

February 28, 2013

Ms. Christa Curnew, P.Eng. Department of Environment & Conservation 4th Floor, West Block, Confederation Building St. John's, NL

Dear: Ms. Curnew:

Re: Test Pitting and Soil Sampling Program, PCB Disposal Area, Upper Trinity South (New Harbour), Waste Disposal Site at New Harbour Barrens, NL AMEC Project No: TF1312736

1.0 INTRODUCTION

AMEC Environment & Infrastructure, a division of AMEC Americas Limited (AMEC), was retained by the Newfoundland and Labrador Department of Environment and Conservation (ENVC) in January 2013 to conduct a Test Pitting and Soil Sampling Program within the Polychlorinated Biphenyl (PCB) Disposal Area at the Upper Trinity South (New Harbour) Waste Disposal Site at New Harbour Barrens, Newfoundland and Labrador (NL), herein after referred to as the "Site" (refer to Figure 1 and 2, Appendix A).

The purpose of the assessment was to delineate the boundaries of the PCB Disposal Area and to collect additional analytical data for the assessment of PCB concentrations in surface and subsurface soil throughout the PCB Disposal Area. This information is considered necessary to complete the human health and ecological risk assessment (HHERA) that is scheduled to be completed for the Site in March 2013.

2.0 PREVIOUS PCB IN SOIL INVESTIGATIONS/REMEDIATION PROGRAMS

2.1 1992 – 1995

During the period of 1992 through 1995, ENVC undertook a PCB remediation program at a nearby scrap yard, located in the community of Makinsons, NL. During this program, PCB-impacted scrap metal and transformer casings were transported to the Site and buried on-Site. Previous soil sampling programs carried out at the Site revealed concentrations of PCBs in soil at the Site that exceeded the Canadian Council of Ministers of the Environment (CCME) Canadian Soil Quality Guideline (CSQG) of 33 mg/kg for PCBs in soil at a commercial site.

2.2 SGE Acres 2003 (February)

Waste Disposal Site

SGE Acres (SGE) conducted a test pitting program along the perimeter of the waste disposal site in August 2002. Six test pits TP-1 to TP-6 were excavated and one soil sample collected



from each test pit was analyzed or PCBs. PCBs were not detected (<0.05 mg/kg) in any of the six soil samples analyzed.

PCB Disposal Area

SGE conducted a test pitting program within in the area of the buried transformers in August 2002. Two soil samples (Trans #1 and Trans #2) were collected from soil adjacent to the transformer casing and we analyzed for PCBs. PCBs were detected in both of the soil samples analyzed at concentrations of 1.4 mg/kg and 5.7 mg/kg, below the CCME-CSQG of 33 mg/kg. The locations of the sample samples were not provided in the report.

2.3 SGE Acres 2003 (May)

SGE conducted a test pitting program in the area of the buried transformers in March 2003. A 'T-shaped' trench was excavated within the PCB Disposal Area of the Site and five subsurface soil samples (TP-1, TP-2, TP-3, TP-5 and TP-6) were collected from the bottom trench (on bedrock) and analyzed for PCBs.

PCBs were detected in one soil sample at a concentration of 52 mg/kg (TP-3), above the CCME-CSQG of 33 mg/kg for PCBs in soil at a commercial site. PCBs were not detected (<1 mg/kg) in the other four soil samples analyzed (refer to Figure 3, Appendix A).

2.4 AMEC 2006

AMEC conducted a test pitting program in the area of the buried transformers in November 2005. Five test pits (TP-1 to TP-5) were excavated and 15 soil samples were collected from the test pits and analyzed for PCBs.

PCBs were detected in all soil samples analyzed and the concentrations ranged from 0.036 mg/kg to 21.1 mg/kg, below the CCME-CSQG of 33 mg/kg for PCBs in soil at a commercial site (refer to Figure 3, Appendix A).

2.5 AMEC 2007

AMEC conducted a test pitting program in the area of the buried transformers in November 2006. Two test pits (TP-6 and TP-7) were excavated and 10 soil samples were collected from the test pits and analyzed for PCBs.

One soil sample was reported as having a PCB concentration of 66.7 mg/kg (TP-6 SA-4), above the CCME-CSQG of 33 mg/kg for PCBs in soil at a commercial site. Soil sample TP-6 SA-4 was collected from a depth interval of 2-3 meters below the ground surface (mbgs). Concentrations of PCBs detected in the remaining nine soil samples analyzed ranged from 0.052 to 30.1 mg/kg (refer to Figure 3, Appendix A).



2.6 AMEC 2008 - 2009

In 2008, AMEC prepared an invitation to tender (ITT) for a PCB remediation program at the Site. The ITT specification included the excavation and removal of PCB-impacted material consisting of soil and debris (scrap metal and solid municipal waste) from the area of buried transformer casings at the Site for storage, treatment, and final disposal at an approved disposal/treatment facility.

The 2008 PCB remediation program was carried out in two phases (i.e., Phase I and Phase II). Phase I was carried out on September 9 and 10, 2008 in accordance with the original ITT specification and involved the removal of PCB-impacted material from two locations (i.e., Locations A and B). Phase II was carried out on October 25, 2009 and involved the removal of additional PCB-impacted material from Location A. In total, 120.25 tonnes of PCB-impacted material were removed Locations A and B of the Site by Edward Collins Contracting Limited and transported to the Universal Environmental Services Inc. (UESI) soil treatment facility located in Sunnyside, NL.

Phase I – PCB Remediation Program

As part of the Phase I PCB remediation program, a total of 43.57 tonnes of PCB-impacted material was removed from Locations A and B and delivered to an approved PCB-impacted soil and debris disposal and treatment facility operated by UESI in Sunnyside, NL. PCB concentrations for all of the confirmatory and stockpile soil samples associated with Location A exceeded the applicable CCME-CSQG of 33 mg/kg. Based on the confirmatory soil sample results, ENVC requested to have an additional 75 to 80 tonnes of PCB-impacted material removed from Location A for disposal and treatment at the Sunnyside facility (i.e., Phase II). PCB concentrations for all of the confirmatory and stockpile soil samples associated with Location B were below the applicable CCME-CSQG of 33 mg/kg. Location B was backfilled with non PCB-impacted material from the adjacent stockpile and surrounding overburden.

Phase II – PCB Remediation Program

As part of the Phase II PCB remediation program, an additional 76.78 tonnes of PCB-impacted material was removed from Location A. Numerous transformer casings and scrap metal were observed within the remediation excavation area. Confirmatory soil samples collected from the northeast floor section and east and south walls of the remediation excavation at Location A contained PCB concentrations above the CCME-CSQG of 33 mg/kg. PCB concentrations for overburden samples collected adjacent to Location A were below the CCME-CSQG of 33 mg/kg.

At the request of ENVC, Location A was partially backfilled with PCB-impacted material including material that was initially excavated and stockpiled from Location A during the Phase I remediation program. The excavation was lined with 6 mil polyethylene sheeting to mark the boundary of the excavation extents, for future excavation and removal of the material. The PCB-impacted material was placed on top of the polyethylene sheeting then covered by a layer of polyethylene sheeting and oriented stand boards (OSBs). Surrounding overburden was then placed on top of the polyethylene sheeting and OSBs and the excavation was backfilled to



match surrounding grade. The purpose of placing a layer of polyethylene sheeting and OSBs between the PCB-impacted material and overburden material was to mark the boundary and restrict contact between PCB-impacted material and overburden material.

Supplemental Soil Sampling Program - Trenching

A supplementary PCB soil sampling program was carried out on January 12 and 13, 2009. The program included the excavation of five trenches (Trench 1 to Trench 5) adjacent to Location A and the collection of representative soil samples from each of the trenches. A total of 44 soil samples were submitted to an accredited laboratory for PCB analysis. Soil samples collected from trenches located southeast and south of the former remediation excavation Location A (Trench 2 and Trench 3) contained PCB concentrations that exceeded the CCME-CSQG of 33 mg/kg. Numerous transformer casings and scrap metal were also observed in some of the trenches (refer to Figure 3, Appendix A).

2.7 AMEC 2010

AMEC prepared an ITT for the excavation and removal of 120 tonnes of PCB-impacted material (i.e. soil and debris) from an area of buried transformer casings at Location A of the Site for treatment and final disposal at an approved disposal/treatment facility. The PCB-impacted material to be excavated and removed from the Site, as part of the remedial program, included the material that was initially excavated and stockpiled from Location A during the Phase I of the previous PCB soil remediation program (AMEC 2008) and re-positioned within the remediation excavation at Location A.

AMEC provided support to ENVC for the duration of the PCB-impacted material removal program to ensure that work was being conducted in accordance with the Contract Documents and to provide the necessary on-Site inspection and monitoring to ensure compliance. AMEC provided an environmental technician to supervise the on-Site work. AMEC identified the boundaries of the remediation excavation for the Contractor prior to the start of excavating the material. The material was excavated and loaded into the trucks (B-Trains) using an excavator. AMEC/ENVC collected manifests for the PCB-impacted material being transported off-Site to the soil treatment facility located in Quebec for decontamination and destruction. In total, 136 tonnes of PCB-impacted material was excavated and removed. AMEC confirmed that the PCB-impacted material area was completely removed as per the boundaries identified in the Contract Document's boundaries (refer to Figure 3, Appendix A).

2.8 Potential Data Gaps

Based on a review of the pervious environmental reports completed for the Site, AMEC identified two potential data gaps that need to be assessed prior to completing a HHERA for the PCB Disposal Area.

• It is important to determine the boundaries of the PCB Disposal Area. This can be completed through the excavation of additional test pits in the area to allow for the visual observation of the presence/absence of transformer casing debris.



• Further assessment of the vertical and horizontal extent of PCBs in soil, in excess of the CCME-CSQGs of 33 mg/kg, is recommended to confirm the boundaries of the PCB Disposal Area.

3.0 METHODOLOGY

3.1 Test Pitting and Soil Sampling Program

AMEC conducted a test pitting and soil sampling program at the Site on February 7 and 8, 2013. The program involved the excavation of sixteen (16) test pits (NH-TP-01 to NH-TP-16) at the Site for the purpose of determining the approximate boundaries of the PCB Disposal Area and to collect soil samples for PCB analysis. The test pits were excavated either to the bedrock interface, groundwater table, or the practical capability of the excavator as illustrated on the test pit logs in Appendix B. AMEC inspected each test pit for the presence/absence of transformer casing debris for use in determining the extent of the PCB Disposal Area. All soil samples were geologically logged, visually classified, placed in laboratory-supplied glass jars and stored in a cooler with ice packs. Two soil samples (one surface and one subsurface) per test pit were analyzed for PCBs. Subsurface soil conditions, soil sample depths, PCB concentrations and select photographs taken during the soil sampling program are illustrated on the test pit logs presented in Appendix B.

Test pitting was completed without the tracks of the excavator coming into contact with the excavated soil to avoid any additional decontamination requirement for the tracks of the excavator. The locations of the 16 test pits presented on Figure 2 (Appendix A).

Laboratory analysis for PCBs in soil was performed by the Maxxam Analytics Inc. (Maxxam) laboratory located in Bedford, Nova Scotia (NS). This laboratory meets the requirements of ISO/IEC Guide 25 (General Requirements for the Competence of Calibration and Testing Laboratories) and is an accredited member of the Canadian Association for Laboratory Accreditation Inc. (CALA) for the analysis.

3.2 Decontamination of Equipment

AMEC provided on-Site supervision for decontamination of equipment used during the test pitting and soil sampling activities (i.e. bucket and arm of the excavator). Equipment was decontaminated between test pits using a broom and varsol upon backfilling the last test pit. The materials used to decontaminate the equipment was collected by NEWALTA and transported to their Fox Trap Transfer Station for disposal purposes (refer to the Bill of Lading in Appendix D). The surface swab test sampling methodology followed the methodology outlined in the CCME document, "PCB Transformer Decontamination Standards and Protocols, PN1205."

AMEC collected two swab samples (SWAB-1 and SWAB-2) from the backhoe used during excavation activity for PCB analysis to determine if the equipment was sufficiently decontaminated prior to mobilization from the Site, or use for other activities at the Site. The



swab samples were submitted to the Maxxam laboratory located in Bedford, NS for PCB analyses.

4.0 FIELD OBSERVATIONS

The soil encountered within the test pits excavated at the Site during the investigation consisted of approximately 3.5 m of silty sand and gravel with cobbles and boulders and contained various miscellaneous debris and waste materials (i.e. sawdust, metal, tires, transformer casings, seal pelts, creosote timbers, etc.). Bedrock was not confirmed in any of the test pits; however, the excavator reached probable bedrock or large boulders prohibiting further advancement at test pit locations NH-TP-02, NH-TP-03, NH-TP-04, NH-TP-06, NH-TP-08, NH-TP-09, NH-TP-10, NH-TP-11 and NH-TP-16.

Groundwater was encountered in test pit NH-TP-01 at 3.1 mbgs, NH-TP-05 at 3.0 mbgs, NH-TP-07 at 1.5 mbgs, NH-TP-12 at 3.2 mbgs, NH-TP0-13 at 1.6 mbgs, NH-TP-14 at 2.0 mbgs and NH-TP-15 at 3.8 mbgs.

Transformer casings were encountered in test pits NH-TP-01 (1.1 - 3.3 mbgs), NH-TP-05 (1.1 - 3.1 mbgs) and NH-TP-07 (0.8 - 2.0 mbgs).

Details of the soil conditions at the Site are presented in the test pit logs in Appendix B.

5.0 ANALYTICAL RESULTS

5.1 PCBs in Soil Samples

A total of thirty-four (34) soil samples, including three blind field duplicate samples (NH-TP-DUP1 to NH-TP-DUP3), were submitted to the laboratory for PCB analyses. The analytical results for PCBs in soil are presented in Table 1, Appendix C and the laboratory certificates of analysis are presented in Appendix D. The analytical results were compared to the applicable CCME-CSQG of 33 mg/kg for PCBs in soil at a commercial site.

PCBs were detected in subsurface soil samples NH-TP-01-SS2 (490 mg/kg) and NH-TP-07-SS2 (260 mg/kg) at concentrations that exceeded the applicable CCME-CSQG of 33 mg/kg. It is noted that PCB casings were observed in both test pits NH-TP-01 and NH-TP-07 during the test pit program. Soil samples NH-TP-01-SS2 and NH-TP-07-SS2 were collected at depths of 2.5 mbgs and 1.5 mbgs, respectively. PCB concentrations in all other soil samples collected and analyzed were either non-detect or were detected at levels that did not exceed the applicable CCME-CSQG of 33 mg/kg.

5.2 PCBs in Swab Samples

The swab analytical results all reported non-detect concentrations (<5 ug) for PCBs and the equipment was cleared to demobilize the Site (refer to laboratory certificates of analysis in Appendix D). The excavator demobilized from the Site on February 13, 2013.



6.0 CONCLUSIONS

Based on the findings of the current and previous soil sampling program carried out at the Site, the following conclusions have been offered concerning the approximate boundary and concentrations of PCBs in soil within the PCB Disposal Area of the Site:

- The approximate extent of the PCB Disposal Area cover an area of approximately 1,440 m² (refer to Figure 3, Appendix A).
- Concentrations of PCBs detected in the following soil samples exceeded the CCME-CSQG of 33 mg/kg for PCBs in soil at a commercial site (refer to Figure 3, Appendix A):
 - NH-TP-01-SS2 (490 mg/kg), 2.5 mbgs;
 - NH-TP-07-SS2 (260 mg/kg), 1.5 mbgs;
 - Trench 2 SA-1 (47.9 mg/kg), 1 mbgs;
 - Trench 3 SA-5 (68.2 mg/kg), 2 mbgs;
 - Trench 3 SA-6 DUP-3 (47.9 mg/kg), 2 mbgs;
 - TP-6-SA-4 (66.7 mg/kg), 2-3 mbgs; and
 - TP-3 (52 mg/kg), collected at bedrock layer.
- Soil remediation programs carried out at the Site in during the period of 2008 to 2010 remediated the PCB impacts in soil defined at test pits TP-6-SA-4 (Location A) and TP-3 (Location B).

7.0 CLOSURE

This report has been prepared for the exclusive use of the Newfoundland and Labrador Department of Environment & Conservation. The assessment was conducted using standard assessment practices and in accordance with written requests from the Client. No further warranty, expressed or implied, is made. The conclusions presented herein are based solely upon the scope of services and time and budgetary limitations described in our contract. Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, are the responsibility of such third parties. AMEC accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report. The limitations of this report are attached in Appendix G.

Respectfully submitted,

AMEC Environment and Infrastructure, A Division of AMEC Americas Limited



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Attachments

- Appendix A Figures
- Appendix B Test Pit Logs
- Appendix C Laboratory Analytical Results
- Appendix D Laboratory Certificates of Analyses
- Appendix E Bill of Lading NEWALTA
- Appendix F Historical PCB in Soil Data
- Appendix G Limitations



APPENDIX A

Figures





SCALE:	
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TING & SOIL SAMPLING PROGRAM R TRINITY SOUTH (NEW HARBOUR) WASTE DISPOSAL SITE	ATE: February 2013 ROJECT No. TF1312736 EV. No. 0 RAWING No.





APPENDIX B

Test Pit Logs

Test Pit Number	Depth (m) From – To	Description
NH-TP-01	0.0 – 1.1	FILL - Grey sand and gravel some silt and cobbles. Dry.
	1.1 – 3.5	FILL – Brown silty sand and gravel, metal and transformer casings. Moist
		Note: 1) Test pit excavated using an excavator 2) Groundwater table encountered at 3.1 m bgs.

Location:	PCB Disposal Area	
Date:	February 7, 2013	PCB C
Notes:	SS1 @ 0.15 m bgs	0.96 m
	SS2 @ 2.5 m bgs	490 mg
	-	

GPS Coordinates: 315576 E (UTM, Zone 22) 5271865 N PCB Concentrations: 0.96 mg/kg 490 mg/kg



Test pit spoilage NH-TP-01.



Test pit excavation NH-TP-01.



Test Pit Number	Depth (m) From – To	Description
NH-TP-02	0.0 - 0.4	FILL – Grey sand and gravel, some silt, cobbles and boulders. Dry.
	0.4 – 0.6	WEATHERED TILL - Brown silty sand and gravel, cobbles and boulders. Dry.
	0.6 - 3.0	GLACIAL TILL - Grey sand and gravel, some silt, cobbles and boulders. Moist
		Note: 1) Test pit excavated using an excavator. 2) Groundwater table not encountered.

GPS Coordinates:	315587 E
(UTM, Zone 22)	5271856 N

PCB Concentrations: 0.17 mg/kg <0.05 mg/kg





Test pit spoilage NH-TP-02.



Test pit excavation NH-TP-02.

Test Pit Number	Depth (m) From – To	Description
NH-TP-03	0.0 – 1.4	FILL – Brown / grey silty sand and gravel and cobbles. Compacted. Moist.
	1.4 – 4.2	FILL – Black silty sand and gravel with garbage and metal.
		Note: 1) Test pit excavated using an excavator. 2) Groundwater not encountered.

PCB Disposal Area	
February 7, 2013	PC
SS1 @ 0.5 m bgs	<0.
SS2 @ 3.5 m bgs	1.5
	PCB Disposal Area February 7, 2013 SS1 @ 0.5 m bgs SS2 @ 3.5 m bgs

GPS Coordinates: 315603 E (UTM, Zone 22) 5271842 N PCB Concentrations: <0.05 mg/kg I.5 mg/kg





Test pit spoilage NH-TP-03.



Test pit excavation NH-TP-03.

Test Pit Number	Depth (m) From – To	Description
NH-TP-04	0.0 - 0.9	FILL - Grey sand and gravel, some silt and cobbles. Dry.
	0.9 – 1.2	SAWDUST
	1.2 – 3.2	GLACIAL TILL - Grey sand and gravel, some silt, cobbles and boulders. Moist.
		Note: 1) Test pit excavated using an excavator. 2) Groundwater table not encountered.

Location:	PCB Disposal Area
Date:	February 7, 2013
Notes:	SS1 @ 0.9 m bgs
	SS2 @ 3.0 m bgs

GPS Coordinates: 315588 E (UTM, Zone 22) 5271880 N PCB Concentrations: <0.05 mg/kg <0.05 mg/kg





Test pit spoilage NH-TP-04.



Test pit excavation NH-TP-04.

Test Pit Number	Depth (m) From – To	Description
	0.0 – 1.1	FILL – Brown / grey silty sand and gravel. Moist.
NH-TP-05	1.1 – 3.1	 FILL - Black organics, cobbles, metal and transformer casings. Moist. Note: 1) Test pit excavated using an excavator 2) Groundwater table encountered at 3.0 m bgs.

Location:	PCB Disposal Area
Date:	February 7, 2013
Notes:	SS1 @ 0.15 m bgs
	SS2 @ 3.0 m bgs
	_

GPS Coordinates:	315565 E
(UTM, Zone 22)	5271862 N

PCB Concentrations: 5.0 mg/kg 1.4 mg/kg



Test pit spoilage NH-TP-05.



Test Pit Number	Depth (m) From – To	Description
NH-TP-06	0.0 - 3.8	FILL – Black / brown, silty sand and gravel, sawdust, seal pelts and wood.
		Note: 1) Test pit excavated using an excavator. 2) Groundwater table not encountered.

Location:	PCB Disposal Area
Date:	February 7, 2013
Notes:	SS1 @ 0.15 m bgs
	SS2 @ 3.4 m bgs
	-

GPS Coordinates: 315550 E (UTM, Zone 22) 5271851 N PCB Concentrations: 1.5 mg/kg 0.52 mg/kg





Test pit spoilage NH-TP-06.



Test pit excavation NH-TP-06.

Test Pit Number	Depth (m) From – To	Description
NH-TP-07	0.0 – 2.0	FILL - Brown silty sand and gravel, cobbles, metal and transformer casings. Wet.
		 Note: 1) Test pit excavated using an excavator. 2) Groundwater table encountered at 1.5 m bgs.

Location:	PCB Disposal Area
Date:	February 7, 2013
Notes:	SS1 @ 0.15 m bgs
	SS2 @ 1.5 m bgs

GPS Coordinates: 315554 E (UTM, Zone 22) 5271834 N PCB Concentrations: 7.2 mg/kg 260 mg/kg





Test pit spoilage NH-TP-07.



Test pit excavation NH-TP-07.

Test Pit Number	Depth (m) From – To	Description
NH-TP-08	0.0 – 1.0	FILL - Brown silty sand and gravel, cobbles and buried debris. Moist.
	1.0 – 3.5	GLACIAL TILL - Grey sand and gravel some silt, cobbles and boulders. Dry.
		Note: 1) Test pit excavated using a excavator 2) Groundwater table not encountered.

Location:PCB Disposal AreaDate:February 7, 2013Notes:SS1 @ 0.15 m bgsSS2 @ 3.2 m bgs

GPS Coordinates: 315570 E (UTM, Zone 22) 5271822 N PCB Concentrations: 0.77 mg/kg <0.05 mg/kg





Test pit spoilage NH-TP-08.



Test pit excavation NH-TP-08 location.

Test Pit Number	Depth (m) From – To	Description
NH-TP-09	0.0 – 0.8	FILL - Grey sand and gravel with some silt, cobbles and boulders. Dry
	0.8 – 1.1	WEATHERED TILL - Brown silty sand and gravel, cobbles and boulders. Dry.
	1.1 – 4.2	GLACIAL TILL - Grey sand and gravel, some silt, cobbles and boulders. Moist.
		Note: 1) Test pit excavated using a excavator 2) Groundwater table not encountered.

Location:	PCB D	isposal Area	
Date:	Februa	ary 7, 2013	PCB Concentrations
Notes:	SS1 @	0.8 m bgs	0.29 mg/kg
	SS2 @	2 3.5 m bgs	<0.05 mg/kg
GPS Coordina (UTM, Zone 2	ates: 2)	315587 E 5271836 N	



Test pit spoilage NH-TP-09.



Test pit excavation NH-TP-09 location.



Test Pit Number	Depth (m) From – To	Description
NH-TP-10	0.0 - 0.9	FILL - Light brown silty sand and gravel, cobbles, boulders and buried debris. Dry
	0.9 – 2.5	GLACIAL TILL - Grey sand and gravel, some silt, cobbles and boulders. Moist
		Note: 1) Test pit excavated using a excavator 2) Groundwater table not encountered.

PCB Disposal Area Location: Date: February 8, 2013 SS1 @ 0.15 m bgs Notes: SS2 @ 2.5 m bgs

GPS Coordinates: 315606 E (UTM, Zone 22) 5271882 N

PCB Concentrations: <0.05 mg/kg <0.05 mg/kg



Test pit spoilage NH-TP-10.



Test pit excavation NH-TP-10.



Test Pit Number	Depth (m) From – To	Description
NH-TP-11	0.0 – 1.1	FILL - Light brown silty sand and gravel, cobbles, boulders and buried debris. Dry.
	1.1 – 1.2	PEAT
	1.2 – 2.2	WEATHERED TILL - Brown silty sand and gravel, cobbles and boulders. Dry.
		Note: 1) Test pit excavated using a excavator 2) Groundwater table not encountered.

Location:	PCB Disposal Area
Date:	February 8, 2013
Notes:	SS1 @ 0.2 m bgs
	SS2 @ 2.2 m bgs
GPS Coordin	ates: 315608 E
(UTM, Zone 2	2) 5271865 N

PCB Concentrations:

<0.05 mg/kg



Test pit spoilage NH-TP-11.



Test pit excavation NH-TP-11.



Test Pit Number	Depth (m) From – To	Description
NH-TP-12	0.0 – 0.5	FILL - Grey sand and gravel with some silt, cobbles and boulders. Dry.
	0.5 – 3.5	FILL - Light brown silty sand and gravel, cobbles, boulders, tires, metal and miscellaneous debris. Wet.
		Note: 1) Test pit excavated using a excavator 2) Groundwater table encountered at 3.2 m bgs.

Location:	PCB	Disposal Area	
Date:	Febr	uary 8, 2013	PCE
Notes:	SS1	@ 0.8 m bgs	0.92
	SS2	@ 3.1 m bgs	1.9
GPS Coord	inates:	315561 E	

(UTM, Zone 22) 5271799 N

PCB Concentrations: .92 mg/kg .9 mg/kg





Test pit spoilage NH-TP-12.



Test pit excavation NH-TP-12.

Test Pit Number	Depth (m) From – To	Description					
NH-TP-13	0.0 - 0.6	FILL - Light brown silty sand and gravel, cobbles and boulders. Dry.					
	0.6 – 2.1	FILL – Grey brown, silty sand and gravel, creosote timbers and cables. Wet.					
		Note: 1) Test pit excavated using a excavator 2) Groundwater table encountered at 1.6 mbgs.					

Location:PCB Disposal AreaDate:February 8, 2013Notes:SS1 @ 0.15 m bgsSS2 @ 1.5 m bgs

GPS Coordinates: 315541 E (UTM, Zone 22) 5271818 N PCB Concentrations: 0.77 mg/kg 0.72 mg/kg



Test pit spoilage NH-TP-13.



Test pit excavation NH-TP-13.



Test Pit Number	Depth (m) From – To	Description
NH-TP-14	0.0 - 3.0	SAWDUST – Orange / brown sawdust, with some silty sand, gravel, and miscellaneous debris. Wet.
		Note: 1) Test pit excavated using a excavator 2) Groundwater table encountered at 2.0 m bgs.

Location:	PCB Disposal Area
Date:	February 8, 2013
Notes:	SS1 @ 0.15 m bgs
	SS2 @ 2.5 m bgs
	-

GPS Coordinates: 315527 E (UTM, Zone 22) 5271836 N PCB Concentrations: <0.05 mg/kg 0.27 mg/kg





Test pit spoilage NH-TP-14.



Test pit excavation NH-TP-14.

Test Pit Number	Depth (m) From – To	Description
NH-TP-15	0.0 – 4.1	SAWDUST – Orange / brown sawdust, with some silty sand, gravel and miscellaneous debris. Wet.
		Note: 1) Test pit excavated using a excavator 2) Groundwater table encountered at 3.8 m bgs.

Location:	PCB Disposal Area
Date:	February 8, 2013
Notes:	SS1 @ 0.15 m bgs
	SS2 @ 3.5 m bgs
	-

GPS Coordinates: 315518 E (UTM, Zone 22) 5271819 N

518 E

PCB Concentrations: <0.05 mg/kg <0.05 mg/kg





Test pit spoilage NH-TP-15.



Test pit excavation NH-TP-15.

Test Pit Number	Depth (m) From – To	Description				
NH-TP-16	0.0 - 0.8	FILL - Grey sand and gravel with some silt, cobbles and boulders. Dry.				
	0.8 – 2.0	GLACIAL TILL – Brown / grey sand and grave silt, cobbles and boulders. Moist.				
		Note: 1) Test pit excavated using a excavator 2) Groundwater table not encountered.				

Location:	PCB Disposal Area
Date:	February 8, 2013
Notes:	SS1 @ 0.8 m bgs
	SS2 @ 3.5 m bgs

@ 3.5 m bgs 315580 E

GPS Coordinates: 315580 E (UTM, Zone 22) 5271841 N PCB Concentrations: 1.2 mg/kg <0.05 mg/kg



Test pit spoilage NH-TP-16.



Test pit excavation NH-TP-16.





APPENDIX C

Laboratory Analytical Results

Table 1: PCBs in Soil

			DATA								GUIDELINES
Sample ID Lab ID Sampling Date Sample Depth (m)		NH-TP-01-SS1 QN3937 Feb. 7, 13 0.15	NH-TP-01-SS2 QN3938 Feb. 7, 13 2.5	NH-TP-02-SS1 QN3939 Feb. 7, 13 0.4	NH-TP-02-SS2 Q3940 Feb. 7, 13 2.5	NH-TP-03-SS1 QN3941 Feb. 7, 13 0.5	NH-TP-03-SS2 QN3942 Feb. 7, 13 3.5	NH-TP-04-SS1 QN3943 Feb. 7, 13 0.9	NH-TP-04-SS2 QN3944 Feb. 7, 13 3.0	NH-TP-DUP1 QN4001 Feb 7, 2013 3.0	1999 CCME-CSQG
	RDL										(Commercial)
Parameter	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Polychlorinated Biphenyls	0.05	0.96	490	0.17	<0.05	<0.05	1.5	<0.05	<0.05	<0.05	33

Notes RDL: Reportable detection limit <X: Below RDL CCME: Canadian Council of Ministers of the Environment CSQG: Canadian Soli Quality Guidelines for the Protection of Environmental and Human Health -: VALUE NOT ESTABLISHED Shaded and bold data exceed the CCME CSQG criteria/guideline(s) NH-TP-DUP1 is a blind field duplicate of NH-TP-04-SS2

Table 1: PCBs in Soil (Continued)

			DATA								GUIDELINES
Sample ID		NH-TP-05-SS1	NH-TP-05-SS2	NH-TP-06-SS1	NH-TP-06-SS2	NH-TP-07-SS1	NH-TP-07-SS2	NH-TP-08-SS1	NH-TP-08-SS2	NH-TP-09-SS1	
Lab ID		QN4004	QN7456	QN3951	QN3952	QN3953	QN3954	QN3955	QN3956	QN3957	1999
Sampling Date		Feb. 7, 13	CCME-CSQG								
Sample Depth (m)		0.15	3.0	0.15	3.4	0.15	1.5	0.15	3.2	0.8	
	RDL										(Commercial)
Parameter	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Polychlorinated Biphenyls	5	5	1.4	1.5	0.52	7.2	260	0.77	<0.05	0.29	33

 Notes

 RDL: Reportable detection limit

 <X: Below RDL</td>

 CCME: Canadian Council of Ministers of the Environment

 CSGG: Canadian Soil Quality Guidelines for the Protection of Environmental and Human Health

 -: VALUE NOT ESTABLISHED

 Shaded and bold data exceed the CCME CSQG criteria/guideline(s)

Table 1: PCBs in Soil (Continued)

			DATA								GUIDELINES
Sample ID Lab ID Sampling Date Sample Depth (m)		NH-TP-09-SS2 QN3958 Feb. 7, 13 3.5	NH-TP-10-SS1 QN3959 Feb. 8, 13 0.15	NH-TP-10-SS2 QN3960 Feb. 8, 13 2.5	NH-TP-11-SS2 QN3954 Feb. 8, 13 2.2	NH-TP-DUP2 QN4002 Feb. 8, 13 2.2	NH-TP-12-SS1 QN3973 Feb. 8, 13 0.8	NH-TP-12-SS2 QN3974 Feb. 8, 13 3.1	NH-TP-13-SS1 QN3975 Feb. 8, 13 0.15	NH-TP-13-SS2 QN3976 Feb. 8, 13 1.5	1999 CCME-CSQG
	RDL										(Commercial)
Parameter	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Polychlorinated Biphenyls	5	<0.05	<0.05	<0.05	<0.05	<0.05	0.92	1.9	0.77	0.72	33

 Notes

 RDL: Reportable detection limit

 <X: Below RDL</td>

 CCME: Canadian Council of Ministers of the Environment

 CSG: Canadian Soil Quality Guidelines for the Protection of Environmental and Human Health
 VALUE NOT ESTABLISHED
 Shaded data exceed the CCME CSQG criteria/guideline(s)
 NH-TP-DUP2 is a blind field duplicate of NH-TP-11,SS2

Table 1: PCBs in Soil (Continued)

			DATA								
Sample ID Lab ID Sampling Date Sample Depth (m)		NH-TP-14-SS1 QN3977 Feb. 8, 13 0.15	NH-TP-14-SS2 QN3978 Feb. 8, 13 2.5	NH-TP-15-SS1 QN3979 Feb. 8, 13 0.15	NH-TP-15-SS2 QN3980 Feb. 8, 13 3.5	NH-TP-16-SS1 QN3999 Feb. 8, 13 0.8	NH-TP-16-SS2 QN4000 Feb. 8, 13 3.5	NH-TP-DUP3 QN4003 Feb 8, 2012 3.5	1999 CCME-CSQG		
	RDL								(Commercial)		
Parameter	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)		
Polychlorinated Biphenyls	5	<0.05	0.27	<0.05	<0.05	1.2	<0.05	<0.05	33		

 Notes

 RDL: Reportable detection limit

 <X: Below RDL</td>

 CCME: Canadian Council of Ministers of the Environment

 CSG: Canadian Soil Quality Guidelines for the Protection of Environmental and Human Health
 VALUE NOT ESTABLISHED
 Shaded data exceed the CCME CSQG criteria/guideline(s)
 NH-TP-DUP3 is a blind field duplicate of NH-TP-16,SS2



APPENDIX D

Laboratory Certificates of Analyses



Your Project #: TF1312736 Site#: NEW HR Site Location: NEW HR Your C.O.C. #: B088255

Attention: Gary Warren

AMEC Environment & Infrastructure St John's (Non Standing Offer) PO Box 13216 133 Crosbie Rd, Suite 202 St John's , NL CANADA A1B 4A5

Report Date: 2013/02/22

This report supersedes all previous reports with the same Maxxam job number

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B320998 Received: 2013/02/12, 10:51

Sample Matrix: Soil # Samples Received: 34

		Date	Date		Method
Analyses	Quantity	Extracted	Analyzed	Laboratory Method	Reference
Moisture (1)	33	N/A	2013/02/12	ATL SOP 00001	MOE Handbook 1983
Moisture (1)	1	N/A	2013/02/13	ATL SOP 00001	MOE Handbook 1983
PCBs in soil by GC/ECD (1,2	1	2013/02/12	2013/02/14	ATL SOP 00106	Based on EPA8082
PCBs in soil by GC/ECD (1,2	18	2013/02/13	2013/02/14	ATL SOP 00106	Based on EPA8082
PCBs in soil by GC/ECD (1,2	15	2013/02/13	2013/02/15	ATL SOP 00106	Based on EPA8082

Sample Matrix: Swab # Samples Received: 2

		Date	Date		Method
Analyses	Quantity	Extracted	Analyzed	Laboratory Method	Reference
PCBs on swabs by GC/ECD (1)	2	2013/02/12	2013/02/13	ATL SOP 00109	Based on EPA8082

Remarks:

Reporting results to two significant figures at the RDL is to permit statistical evaluation and is not intended to be an indication of analytical precision.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

* Results relate only to the items tested.

(1) This test was performed by Bedford

(2) Soils are reported on a dry weight basis unless otherwise specified.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Michelle Hill, Project Manager Email: MHill@maxxam.ca Phone# (902) 420-0203 Ext:289

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section

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AMEC Environment & Infrastructure Client Project #: TF1312736 Site Location: NEW HR Sampler Initials: CT

-2-

5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Total cover pages: 2

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AMEC Environment & Infrastructure Client Project #: TF1312736 Site Location: NEW HR Sampler Initials: CT

RESULTS OF ANALYSES OF SOIL

Maxxam ID		QN3937	QN3938	QN3939	QN3940	QN3941	QN3942	QN3943		
Sampling Date		2013/02/07	2013/02/07	2013/02/07	2013/02/07	2013/02/07	2013/02/07	2013/02/07		
	Units	NH-TP-01-SS1	NH-TP-01-SS2	NH-TP-02-SS1	NH-TP-02-SS2	NH-TP-03-SS1	NH-TP-03-SS2	NH-TP-04-SS1	RDL	QC Batch
Inorganics										
Moisture	%	14	32	13	5	12	21	17	1	3121175

Maxxam ID		QN3944	QN3951	QN3952	QN3953	QN3954	QN3955	QN3956		
Sampling Date		2013/02/07	2013/02/07	2013/02/07	2013/02/07	2013/02/07	2013/02/07	2013/02/07		
	Units	NH-TP-04-SS2	NH-TP-06-SS1	NH-TP-06-SS2	NH-TP-07-SS1	NH-TP-07-SS2	NH-TP-08-SS1	NH-TP-08-SS2	RDL	QC Batch
Inorganics	-									
Moisture	%	6	23	24	33	32	29	6	1	3121175

Maxxam ID		QN3957	QN3958	QN3959	QN3960	QN3972	QN3973	QN3974		
Sampling Date		2013/02/07	2013/02/07	2013/02/08	2013/02/08	2013/02/08	2013/02/08	2013/02/08		
	Units	NH-TP-09-SS1	NH-TP-09-SS2	NH-TP-10-SS1	NH-TP-10-SS2	NH-TP-11-SS2	NH-TP-12-SS1	NH-TP-12-SS2	RDL	QC Batch
Inorganics	-	_				_		_		
Moisture	%	15	8	19	9	12	27	20	1	3121175

Maxxam ID		QN3975	QN3976	QN3977	QN3978	QN3979	QN3980	QN3999		
Sampling Date		2013/02/08	2013/02/08	2013/02/08	2013/02/08	2013/02/08	2013/02/08	2013/02/08		
	Units	NH-TP-13-SS1	NH-TP-13-SS2	NH-TP-14-SS1	NH-TP-14-SS2	NH-TP-15-SS1	NH-TP-15-SS2	NH-TP-16-SS1	RDL	QC Batch
Inorganics	-	-		-						
Moisture	%	20	29	64	70	60	71	7	1	3121175

Maxxam ID		QN4000	QN4001	QN4002	QN4003	QN4004		QN7456		
Sampling Date		2013/02/08	2013/02/08	2013/02/08	2013/02/08	2013/02/08		2013/02/08		
	Units	NH-TP-16-SS2	NH-TP-DUP1	NH-TP-DUP2	NH-TP-DUP3	NH-TP-05-SS1	QC Batch	NH-TP-05-SS2	RDL	QC Batch
Inorganics			-	-				_		_
Moisture	%	13	7	11	11	25	3121175	65	1	3122153



AMEC Environment & Infrastructure Client Project #: TF1312736 Site Location: NEW HR Sampler Initials: CT

POLYCHLORINATED BIPHENYLS BY GC-ECD (SOIL)

Maxxam ID		QN3937	QN3937	QN3938	QN3939	QN3940	QN3941	QN3942		
Sampling Date		2013/02/07	2013/02/07	2013/02/07	2013/02/07	2013/02/07	2013/02/07	2013/02/07		
	Units	NH-TP-01-SS1	NH-TP-01-SS1	NH-TP-01-SS2	NH-TP-02-SS1	NH-TP-02-SS2	NH-TP-03-SS1	NH-TP-03-SS2	RDL	QC Batch
			Lab-Dup							
PCBs	_	_	_						_	_
Total PCB	ug/g	0.96	1.3	490	0.17	<0.050	<0.050	1.5	0.050	3122135
Surrogate Recovery (%)										
Decachlorobiphenyl	%	77(1)	87	89(2)	80(3)	76	83	80(2)		3122135

Maxxam ID		QN3943	QN3944	QN3951	QN3952	QN3953	QN3954		QN3955		
Sampling Date		2013/02/07	2013/02/07	2013/02/07	2013/02/07	2013/02/07	2013/02/07		2013/02/07		
	Units	NH-TP-04-SS1	NH-TP-04-SS2	NH-TP-06-SS1	NH-TP-06-SS2	NH-TP-07-SS1	NH-TP-07-SS2	QC Batch	NH-TP-08-SS1	RDL	QC Batch
PCBs											
Total PCB	ug/g	<0.050	<0.050	1.5	0.52	7.2	260	3122135	0.77	0.050	3122128
Surrogate Recovery (%)	_										
Decachlorobiphenyl	%	77	79	82(2)	77(2)	81(1)	81(2)	3122135	79(1)		3122128

Maxxam ID		QN3956	QN3957	QN3958	QN3959	QN3960	QN3972	QN3973		
Sampling Date		2013/02/07	2013/02/07	2013/02/07	2013/02/08	2013/02/08	2013/02/08	2013/02/08		
	Units	NH-TP-08-SS2	NH-TP-09-SS1	NH-TP-09-SS2	NH-TP-10-SS1	NH-TP-10-SS2	NH-TP-11-SS2	NH-TP-12-SS1	RDL	QC Batch
PCBs										
Total PCB	ug/g	<0.050	0.29	<0.050	<0.050	<0.050	<0.050	0.92	0.050	3122128
Surrogate Recovery (%)										
Decachlorobiphenyl	%	82	78(1)	80	85(4)	82	80	79(2)		3122128

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

(1) - Aroclor 1254, 1260.

(2) - Aroclor 1242, 1254, 1260.

(3) - Aroclor 1254.

(4) - PCB:Unidentified (possibly halogenated) compounds detected.



AMEC Environment & Infrastructure Client Project #: TF1312736 Site Location: NEW HR Sampler Initials: CT

POLYCHLORINATED BIPHENYLS BY GC-ECD (SOIL)

Maxxam ID		QN3974	QN3974	QN3975	QN3976	QN3977	QN3978		
Sampling Date		2013/02/08	2013/02/08	2013/02/08	2013/02/08	2013/02/08	2013/02/08		
	Units	NH-TP-12-SS2	NH-TP-12-SS2	NH-TP-13-SS1	NH-TP-13-SS2	NH-TP-14-SS1	NH-TP-14-SS2	RDL	QC Batch
			Lab-Dup						
PCBs									
Total PCB	ug/g	1.9	2.4	0.77	0.72	<0.050	0.27	0.050	3122128
Surrogate Recovery (%)									
Decachlorobiphenyl	%	80(1)	81	76(2)	79(1)	72	77(3)		3122128

Maxxam ID		QN3979	QN3980	QN3999	QN4000	QN4001		
Sampling Date		2013/02/08	2013/02/08	2013/02/08	2013/02/08	2013/02/08		
	Units	NH-TP-15-SS1	NH-TP-15-SS2	NH-TP-16-SS1	NH-TP-16-SS2	NH-TP-DUP1	RDL	QC Batch
PCBs								
Total PCB	ug/g	<0.050	<0.050	1.2	<0.050	<0.050	0.050	3122128
Surrogate Recovery (%)								
Decachlorobiphenyl	%	78	71	78(1)	79	82		3122128

Maxxam ID		QN4002		QN4003	QN4004		QN7456		
Sampling Date		2013/02/08		2013/02/08	2013/02/08		2013/02/08		
	Units	NH-TP-DUP2	QC Batch	NH-TP-DUP3	NH-TP-05-SS1	QC Batch	NH-TP-05-SS2	RDL	QC Batch
PCBs									
Total PCB	ug/g	<0.050	3122135	<0.050	5.0	3122128	1.4	0.050	3122135
Surrogate Recovery (%)									
Decachlorobiphenyl	%	82	3122135	84	86(1)	3122128	87(1)		3122135

(3) - Aroclor 1260.

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AMEC Environment & Infrastructure Client Project #: TF1312736 Site Location: NEW HR Sampler Initials: CT

POLYCHLORINATED BIPHENYLS BY GC-ECD (SWAB)

Maxxam ID		QN3935	QN3936		
Sampling Date		2013/02/07	2013/02/07		
	Units	SWAB-1	SWAB-2	RDL	QC Batch
PCBs					
Total PCB	ug	<5.0	<5.0	5.0	3120969
Surrogate Recovery (%)					
Decachlorobiphenyl	%	80	76		3120969



AMEC Environment & Infrastructure Client Project #: TF1312736 Site Location: NEW HR Sampler Initials: CT

Package 1 7.8°C

Each temperature is the average of up to three cooler temperatures taken at receipt

GENERAL COMMENTS

Revised report:

Corrected sample IDs for QN3972-QN3980 corrected from NH-TH11,SS2, NH-TH12,SS1, NH-TH13,SS2, NH-TH13,SS2, NH-TH14,SS1, NH-TH14, SS2, NH-TH15,SS1 and NH-TH15,SS2 to NH-TP11,SS2, NH-TP12,SS1, NH-TP13,SS1, NH-TP13,SS2, NH-TP14,SS1, NH-TP15,SS1 and NH-TP15,SS2as per COC. All sample IDs for NH-TP samples have had the comma replaced with a dash as per client request. February 22, 2013 MHL



AMEC Environment & Infrastructure Client Project #: TF1312736 Site Location: NEW HR Sampler Initials: CT

QUALITY ASSURANCE REPORT

			Matrix	Spike	Spiked	Blank	Method	Blank	RP	D
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
3120969	Decachlorobiphenyl	2013/02/13			83	30 - 130	90	%		
3120969	Total PCB	2013/02/13			92	30 - 130	<5.0	ug		
3122128	Decachlorobiphenyl	2013/02/14	84	30 - 130	82	30 - 130	86	%		
3122128	Total PCB	2013/02/14	NC	70 - 130	96	70 - 130	<0.050	ug/g	21.2	50
3122135	Decachlorobiphenyl	2013/02/14	79	30 - 130	84	30 - 130	81	%		
3122135	Total PCB	2013/02/14	NC	70 - 130	113	70 - 130	<0.050	ug/g	31.0	50

N/A = Not Applicable

RPD = Relative Percent Difference

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was not sufficiently significant to permit a reliable recovery calculation.



Validation Signature Page

Maxxam Job #: B320998

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Alan Stewart, Scientific Specialist (Organics)

pecialist (Organics)

lin Smith austrong

Robin Smith-Armstrong, Bedford SemiVol Spvsr

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Maxanalytics.com 200 Bluewater Road, Suite 105, Bedford, Nova Scotia B4B 169 49 Elizabeth Ave, St John's, NL AIA 1W9 60 Esplanade Sydney, NS B1P 1A1 www.maxxamanalytics.com E-mail: Clientservicesbedford@maxxamanalytics.com MAXXAM Chain of Custody Record Page 1. of 4 088255 COC #: B PO # TURNAROUND TIME This column for lab use only: INVOICE INFORMATION: REPORT INFORMATION (if differs from involce): Client Code 10970 Project # / Phase # TF 1312736 Standard Company Name: AMEC E4F Company Name: Maxxam Job # Project Name / Site Location 10 day Contact Name: bary Warren Contact Name: E) B320998 If RUSH Specify Date; 24Hr For SWABs Quote Address: 133 Crosbie Rd Address: St. Johns Postal AIB 4A5 Site # Postal 3 day for Soi Pre-schedule rush work New Hr Temp Code Seal Present Task Order # Seal Intact Cooler (D garywarren@amec.com Email: 7.8 Temp 1 7.8 Temp 2 7.8 Temp 3 Average 7 Email: Charge for # Sampled by C. Tay lor Jars used but Ph: 722-7023 Fax: 722-7353 Ph: Guideline Requirements / Detection Limits / Special Instructions not submitted Fax: Choose CAP-30 Total or Diss Metals Choose Choose Total or Diss Metals for well water gurace water bior ground water CCME-CSQGC Commercial) Possible interfarence from Seal oil. Quinoline Metals & Mercury Dafault: Available Digest- Methoc Metals: Total Digest- for Occa sectiments (HNUO3/HF/HOLO4). Mercury Mercury (tov level) Red'd for i Residential, Parklands, Adricultural Recurred for CONE Adricultural RECA Hydrocarbons (BTEX, C6-032). Soil (Potable), NS F Low Level BTEX, (Filtered & Preserved Integrity YES

Field Filtered & Preserve Lab Filtration Required PAH's with Acridine, Integrity / Checklist by **IPH Fractionation** (NO) Mercury RCAP-MS RCAP-30 *Specify Matrix: Surface/Salt/Ground/Tapwater/Sewage/Effluent/ PAH's Labelled by Location / Bin # 50 10 of 13 Potable/NonPotable/Tissue/Soil/Sludge/Metal/Seawater 01 Date/Time # & type of Sampled bottles Metals Field Sample Identification Matrix* Metals Soil Hydrocarbons Water Swab Page 1 SWAB-1 Feb7 2 SWAB-2 50:1 ³ NH-TP-01, 551 250ml 4 NH-TP-01, 552 5 NH-TP-02, 551 ⁶ NH-TP-02, 552 1 NH-TP-03 55 1 8 11 11 1' SSZ ?FEBUZION *NH-TP-04, SSI 10 (1 11 11, SS2 1 RELINGUISHED BY Signature/Print) Big Cravig Tay for Julia 2012/02/11 12:13:03 Date Time RECEIVED BY: (Signature/Print), Date FLASEL ERIN FRASER White: Maxxam Yellow : Mail ATL FCD 00149 / Revision 10

Maxama alytics.com 200 Bluewater Road, Suite 105, Bedford, Nova Scotia B4B 1G9 49 Eizabeth Ave, St John's, NL A1A 1W9 50 Esplanede Sydney, NS B1P 1A1 Www.maxxamanalytics.com E-mail: Clientservicesbedford@maxxamanalytics.com E-mail: Clientservicesbedford@maxxamanalytics.com

MAXXAM Chain of Custody Record

VIAXAM	90 Esplanade Sydney, NS BIP 1A1 5 www.maxxamanalytics.com E-mail:	Tel: 1 Clientservicesb	902-567-1255 Fa edford@maxxar	: 709-754-8612 1011 Free :: 902-539-6504 Toll Free nanalytics.com	e: 1-888-535-7770 e: 1-868-535-7770	coc #: 🛛 08	6048	Page 2_of _	1
This column for lab use only	INVOICE INFORMATION:		REPORT INFO	RMATION (if differ	s from invoice):	PO #	17 M 100 A 19		ME
Client Code 10970	Company Name: AMEC F	4π	Company Nar	ne.	<u></u>	Project # / Phase #		Standard	
Maxxam Job #	Contact Name: Grow 1 Jay		Contact Nam	a.		Project Name / Site Locat	lon	10 day 🛛	
(Z) B220998	Address:	164	Address:		<u> </u>	Quote		If RUSH Specify Da	ate:
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	Guideline Requirements / Detection L	imits / Special	Instructions	Fax:		W S		not submitted	
Integrity Integrity / Checklist I YES (NO) 27 abelled by Location / Bin #	y *Specify Matrix: Surface/Salt/Ground/Tapv Potable/NonPotable/Tissi	vater/Sewage/Effi	uent/ stal/Seawater	Filtered & Preserved Iltration Required -30 Total or Diss Meta -MS Total or Diss Meta otal Digest (Default Method)	or well water, surface water bissolved for ground water Aercury featurt Available Digest Method featurt Available Digest Method featurt Available Digest for Ocean	Recursting invocant i	 Solil Policy Low Lever bl EX, up IFEX, VPH, Low level T.E.H. PH Fractionation AH's with Acridine, Quinoline 	83	
0}	Field Sample Identification	Matrix* Date/Ti Sampl	ime # & type of led bottles	RCAF RCAF	Metals M Water M	etals Soil F	lydrocarbons	00	- 10 - 10 - 10
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	⁶ , « », SS2			·				r	
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Maxxam Analytics International Corporation o/a Maxxam Analytics 49-55 Elizabeth Ave, Suite 101A, St. John's, NL, Canada A1A 1W9 Tel: 709-754-0203 Toll Free: 888-492-7227 Fax: 709-754-8612 www.maxxam.ca

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200 Bluewater Road, Suite 105, Bedford, Nova Scotia B4B 1G9 Tel: 902-420-0203 Fax: 902-420-8612 Toll Free: 1-800-565-7227 49 Elizabeth Ave., St John's, NL A1A 1W9

Tel: 709-754-0203 Fax: 709-754-8612 Toll Free: 1-888-492-7227 T-L 000 C07

MAXXAM Chain of Custody Record

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Analytic	www.maxxamanalytics.com E-mail: Clientservice	esbedford@maxxamanalytics.com	coc #: 13 086049	Page 3 of 4
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Maxxam Analytics International Corporation o/a Maxxam Analytics 49-55 Elizabeth Ave, Suite 101A, St. John's, NL, Canada A1A 1W9 Tel: 709-754-0203 Toll Free: 888-492-7227 Fax: 709-754-8612 www.maxxam.ca

Mayam	200 Bluewater Road, Suite 105, Bedford, Nova 49 Elizabeth Ave., St John's, NL A1A 1W9 90 Esplanade Sydney, NS B1P 1A1 www.maxxamanalytics.com E-ma	Scotia B4B 1G9 all: Clientservic	Tel: 902- Tel: 709- Tel: 902- cesbedf	-420-0203 Fax -754-0203 Fax -567-1255 Fax ford@maxxan	c 902-42 c 709-75 c 902-53 nanaly	0-8612 4-8612 9-6504 tics.co	Toll Fre Toll Fre Toll Fre Toll Fre	ee: 1-800- se: 1-888- ee: 1-888-	- 565-722 492-722 -535-777	27 27 70	MAX	схам с : #: В	^{chain}	of Cust) 86	^{tody R}	lecoro 0	d Pi	age	4_	of_4	
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Integrity Integrity/Checklist by YES NO 227 Labelled by Location / Bin #	*Specify Matrix: Surface/Salt/Ground/Ta Potable/NonPotable/Ti	apwater/Sewage ssue/Soil/Sludg	e/Effluer e/Metal/	nt/ /Seawater	d Filtered & Preserved Eliteration Described	P-30 Total or Diss Metals	Choose Choose Total or Diss Metals	for well water, surface water Dissolved for oround water	Mercury	metais & mercury Default Available Digest Method Metals Total Digest - for Ocean	sediments (HNO3/HF/HCLO4) Mercury Low level by Cald Vapour AA	Selenium (low level) Req'd for CCN Residential, Parklands, Agricultural Hot Water soluble Boron	REGATES TOL COME AUTICUTURE	Hydrocarbons Soil (Potable), NS Fuel Oil Spill Policy Low Level BTEX, C6-C NB Potable Water	BTEX, VPH, Low level T.E.H. TPH Fractionation	PAH's	PAH's with Acridine, Quinoline	285	in the second second		
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Maxam Analytics International Corporation of Maxxam Analytics 49-55 Ekzebeth Ave, Suite 1014, Students, NL, Canada A1A 1W9 Tet, 709-754-0203 Toll Free, 888-482-7227 Fax 709-754-8612 www.rrexxam.ca

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APPENDIX E

Bill of Lading – NEWALTA



133 CROSBIE ROAD

Customer #:

Generator PIN #:

ST JOHNS NL A1B 4A5

Phone #: 709-722-7023

Bill of Lading

Consignee/Receiver Site Address Newalta Foxtrap Transfer Station PO Box 16004, STN. Foxtrap Conception Bay South, NL, A1X 2E2 CA Phone #: 709-834-7350 Receiver PIN #: NFG000398 Manifest #: 8279009-8

82456080 Sales Order 52173291 DATE 02/12/2013

Customer Billing Address AMEC AND ENVIRONMENTAL **133 CROSBIE ROAD** ST JOHNS NL A1B 4A5

Consignor/Customer Site Address

135078

AMEC AND ENVIRONMENTAL

Carrier/Transporter Newalta Corporation PO Box 16004 St. Johns NL A1H 0B4 Carrier PIN #:

DANGENOUS GOODS INFO 24 HB # 1-800-567-7455 Canutec (813)998-8668	Dangerous Goods Certificate No. SU6633 - expiry date: May 31, 2013 Dangerous Goods Certificate No. SU6839 - expiry date: May 31, 2013 Dangerous Goods Certificate No. SU9246 - expiry date: May 31, 2013 Dangerous Goods Certificate No. SU8595 - expiry date: May 31, 2013
and the second	

Shipping details

Product	D	Start Time: 100 Finish Time: 130	Class	P.I.N.	Packing	Pack	aging	UМ	Expected	Actual	Waste
Code	G	Shipping Name/Description			Group	No.	Code		Quantity	Quantity	Profile
72470		WASTE NON-REGULATED SOLIDS	NR	NA	NA			P20	1.0	na)	000000
		PCB	9	2315	11			Vzc	2	1	

Craig Taylor Cell (709)690-1542 Tel (709)722-7023

Fers 20/13

Require Valici Hove To CALL Day BEFORE

Call Craig Supreyou and the

DG-Dangerous Goods (X = Dangerous Good) UM - Unit of Measure (I - Liters, KG-Kilogram, EA-Fach, DR - Drum)

Fax #: 709-722-7353

BS&W %	Sample Taken*	GROSS:	
Kilometers	*Subject to Lab Analysis	TARE:	
Site Time (hrs) ' 🗲	FEB 24/13	NET:	

General Terms and Conditions:

All wastes must meet the specifications as described on the Customer's Bill of Lading. Wastes that do not meet the profile are subject to rejection at Newalta site or conditional acceptance at an alternative price. Customer acknowledges and accepts these conditions by signing below. Customer, agrees to Indemnify and save harmless Newalta from any and all claims, penalties, forfeitures, costs, damages, losses, judgments, orders, fines, prosecutions, actions, causes of action, and expenses (including, without limitation, any costs or expenses related to environmental clean-up, remediation or reclamation), legal fees on a solicitor/client basis, expents' faas and all amounta paid in Investigation, defense or settlement of any of the foregoing, which it may suffer or incur as a result of death, bodily injuries to any person, destruction or damage to any property, contamination or any adverse effects on the environment, violation of laws, regulations, or orders, caused in whole or in part by the Customer failure to provide wasta which meets the specifications as described on the Customer Bill of Lading. Newaltadoes not accept care or responsibility for Customer waste until loaded on a Newalta Transportation Unit

PURCHASE ORDER TF1312736

CUSTOMER SUSNATURE

ABOVE NAME PRINTED Cral 9 Taylor

ABOVE NAME PRINTED

ZONE NUMBER

DRIVER SIGNATURE

ROUTE **AVALON PENINSULA**

NEWALTA SITE SIGNATURE

ABOVE NAME PRINTED

A Generator / consignor Producteur / axpéditeur Company Iame / Nom de l'enirepsau Armec and Envi Maileg adress / Adress posicie City / Ville	Registration, No / Province/ID No NFG 000419 irronmentaal a Province Proteil code postal b Province Proteil code postal	B Carrier Regista Transporteur N° d'm Company name / Num de fantegriss NEVAL Maling activess / Admese posidé	In the / Promosel ID No matriculation - drid provincest NFG000398 TA Corporation City / Vals Province P	Postal conte / Conte postal	Verteinen Nes or ofter movement droumentig Prive riffee nor des subre document is de mour Receiver / consignee Receiver / consignee moment Les rersegraments du receptu
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Shipping site address /Arinezia du lieu de Texpédito		Vehicle / Véhicule Trater - Ral car No 1	Registration No. /Nº d'Immetriculation	Prove 24	Maili
CH/VIIIe 133 Crosbie Rc St. John's, NL	A1B 4A5 Prostal code / Code postal	1" remolute - wagon Trailwr - Rail car No 2 2' remorçue - wagui			City
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MOVEMENT DOCUMENT / MANIFEST DOCUMENT DE MOUVEMENT / MANIFESTE This Movement document/manifest conforms to all foderal and provincial family monomial legislation.

8279009-8

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APPENDIX F

Historical PCB in Soil Data



SGE Acres 2003 – February

SGE Acres Feb 2015

Pesticides and PCBs

COME	COME		·				······································					
FEQG	RestPark	Description	EQL	Units		See A	TP-1	TP-2	TP-3	TP-4	TP-5	TP-6
		Aldrin	ug/g	0.002	nd	nd	nd	nd	nd	nd	nd	ba
and the state		Bromodichloromethane	ug/g	0.002	nd	nd	nd	nd	nd	nd	nd	nd
Sector Sector		Alpha-BHC	ug/g	0.002	nd	nd	nd	nd	nd	nd	nd	nd
		Beta-BHC	ug/g	0.002	nd	nd	nd	nd	nd	nd	nd	nd
		Delta-BHC	ug/g	0.002	nd	nd	nd	nd	nd	nd	nd	nd
E		Gamma-BHC (Lindane)	ug/g	0.002	nd	nd	nd	nd	nd	nd	nd	nd
2		Alpha Chlordane	ug/g	0.002	nd	nd	nd	nd	nd	nd	nd	nd
		Gamma-Chlordane	ug/g	0.002	nd	nd	nd	nd	nd	nd	nd	ndi
		4,4'-DDD	ug/g	0.004	nd	nd	nd	nd	nd	nd	nd	nd
1		4,4'-DDE	ug/g	0.002	nd	nd	nd	nd	nd	nd	nd	nd
		4,4'-DDT	ug/g	0.004	nd	nd	nd	nd	nd	nd	nd	nd
		2,4'-DDT	ug/g	0.004	nd	nd	nd	nd	nd	nd	nd	nd
		Dieldrin	ug/g	0.002	nd	nd	nd	nd	nd	nd	nd	nd
		Endosullfan I	ug/g	0.004	nd	nd	nd .	nd	nd	nd	nd	nd
		Endosullfan II	ug/g	0.004	nd	nd	nd	nd	nd	nd	nd	nd
		Endosulfan Sulfate	ug/g	0.004	nd	nd	nd	nd	nd	nd	nd	nd
		Endrin	ug/g	0.004	nd	nd	nd	nd	nd	nd	nd	nd
		Endrin Aldehyde	ug/g	0.01	nd	nd	nd	nd	nd	nd	nd	nd
	()	Heptachlor	ug/g	0.002	nd	nd	nd	nd	ndi	nd	nd	nd
		Heptachlor Epoxide	ug/g	0.002	nd	nd	nd	nd	nd	nd	nd	nd
		Methoxychlor	ug/g	0.04	nd	nd	nd	nd	nd	nd	nd	nd
		Mirex	ug/g	0.004	nd	nd	nd	nd	nd	nd	nd	nd
		Total PCB's	ug/g	0.05	nd	nd	nd	nd	nd	nd	pd	nd
	1	Endrin Ketone	ug/g	0.004	nd	nd	nd	nd	nd	nd	nd	nd
		Toxaphene	ug/g	0.3	nd	nd	nd	nd	nd	nd	nd	nd

CCME FSQG = Canadian Council of Ministers of the Environment Canadian Environmental Quality Guidelines for Sediment:Freshwater CCME Res/Park = Canadian Council of Ministers of the Environment Canadian Environmental Quality Guidelines for Soil: Residental/Parkland NF Cont. Site = Government of Newfoundland and Labrador Policy Directive for Contaminated Sites PPD97-01.



= Elevated level = Above Guideline CCME FSQG

= Above Guideline CCME Res/Park

PSC 200 Jedi Tel Toll Tax	Analytical Services Bluewater Road Ford, NS Canada B4B 1G9 (902) 420-0203 free (800) 565-7227 (902) 420-8612	Organic Client PSC : Client :	Parama 2 SGB A P.O. 3 St. J NF Project Project	ters cres Limited Box 13144, 60 ohn's, AlB 4A4 Number : 021 Number : NH	page : 18 Pippy Place 3052E Dump	WHEELER, RA FAX # : 70 Printed : 20 Reported : 20	NDY 9-576-0374 02/09/24 02/09/24
and the second sec	Matrix Philip ID Client ID			Water 02-k051740 TP#6 water	Water 02-H051741 TP#6 water	Soil 02-B051742 Trans #1 8	Soil 02-H051743 Trans #2 S
0	Date Sampled (y/m/d) Date Received (y/m/d)			02/08/30 02/09/05	DUP 02/08/30 02/09/05	oil 02/08/30 02/09/05	oil 02/08/30 02/09/05
	Analyte	Units	EOL	(Contin	ued from prev	vious page)	
2	cis 1,3-Dichloropropene trans-1,3-Dichloropropene Ethylbenzene	ug/L eug/L ug/L	2.0 1.0 1.0	nd nd nd	nd nd nd	-	= s
	Styrene Tetrachloroethene 1,1,2,2-Tetrachloroethan Toluene 1,1,1 - Trichloroethane	ug/L ug/L eug/L ug/L ug/L	1.0 1.0 1.0 1.0 1.0	nd nd nd 4400 nd	nd nd nd 4100 nd	-	
	l,l,2 - Trichloroethane Trichloroethane Mp-Xylenes o-Xylene	ug/L ug/L ug/L ug/L ug/L	1.0 1.0 8. 2.0 1.0	nd nd nd nd nd	nd nd nd nd nd nd		
0	Vinyl Chloride 1,2 -Dichloroethane - d4 Toluene - d8 4-Bromofluorobenzene-Sur EPA 625 Sub	ug/L t Rec. t Rec. rt Rec.	1.0 - -	nd 93. 249. 60. Comment	nd 100. 110. 79.	- - - - -	
	PCB in Soil Event # Polychlorinated Biphenyl Decachlorobiphenyl Surr. OC Pesticide Scan Sub	mg/kg % Rec.	0.05	Conment	-	GF81 5.7 91.	GF81 1.4 88.
ND Sve trs	<pre>EQL = Estimated Quantita reported. It is no The moisture corra () = Analyte was not d = Dash is reported w nt # = PSC Quality Contro C = Surrogate Recovery Note : Soil results are e : Biota results are</pre>	tion Lin t a requ tetad EQI letacted then para l Refere Values apresse expresse	nit is t latory L = EQL/ above t ameter r ance num are res d on a d ed on a	the minimum co limit. For so (1- (Amoisture the EQL. Raise not requested aber for QC se mults of PSC of any weight bas wet weight bas	oncentration bils, sero %m b/100}) ed EQL listed in sample. unples run wi quality contr sis. asis. page ve	that can be re cisture is ass in Parenthesi th your sample ol tests. rified	liably umed. s.

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\$			Report of	Analysis N	Ko	. 8	7°`	. Ar	24
				49		and a		Q×*	(QX)
Compound	E.Q.L. ug/g	Reagent Blank	Spiked Reagent Blank	51724	51724 Repeat	51726	517	28	51730
s d r in	0.002	ND	1160	ND	ND		.		
Alpha-BHC	0.002	ND	029/	ND		NU	NI		ND
Beta-BHC	0.002	ND	96%	ND	ND	ND	N		ND
Jelta-BHC	0.002	ND	73%	ND	ND	ND	EN4 NIT	, ,	ND
Jamma-BHC (Lindane)	0.002	ND	104%	ND	ND	ND	INE NE		
Alpha Chlordane	0.002	ND	130%	ND	ND	ND	NI	2	
Damma-Chlordane	0.002	ND	124%	ND	ND	ND	NI	^	ND
.4'-DDD	0.004	ND	93%	ND	ND	ND	N	5	ND
4.4'-DDE	0.002	ND	123%	ND	ND	ND	- NE	5	ND
4.4-DDT	0.004	ND	90%	ND	ND	ND	NE)	ND
4-DDT	0.004	ND	121%	ND	ND	ND	N)	ND
Dieldrin	0.002	ND	112%	ND	ND	ND	NE	3	ND
Endosulian	0.004	ND	110%	ND	ND	ND	NE	>	ND
Indosulian II	0.004	ND	113%	ND	ND	ND	NE)	ND
Endosunan Sulphate	0.004	ND	120%	ND	ND	ND	NE)	ND
Endrin Aldebude	0.004	ND	105%	ND	ND	'ND	NC)	ND
leptachlor	0.010	ND	82%	ND	ND	ND	NE	1	ND
Hestachior Enovide	0.002	ND	112%		ND	ND	NE)	ND
Methoxychlor	0.002	ND	11076			ND	ND	2	ND
lirex	0.040		11376		ND	ND	NU)	ND
Total PCB'S	0.05	ND	100%	ND		ND	ND		ND
Endrin Ketone	0.004	ND	110%	ND	ND	ND	NL		ND
Toxaphene	0,3	ND		ND	ND	ND	ND)	ND
Tetrachloro-m-Xylene surrogale standard)	%Recovery	108%	100%	82%	80%	90%	969	6	117%

.= Estimated Quantitation Limit

= Not Detected

 \mathbf{z} 1

= micrograms per gram

Page 1 of 2

5735 MCADAM ROAD, MISSISSAUGA, ONTARIO, CANADA L4Z 1N9 T 905 890 8566 F 905 890 8575 W www.pscanolytical.com

Sap-18-02 07:32pm	From-PHILP S	ERVICES CO	Rb.	1	1050908359	T-70 1	P.003/010	F-436
tue.				7			ANALYTICA	L SERVICES
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Compound	E.Q.L	51732	51734	51736	51738			
	ug/g		`					
Aldrin	0.002	AID:		. 19				
Alpha-BHC	0.002	ND	ND	ND	ND			
Beta-BHC	0.002	ND	ND		NU			
Delta-BHC	0.002	ND	ND	ND	ND			
Gamma-BHC (Lindane) 0,002	ND	ND	ND				
Alpha Chlordane	0.002	ND	ND	ND	ND			
Gamma-Chlordane	0.002	ND	ND	ND	ND			
4,4'-DDD	0.004	ND	ND	ND	ND			
4,4'-DDE	0.002	ND	ND	ND	ND			
4,4'-DDT	0.004	ND	ND	ND	ND			
2,4'-DDT	0.004	ND	ND	ND	ND			
Dieldrin	0.002	ND	ND	ND	ND			
Endosulfan	0.004	ND	ND	ND	ND			
Endosultan II	0.004	ND	ND	ND	ND			
Endosultan Sulphale	D.004	ND	ND	ND	ND			
	0.004	ND	ND	ND	ND			
Engrin Aldenyde	0.010	ND	ND	ND	ND			-
Heptachior	0.002	ND	ND	ND	ND			
neptachior impoxide	0.002	ND	ND	ND	ND			55
Miney	0.040	ND	ND	ND	ND			
	0.004	ND	ND	ND	ND			
Endrin Ketone	0,05	ND	ND	ND	ND			05
Toxaphene	0.3	ND	ND	ND	ND			
Tologoblash - M. I		1 12-5			ND			
	%Recovery	91%	83%	83%	87%			
(Ann Afters Stolid Sid)								
*								

.= Estimated Quantitation Limit

= Not Detected

3

- Andrew Law

= micrograms per gram

Page 2 of 2

5735 MCADAM ROAD, MISSISSAUGA, ONTARIO, CANADA L4Z 1N9 T 805 890 8566 F 905 890 8575 W www.pscunelylicel.com

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SGE Acres 2003 – May

3.5 Test Results for Soil

The laboratory report for the soil samples taken inside the dump is found in Appendix D. A summary table of the results is shown in Appendix E.

The results of the testing for total PCBs are:

- Soil Sample #1 <1 mg/kg
- Soil Sample #2 <1 mg/kg
- Soil Sample #3 52 mg/kg
- Soil Sample #4 <1 mg/kg
- Soil Sample #6 <1 mg/kg

The value of 52 mg/kg detected in one sample exceeds the CCME Environmental Quality Guideline for soil at industrial sites, which is 33 mg/kg. It also exceeds the maximum allowable concentration that may be released into the environment under the Chlorobiphenyls Regulations of the Canadian Environmental Protection Act (CEPA), which is set at 50 mg/kg.

In Phase I, excavations yielded several transformer casings but no intact transformers. Two soil samples were taken in the immediate vicinity of the transformers to determine if there had been any PCB oils in the transformers prior to burial. The Phase I testing found that the transformers probably contained oils with low concentrations of PCBs. The levels detected were lower than the CCME EQG for soil at industrial sites. Phase I testing around the perimeter of the site indicated no detectable migration of PCBs from the site.

The result of the testing in Part 1 of Phase II suggests that an object with PCBs exceeding 50 mg/kg was buried in the dump and the liquids leaked out. This object could have been a transformer still containing oils.

The results of the remaining 5 samples, which all had PCBs as non-detect, indicate that the PCBs are contained in the specific area of Sample #3 and are not prevalent throughout the designated transformer disposal area.

	52	160		
1	2	(reg		

/

100000									
1.12	Description	EQL	Units	#1	#2	#3	#4	#5	#6
	Total PCBs	1	mg/kg	nd	nd		nd	nd	nd

CCME EQG = Canadian Council of Ministers of the Environment Canadian Environmental Quality Guidelines for Soil: Industrial land uses CEPA = Canadian Environmental Protection Act Chlorobiphenyls Regulations

EQL = Estimated Quantitation Limit, the minimum concentration that can be reliably reported. It is not a regulatory limit.

- = Elevated level
 - = Above Guideline CCME EQG Industrial
 - = Above CEPA Chlorobiphenyls Regulations limit



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Environmental Services Laboratory Incorporated

P.O. Box 697, Sydney, Nova Scotla. B1P 6J1 Phone: (902)567-1255

Toll Free: 1-888-535-7770

Fax: (902)639-6504

SGE Acres	Lab Number:	9957639	
280 Torbay Rd., Suite E200	Dato Received:	2/26/03 1 1:09	
Bally Rou Place, St. John's, NF A1A 3W8 Fax:	Onte Roported:	3/13/2003	
709-754-2712	Dato Sampled:	2/21/2003	
Project Number: New Harbour PI 4766.00	Metrix:	Soli	

Requested Analysis

Analysis	Method		Result	Unit	Date
#1 NH - (9957639-01)			*	- mage lag	1/8/2003
PCB (Soil)	EPA 8082	÷	<1	HIM KR	3/8/2003
Decachlorobiphenyl (Soll	EPA 8082		87	7)	3/0/2003
#2 NH - (9957639-02)				ma ka	3/8/2003
PCB (Soil)	EPA 8082		<u> </u>	UTE #2.	3/8/2003
Decachlorobiphenyl (Soll	EPA 8082		91	71	3/8/2003
#3 NH - (9957639-03)				maika	3/8/2003
PCB (Soil)	EPA 8082			0	3/8/2003
Decachlorobiphenyl (Soll	EPA 8082	8	• 0	73	p. 0 0.
#4 NH - (9957639-04)		÷+.		8	2/2/2007
PCB (Soli)	EPA 8082		<1	wf. KS	3/6/2003
Decachlorobiphenyl (Soil	EPA 8082	12	. 87	4 70'	3/8/2003
#5 NH - (9957639-05)					
PCR (Soil)	EPA 8082		<1	mg 'kg	3/8/2003
Decachlorobiphenyl (Soll	EPA 8082		110	ų is	3/8/2003
#6 NH - (9957639-06)			29 ¥2	me lee	2/13/2003
PCB (Soil)	EPA 8082		< 1	ttef v C	2/12/2002
Decephiorophynenyl (Sol	EPA 8082		-101	n a	JI 1 JI 2003

spette. **Approved By:** Michelle Mombourquette Lab Manager

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ESL023

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AMEC 2006

Table 1. PCBs in Soil - New Harbour Dump

					DATA	GUIDELINES					
						1999 CCME RECOMMENDED CANADIAN SOIL QUALITY GUIDELINES (UPDATED 2004					
						AG	R/P	С	I		
			Sample	MDL							
Test Pit	Lab Sample I.D.	Field Sample I.D	Depth (m)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)		
	S2005-14250	TP1-1	0 - 1	0.005	1.420						
TP1	S2005-14251	TP1-2	1-2	0.005	3.380						
	S2005-14252	TP1-3	2-3	0.005	2.530						
	S2005-14253	TP2-1	0 - 1	0.005	21.100						
TP2	S2005-14254	TP2-2	1-2	0.005	1.800						
	S2005-14255	TP2-2.5	2 - 2.5	0.005	0.043 (0.036)						
	S2005-14256	TP3-1	0 - 1	0.005	8.490						
TP3	S2005-14257	TP3-2	1-2	0.005	7.990	0.5	1.3	33	33		
	S2005-14258	TP3-3	2 - 3	0.005	5.310						
	S2005-14259	TP4-1	0 - 1	0.005	2.160						
TP4	S2005-14260	TP4-2	1-2	0.005	2.390						
	S2005-14261	TP4-3	2 - 3	0.005	1.630						
	S2005-14262	TP5-1	0 - 1	0.005	2.370						
TP5	S2005-14263	TP5-2	1-2	0.005	4.790						
	S2005-14264	TP5-3	2-3	0.005	1.400						

Notes:

MDL: Method Detection Limit

<X: Below MDL

CCME: Canadian Council of Ministers of the Environment

ÀG: Agricultural

R/P: Residential/Parkland

C: Commercial

I: Industriał

Data in brackets indicates replicate result

1999 CCME Recommended Canadian Soil Quality Guidelines include 1991 CCME Interim Environmental Quality Criteria for Contaminated Sites where applicable





AMEC 2007

Table 1. PCBs in Soil - Upper Trinity South (New Harbour) Dump November 27, 2006

					DATA	GUIDELINES				
						1999 CCME RECOMMENDED CANADIAN SOIL QUALITY GUIDELINES (UPDATED 2005)				
						AG	R/P	С	Ι.	
Test Pit	Lab Sample I.D.	Field Sample I.D	Sample Depth (m)	MDL (mg/kg)	(mg/kg)	<u>(</u> mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	
	S2006-15725	TP-6 SA-1	0 - 0.1	0.005	0.125					
	S2006-15726	TP-6 SA-2	0.1 - 1	0.005	<u>3.25</u>					
TP6	S2006-15727	TP-6 SA-3	1-2	0.005	<u> </u>					
	S2006-15728	TP-6 SA-4	2 - 3	0.005	66.7					
	S2006-15729	TP-6 SA-5	3 - 4	0.005	<u>30.1</u>	0.5	1 2	22	33	
	S2006-15730	TP-7 SA-1	0 - 0.1	0.005	0.052	0.5	1.5	33	- 55	
	S2006-15731	TP-7 SA-2	0.1 - 1	0.005	<u>2.34</u>					
TP7	S2006-15732	TP-7 SA-3	1-2	0.005	0.125					
1	S2006-15733	TP-7 SA-4	2-3	0.005	0.222					
	S2006-15734	TP-7 SA-5	3 - 3.5	0.005	0.264 (0.273)					

Notes:

MDL: Method Detection Limit

<X: Below MDL

CCME: Canadian Council of Ministers of the Environment

AG: Agricultural

R/P: Residential/Parkland

C: Commercial

I: Industrial

Underlined and bold data exceed the CCME-CEQG for residential properties.

Bold, underlined and shaded data exceeds CCME-CEQG guidelines for commercial sites.

Data in brackets indicates laboratory replicate result





AMEC 2009

					GUIDELINES								
Average Sampling	g Depth (m)		1.0	1.0	1.0	2.0	2.0	2.0	3.0	3.0	3.0	3.0	Recommended
Lab ID		Lah	09-713	09-714	09-715	09-716	09-717	09-718	09-719	09-720	09-721	09-722	1999 CCME-CSQGs
Field ID		Blook	Trench 1	Trench 1	Trench 1	Trench 1	Trench 1	Trench 1	Trench 1	Trench 1	Trench 1	DUP-1	Commercial/Industrial
		Dialiik	SA-1	SA-2	SA-3	SA-4	SA-5	SA-6	SA-7	SA-8	SA-9		Sites
Date (D/M/Y)			12-Jan-09	12-Jan-09	12-Jan-09	12-Jan-09	12-Jan-09	12-Jan-09	12-Jan-09	12-Jan-09	12-Jan-09	12-Jan-09	Updated 2007
Parameter	MDL (mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
PCBs	0.005	<0.005	0.90	6.06	0.064	0.418	2.44	0.97	0.304	0.87	0.83	1.29	33

Table D-10: PCBs in Soil PCB Soil Sampling Program (Trench 1), New Harbour Waste Disposal Site, NL

Table D-11: PCBs in Soil PCB Soil Sampling Program (Trench 2), New Harbour Waste Disposal Site, NL

	11				GUIDELINES								
Average Sampling	g Depth (m)		1.0	1.0	1.0	2.0	2.0	2.0	3.0	3.0	3.0	3.0	Recommended
Lab ID		Lab	09-727	09-728	09-729	09-730	09-731	09-732	09-733	09-723	09-734	09-735	1999 CCME-CSQGs
Field ID		Blank	Trench 2	Trench 2	Trench 2	Trench 2	Trench 2	Trench 2	Trench 2	DUP-2	Trench 2	Trench 2	Commercial/Industrial
		Diarik	SA-1	SA-2	SA-3	SA-4	SA-5	SA-6	SA-7		SA-8	SA-9	Sites
Date (D/M/Y)			13-Jan-09	13-Jan-09	13-Jan-09	13-Jan-09	13-Jan-09	13-Jan-09	13-Jan-09	13-Jan-09	13-Jan-09	13-Jan-09	Updated 2007
Parameter	MDL (mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
PCBs	0.005	<0.005	47.9	5.95	1.54	11.2	9.22	6.13	18.0	11.5	0.553	0.302	33

Notes:

PCBs: Polychlorinated Biphenyls MDL: Method detection limit <X: Below MDL CCME: Canadian Council of Ministers of the Environment CSQGs: Canadian Soil Quality Guidelines DUP-1 is a blind field duplicate of Trench 1 SA-9 DUP-2 is a blind field duplicate of Trench 2 SA-7 Bold and shaded data exceeds the CCME-CSQG for commercial/industrial sites amec

Table D-14: PCBs in SoilPCB Soil Sampling Program (Trench 5), New Harbour Waste Disposal Site, NL

					GUIDELINES					
Average Sampling Depth (m) Lab ID			1.0	1.0	1.0	2.0	2.0	2.0	2.0	Recommended
		Lab	09-751	09-752	09-753	09-754	09-755	09-756	09-726	1999 CCME-CSQGs
Field ID		Blank	Trench 5	Trench 5	Trench 5	Trench 5	Trench 5	Trench 5	DUP-5	Commercial/Industrial
		DIGUK	SA-1	SA-2	SA-3	SA-4	SA-5	SA-6		Sites
Date (D/M/Y)			13-Jan-09	13-Jan-09	13-Jan-09	13-Jan-09	13-Jan-09	13-Jan-09	13-Jan-09	Updated 2007
Parameter	MDL (mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
PCBs	0.005	< 0.005	13.8	18.2	1.64	21.5	0.47	4.35	5.58	33

Notes:

PCBs: Polychlorinated Biphenyls MDL: Method detection limit <X: Below MDL CCME: Canadian Council of Ministers of the Environment CSQGs: Canadian Soil Quality Guidelines DUP-5 is a blind field duplicate of Trench 5 SA-6 Bold and shaded data exceeds the CCME-CSQG for commercial/industrial sites



Table D-12: PCBs in Soil										
PCB Soil Sampling Program (Trench 3), New Harbour Waste Disposal Site, NL										

					GUIDELINES								
Average Sampling	g Depth (m)		1.0	1.0	1.0	2.0	2.0	2.0	3.0	3.0	3.0	3.0	Recommended
Lab ID			09-736	09-737	09-738	09-739	09-740	09-741	09-724	09-742	09-743	09-744	1999 CCME-CSQGs
Field ID		Blank	Trench 3	Trench 3	Trench 3	Trench 3	Trench 3	Trench 3	DUP-3	Trench 3	Trench 3	Trench 3	Commercial/Industrial
		Dialik	SA-1	SA-2	SA-3	SA-4	SA-5	SA-6		SA-7	SA-8	SA-9	Sites
Date (D/M/Y)			13-Jan-09	13-Jan-09	13-Jan-09	13-Jan-09	13-Jan-09	13-Jan-09	13-Jan-09	13-Jan-09	13-Jan-09	13-Jan-09	Updated 2007
Parameter	MDL (mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
PCBs	0.005	<0.005	3.21	4.61	15.4	26.0	68.2	32.5	47.9	11.1	14.5	3.61	33

Table D-13: PCBs in Soil PCB Soil Sampling Program (Trench 4), New Harbour Waste Disposal Site, NL

			DATA							GUIDELINES
Average Sampling Depth (m)		Lab Blank	1.0	1.0	1.0	1.0	2.0	2.0	2.0	Recommended
Lab ID Field ID			09-745	09-746	09-747	09-725	09-748	09-749	0 9 -750	1999 CCME-CSQGs
			Trench 4	Trench 4	Trench 4	DUP-4	Trench 4	Trench 4	Trench 4	Commercial/Industrial
			SA-1	SA-2	SA-3		SA-4	SA-5	SA-6	Sites
Date (D/M/Y)			13-Jan-09	Updated 2007						
Parameter	MDL (mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
PCBs	0.005	<0.005	3.66	0.85	0.288	0.530	5.76	3.79	1.17	33

Notes:

PCBs: Polychlorinated Biphenyls MDL: Method detection limit <X: Below MDL CCME: Canadian Council of Ministers of the Environment CSQGs: Canadian Soil Quality Guidelines DUP-3 is a blind field duplicate of Trench 3 SA-6 DUP-4 is a blind field duplicate of Trench 4 SA-3 Bold and shaded data exceeds the CCME-CSQG for commercial/industrial sites





APPENDIX G

Limitations


LIMITATIONS

- 1. This report was prepared specifically for the Client (ENVC). Any other use which a third party makes of this report, or any reliance on or decisions to be made based on it are the responsibility of such third parties. AMEC Environment & Infrastructure accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions taken based on this report.
- 2. The report has been prepared in accordance with generally accepted environmental study and/or engineering practices. No other warranties, either expressed or implied, are made as to the professional services provided under the terms of our contract and included in this report.
- 3. The services performed and outlined in this report were based, in part, upon visual observations of the site and attendant structures. Our opinion cannot be extended to portions of the site which are unavailable for direct observation reasonably beyond the control of AMEC Environment & Infrastructure.
- 4. The objective of this report was to assess the environmental conditions at the site, given the context of our contract, with respect to existing environmental regulations within the applicable jurisdiction. Compliance of past owners with applicable local, provincial and federal government laws and regulations was not included in our contract for services.
- 5. The site history research performed herein relies on information supplied by others, such as local, provincial and federal agencies as well as the homeowner. No attempt has been made to independently verify the accuracy of such information, unless specifically noted in our report.
- 6. Our visual observations relating to potential contaminant materials in the environment at the site are described in this report. Testing of soil samples included field screening and analytical testing for specific parameters referred to in the report. Testing of groundwater samples included analytical testing for specific parameters referred to in the report. It should be noted that other compounds or material may be present in the site environment.
- 7. The conclusions of this report are based in part, on the information provided by others. The possibility remains that unexpected environmental conditions may be encountered at the site in locations not specifically investigated. Should such an event occur, AMEC Environment & Infrastructure must be notified in order that we may determine if modifications to our conclusions are necessary.
- 8. The work performed in this report was carried out in accordance with the Standard Terms of Conditions made as part of our contract. The conclusions presented herein are based solely upon the scope of services and time and budgetary limitations described in our contract.