<40	<0.2	<4.0	<0.4	<0.2	<4.0	<40
Phenol	<2.0	<2.0	<0.1	<2.0	<0.07	<2.0	<0.2	<0.07	<2.0	<2.0
2-Chlorophenol	<2.0	<2.0	<0.1	<2.0	<0.07	<2.0	<0.2	<0.07	<2.0	<2.0
4-Chloro-3-methylphenol	<2.0	<2.0	<0.1	<2.0	<0.1	<2.0	<0.2	<0.1	<2.0	<2.0
2,4-Dichlorophenol	<2.0	<2.0	<0.1	<2.0	<0.07	<2.0	<0.2	<0.07	<2.0	<2.0
2,4,6-Trichlorophenol	<20	<20	<0.1	<20	<0.1	<2.0	<0.2	<0.1	<2.0	<20
2,4,5-Trichlorophenol	<20	<20	<0.1	<20	<0.07	<2.0	<0.2	<0.07	<2.0	<20
Pentachlorophenol	<40	<40	<0.2	<40	<0.2	<4.0	<0.4	<0.2	<4.0	<40
Naphthalene	<2	<2.0	<0.06	<20	<0.06	<2.0	<0.1	<0.06	<2.0	<2.0
Acenaphthylene	<20	<20	<0.07	<20	<0.07	<2.0	<0.2	<0.07	<2.0	<20
Acenaphthene	<10	<10	<0.04	<10	<0.04	<1.0	<0.1	<0.04	<1.0	<10
Fluorene	<10	<10	<0.04	<10	<0.04	<1.0	<0.1	<0.04	<1.0	<10
Phenanthrene	<10	<10	<0.03	<10	<0.03	<1.0	<0.1	<0.03	<1.0	<10
Anthracene	<10	<10	<0.02	<10	<0.02	<1.0	<0.1	<0.02	<1.0	<10
Fluoranthene	<10	<10	<0.03	<10	<0.03	<1.0	<0.1	<0.3	<1.0	<10
Pyrene	<10	<10	<0.02	<10	<0.02	<1.0	<0.1	<0.2	<1.0	<10
Benz(a)anthracene	<10	<10	<0.03	<10	<0.03	<1.0	<0.1	<0.3	<1.0	<10
Chrysene	<10	<10	<0.03	<10	<0.04	<1.0	<0.1	<0.4	<1.0	<10
Benzofluoranthenes	<30	<30	<0.1	<30	<0.11	<3.0	<0.2	<0.6	<2.0	<20
Benzo(a)pyrene	<10	<10	<0.1	<10	<0.05	<1.0	<0.1	<0.5	<1.0	<10
Dibenz(ah)anthracene	<10	<10	<0.03	<10	<0.03	<1.0	<0.1	<0.3	<1.0	<10
Indeno(1,2,3-cd)pyrene	<10	<10	<0.05	<10	<0.05	<1.0	<0.1	<0.5	<1.0	<10
Benzo(ghi)perylene	<10	<10	<0.05	<10	<0.05	<1.0	<0.1	<0.5	<1.0	<10
3,3-Dichlorobenzidine	<60	<60	<0.3	<60	<0.3	<6.0	<0.5	<3.0	<6.0	<60
1,3-Dichlorobenzene	<2.0	<2.0	<0.09	<20	<0.09	<2.0	<0.2	<0.09	<2.0	<2.0
1,4-Dichlorobenzene	<2.0	<2.0	<0.09	<20	<0.09	<2.0	<0.2	<0.09	<2.0	<2.0
1,2-Dichlorobenzene	<2.0	<2.0	<0.08	<20	<0.08	<2	<0.2	<0.08	<2.0	<2.0

FOX-C Acid/Base/Neutral Extractable (ABN) Results for Soils (cont'd)

Sample:	G3706A	G3706B	G3746B	G3707	O3700	O3702	O3703	L3701	L3702	L3704
Compound						μg/g (ppm)				
Dimethyl phthalate	<20	<20	<0.06	<20	<0.06	<2	<0.1	<0.06	<2.0	<20
Diethyl phthalate	<10	<10	<0.03	<10	<0.03	<1	<0.1	<30	<1.0	<10
Dibutyl phthalate	<600	<600	<3.0	<600	<3.0	<60	<5	<9.0	<60	<600
Butyl-Benzyl phthalate	<200	<200	<0.9	<200	<0.9	<20	<2	<0.9	<20	<200
Bis(2-ethylexyl)phthalate	<200	<200	<0.8	<200	<0.8	<20	<2	<8	<20	<200
Di-N-Octyl phthalate	<20	<20	<0.08	<20	<0.08	<2	<0.2	<0.8	<2.0	<20

K. FOX-C Polycyclic Aromatic Hydrocarbon (PAH) Results for Soils

Sample:	G3705	G3706A	G3706B	G3707	G3710	G3722	G3723
Sample Weight:	9.03g	9.54g	9.99g	4.48g	4.73g	4.04g	4.18g
Compound	ng/g (ppb)						
Naphthalene	140	84	66	NDR(66)	47	NDR(57)	39
Acenaphthylene	NDR(7.0)	NDR(8.8)	NDR(5.3)	NDR(80)	2.5	NDR(8.1)	8.4
Acenaphthene	9.6	20	NDR(10)	140	<2.5	<8.2	<4.2
Fluorene	NDR(38)	NDR(29)	NDR(13)	540	4.4	NDR(18)	9.8
Phenanthrene	60	NDR(24)	NDR(22)	1700	36	NDR(17)	NDR(45)
Anthracene	NDR(22)	10	NDR(19)	NDR(32)	5.0	NDR(30)	20
Fluoranthene	97	48	NDR(37)	110	NDR(21)	42	120
Pyrene	170	220	170	200	44	110	290
Benz(a)anthracene	33	NDR(50)	NDR(34)	NDR(40)	NDR(18)	NDR(12)	NDR(62)
Chrysene	110	510	410	690	380	59	530
Benzofluoranthenes	NDR(38)	99	90	70	43	32	150
Benzo(e)pyrene	NDR(35)	80	61	54	23	NDR(27)	140
Benzo(a)pyrene	NDR(13)	NDR(10)	NDR(9.0)	<1.9	3.5	9.4	NDR(44)
Perylene	<2.6	32	42	5.3	<1.6	<1.0	<1.0
Dibenz(ah)anthracene	<10	7.1	5.1	<5.6	<5.2	<6.0	NDR(13)
Indeno(1,2,3-cd)pyrene	14	24	23	8.2	13	NDR(13)	91
Benzo(ghi)perylene	NDR(39)	24	25	10	14	33	180

Sample:	O3700	O3702	O3703	L3701	L3702	L3704
Dry Weight:	10.16g	8.74g	8.12g	9.36g	9.15g	8.51g
Compound	ng/g (ppb)					
Naphthalene	NDR(1.8)	NDR(61)	NDR(16)	40	20	150
Acenaphthylene	0.2	NDR(72)	NDR(4.7)	<0.3	NDR(1.8)	NDR(3.9)
Acenaphthene	0.4	NDR(22)	NDR(1.0)	NDR(24)	NDR(1.1)	5.4
Fluorene	1.0	NDR(5.1)	NDR(5.9)	NDR(16)	NDR(2.1)	23
Phenanthrene	2.2	NDR(30)	NDR(12)	NDR(110)	NDR(10)	120
Anthracene	0.5	NDR(19)	5.5	NDR(25)	NDR(6.0)	47
Fluoranthene	1.1	44	9.3	79	NDR(10)	220
Pyrene	1.2	54	28	180	76	190
Benz(a)anthracene	NDR(0.2)	NDR(8.3)	4.2	NDR(32)	NDR(16)	NDR(35)
Chrysene	NDR(0.8)	59	41	290	200	820
Benzofluoranthenes	NDR(0.8)	27	NDR(32)	NDR(34)	NDR(30)	190
Benzo(e)pyrene	NDR(0.4)	20	NDR(16)	28	21	69
Benzo(a)pyrene	<0.4	NDR(3.3)	2.5	NDR(4.9)	<1.3	NDR(11)
Perylene	<0.3	<1.6	<1.5	NDR(6.3)	<1.2	<2.0
Dibenz(ah)anthracene	<0.7	<5.6	<4.7	NDR(2.9)	<5.3	<10
Indeno(1,2,3-cd)pyrene	<0.4	NDR(6.6)	8.1	9.9	<5.8	32
Benzo(ghi)perylene	<0.4	NDR(11)	NDR(7.7)	13	NDR(7.3)	<16

NDR = Peak detected but did not meet quantification criteria
Note: Data have not been blank corrected

L. FOX-C Swab Aroclor PCB Results

Sample	Aroclor 1242	Aroclor 1254	Aroclor 1260	Aroclor Total	Location
		ng/g (ppb)			
1. Area A: Station Proximity					
SW3700-1	280	20000	4400 *	25000	Module train, boiler room, side of tank
SW3700-2					Field duplicate
SW3700-3					Module train, bedroom
SW3700-4	590	63000	14000	78000	Field duplicate
SW3700-7					Module train, water room
SW3700-8	NDR(120)	66000	23000	89000	Field duplicate
SW3700-9					Module train, kitchen, above stove
SW3700-10	<13	3300	8400 *	12000	Field duplicate
SW3700-11	NDR(11)	1200	3100 *	4300	Field triplicate
SW3700-12					Module train, electrical room
SW3700-13	39	38000	8600	47000	Field duplicate
SW3700-14	1500	140000	28000	170000	Module train, generator room
SW3700-15					Field duplicate
SW3700-16					Warehouse, bedroom area
SW3700-17	27	500	170	700	Field duplicate
SW3700-18					Warehouse, south bay door
SW3700-19	64	20	5.7	90	Field duplicate
SW3700-20	23	370	100	490	Garage
SW3700-21					Field duplicate
2. Field Blanks					
SW3700-5	NDR(13)	<11	<13	0	Field blank
SW3700-6					Duplicate

* Unusual 1260 pattern noted

NDR = Peak detected but did not meet quantification criteria

M. FOX-C Floor Tiles and Insulation Material

Sample	Chrysotile Asbestos Content (%)	Location
ABS-C-01	Not detected	Water tank in module train
ABS-C-02	>75%	Piping in module train
ABS-C-03	1-5%	Floor tile in module train
ABS-C-04	Not detected	Insulation in Quonset hut

Asbestos not detected = below detection limit of 0.5%

Table V-6: Ekalugad Fjord, FOX-C, Environmental Summary

Area	Soil Indicators[a]	Ecosystem Impact/Indicators[b]	Cleanup Plan
A: Station Proximity	- max. PCBs >DCC-II - max. Cu, Cd, Pb and Zn > DCC-II	- sparse vegetation - minimal wildlife use - yes, potential for migration of contaminants	- remove soil from five locations - remove 75 oil-filled drums - remove module train - remove all facility structures, vehicles, equipment and debris
B: Outfall	- max. PCBs >DCC-I - max. Cu >DCC-II	- sparse vegetation - minimal wildlife use - yes, potential for migration of contaminants	- remove soil from three locations - remove old outfall pipe and barrels
C: Upper Site Dumps	- max. PCBs >DCC-I	- sparse vegetation - minimal wildlife use - yes, potential for migration of contaminants	- remove soil from large stained area south of the garage - sort and remove debris
D: Beach	- all substances < DCC	- minimal	- remove POL tanks - remove barrels, vehicles and debris
E: Station Road Debris Piles	- all substances < DCC	- minimal	- remove barrels, vehicles and debris
F: Station Road to Water Lake	- all substances < DCC	- minimal	- remove barrels and debris

a. DCC I and II refer to the DEW Line Cleanup Criteria Tier I and Tier II.

b. Composite of vegetation analysis and visual observations.

Table V-7: Details of Soil and Debris Requiring Action at Ekalugad Fjord, FOX-C

Area	Non-Hazardous Materials[a]	Hazardous or Potentially Hazardous Materials	DCC Tier I Contaminated Soil[b]	DCC Tier II Contaminated Soil[b]
A: Station Proximity	- station buildings and contents - vehicles - equipment - two POL tanks - barrels (3000)	- module train - asbestos from buildings (if present) - POL tank sludge (if present) - 75 oil-filled drums - barrels with unknown contents	- G3707 (2 m^3) - G3722 (9 m^3) - G3723 (8 m^3)	- G3702 (1 m^3) - G3705 (9 m^3) - G3706 (5 m^3)
B: Outfall	- outfall pipe - barrels (100)	- barrels with unknown contents	- O3702 (1 m^3) - O3703 (1 m^3)	- O3701 (1 m^3)
C: Upper Site Dumps	- materials present in dumps - oil containers - barrels (300)	- any hazardous materials found during dump removal - barrels with unknown contents	- L3700 to L3705 (total volume for stain - 720 m^3) - L3709 (1 m^3)	
D: Beach	- vehicles - equipment - two POL tanks - barrels (1000)	- two batteries - POL tank sludge (if present) - barrels with unknown contents		
E: Station Road Debris Piles	- vehicles - equipment - barrels (600)	- barrels with unknown contents		
F. Station Road to Water Lake	- vehicles - equipment - barrels (5000)	- barrels with unknown contents		

a. The numbers of barrels listed are rough order of magnitude estimates.

b. Volumes were calculated based on a depth of 0.3 m and have been rounded up to a whole number.

Contaminated Sites Water Monitoring Program – East Nunavut

prepared for:
Indian and Northern Affairs Canada

prepared by:
Gartner Lee Limited

reference: GLL 23-679

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2 Indian and Northern Affairs Canada
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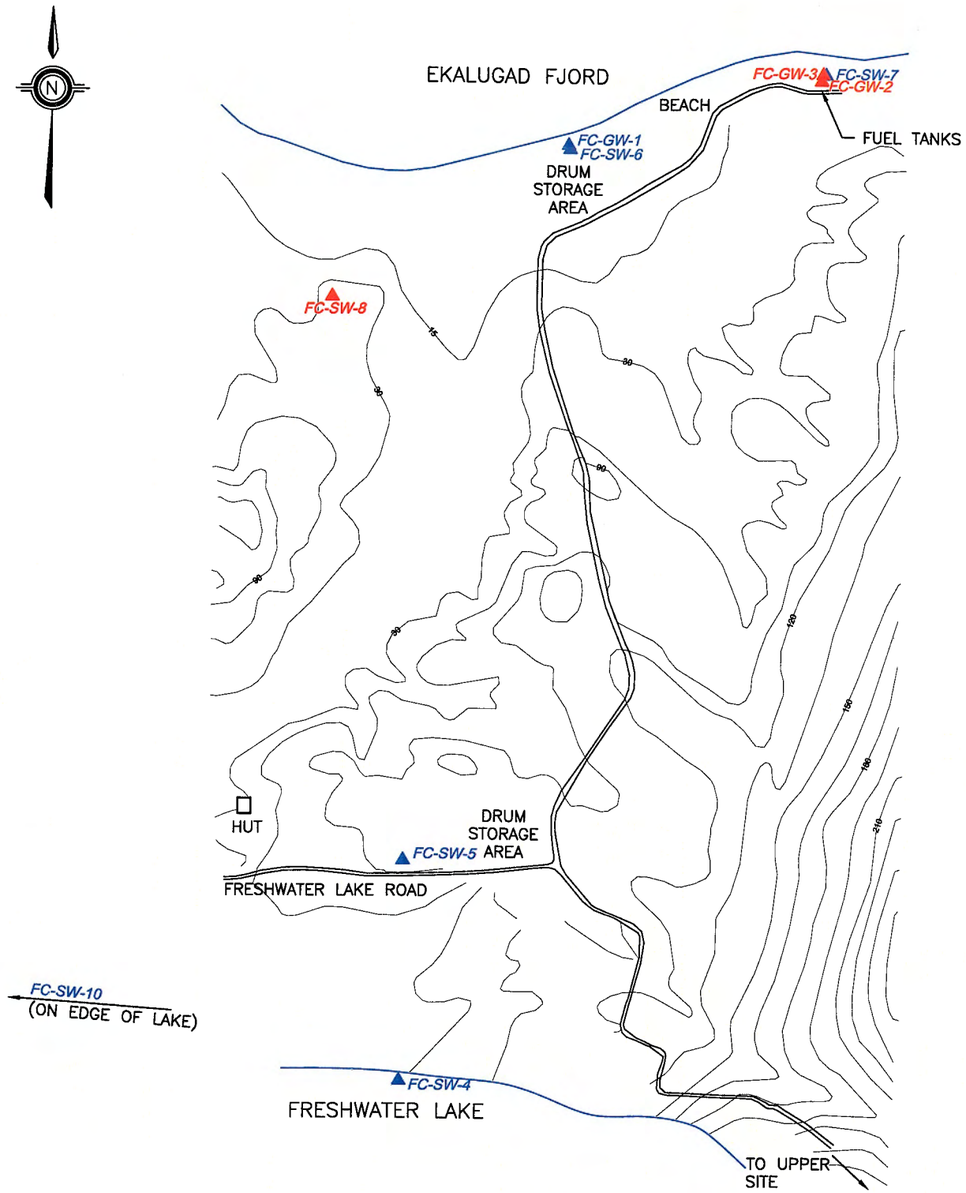
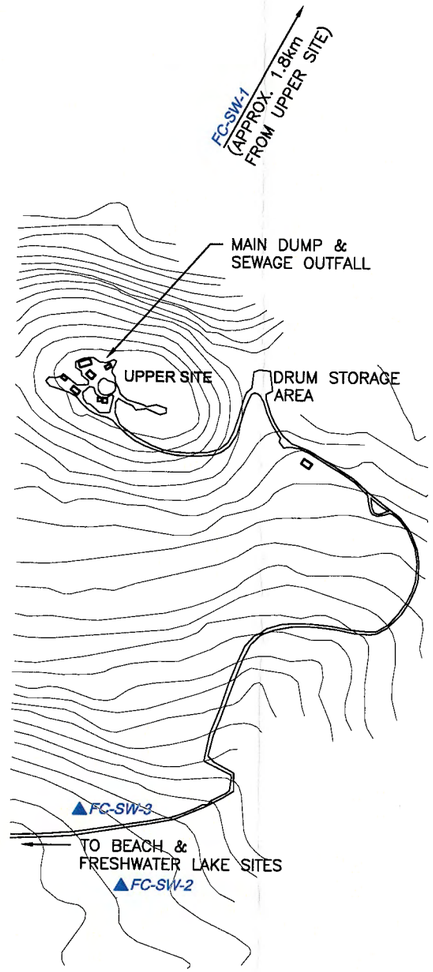
Gartner Lee





LEGEND

- ▲FC-SW-8 SURFACE WATER SAMPLING LOCATION
- ▲FC-GW-3 PERCHED GROUNDWATER SAMPLING LOCATION
- ▲FC-SW-8 2002 SAMPLING STATION NOT SAMPLED IN 2003

REFERENCE: BASE PLAN TAKEN FROM MAP VI: EKALUGAD FJORD, FOX-C, GENERAL SITE LAYOUT IN ENVIRONMENTAL STUDY OF ABANDONED DEW LINE SITES II. SIX INTERMEDIATE SITES IN THE EASTERN ARCTIC BY ROYAL ROADS MILITARY COLLEGE AND DATED MARCH, 1994.

No.	Revision	Date	Initial

SCALE: 150m 0 300m 600m

Scale 1:15,000

Designed By: DLT	Drawn By: JEP/JDM
Checked By: DLT	Approved By: GL
Date Issued: FEBRUARY 2004	Project No.: 23-679

INDIAN and NORTHERN AFFAIRS CANADA
CONTAMINATED SITES WATER MONITORING PROGRAM
EAST NUNAVUT

FOX-C
SITE PLAN & SAMPLING LOCATIONS

Gartner Lee

FIGURE 4

Apr 02, 2004 - 1:32pm N:\Projects\2003\23679\2004\Final\ACAD\23679-F02.dwg

Table 1. Sample Location Summary - 2002 and 2003, Contaminated Sites Water Monitoring Program - East Nunavut

Station	Descriptor	Sample ID* (duplicate)	Matrix	Northing**	Easting	Elevation (m AMSL)	GPS Instrument Error (m)	Location Description
Fox E	Durban Island	FE-GW-1[1]	Perched	7440135	535554	100	± 5	downgradient (S) of Dump D in muskeg
Fox E	Durban Island	FE-GW-2[2]	Perched	7440352	535626	117	± 5	NW of Dump B in muskeg
Fox E	Durban Island	FE-GW-3[2]	Perched Groundwater	7439469	535623	10 (4 or 5 visual)	± 4	downgradient of drums on slope to beach mossy area, at RRMC 25
Fox E	Durban Island	FE-GW-4[1]	Perched Groundwater	7439452	535537	2	± 4	in channel down slope of west side of fuel tank pad rocky in channel, sandy beach
Fox E	Durban Island	FE-SW-1[1]	Surface Water	7440142	535569	100	± 5	ponded water downgradient (S) of Dump D in muskeg goose droppings in and around pond
Fox E	Durban Island	FE-SW-2[1]	Surface Water	7440276	535676	127	± 6	main drainage channel at base of mountain, south side rocky, downgradient of Dump D, near barrel fast flowing water
Fox E	Durban Island	FE-SW-3[1]	Surface Water	7440471	535595	140	± 6	main drainage channel at base of mountain, south side rocky, upgradient of Dump D, at vertical drop fast flowing water
Fox E	Durban Island	FE-SW-4[1]	Surface Water	7441933	538891	174	± 5	down slope of Dump A on bench, multiple channels in muskeg, sandy bottom, seep water , shallow, fast flowing
Fox E	Durban Island	FE-SW-5[2]	2002 Background Surface Water	7439423	535361	4	± 6	drainage channel about 200 m west of tank pad
Fox E	Durban Island	FE-SW-6[3]	Surface Water replacement for FE-GW-3	7439470	535627	4 or 5 as measured at FE-GW-3		fast flowing shallow channel downgradient of drums on slope to beach, mossy area
Fox E	Durban Island	FE-SW-7[3]	2003 Background	7439848	534647	91		incised fast flowing shallow channel draining elevated land to west of site
Fox C	Ekalugad Fjord	FC-GW-1[1]	Perched Groundwater	7625341	513667	11	± 6	downgradient of drum dump at west end of marine beach, muskeg area
Fox C	Ekalugad Fjord	FC-GW-2	Perched Groundwater	7625793	514080	5.5 (visual)	± 7	downgradient of fuel tanks, west side of pipe to marine muskeg area
Fox C	Ekalugad Fjord	FC-GW-3	Perched Groundwater	7625809	514084	4 (visual)	± 6	downgradient of fuel tanks, east side of pipe to marine muskeg area, drive point only went in half-way
Fox C	Ekalugad Fjord	FC-SW-1[1]	Surface Water	7625911	517698	174	± 5	main drainage channel downgradient of main dump and sewage outfall flat, mossy area, iron precipitate, some drums fast flowing shallow water
Fox C	Ekalugad Fjord	FC-SW-2[1]	Surface Water	7623017	516914	380	± 6	drainage area down slope of drum storage areas south side of road rocky, shallow fast flowing water
Fox C	Ekalugad Fjord	FC-SW-3[1]	Surface Water	7623207	516809	391	± 5	drainage channel north side of road rocky, flowing water downgradient of drum storage area
Fox C	Ekalugad Fjord	FC-SW-4[1]	Surface Water	7622850	513368	28	± 4	"Freshwater Lake" at mouth of drainage channel base of glacier silty water, sandy bottom, fish in 2002

Table 1. Sample Location Summary - 2002 and 2003, Contaminated Sites Water Monitoring Program - East Nunavut

Station	Descriptor	Sample ID* (duplicate)	Matrix	Northing**	Easting	Elevation (m AMSL)	GPS Instrument Error (m)	Location Description
Fox C	Ekalugad Fjord	FC-SW-5[1]	Surface Water 2003 discharging subsurface water	7623602	513577	59.2	± 6	drainage channel from barrel dump north side of road to "Freshwater Lake" very shallow, low flow
Fox C	Ekalugad Fjord	FC-SW-6[1] (FC-SW-11[3])	Surface Water	7625331	513671	13.5	± 5	west end of marine beach at base of drum dump mossy area, ponded water
Fox C	Ekalugad Fjord	FC-SW-7[1]	Surface Water	7625808	514091	5	± 6	downgradient of fuel tanks, east side of pipe to marine beach, mossy area
Fox C	Ekalugad Fjord	FC-SW-8[2]	2002 Background	7625260	512870		± 7	west side of river, ponded water
Fox C	Ekalugad Fjord	FC-SW-10[3]	2003 Background Surface Water	7625325	511700	37		west side of Freshwater Lake, shallow drainage channel, drains elevated land on west side of river, mossy area
Padloping Island	Padloping Island	PI-SW-1[1]	Surface Water	7435868	513117	0	± 4	Ponded water at eastern drum site area
Padloping Island	Padloping Island	PI-SW-2[1]	Surface Water	7435946	511753	36.1	± 4	drainage channel southeast of kitchen fast flowing water, at ESG 65 marker
Padloping Island	Padloping Island	PI-SW-3[1]	Surface Water	7436043	511742	40.4	± 5	ponded water south of weather station, beside road road covered in metal shavings mossy area
Padloping Island	Padloping Island	PI-SW-4[1]	Surface Water	7435968	511647	39.3	± 4	ponded water downgradient of maintenance shed, west of accomodations building, muskeg area
Padloping Island	Padloping Island	PI-SW-5[1]	Surface Water	7436009	511678	38.1	± 4	ponded water southwest of generator building, stained soil, possible sheen in 2002
Padloping Island	Padloping Island	PI-SW-6[1]	Surface Water	7435981	511694		± 6	ponded water downgradient of maintenance shed and generator building, organics
Padloping Island	Padloping Island	PI-SW-7[1]	Surface Water	7435889	511647	37.3	± 5	downgradient of old generator building
Padloping Island	Padloping Island	PI-SW-8[1]	Surface Water	7435640	511633	21.5	± 5	ponded water downgradient of metal dump
Padloping Island	Padloping Island	PI-SW-9[1]	Surface Water	7435535	511759	7.3 (1 visual)	± 3	ponded water downgradient of western drum site area
Padloping Island	Padloping Island	PI-SW-10[2]	2002 Background	7436635	509972	24.7	± 4	background, lake northwest of site
Padloping Island	Padloping Island	PI-SW-11[3]	2003 Background Surface Water	7436166	512303	38.1		ponded water within muskeg area between original site and main site
Cape Christian	Cape Christian	CC-GW-1[2]	Perched Groundwater	7824489	526382	4.2	± 6	ditch along west edge of airstrip, downgradient of airstrip fuel tanks, sandy
Cape Christian	Cape Christian	CC-SW-1[2]	Surface Water	7824771	526157	7	± 6	ponded water east side of main station building sandy area
Cape Christian	Cape Christian	CC-SW-1R[3]	Surface Water	7824841	526221			77 m downstream of CC-SW-1, downstream of second channel, silty bottom
Cape Christian	Cape Christian	CC-SW-2[2]	Surface Water	7824767	526111		± 6	drainage channel southeast of fuel tanks sandy area, previous soil sample hole, stained soil hydrocarbon odor
Cape Christian	Cape Christian	CC-SW-2R[3]	Surface Water	7824784	526117			small channel 17.5 m downstream of CC-SW-2 oil sheen, iron precipitates
Cape Christian	Cape Christian	CC-SW-3[1]	Surface Water	7824845	525977	17.4	± 4	large pond downgradient of fuel tanks to north muskeg area

Surface water samples were grab samples obtained by immersing the sample bottle (or a bottle with no preservative) directly in the water body facing upstream. If the depth of the water body was insufficient for sample collection, the water body was deepened and the disturbed sediment was allowed to settle prior to sampling. Table 2 summarizes the sample collection methods used. Care was taken to minimize disturbance of the substrate to collect samples free of sediment.

Table 2. 2003 Sample Collection Method

Sample ID	Sampling Method
FE-GW-1	dug hole/pumped
FE-GW-4	drive point/pumped
FE-SW-1	grab sample
FE-SW-2	grab sample
FE-SW-3	grab sample
FE-SW-4	grab sample
FE-SW-6	grab sample
FE-SW-7	grab sample
FC-GW-1	drive point/pumped
FC-SW-1	grab sample
FC-SW-2	grab sample
FC-SW-3	grab sample
FC-SW-4	grab sample
FC-SW-5	grab sample
FC-SW-6 (FC-SW-11)	grab sample
FC-SW-7	grab sample
FC-SW-10	grab sample
PI-SW-1	grab sample

Sample ID	Sampling Method
PI-SW-2	grab sample
PI-SW-3	grab sample
PI-SW-4	grab sample
PI-SW-5	grab sample
PI-SW-6	grab sample
PI-SW-7	grab sample
PI-SW-8	grab sample
PI-SW-9	grab sample
PI-SW-11	grab sample
CC-SW-1R	grab sample
CC-SW-2R	dug hole/grab
CC-SW-3	grab sample
CC-SW-4 (CC-SW-5)	grab sample
CC-SW-6	grab sample
CC-SW-7	grab sample
CC-SW-10	grab sample
CC-SW-11R	grab sample

Perched groundwater samples were collected from drive-point piezometers or shallow dug holes as indicated in Table 2. Disturbed sediments were allowed to settle prior to sample collection. Water was collected through Teflon tubing using a peristaltic pump outfitted with Silicon tubing in the pump head. All tubing was changed between sampling locations to minimize the potential for cross-contamination. Samples collected for metals and mercury were filtered using an in-line 0.45 micron filter.

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Table 3. QA/QC Results
Contaminated Sites Water Monitoring Program - East Nunavut

Sample ID	Date	Cadmium µg/L	Cobalt µg/L	Chromium µg/L	Copper µg/L	Iron µg/L	Mercury µg/L	Manganese µg/L	Nickel µg/L	Lead µg/L	Zinc µg/L
Field Blanks											
FE-SW-8	19-Aug-03	<0.1	<0.1	38.9	<0.2	<30		0.2	0.5	0.2	<10
FC-SW-12	21-Aug-03	<0.1	<0.1	1	<0.2	<30	<0.05	0.2	<0.1	0.1	<10
PI-SW-12	20-Aug-03	<0.1 [<0.1]	<0.1 [<0.1]	<0.3 [<0.3]	0.4 [<0.2]	<30	<0.05	0.1 [<0.1]	<0.1 [<0.1]	1.3 [<0.1]	<10 [<10]
CC-SW-13	18-Aug-03	<0.1	<0.1	<0.3	<0.2	32	<0.05	0.2	<0.1	<0.1	<10
Travel Blanks											
FE-TB	19-Aug-03	<0.1	<0.1	1.5	<0.2	<30		0.1	<0.1	0.9	<10
FC-TB	21-Aug-03	<0.1	<0.1	0.6	<0.2	<30		<0.1	<0.1	1	<10
PI-TB	20-Aug-03	<0.1	<0.1	1.5	0.3	<30		0.1	0.3	0.8	<10
CC-TB	18-Aug-03	<0.1	<0.1	1.5	6.7	<30		0.3	<0.1	1.3	10
Duplicate Samples											
FC-SW-6 (FC-SW-11)	21-Aug-03	<0.1 (<0.1)	0.3 (0.3)	2.3 (0.6)	2.6 (2.4)	515 (458)	<0.05	5.1 (6.2)	2.5 (2.6)	1.3 (0.5)	<10 (10)
CC-SW-4 (CC-SW-5)	18-Aug-03	<0.1 (0.1)	1.3 (1.3)	3 (2.7)	3.1 (7.4)	6,830 (5,436)	<0.05 (<0.05)	389 (371)	1.2 (1.2)	2.5 (1.6)	12 (14)

Note: ( ) indicates results of duplicate analysis
[ ] indicates results of laboratory duplicate analysis

Gartner Lee

Table 3. QA/QC Results
Contaminated Sites Water Monitoring Program - East Nunavut

Sample ID	Date	Total PCB µg/L	Petroleum Hydrocarbons			Benzene µg/L	Toluene µg/L	Ethylbenzene µg/L	m/p-Xylenes µg/L	o-Xylenes µg/L
			C_6-C_{10} µg/L	C_{10}-C_{16} µg/L	C_{16}-C_{34} µg/L					
Field Blanks										
FE-SW-8	19-Aug-03		<2	<5	<5	<2	<2	<2	<4	<2
FC-SW-12	21-Aug-03		<2	<5	9	<2	<2	<2	<4	<2
PI-SW-12	20-Aug-03		<2	<5	<5	<2	<2	<2	<4	<2
CC-SW-13	18-Aug-03	0.04	<2	81	996	<2	<2	<2	<2	<2
Travel Blanks										
FE-TB	19-Aug-03	<0.02	<2	<5	<5	<2	<2	<2	<2	<2
FC-TB	21-Aug-03	0.04		<5	<5					
PI-TB	20-Aug-03	<0.02	<2 [<2]	<5	<5	<2 [<2]	<2 [<2]	<2 [<2]	<4 [<4]	<2 [<2]
CC-TB	18-Aug-03	0.09	<2 [2]	5	19	<2 [<2]	<2 [<2]	<2 [<2]	<2 [<2]	<2 [<2]
Duplicate Samples										
FC-SW-6 (FC-SW-11)	21-Aug-03	<0.02 (<0.02)	<2 (<2)	<5 (8)	6 (<5)	<2 (<2)	<2 (<2)	<2 (<2)	<4 (<4)	<2 (<2)
CC-SW-4 (CC-SW-5)	18-Aug-03	<0.02 (<0.02)	<2 (<2)	2,760 (774)	627 (202)	<2 (<2)	<2 (<2)	<2 (<2)	<4 (<4)	<2 (<2)

Note: ( ) indicates results of duplicate analysis
[ ] indicates results of laboratory duplicate analysis

Table 5. Sample Description and Field Measurements
Contaminated Sites Water Monitoring Program - East Nunavut

Gartner Lee

Sampling Location	Date Sampled	Sample Description	Depth of Sample (m)	Water Temperature (°C)	pH	Electrical Conductivity (µS/cm)
FE-GW-1	22-Sep-02	silty	0.0-0.3	2.2	6.16	51
	19-Aug-03	very silty	0.15-0.3	5.1	6.67	60.6
FE-GW-2	22-Sep-02	very silty	0.03-0.4	5.0	6.04	70
	19-Aug-03	dry				
FE-GW-3	22-Sep-02	clear	0.2-0.4	5.5	6.30	130
	19-Aug-03	replaced with FE-SW-6				
FE-GW-4	22-Sep-02	silty, duplicate FE-GW-5	0.0-1.1	5.8	6.82	184
	19-Aug-03	silty	0.0-1.1	6.5	6.75	174.8
FE-SW-7	19-Aug-03	clear, colourless, **background**	surface	3.6	7.35	53.1
FE-SW-5	22-Sep-02	clear, background	surface	5.4	6.62	26
FE-SW-1	22-Sep-02	clear, thin ice cover	surface	2.5	6.26	45
	19-Aug-03	clear, colourless	surface	6.1	7.27	60.5
FE-SW-2	22-Sep-02	clear	surface	3.1	6.37	19
	19-Aug-03	clear, colourless	surface	4.5	7.26	34.0
FE-SW-3	22-Sep-02	clear	surface	2.2	6.35	18
	19-Aug-03	clear, colourless	surface	4.3	7.31	349
FE-SW-4	22-Sep-02	clear	surface	1.3	6.75	14
	19-Aug-03	clear, colourless	surface	2.3	7.17	4.01
FE-SW-6	19-Aug-03	clear, colourless	surface	6.2	6.23	65.5
FC-GW-1	23-Sep-02	clear	0.1-0.5	NM	NM	NM
	21-Aug-03	clear	0.06-0.72	3.7	6.78	1124
FC-SW-10	22-Aug-03	clear, **background**	surface	7.5	6.56	103.9
FC-SW-8	23-Sep-02	clear, background	surface	5.1	6.82	1922
FC-SW-1	23-Sep-02	clear	surface	3.2	5.32	13
	21-Aug-03	clear, colourless	surface	8.4	7.68	17.84
FC-SW-2	23-Sep-02	clear	surface	0.3	5.15	19
	21-Aug-03	clear, colourless	surface	5.3	4.94	25.8
FC-SW-3	23-Sep-02	clear	surface	0.4	5.63	44
	21-Aug-03	clear, colourless	surface	5.8	4.40	44.3
FC-SW-4	23-Sep-02	clear	surface	4.8	5.60	12
	21-Aug-03	silty, some sand,organics	surface	6.5	5.17	50.7
FC-SW-5	23-Sep-02	silty	surface	5.6	4.21	121
	21-Aug-03	some sand, organics	surface	9.0	5.68	26.1
FC-SW-6	23-Sep-02	clear	surface	5.7	7.05	315
	21-Aug-03	clear, duplicate FC-SW-11	surface	7.3	7.51	534
FC-SW-7	23-Sep-02	clear	surface	4.6	5.96	220
	21-Aug-03	clear	surface	7.2	7.10	324
PI-SW-11	20-Aug-03	slightly yellow, organics, **background**	surface	4.0	6.73	18.58
PI-SW-10	24-Sep-02	clear	surface	3	5.97	10
PI-SW-1	22-Sep-02	clear	surface	3.3	7.05	6
	20-Aug-03	clear, colourless	surface	4.1	3.83	20.6
PI-SW-2	24-Sep-02	clear	surface	2.9	6.16	45
	20-Aug-03	clear, yellow	surface	3.3	6.70	30.0

Table 5. Sample Description and Field Measurements
Contaminated Sites Water Monitoring Program - East Nunavut

Sampling Location	Date Sampled	Sample Description	Depth of Sample (m)	Water Temperature (°C)	pH	Electrical Conductivity (µS/cm)
PI-SW-3	24-Sep-02	clear	surface	2.9	7.58	92
	20-Aug-03	clear, colourless	surface	3.3	7.15	54.4
PI-SW-4	24-Sep-02	clear	surface	2.9	6.65	47
	20-Aug-03	clear, yellow	surface	3.2	6.99	56.8
PI-SW-5	24-Sep-02	clear	surface	3.2	6.19	82
	20-Aug-03	yellow, organics	surface	4.2	5.80	644
PI-SW-6	24-Sep-02	clear	surface	2.9	6.70	103
	20-Aug-03	slightly yellow, organics	surface	3.2	5.86	127.6
PI-SW-7	24-Sep-02	silty	surface	2.8	6.71	70
	20-Aug-03	clear, yellow	surface	3.5	6.82	150.8
PI-SW-8	24-Sep-02	clear	surface	2.7	6.90	24
	20-Aug-03	clear, yellow	surface	3.7	5.83	37.6
PI-SW-9	24-Sep-02	silty	surface	2.9	5.70	27
	20-Aug-03	colourless, organics	surface	4.1	5.72	52.1
CC-GW-1	26-Sep-02	silty	0.1-0.8	1.5	5.99	126
CC-SW-12	18-Aug-03	clear, colourless, **background**	surface	9.8	7.62	75.2
CC-SW-1	25-Sep-02	clear	surface	3.4	6.87	80
	18-Aug-03	dry				
CC-SW-1R	18-Aug-03	silty	surface	12.3	6.52	540
CC-SW-2	25-Sep-02	clear	surface	2.8	6.51	76
	18-Aug-03	dry				
CC-SW-2R	18-Aug-03	silty, orange on organics	surface	9.1	5.95	136.2
CC-SW-3	25-Sep-02	clear	surface	2.8	7.00	248
	18-Aug-03	clear, colourless	surface	11.3	6.90	510
CC-SW-4	25-Sep-02	silty, duplicate CC-SW-5	surface	1.9	6.70	294
	18-Aug-03	silt, yellow, PHC odour, duplicate CC-SW-5	surface	10.6	6.62	460
CC-SW-6	25-Sep-02	silty	surface	2.4	6.23	214
	18-Aug-03	clear, brownish yellow	surface	12.7	6.07	452
CC-SW-7	25-Sep-02	clear	surface	2.6	6.77	87
	18-Aug-03	clear, colourless	surface	6.7	7.45	113.7
CC-SW-8	26-Sep-02	silty	surface	1.7	5.52	87
	18-Aug-03	dry				
CC-SW-9	26-Sep-02	clear	surface	1.4	5.27	61
CC-SW-10	26-Sep-02	silty	surface	2.4	6.61	59
	18-Aug-03	colourless, organics	surface	10.9	7.43	113.9
CC-SW-11	26-Sep-02	silty	surface	2	6.34	122
	18-Aug-03	dry				
CC-SW-11R	18-Aug-03	clear, colourless	surface	10.8	7.47	115.6

Notes: **Bold** indicates 2003 background sample
NM indicates parameter not measured
PHC indicates petroleum hydrocarbon

Table 6. Analytical Results: PCB and Petroleum Hydrocarbons - Perched Groundwater Contaminated Sites Water Monitoring Program - East Nunavut

Sample ID	Sampling Date	PCB Congeners			Total PCB	Petroleum Hydrocarbons			Benzene	Toluene	Ethylbenzene	m/p-Xylenes	o-Xylenes
		Cl-4 total µg/L	Cl-5 total µg/L	Cl-6 total µg/L	µg/L	C_6-C_{10} µg/L	C_{10}-C_{16} µg/L	C_{16}-C_{34} µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Drinking Water Quality[1]									**5 MAC[2]**	**24 AO**	**2.4 AO**	**300 AO**	
FE-GW-1	22-Sep-02	<0.001	<0.001	0.010		<25	<50	<50					
	19-Aug-03				<0.02	4	<5	6	<2	<2	<2	<2	<2
FE-GW-2	22-Sep-02	<0.001	<0.001	<0.001		<25	<50	84					
FE-GW-3	22-Sep-02	<0.001	<0.001	<0.001		<25	51	50					
FE-GW-4 (FE-GW-5)	22-Sep-02	<0.001 (<0.001)	<0.001 (<0.001)	<0.001 (<0.001)		<25 (<25)	<50 (<50)	<50 (<50)					
FE-GW-4	19-Aug-03					<2	6	17	<2	<2	<2	<2	<2
FC-GW-1	23-Sep-02					<25	72	100					
	21-Aug-03					<2	<5	23	<2	<2	<2	<4	<2
CC-GW-1	25-Sep-02	<0.001	0.010	0.010		570	6400	490					

Notes:
1. Drinking Water Quality refers to *Guidelines for Canadian Drinking Water Quality*, Federal-Provincial Subcommittee on Drinking Water, March 2001
2. MAC = maximum acceptable concentration; AO = aesthetic objective
3. ( ) indicates results of duplicate analysis
4. Shaded record indicates values exceed QA/QC value of 7 µg/L for petroleum hydrocarbons C_{16}-C_{34} or CCME Criterion

Table 7. Analytical Results: Metals - Perched Groundwater - Contaminated Sites Water Monitoring Program - East Nunavut

Sample ID	Sampling Date	Cadmium µg/L	Cobalt µg/L	Chromium µg/L	Copper µg/L	Iron µg/L	Mercury µg/L	Manganese µg/L	Nickel µg/L	Lead µg/L	Zinc µg/L
Drinking Water Quality[1]		**5 MAC[2]**		**50 MAC**	**1000 AO**	**300 AO**	**1 MAC**	**50 AO**		**10 MAC**	**5000 AO**
FE-GW-1	22-Sep-02	<1	<1.0	1	6	40	<0.2	3	1	<1	10
	19-Aug-03	<0.02 [<0.02]	0.288 [0.278]	0.3 [0.14]	1.6 [2.7]	189	<0.05	11.2 [11.4]	2.5 [2.5]	0.78 [0.92]	3.5 [5.1]
FE-GW-2	22-Sep-02	<1	4	5	9	4800	<0.2	330	100	7	10
FE-GW-3	22-Sep-02	<1	<1.0	2	2	210	<0.2	9	2	<1	<10
FE-GW-4 (FE-GW-5)	22-Sep-02	<1 (<1)	7 (1.0)	25 (7)	21 (5)	11,000 (2,400)	<0.2 (<0.2)	150 (290)	22 (5)	5 (<1)	50 (10)
FE-GW-4	19-Aug-03	0.02	0.155	0.6	3.82	<0.03	<0.05	1	2.36	2.97	7.1
FC-GW-1	21-Aug-03	0.1	0.3	2.4	3.8	1,438	<0.05	8.8	2.7	1	<10
CC-GW-1	25-Sep-02						<0.2				

Notes:

1. Drinking Water Quality refers to *Guidelines for Canadian Drinking Water Quality* , Federal-Provincial Subcommittee on Drinking Water, March 2001
2. MAC =maximum acceptable concentration;AO=aesthetic objective
3. ( ) indicates results of duplicate analysis
4. [ ] indicates results of laboratory duplicate analysis
5. Shaded record indicates value exceeds CCME criterion

Table 8. Analytical Results: PCB and Petroleum Hydrocarbons - Surface Water - Contaminated Sites Water Monitoring Program - East Nunavut

Sample ID	Sample Date	PCB Congeners			Total PCB	Petroleum Hydrocarbons			Benzene	Toluene	Ethylbenzene	m/p-Xylenes	o-Xylenes
		Cl-4 total	Cl-5 total	Cl-6 total		C_6-C_{10}	C_{10}-C_{16}	C_{16}-C_{34}					
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
CCME Criteria[1]									**370**	**2.0**	**90**		
FE-SW-7[2]	19-Aug-03				<0.02	<2	<5	<5	<2	<2	<2	<2	<2
FE-SW-5[3]	22-Sep-02	<0.001	<0.001	<0.001		<25	<50	50					
FE-SW-1	22-Sep-02	<0.001	<0.001	<0.001		<25	<50	<50					
	19-Aug-03				<0.02	<2	<5	<5	<2	<2	<2	<2	<2
FE-SW-2	22-Sep-02	<0.001	<0.001	<0.001		<25	<50	<50					
	19-Aug-03				<0.02	<2	<5	5	<2	<2	<2	<2	<2
FE-SW-3	22-Sep-02	<0.001	<0.001	<0.001		<25	<50	<50					
	19-Aug-03				<0.02	<2	<5	<5	<2	<2	<2	<2	<2
FE-SW-4	22-Sep-02	<0.001	<0.001	<0.001		<25	<50	<50					
	19-Aug-03				<0.02	<2	<5	<5	<2	<2	<2	<2	<2
FE-SW-6	19-Aug-03				0.06	<2	<5	14	<2	<2	<2	<2	<2
FC-SW-10	21-Aug-03				0.12		<5	<5					
FC-SW-8	23-Sep-02					<25	<50	170					
FC-SW-1	23-Sep-02	<0.001	<0.001	<0.001		<25	<50	<50					
	21-Aug-03				<0.02	<2	<5	9	<2	<2	<2	<4	<2
FC-SW-2	23-Sep-02	<0.001	<0.001	<0.001		<25	<50	130					
	21-Aug-03				<0.02	<2	<5	6	<2	<2	<2	<4	<2
FC-SW-3	23-Sep-02	<0.001	<0.001	<0.001		<25	<50	<50					
	21-Aug-03				<0.02	<2	1,160	506	<2	<2	<2	<4	<2
FC-SW-4	23-Sep-02	<0.001	<0.001	<0.001		<25	69	53					
	21-Aug-03				<0.02	<2	<5	37	<2 [<2]	<2	<2	<4	<2
FC-SW-5	23-Sep-02						<50	<50					
	21-Aug-03				<0.02	<2	<5	<5	<2	<2	<2	<4	<2
FC-SW-6	23-Sep-02	<0.001	<0.001	<0.001		<25	140	<50					
FC-SW-6 (FC-SW-11)	21-Aug-03				<0.02 (<0.02)	<2 (<2)	<5 (8)	6 (<5)	<2 (<2)	<2 (<2)	<2 (<2)	<4 (<4)	<2 (<2)
FC-SW-7	23-Sep-02	<0.001	<0.001	<0.001		<25	<50	<50					
	21-Aug-03				<0.02	<2	<5	8	<2	<2	<2	<4	<2
PI-SW-11	21-Aug-03				<0.02	<2 [<2]	<5	9	<2	<2	<2 [<2]	<4 [<4]	<2
PI-SW-10	24-Sep-02	<0.001	<0.001	<0.001		<25	<50	<50					
PI-SW-1	22-Sep-02	<0.001	<0.001	<0.001		<25	<50	<50					
	21-Aug-03				<0.02	<2	<5	5	<2	<2	<2	<4	<2
PI-SW-2	24-Sep-02	<0.001	<0.001	<0.001		<25	<50	79					
	21-Aug-03					<2	30	8	<2	<2	<2	<4	<2
PI-SW-3	24-Sep-02	<0.001	<0.001	<0.001		<25	<50	<50					
	21-Aug-03				0.05	<2	142	542	<2	<2	<2	<4	<2

Table 8. Analytical Results: PCB and Petroleum Hydrocarbons - Surface Water - Contaminated Sites Water Monitoring Program - East Nunavut

Sample ID	Sample Date	PCB Congeners			Total PCB	Petroleum Hydrocarbons			Benzene	Toluene	Ethylbenzene	m/p-Xylenes	o-Xylenes
		Cl-4 total	Cl-5 total	Cl-6 total		C_6-C_{10}	C_{10}-C_{16}	C_{16}-C_{34}					
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
CCME Criteria[1]									**370**	**2.0**	**90**		
PI-SW-4	24-Sep-02	<0.001	<0.001	<0.001		<25	<50	<50					
	21-Aug-03				<0.02	<2	<5	<5	<2	<2	<2	<4	<2
PI-SW-5	24-Sep-02	<0.001	<0.001	<0.001		<25	290	960					
	21-Aug-03				<0.02	<2	130	213	<2	<2	<2	<4	<2
PI-SW-6	24-Sep-02	<0.001	<0.001	<0.001		<25	<50	110					
	21-Aug-03					<2 [<2]	<5	<5	<2 [<2]	<2 [<2]	<2 [<2]	<4 [<4]	<2 [<2]
PI-SW-7	24-Sep-02	<0.001	<0.001	<0.001		<25	1,000	15,000					
	21-Aug-03				<0.02	<2	114	292	<2	<2	<2	<4	<2
PI-SW-8	24-Sep-02	<0.001	<0.001	<0.001		<25	<50	<50					
	21-Aug-03				<0.02	<2	10	27	<2	<2	<2	<4	<2
PI-SW-9	24-Sep-02	<0.001	<0.001	<0.001		<25	<50	<50					
	21-Aug-03				<0.02	<2	<5	5	<2	<2	<2	<4	<2
CC-SW-12	18-Aug-03				<0.02	<2	30	146	<2	<2	<2	<2	<2
CC-SW-1	25-Sep-02	<0.001	<0.001	<0.001		<25	200	560					
CC-SW-1R	18-Aug-03				<0.02	<2	829	258	<2	<2	<2	<2	<2
CC-SW-2	25-Sep-02	<0.001	<0.001	<0.001		<25	<50	120					
CC-SW-2R	18-Aug-03				<0.02	4	11,800	233	<2	<2	<2	<4	<2
CC-SW-3	25-Sep-02	<0.001	<0.001	<0.001		<25	<50	81					
	18-Aug-03				<0.02	<2	<5	9	<2	<2	<2	<4	<2
CC-SW-4 CC-SW-5	25-Sep-02	<0.001 (<0.001)	<0.001 (<0.001)	<0.001 (<0.001)		<25 (<25)	3,600 (2,800)	670 (610)					
CC-SW-4 CC-SW-5	18-Aug-03				<0.02 (<0.02)	<2 (<2)	2,760 (774)	627 (202)	<2 (<2)	<2 (<2)	<2 (<2)	<4 (<4)	<2 (<2)
CC-SW-6	25-Sep-02	<0.001	<0.001	<0.001		<25	1,400	1,600					
	18-Aug-03				<0.02	<2	477	830	<2	<2	<2	<2	<2
CC-SW-7	25-Sep-02	<0.001	<0.001	<0.001		<25	<50	<50					
	18-Aug-03				<0.02	<2	<5	20	<2	<2	<2	<2	<2
CC-SW-8	25-Sep-02	<0.001	<0.001	<0.001		<25	260	220					
CC-SW-9	25-Sep-02	<0.001	<0.001	<0.001		<25	560	370					
CC-SW-10	25-Sep-02	<0.001	<0.001	<0.001		<25	<50	<50					
	18-Aug-03				<0.02	4	731	277	<2	<2	<2	<2	<2
CC-SW-11	25-Sep-02	0.020	0.040	0.010		<25	90	73					
CC-SW-11R	18-Aug-03				<0.02	<2	6	27	<2	<2	<2	<2	<2

Notes:

1. Canadian Water Quality Guidelines for the Protection of Aquatic Life, Canadian Council of Ministers of the Environment (CCME), updated 2001
2. **Bold** Sample ID indicates 2003 background sample
3. **Bold** and in *italics* Sample ID indicates 2002 background sample
4. ( ) indicates results of duplicate analysis
5. [ ] indicates results of laboratory duplicate analysis
6. Shaded record indicates values exceed QA/QC value of 7 µg/L for petroleum hydrocarbons C16-C34 or CCME Criterion

Table 9. Analytical Results: Metals - Surface Water - Contaminated Sites Water Monitoring Program - East Nunavut

Sample ID	Sample Date	Cadmium µg/L	Cobalt µg/L	Chromium µg/L	Copper µg/L	Iron µg/L	Mercury µg/L	Manganese µg/L	Nickel µg/L	Lead µg/L	Zinc µg/L
CCME Criteria[1]		**0.017**			**2**	**300**	**0.1**		**25**	1	**30**
FE-SW-7[2]	19-Aug-03	<0.1	<0.1	1.3	6.8	41	<0.05	0.7	0.2	1.1	<10
FE-SW-5[3]	22-Sep-02	<10	<10	<10	<10	60	<0.2	<5	<10	<10	40
FE-SW-1	22-Sep-02	<10	<10	40	20	1,200	<0.2	160	10	120	100
	19-Aug-03	<0.1	<0.1	4.9	1.7	179	<0.05	2.3	2.7	2.7	10
FE-SW-2	22-Sep-02	<10	<10	<10	<10	1,100	<0.2	10	<10	<10	20
	19-Aug-03	<0.1	<0.1	1.5	20.3	34	<0.05	1	0.2	2.6	18
FE-SW-3	22-Sep-02	<10	<10	<10	<10	50	<0.2	<5	<10	<10	20
	19-Aug-03	<0.1 [<0.1]	<0.1 [<0.1]	2.2 [2.1]	0.6 [0.47]	38	<0.05	1.7 [0.96]	0.2 [0.18]	3.1 [3.1]	<10 [<10]
FE-SW-4	22-Sep-02	<10	<10	<10	<10	70	<0.2	<5	<10	<10	20
	19-Aug-03	<0.1	1	2.3	1.7	986	<0.05	15.8	8.4	0.3	<10
FE-SW-6	19-Aug-03	<0.1	2.8	10.6	4.1	2,937	<0.05	59.1	8.6	2.7	12
FC-SW-10	21-Aug-03	<0.1	1.3	<0.3	1.6	<30	<0.05	4.5	10.6	0.7	<10
FC-SW-8	23-Sep-02	<10	<10	<10	<10	400	0.2	<5	<10	<10	20
FC-SW-1	23-Sep-02	<10	<10	<10	<10	60	<0.2	<5	<10	<10	10
	21-Aug-03	<0.1	0.4	<0.3	0.9	<30	<0.05	2.1	2	2.2	<10
FC-SW-2	23-Sep-02	<10	<10	<10	<10	50	0.6	<5	<10	<10	30
	21-Aug-03	<0.1	1.2	<0.3	0.7	<30 [<30]	<0.05	4.9	5.9	0.9	<10
FC-SW-3	23-Sep-02	<10	<10	<10	<10	60	0.9	30	20	<10	30
	21-Aug-03	<0.1 [<0.1]	1.9 [1.8]	0.4 [0.47]	1.4 [1.6]	<30	<0.05	14.6 [13.9]	12.7 [12.0]	1.6 [1.5]	<10 [<10]
FC-SW-4	23-Sep-02	<10	<10	<10	10	2,500	<0.2	30	10	<10	30
	21-Aug-03	<0.1	2.9	12.4	6.6	4,737	<0.05	44.9	12.2	3.4	18
FC-SW-5	23-Sep-02	<10	0.03	0.03	50	7,900	0.3	130	100	<10	90
	21-Aug-03	<0.1	1	4.8	4.3	1,637	<0.05	18.7	3.4	5.4	11
FC-SW-6 (FC-SW-9)	23-Sep-02	<10 (<10)	<10 (<10)	<10 (<10)	<10 (<10)	410 (390)	0.8 (<0.2)	<5 (10)	<10 (10)	<10 (<10)	30 (40)
FC-SW-6 (FC-SW-11)	21-Aug-03	<0.1 (<0.1) [<0.1]	0.3 (0.3) [0.28]	2.3 (0.6) [0.53]	2.6 (2.4) [2.6]	515 (458) [639]	<0.05	5.1 (6.2) [6.3]	2.5 (2.6) [2.6]	1.3 (0.5) [0.56]	<10 (<10) [<10]
FC-SW-7	23-Sep-02	<10	<10	20	10	6,100	0.5	80	<10	<10	40
	21-Aug-03	<0.1	0.3	1.9	2.5	351	<0.05	5	2.4	1.2	<10
PI-SW-11	21-Aug-03	<0.1	<0.1	1.3	0.7	820 [84]	<0.05	1.8	0.7	1.4	<10
PI-SW-10	24-Sep-02	<10	<10	<10	<10	90	0.5	<5	<10	<10	20
PI-SW-1	22-Sep-02	<10	<10	<10	<10	140	0.2	<5	<10	<10	30
	21-Aug-03	<0.1	<0.1	<0.3	0.4	117	<0.05	1.5	0.1	1.3	<10
PI-SW-2	24-Sep-02	<10	<10	<10	20	2,500	<0.2	30	<10	<10	100
	21-Aug-03	<0.1	0.5	3.9	17.9	1,281	<0.05	10.7	3.5	2	27
PI-SW-3	24-Sep-02	<10	<10	20	30	5,900	<0.2	50	<10	<10	60
	21-Aug-03	<0.1	1.1	2.9	15.3	673	<0.05	71	4.1	2.2	37
PI-SW-4	24-Sep-02	<10	<10	<10	20	780	<0.2	10	<10	<10	70
	21-Aug-03	0.3	1.1	8.7	22.5	2,877	<0.05	22.5	9.4	5.3	68
PI-SW-5	24-Sep-02	<10	<10	<10	10	280	1.8	60	<10	<10	90
	21-Aug-03	2	13.3	13.7	14.7	1,977		627	20.5	15.3	483
PI-SW-6	24-Sep-02	<10	<10	<10	10	140	0.6	<5	<10	<10	110
	21-Aug-03	0.3	0.2	2.2	13.6	148	<0.05	8.6	6	3.3	164

Table 9. Analytical Results: Metals - Surface Water - Contaminated Sites Water Monitoring Program - East Nunavut

Sample ID	Sample Date	Cadmium µg/L	Cobalt µg/L	Chromium µg/L	Copper µg/L	Iron µg/L	Mercury µg/L	Manganese µg/L	Nickel µg/L	Lead µg/L	Zinc µg/L
CCME Criteria[1]		**0.017**			**2**	**300**	**0.1**		**25**	**1**	**30**
PI-SW-7	24-Sep-02	<10	10	100	70	26,000	<0.2	340	40	60	180
	21-Aug-03	1.1	0.4	3.6	12.6	217		16.2	4.7	4	50
PI-SW-8	24-Sep-02	<10	<10	10	10	1,400	0.2	20	<10	<10	40
	21-Aug-03	0.1	0.5	4.5	10.2	989	<0.05	8.9	3.6	2	34
PI-SW-9	24-Sep-02	<10	20	170	60	48,000	<0.2	440	60	40	150
	21-Aug-03	<0.1	0.8	2.6	4.3	402	0.05	35.3	2.9	2.5	18
CC-SW-12	18-Aug-03	<0.1	<0.1	1.4	0.7	200	<0.05	1.7	0.1	1.1	<10
CC-SW-1	25-Sep-02	<10	<10	<10	20	1,100	<0.2	60	<10	<10	250
CC-SW-1R	18-Aug-03	0.6	8.6	16.8	20.3	19,000	<0.05	589	11.2	7.5	58
CC-SW-2	25-Sep-02	<10	<10	<10	<10	280	<0.2	20	<10	<10	260
CC-SW-2R	18-Aug-03	0.2	3.5	8.1	6.9	13,800	<0.05	207	4.9	6.6	117
CC-SW-3	25-Sep-02	<10	<10	<10	10	380	<0.2	10	<10	<10	40
	18-Aug-03	<0.1	0.1	2	3.3	129	<0.05	8.6	1.1	0.4	<10
CC-SW-4 CC-SW-5	25-Sep-02	<10 (<10)	<10 (<10)	10 (20)	20 (10)	9,100 (8,700)	<0.2 (0.4)	320 (310)	<10 (<10)	<10 (<10)	40 (40)
CC-SW-4 CC-SW-5	18-Aug-03	<0.1 (0.1)	1.3 (1.3)	3 (2.7)	3.1 (7.4)	6,830 (5,436)	<0.05 (<0.05)	389 (371)	1.2 (1.2)	2.5 (1.6)	12 (14)
CC-SW-6	25-Sep-02	<10	<10	50	<10	31,000	4.7	330	<10	<10	60
	18-Aug-03	0.3	5.4	5.3	6.6	17,600	<0.05	456	2.8	1.7	64
CC-SW-7	25-Sep-02	<10	<10	<10	<10	140	<0.2	<5	<10	<10	20
	18-Aug-03	<0.1 [<0.1]	<0.1 [<0.1]	0.6 [0.81]	1 [3]	210	<0.05	7.2 [7.2]	<0.1 [<0.1]	0.9 [0.99]	<10 [<10]
CC-SW-8	25-Sep-02	<10	<10	50	30	21,000	0.5	160	<10	10	1,300
CC-SW-9	25-Sep-02	<10	<10	10	<10	2000	1.7	40	<10	<10	40
CC-SW-10	25-Sep-02	<10	<10	20	<10	8,200	1	120	<10	<10	640
	18-Aug-03	<0.1	0.5	4	3.7	2,179	<0.05	15.6	2.7	4.6	30
CC-SW-11	25-Sep-02	<10	<10	30	20	9,800	2.8	80	<10	<10	140
CC-SW-11R	18-Aug-03	<0.1	0.4	1.2	5.3	2,128	<0.05	37	0.5	1.7	17

Notes:

1. Canadian Water Quality Guidelines for the Protection of Aquatic Life, Canadian Council of Ministers of the Environment (CCME), updated 2001. Criteria shown for cadmium, copper, nickel and lead are for waters with low hardness. Low hardness values are expected based on the sources of water and geology of the sites.
2. **Bold** Sample ID indicates 2003 background sample
3. **Bold** and in *italics* Sample ID indicates 2002 background sample
4. ( ) indicates results of duplicate analysis
5. Shaded record indicates value exceeds CCME criterion

Gartner Lee

Appendix A. 2003 Analytical Program

Sample ID	Sample Type	Field Conductivity	Field pH	Water Temperature	Total PCBs	Petroleum Hydrocarbons[1] Purgeable	Petroleum Hydrocarbons[1] Extractable	BTEX[2]	Metals[3]	Mercury
FE-GW-1		x	x	x	x	x	x	x	x	x
FE-GW-4		x	x	x		x	x	x	x	x
FE-SW-1		x	x	x	x	x	x	x	x	x
FE-SW-2		x	x	x	x	x	x	x	x	x
FE-SW-3		x	x	x	x	x	x	x	x	x
FE-SW-4		x	x	x	x	x	x	x	x	x
FE-SW-6		x	x	x	x	x	x	x	x	x
FE-SW-7	Background	x	x	x	x	x	x	x	x	x
FE-SW-8	Field Blank	x	x	x		x	x	x	x	
FE-TB	Travel Blank	x	x	x	x	x	x	x	x	
FC-GW-1		x	x	x		x	x	x	x	x
FC-SW-1		x	x	x	x	x	x	x	x	x
FC-SW-2		x	x	x	x	x	x	x	x	x
FC-SW-3		x	x	x	x	x	x	x	x	x
FC-SW-4		x	x	x	x	x	x	x	x	x
FC-SW-5		x	x	x	x	x	x	x	x	x
FC-SW-6		x	x	x	x	x	x	x	x	x
FC-SW-7		x	x	x	x	x	x	x	x	x
FC-SW-10	Background	x	x	x	x		x		x	x
FC-SW-11		x	x	x	x	x	x	x	x	
FC-SW-12	Field Blank	x	x	x		x	x	x	x	x
FC-TB	Travel Blank	x	x	x	x		x		x	
PI-SW-1		x	x	x	x	x	x	x	x	x
PI-SW-2		x	x	x		x	x	x	x	x
PI-SW-3		x	x	x	x	x	x	x	x	x
PI-SW-4		x	x	x	x	x	x	x	x	x
PI-SW-5		x	x	x	x	x	x	x	x	
PI-SW-6		x	x	x		x	x	x	x	x
PI-SW-7		x	x	x	x	x	x	x	x	
PI-SW-8		x	x	x	x	x	x	x	x	x
PI-SW-9		x	x	x	x	x	x	x	x	x
PI-SW-11	Background	x	x	x	x	x	x	x	x	x
PI-SW-12	Field Blank	x	x	x		x	x	x	x	x
PI-TB	Travel Blank	x	x	x	x	x	x	x	x	
CC-SW-1R		x	x	x	x	x	x	x	x	x
CC-SW-2R		x	x	x	x	x	x	x	x	x
CC-SW-3		x	x	x	x	x	x	x	x	x
CC-SW-4		x	x	x	x	x	x	x	x	x
CC-SW-5		x	x	x	x	x	x	x	x	x
CC-SW-6		x	x	x	x	x	x	x	x	x
CC-SW-7		x	x	x	x	x	x	x	x	x
CC-SW-10		x	x	x	x	x	x	x	x	x
CC-SW-11R		x	x	x	x	x	x	x	x	x
CC-SW-12	Background	x	x	x	x	x	x	x	x	x
CC-SW-13	Field Blank	x	x	x	x	x	x	x	x	x
CC-TB	Travel Blank	x	x	x	x	x	x	x	x	

Notes:

1. Petroleum hydrocarbons were analyzed as purgeable and extractable fractions. Upon request, Taiga reviewed the chromatograms of the extractable fraction and reported the concentrations for the ranges C_{10}-C_{16} and C_{16}-C_{34}
2. BTEX compounds are benzene, toluene, ethylbenzene, m/p xylenes and o-xylenes
3. Metals include cadmium, cobalt, chromium, copper, iron, manganese, nickel, lead and zinc

DEPARTMENT OF INDIAN AFFAIRS AND NORTHERN DEVELOPMENT
INDIAN AND NORTHERN AFFAIRS CANADA

ENVIRONMENTAL PROTECTION PLAN

CLEAN UP
OF
EKALUGAD FJORD

FOX-C : ABANDONED DEW LINE MILITARY RADAR STATION

Prepared by:
QIKIQTAALUK CORPORATION
and
SINANNI INC.

March 2001
(Revision-1 October 2001)

EKALUGAD FJORD (FO) PAINT SAMPLES

SAMPLE ID	PCB [C] (ppm)	LOCATION	SAMPLING LOCATION	COLOUR	SURFACE TYPE	NOTES
EF-PC-1	13,000	Garage	Generator / Furnace Room	Grey	Metal	
EF-PC-2	13,000	Garage	Overhead Door - Interior	Grey / Red	Metal	
EF-PC-3	6,300	Garage	Beam on East Wall	Grey	Metal	
EF-PC-4	18,200	Garage	Mezzanine Railing	Black / White	Metal	
EF-PC-5	250	Module Train	Exterior Railing at South Entrance	Beige	Wood	
EF-PC-6	460	Module Train	Exterior Door on SW Venting Annex	Red / Green	Wood	
EF-PC-7	140	Module Train	Exterior Pole at West	Red	Metal	
EF-PC-8	1,400	Module Train	Exterior Railing at North Entrance	Beige / Red	Wood	
EF-PC-9	21,000	Module Train	Hallway From South Entrance	Green / Grey / Beige	Wood	Paint Peeling
EF-PC-10	31,300	Garage	Generator Room Wall	Grey / Red	Metal	
EF-PC-11	11,000	Warehouse	Overhead Door - Interior	Grey / White	Wood	Peeling - 30% covered
EF-PC-12	10,100	Warehouse	East Man Door - Interior	Grey	Wood	Peeling - 50% covered
EF-PC-13	220	Warehouse	East Entrance Steps	White	Wood	
EF-PC-14	700	Warehouse	Interior Dividing Wall - South Side	Grey	Wood	
EF-PC-15	2,400	Warehouse	Door Frame at East Entrance	Beige	Wood	80% covered
EF-PC-16	36	POL Tanks - Upper Site	Top of Tank	Grey / Orange	Steel	
EF-PC-17	145	POL Tanks - Upper Site	Side of Tank	Grey / Orange	Steel	
EF-PC-18	134	Paint Shed	Spill on Floor	White	N/A	Shed not Painted
EF-PC-19	9,600	Duplicate	Sample EF-PC-2			
EF-PC-20	8,200	Duplicate	Sample EF-PC-12			
EF-PC-28	5.1	POL Tanks - Beach	Side of Tank	Grey / Orange	Steel	
EF-PC-29	12.7	POL Tanks - Beach	Top of Tank	Grey / Orange	Steel	
EF-PC-30	24,600	Warehouse Annex	Annex Entrance - West Wall	Beige	Cardboard / Wood	
EF-PC-31	24,300	Warehouse Annex	Entrance - Exterior Door Jam	Beige	Wood	80% covered
EF-PC-32	29,500	Warehouse Annex	West Room - North Wall	Beige	Metal Cladding	
EF-PC-33	21,100	Warehouse Annex	East Room - East Wall	Beige	Plywood	Peeling - 50% covered
EF-PC-34	1,400	Warehouse Annex	Door to Furnace Room	Grey	Meal	
EF-PC-35	42,000	Warehouse Annex	Annex Interior Door	Grey	Wood	80% covered
EF-PC-36	44,300	Module Train	Tank #3 at East End	Grey	Metal	
EF-PC-37	14,100	Module Train	Wall At Far East End	Grey	Wood	
EF-PC-38	17,000	Module Train	North Wall of Bedroom	Green	Wood	50% Peeled
EF-PC-39	28,300	Module Train	South Wall in Dinning Area	Green / Beige	Wood	50% Peeled
EF-PC-40	14,900	Module Train	East Wall Storage / Laboratory Area	Light Blue	Wood	60% covered - Peeling
EF-PC-41	30,500	Module Train	East Wall Power Room	Blue / Grey	Wood	Peeling
EF-PC-42	940	Module Train	Kitchen Cabinets	White	Wood	
EF-PC-43	6,600	Module Train	Lower Diesel Tank in East Room	Grey / Black	Steel	
EF-PC-44	40	Module Train	Electrical Panels in Storage / Lab Area	Grey	Steel	
EF-PC-45	18,500	Module Train	East Wall Bathroom	Beige	Wood	
EF-PC-46	102	Module Train	North Genset in Power Room	Grey	Steel	
EF-PC-47	4,000	Garage	Ceiling	Grey / Red	Metal Cladding	
EF-PC-48	94	Garage	Barrel Outside Overhead Door	Red / White	Steel	
EF-PC-49	4,530	Garage	Plywood Peg Board	Yellow	Wood	Area Approx. 7 m^2
EF-PC-50	97	POL Tanks - Upper Site	Tank #2 - Top	Grey / Orange	Steel	
EF-PC-51	11.2	Fuel Pump House	Door	Grey	Metal	Building Collapsed
EF-PC-52	36	POL Tanks - Upper Site	Tank #2 - Side	Grey / Orange	Steel	
EF-PC-53	7.5	POL Tanks - Beach	East Tank - Side	Grey / Orange	Steel	
EF-PC-54	14	POL Tanks - Beach	East Tank - Top	Grey / Orange	Steel	
EF-PC-55	14,700	Duplicate	Sample EF-PC-38			
EF-PC-56	21,000	Duplicate	Sample EF-PC-41			
EF-PC-57	5.3	Duplicate	Sample EF-PC-53			

Note: colours listed are from exterior coating to interior coating

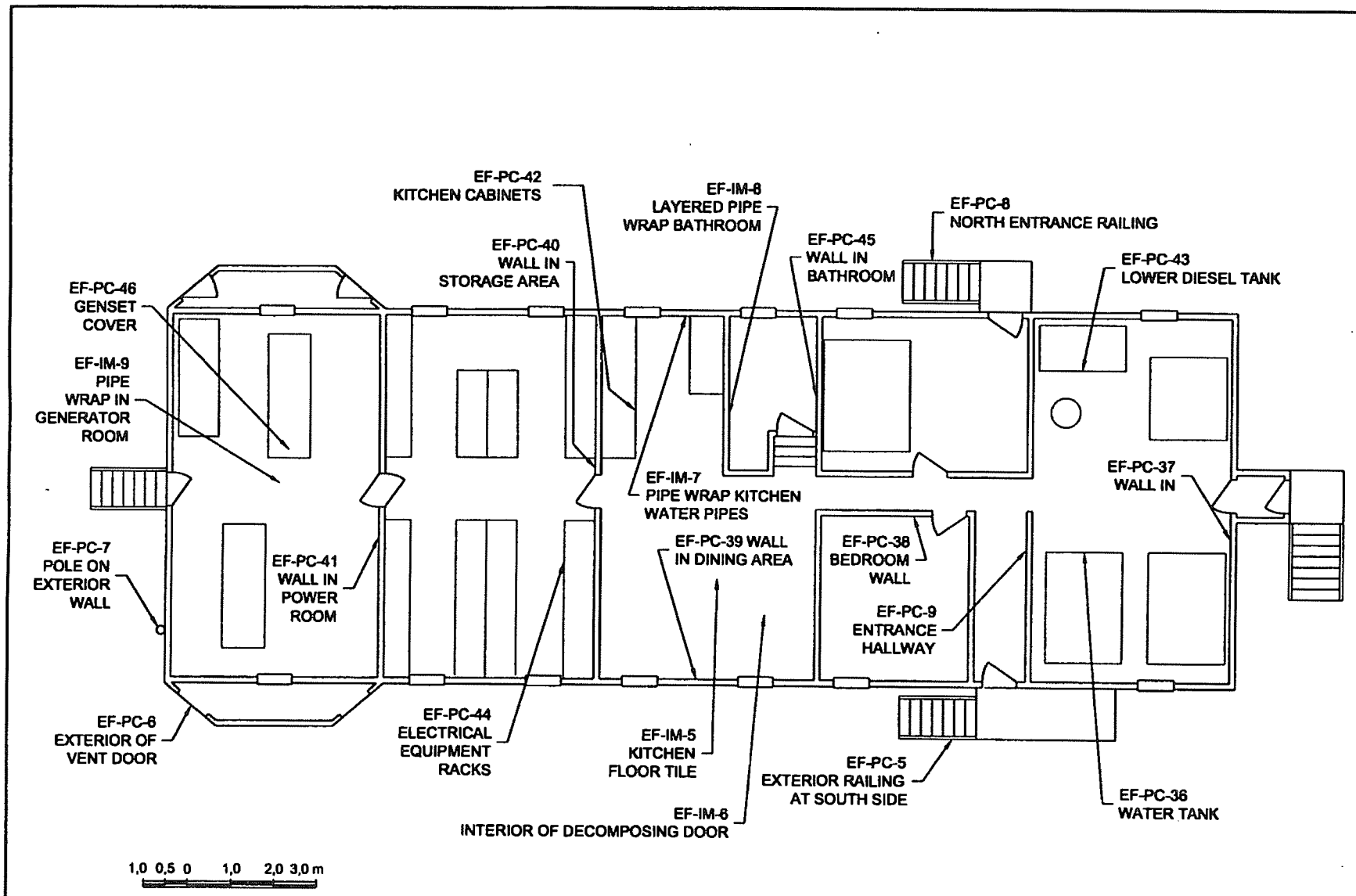
QC / Sinanni

EKALUGAD FJORD (FOX-C, ...LATION SAMPLES

SAMPLE NUMBER	LOCATION	SAMPLING LOCATION	COLOUR	TYPE OF SURFACE	NOTES
EF-IM-1	Garage	Flue Pipe in Furnace Room	Pinkish	Pipe Wrap	2 ft Long, 1 ft OD, Metal Grating Present in Insulation
EF-IM-2	Garage	Heating Pipe from Furnace Room	White	Pipe Wrap	Square Pipe 1ft x 1ft x 12 ft long
EF-IM-5	Module Train	Floor of Kitchen		Floor Tile	
EF-IM-6	Module Train	Dining Area	White	Door Insulation	Collected From Decomposing Door On Floor
EF-IM-7	Module Train	Kitchen H2O Pipes	Grey	Pipe Wrap	Length = 5 times length of the building with a 10" OD
EF-IM-8	Module Train	Bathroom Pipes		Pipe Layered	
EF-IM-9	Module Train	Generator Room	White	Pipe Wrap	
EF-IM-11	Warehouse	Furnace Flue Pipe	Grey	Pipe Wrap	15 ft Long, 10" OD
EF-IM-12	Warehouse	Warehouse Annex		Floor Tile	20 m^2 tiled

Note: furnace room is covered in asbestos wall board

QC / Sinanni



DEPARTMENT OF INDIAN AFFAIRS AND NORTHERN DEVELOPMENT

CONTAMINATED SITES OFFICE

General Notes:

1.

Legend:

PC = PAINT CHIPS

IM = INSULATING MATERIAL

QIKIQTAALUK CORPORATION

SINANNI INC.

GRAPHIC

FOX-C, EKALUGAD FJORD
INTERMEDIATE DEW LINE SITE

SITING 2001-09-17

PAINT AND ASBESTOS SAMPLING LOCATIONS
MODULE TRAIN

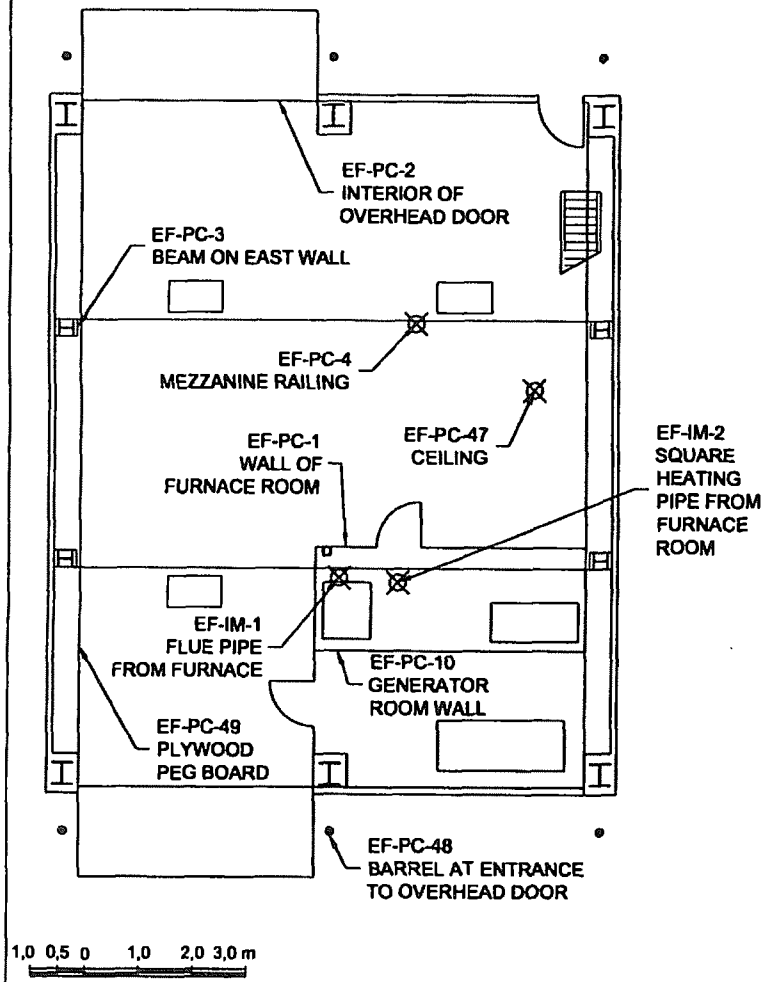
K.C.

J.M.R./G.J.

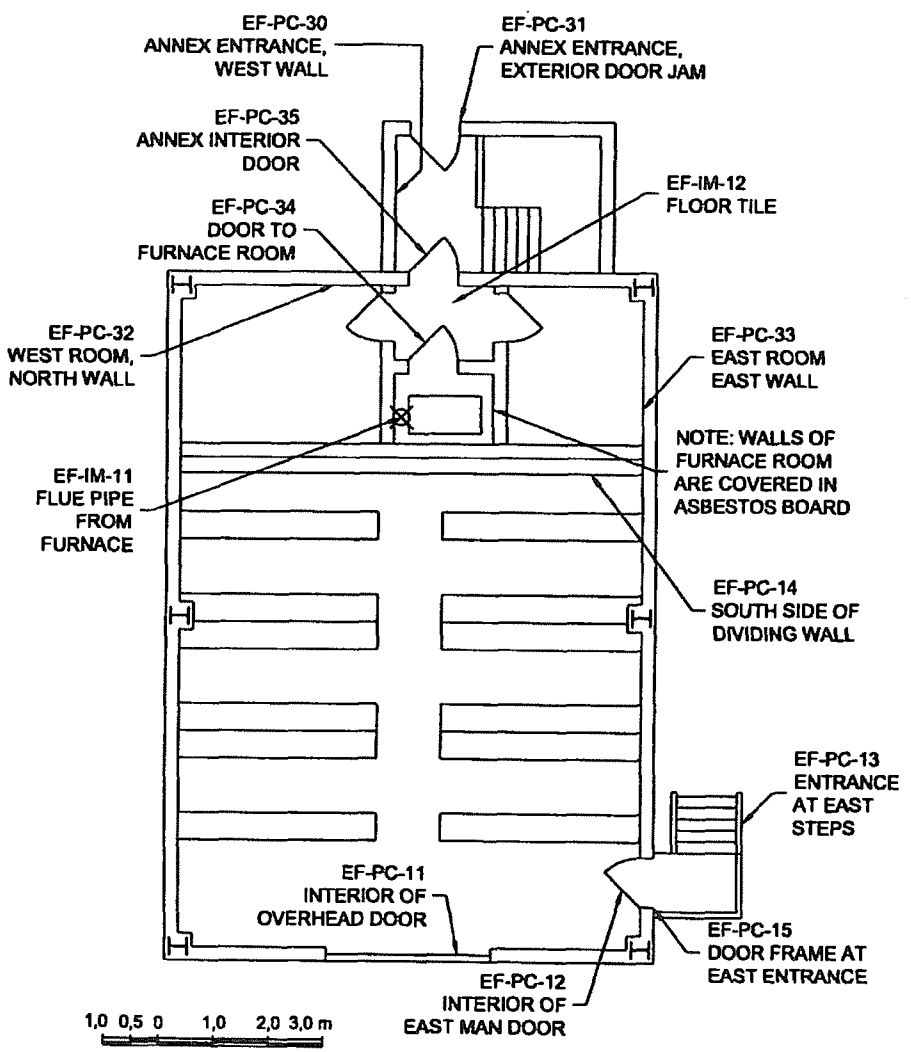
P.S.

2001-1629-A

Canada



GARAGE



WAREHOUSE

DEPARTMENT OF INDIAN AFFAIRS AND NORTHERN DEVELOPMENT

CONTAMINATED SITES OFFICE

General Notes:
1.

Legend:

PC = PAINT CHIPS

IM = INSULATING MATERIAL

QIKIQTAALUK CORPORATION
SINANNI INC.

GRAPHIC

FOX-C, EKALUGAD FJORD
INTERMEDIATE DEW LINE SITE

SITING

2001-09-17

PAINT AND ASBESTOS SAMPLING LOCATIONS
GARAGE / WAREHOUSE

DESIGNED	K.C.
DRAWN	J.M.R./G.J.
CHECKED	P.B.

2001-1523-8

Canada

APPENDIX H

NCS CLASSIFICATION

Site Information: FOX - C DEW Line

Site No.: Not Entered
Site Name: FOX - C DEW Line
Province/Territory: N.W. Territories
Custodian Dept.: INAC
Facility Name: FOX - C DEW Line
Site Operator/Mngr.: Not Entered
Type of Site: Not Entered
Site Owner: Not Entered
Zone:
UTM Coordinates: Easting
Northing
Latitude: 68 deg. 42 min. sec.
Longitude: 68 deg. 33 min. sec.
Location: Ekalguad Fiord, Nunavut
Legal Land Desc.: Not Entered
Address: Not Entered
Provincial Parcel No.: Not Entered

Brief Description of Site: Abandoned DEW Line Site

Site Land Use: **Current:** Not Entered **Proposed:** Not Entered

Comments: Not Entered

Detailed Evaluation: FOX - C DEW Line

I. Contaminants Characteristics

A Degree of Hazard

List possible contaminants and estimated concentrations:

None

Scoring Rationale & Information Source:

None

Score: 11

B Contaminant Quantity

Estimated or measured area/volume of contaminated zone:

None

Scoring Rationale & Information Source:

None

Score: 10

C Physical State of Contaminants

Does the site contain a) Predominantly liquids/gases, b) Primarily sludges, c) Primarily solids:

None

Scoring Rationale & Information Source:

None

Score: 9

Special Considerations

Document any other important contaminant characteristics not addressed above:

None

Scoring Rationale & Information Source:

None

Score: 0

II. Exposure Pathways

A Groundwater

1. Known Contamination of Groundwater at or beyond the Property Boundary

Document information on known groundwater contamination:

None

Scoring Rationale & Information Source:

None

Score: 6

2. Potential for Groundwater Contamination
   a) Engineered subsurface containment

Document engineered systems protecting groundwater:

None

Scoring Rationale & Information Source:

None

Score: 4

2. Potential for Groundwater Contamination
   b) Thickness of confining layer over aquifer

Document local geological conditions and identify water-bearing zones used for water supply:

None

Scoring Rationale & Information Source:

None

Score: 0

2. Potential for Groundwater Contamination
c) Hydraulic conductivity of the confining layer

Estimate hydraulic conductivity of any confining layer:

None

Scoring Rationale & Information Source:

None

Score: 1

2. Potential for Groundwater Contamination
d) Annual rainfall

Document rainfall data:

None

Scoring Rationale & Information Source:

None

Score: 0.2

2. Potential for Groundwater Contamination
e) Hydraulic conductivity of aquifer(s) of concern

Estimate hydraulic conductivity of relevant aquifer(s):

None

Scoring Rationale & Information Source:

None

Score: 0.5

3. Special Considerations

Document any other important groundwater issues not addressed above:

None

Scoring Rationale & Information Source:

None

Score: 0

II. Exposure Pathways
B Surface Water

1. Observed or Measured Contamination of Water/Effluent Discharged from Site

Document information on surface water contamination:

None

Scoring Rationale & Information Source:

None

Score: 6

2. Potential for Surface Water Contamination
a) Surface containment

Review and document engineered or natural systems protecting surface water:

None

Scoring Rationale & Information Source:

None

Score: 5

2. Potential for Surface Water Contamination
b) Distance to perennial surface water

Estimate distance from site to nearest stream or other water body:

None

Scoring Rationale & Information Source:

None

Score: 3

2. Potential for Surface Water Contamination
c) Topography

Document terrain conditions and document positions of contaminants (are they above ground or buried?):

None

Scoring Rationale & Information Source:

None

Score: 1.5

2. Potential for Surface Water Contamination
d) Run-off potential

Document geological and rainfall conditions:

None

Scoring Rationale & Information Source:

None

Score: 0.2

2. Potential for Surface Water Contamination
e) Flood potential

Estimate flood frequency of nearby water courses or water bodies:

None

Scoring Rationale & Information Source:

None

Score: 0.3

3. Special Considerations

Document any other important surface water conditions not addressed above:

None

Scoring Rationale & Information Source:

None

Score: 0

II. Exposure Pathways
C Direct Contact

1. Known Contamination of Media Off-site

Document reports of off-site contamination due to contact with contaminated soil, dust, air, etc.:

None

Scoring Rationale & Information Source:

None

Score: 0

2. Potential for Direct Human and/or Animal Contact
a) Airborne Emissions (gases, vapours, contaminated dust, etc.)

Document incidents or complaints about fumes, gases, dust, odours, etc.:

Airbourne release of PCB containing paint

Scoring Rationale & Information Source:

None

Score: 5

2. Potential for Direct Human and/or Animal Contact
   b) Accessibility of Site (Ability to Contact Materials)

   Review and document avenues of site access by humans and animals:

   Remote location however PCB containing paint material is not covered

   Scoring Rationale & Information Source:

   None

   Score: 4

2. Potential for Direct Human and/or Animal Contact
   c) Hazardous soil gas migration from the site

   Review potential for hazardous soil gas production and migration from site:

   None

   Scoring Rationale & Information Source:

   None

   Score: 0

3. Special Considerations

   Document any other conditions whereby humans/animals could contact contamination:

   None

   Scoring Rationale & Information Source:

   None

   Score: 0

III. Receptors

A Human and Animal Uses

1. Known Impact on Humans or Animals

   Record known or suspected adverse effects on humans or domestic animals:

   None

   Scoring Rationale & Information Source:

   None

   Score: 0

2. Potential for Impact on Humans or Animals
   a) Drinking Water Supply
      i) Known impact on drinking water supply

   Record known or suspected incidents of contamination of drinking water:

   Drinking water (surface water) is not known to be contaminated

   Scoring Rationale & Information Source:

   None

   Score: 0

2. Potential for Impact on Humans or Animals
   a) Drinking Water Supply
      ii) Potential for impact on drinking water supply
         - Proximity to drinking water supply

   Identify nearest drinking water well and measure distance to site:

   None

   Scoring Rationale & Information Source:

   None

   Score: 5

2. Potential for Impact on Humans or Animals
   a) Drinking Water Supply

ii) Potential for impact on drinking water supply
- "Availability" of alternate drinking water supply

Document availability of alternate sources of drinking water and ease of implementation:

None

Scoring Rationale & Information Source:

None

Score: 2

2. Potential for Impact on Humans or Animals
b) Other Water Resources
i) Known impact on water resources

Record information on water resource that is or is potentially affected by site contamination:

None

Scoring Rationale & Information Source:

None

Score: 0

2. Potential for Impact on Humans or Animals
b) Other Water Resources
ii) Potential for impact on water resources
- Proximity to water resources used for activities (specified below)

Locate and measure nearest water resource areas to site:

None

Scoring Rationale & Information Source:

None

Score: 2

2. Potential for Impact on Humans or Animals
b) Other Water Resources
ii) Potential for impact on water resources
- Use of water resources

Record uses of nearby water resources:

None

Scoring Rationale & Information Source:

None

Score: 1

2. Potential for Impact on Humans or Animals
c) Direct Human Exposure
i) Known contamination of land used by humans

Record land use type (current or proposed) and level of contamination for land known to be contaminated due to site:

None

Scoring Rationale & Information Source:

None

Score: 0

2. Potential for Impact on Humans or Animals
c) Direct Human Exposure
ii) Potential human exposure through land use
- Use of land at and around site

Document land uses (current and proposed) for up to five kilometers from the site:

Residential (fishing/hunting)

Scoring Rationale & Information Source:

None

Score: 5

3. Special Considerations

Document any other important human or animal use information, including details of air contamination if known:

None

Scoring Rationale & Information Source:

None

Score: 0

III. Receptors
B Environmental Receptors

1. Known Adverse Impact on the Environment as a Result of the Contaminated Site

Record known impact(s) on any sensitive biological environment at and/or around the site:

None

Scoring Rationale & Information Source:

None

Score: 0

2. Potential for Impact on Sensitive Environments
a) Distance from the site to the nearest sensitive environment

Document location, distance, type and details of any nearby sensitive environments or habitats:

None

Scoring Rationale & Information Source:

None

Score: 2

2. Potential for Impact on Sensitive Environments
b) Groundwater

Measure distance to major recharge or discharge area:

None

Scoring Rationale & Information Source:

None

Score: 2

3. Special Considerations

Document any other important impacts on the environment not addressed above:

None

Scoring Rationale & Information Source:

None

Score: 0

Evaluation Totals

	Known:	Estimated:	Combined:
I. Contaminant Characteristics	30	0	30
II. Exposure Pathways			
A. Ground Water	4.7	1	5.7
B. Surface Water	9.7	0.3	10
C. Direct Contact	9.000001	0	9.000001
Section II Totals:	23.4	1.3	24.7
III. Receptors			
A. Human and Animal Uses	15	0	15
B. Environment	4	0	4
Section III Totals:	19	0	19
TOTAL SCORES FOR THIS SITE	**72.4**	**1.3**	**73.7**
CLASSIFICATION:			**Class 1**
Risk Potential:			**High**
Action Required:			**Yes**
Evaluation Last Updated:			**Jan-3-2005**

Evaluation Results

	Known	Estimated	Combined
I. Contaminants Characteristics			
A. Degree of Hazard	11		
B. Contaminant Quantity	10		
C. Physical State of Contaminants	9		
Special Considerations	0		
Section I Totals:	30		30
II. Exposure Pathways			
A. Groundwater			
○ 1. Known Contamination of groundwater at or beyond the property boundary	6		
◉ 2. Potential for Groundwater Contamination			
a) Engineered subsurface containment	4		
b) Thickness of confining layer over aquifer	0		
c) Hydraulic conductivity of the confining layer		1	
d) Annual Rainfall	0.2		
e) Hydraulic conductivity of aquifer(s) of concern	0.5		
3. Special Considerations	0		

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Evaluation Results

II. Exposure Pathways	Known	Estimated	Combined
B. Surface Water			
○ 1. Observed or measured contamination of water/effluent discharged from site	6		
◉ 2. Potential for surface water contamination			
a) Surface containment	5		
b) Distance to perennial surface water	3		
c) Topography	1.5		
d) Run-off potential	0.2		
e) Flood potential		0.3	
3. Special Considerations	0		
C. Direct Contact			
○ 1. Known contamination of media off-site	0		
◉ 2. Potential for direct human and/or animal contact			
a) Airborne emissions	5		
b) Accessibility to site	4		
c) Hazardous soil gas migration from site	0		
3. Special Considerations	0		
Section II Totals:	23.4	1.3	24.7

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Evaluation Results

III. Receptors	Known	Estimated	Combined
A. Human and Animal Uses			
○ 1. Known impact on humans or animals	0		
◉ 2. Potential for impact on humans or animals			
a) Drinking water supply			
○ i) Known impact on drinking water	0		
◉ ii) Potential for impact on drinking water			
- Proximity to drinking water supply	5		
- 'Availability' of alternate drinking water supply	2		
b) Other water resources			
○ i) Known impact on water resources	0		
◉ ii) Potential for impact on water resources			
- Proximity to water resources	2		
- Use of water resources	1		

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Evaluation Results

III. Receptors	Known	Estimated	Combined
c) Direct human exposure			
○ i) Known contamination of land used by humans	0		
◉ ii) Potential human exposure through land use			
- Use of land at and surrounding site	5		
3. Special Considerations	0		
B. Environmental Receptors			
○ 1. Known adverse impact on sensitive environments	0		
◉ 2. Potential for impact on sensitive environments			
a) Distance from site to the nearest sensitive environment	2		
b) Groundwater	2		
3. Special Considerations	0		
Section III Totals:	19	0	19

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Evaluation Totals

	Known	Estimated	Combined
I. Contaminant Characteristics	30	0	30
II. Exposure Pathways			
A. Ground Water	*4.7*	*1*	*5.7*
B. Surface Water	*9.7*	*0.3*	*10*
C. Direct Contact	*.00000*	*0*	*.00000*
Section II Totals:	23.4	1.3	24.7
III. Receptors			
A. Human and Animal Uses	*15*	*0*	*15*
B. Environment	*4*	*0*	*4*
Section III Totals:	19	0	19
TOTAL SCORES FOR THIS SIT	**72.4**	**1.3**	**73.7**

CLASSIFICATION: **Class 1**

Risk Potential: **High**

Action Required: **Yes**

Last Update: Jan-3-2005

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APPENDIX I

GENERAL TERMS AND CONDITIONS

The production and use of this Report is conditional upon the following agreement by the Client and Others who may use or rely upon it.

1. ***MANDATE OF EARTH TECH***

This Report has been prepared pursuant to the instructions of the Client, and is subject to the constraints imposed by those instructions. Earth Tech & Partners Ltd. ("Earth Tech") and the Client are aware of these instructions and constraints. Others, who wish to rely upon this Report in any manner, should inquire of the Client for the terms of Earth Tech's mandate in preparing this Report.

2. ***BASIS OF REPORT***

2.1 Representations to Earth Tech by Client

This Report has been prepared for the specific site, development, design objective, and purpose described to Earth Tech by the Client and is specifically based on all of the aforesaid.

Inaccuracies or alterations, of any of the matters upon which this Report is based, will affect the reliability and applicability of this Report.

2.2 Representations to Earth Tech by Other Persons

Earth Tech may have relied upon the representations or opinions of persons other than the Client in the course of preparing this Report. Earth Tech may not have checked the accuracy of such representations or opinions except where directed to do so by the Client. The accuracy of these representations and opinions will affect the accuracy of this Report.

2.3 Time Sensitivity of Report

The findings expressed in this Report by Earth Tech were valid, in accordance with generally accepted engineering practice and procedures, at the time that they were made. The Client and Others are advised that the conditions upon which such findings were based, and the findings themselves may be subject to change as a result of the passage of time.

3. ***USE OF REPORT BY THE CLIENT***

The Client recognizes that projects involving pollutants and hazardous waste, as defined below, create extraordinary risks. In consideration of the said extraordinary risks and in consideration of Earth Tech providing the services to the Client in connection with the project on which pollutants and hazardous wastes are involved, the Client agrees that Earth Tech's liability to the Client, including liability resulting from claims by Third Parties upon the Client, with respect to any matter in any way arising out of Earth Tech's involvement with pollutants and hazardous wastes associated shall be limited to or otherwise protected as provided in paragraphs (a) and (b) below.

(a) Earth Tech's liability to the Client in connection with pollutants and hazardous waste is absolutely limited, both in contract and in tort for any and all claims arising out of or in connection with the project to a total maximum aggregate amount not to exceed the cost of reperformance of the services at the sole cost of Earth Tech for that portion of the services proven to be in error.

It is further agreed that such limitation shall be exclusive of the liability of Earth Tech to the Client which may otherwise be provided for in this Agreement for claims unrelated to pollutants and hazardous wastes.

In further consideration of Earth Tech providing the services to the Client in connection with the project in which pollutants and hazardous wastes are involved, the Client agrees that in connection with incidents and claims initiated by Third Parties involving pollutants and hazardous wastes, the Client shall indemnify, defend and hold harmless Earth Tech of and from any and all suits, actions, legal and administrative or arbitration proceedings, claims, demands, damages, penalties, fines, losses, costs and expenses of whatsoever kind or character, arising or alleged to arise out of the services of Earth Tech or any claim against Earth Tech arising or alleged to arise from the acts, omissions or work of others. Such indemnification shall apply to the fullest extent permitted by law, regardless of fault or breach of contract by Earth Tech and shall include the fees and charges of lawyers in defending or advising Earth Tech as to such claims under the Agreement.

Without limiting the generality of the foregoing, such indemnity extends to claims which arise out of the actual or threatened dispersal, discharge, escape, release or saturation (whether sudden or gradual) of any pollutant to hazardous waste in or into the atmosphere, or on, on to, upon, in or into the surface or subsurface, soils, water or water courses, persons, objects or any other tangible matter.

(b) Nothing herein shall relieve Earth Tech from their obligations to provide the services required by this Agreement and generally as required by standard engineering practice current as of the date of the performance of the services.

(c) For all purposes of this statement of limitations, "pollutants and hazardous wastes" shall mean any solid, liquid, gaseous or thermal irritant or contaminant, including without limitation smoke, vapour, soot, fumes, acids, alkalis, chemicals and wastes, including without limitation, pollutants, hazardous or special waste as defined in any federal, provincial or municipal laws.

4. ***SUBCONSULTANTS AND SUBCONTRACTORS***

As a result of its mandate, Earth Tech may hire companies or individuals with special expertise or services not available within Earth Tech. These services are for the Client's benefit. The Client agrees to pay for the services of subconsultants and subcontractors. The Client also agrees to indemnify Earth Tech for any damage in any way resulting from the error, omission or negligent act of such subconsultants or subcontractors, including, without limiting the generality of the foregoing, the laboratory testing by subconsultants.

5. ***JOB SITE SAFETY***

Earth Tech is only responsible for the activities of its employees on the job site and is not responsible for the supervision of any other persons whatsoever. The presence of Earth Tech personnel on the site shall not be construed in any way to relieve the Client or any other persons on site from their responsibilities for job site safety.

6. ***HAZARDOUS CONDITIONS AND EMERGENCY PROCEDURE***

The Client undertakes to inform Earth Tech of all hazardous conditions, or possible hazardous conditions which are known to it. The Client recognizes that the activities of Earth Tech may uncover previously unknown hazardous materials or conditions and that such a discovery may result in the necessity to undertake emergency procedures to protect Earth Tech employees as well as other persons and the environment. These procedures may involve additional costs outside of any budgets previously agreed to. The Client agrees to pay Earth Tech for any expenses incurred as a result of such discoveries and to compensate Earth Tech through payment of additional fees and expenses for time spent by Earth Tech to deal with the consequences of such discoveries.

7. ***NOTIFICATION OF AUTHORITIES***

The Client acknowledges that in certain instances the discovery of hazardous substances or conditions and materials may require that government bodies, and other persons, be informed and the client agrees that notification to such bodies or persons as required may be done by Earth Tech in its reasonably exercised discretion.

8. ***USE OF REPORT BY OTHERS***

Others wishing to rely upon this Report in any manner may do so only upon condition that such use, and the consequences of such use, are entirely at their own risk and that they understand fully the terms of the Mandate and Basis of this Report.

It is further agreed by such Others that Earth Tech will not be liable to them in any manner including any liability in contract or in tort for any damages whatsoever arising from such use.