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**Implementation of Remedial
Action Plan – Year 2, Former
U.S. Military Site and
Residential Subdivision,
Hopedale, Labrador**

Prepared for

Newfoundland Department of
Environment and Conservation
P.O. Box 8700
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Final Report

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EXECUTIVE SUMMARY

Aivek-Stantec Limited Partnership (Stantec) was retained by the Newfoundland and Labrador Department of Environment and Conservation (NLDEC) to supervise environmental site remediation and conduct confirmatory sampling during Years 1 to 3 of the Implementation of the Remedial Action Plan (RAP) at the Former U.S. Military Site and Residential Subdivision in Hopedale, Newfoundland and Labrador (NL). The remediation program was carried out in response to a Phase II/III Environmental Site Assessment (ESA), Human Health and Ecological Risk Assessments (HHERA) and Remedial Action Plan/Risk Management Plan (RAP/RMP) conducted at the site in 2010 (refer to Stantec Report No. 121410103, dated May 17, 2010), additional delineation conducted in 2010-2011 (refer to Stantec Report No. 121411170, dated February 28, 2011) and a mutually agreeable work plan developed by the Stakeholder Scientific Advisory Working Group (referred to as the “Stakeholder Committee”), which consists of representatives from the Inuit Community Government of Hopedale (ICGH), the Nunatsiavut Government (NG), Labrador Grenfell Health, the Department of Labrador and Aboriginal Affairs, NLDEC and technical advisors.

The scope of work proposed for Years 1 to 3 of the Implementation of the RAP at the Former U.S. Military Site and Residential Subdivision involved polychlorinated biphenyl (PCB)-impacted soil/sediment removal in a stream in the Residential Subdivision (i.e., the Stream site) and at the Old Dump Pond site in Year 1 (2011-2012), at the Wharf site in Year 2 (2012-2013) and at the ballistic missile early warning system (BMEWS) site in Year 3 (2013-2014). The work scope was meant to be revised each year and was meant to be flexible based on the results of marine studies and risk modeling (reported under separate covers), and recommendations provided by the Stakeholder Committee.

In 2011 (Year 1 of the Implementation of the RAP), approximately 283 tonnes of PCB-impacted soil was removed from one of two areas requiring remediation at the Old Dump Pond site (ODP – Area 1). Due to time constraints caused by freight service delays, the stream and a second area at the Old Dump Pond site (ODP – Area 2) with PCB concentrations in exceedance of the applicable site-specific target level (SSTL) were not remediated in Year 1 as planned. Also, due to the increased risk associated with transportation of the contaminated soil by sea barge in the late fall/early winter, the material was temporarily stored at a laydown area created at Pit No. 1 (contained in 1 tonne soil enviro-bags, on a liner) for transportation to an approved PCB treatment/disposal facility in Year 2. Large pieces of buried metal debris encountered in the remedial excavation were manually segregated from the soil and were temporarily stockpiled at the Old Dump Pond site.

In 2012 (Year 2 of the Implementation of the RAP) Stantec supervised environmental site remediation and conducted confirmatory soil sampling at the Old Dump Pond site, the Stream site and the Wharf site in Hopedale, NL. Based on the observations and results obtained from the work completed, the following conclusions are made:

- Old Dump Pond site: 421 bags of soil were removed from Old Dump Pond- Area 2 (ODP – Area 2) in Year 2. Results of confirmatory soil sampling in this area indicate that additional soil removal is required in the vicinity of samples (12-ODP-BS7, 12-ODP-BS8, 12-ODP-BS27, 12-ODP-BS29 to 12-ODP-BS34), which contained concentrations of PCBs ranging from 11 mg/kg to 63 mg/kg along the northeast and northwest sidewalls of the excavation and 200 to 260 mg/kg along the southwest sidewall of the excavation. Soil removal at ODP – Area 2 was halted on October 1, 2012 due to concerns that the number/weight of bags filled to date may exceed the barge limit; therefore, remediation was not completed at ODP – Area 2 in Year 2 as planned. This area will be remediated in conjunction with Year 3 remedial activities to be conducted in 2013. It shall be noted that additional soil removal along the southwest sidewall of the remedial excavation is not deemed possible due to the proximity to the pond. This area should be assessed during the development of a remedial action/risk management plan for the pond sediments.

Based the results of soil sampling conducted as part of the current and previous investigations, there is an estimated 125 m³ of additional PCB-impacted soil requiring remediation to the northeast and northwest of the limits of the ODP – Area 2 remedial excavation.

- Stream site: 218 bags of soil/sediment were removed were from Stream site in Year 2. Results of confirmatory soil sampling in this area indicate that concentrations of PCBs detected in soil samples collected along the final limits of the excavation ranged from non-detect to 6.7 mg/kg, which are below the calculated SSTL of 9 mg/kg. Soil/sediment remediation for PCBs in this area is deemed complete.
- Wharf site: 245 bags of soil were removed were from two areas at the Wharf site in Year 2. Results of confirmatory soil sampling in these areas indicate that concentrations of PCBs detected in soil samples collected along the final limits of the excavation ranged from 1.1 mg/kg to 7.5 mg/kg, which are below the calculated SSTL of 9 mg/kg. Soil remediation for PCBs in this area is deemed complete.
- The highest recorded concentrations of PCBs in soil/sediment removed from the site in Year 2 were 510 mg/kg at the Old Dump Pond site, 370 mg/kg at the Stream site and 96 mg/kg at the Wharf site.
- A total of 1,200 1-tonne capacity bags of PCB-impacted soil were excavated in Year 1 and Year 2 of the Implementation of the RAP. 567 of these bags (599.32 tonnes) were transported by barge/tug, and tractor trailer to the Récupère Sol (a division of Benev Capital Inc. (BCI)) thermal treatment facility in St.-Ambroise, QC. PCB-contaminated soil was treated by thermal oxidation in accordance with the Quebec Ministry of Sustainable Development, Environment, Wildlife and Parks “<A” Treatment Criteria (i.e., <0.05 mg/kg). The remaining 633 bags were stored at the laydown area over winter and will be transported out of Hopedale to a treatment facility in Year 3 of the Implementation of the RAP.
- Deterioration due to UV exposure and protruding metal was noted for some of the bags. Bags that were in poor condition were double-bagged prior to shipment.

- Bags left in the laydown area for temporary storage until Year 3 that were in poor condition were double-bagged and the stockpile was covered in a plastic liner. Clean backfill material was poured onto the plastic liner to prevent movement. Boulders were then placed at the entrance to the laydown area to block access from roadway. A public notice sign was also placed at the entrance to the laydown area.
- Large pieces of metal debris encountered in the remedial excavations were segregated from the soil and were cleaned by shaking/brushing/scraping. The metal was cut into smaller pieces, consolidated in a stockpile at the Old Dump Pond site and swab sampled for PCBs. The portion of metal with detected concentrations of PCBs was segregated into a separate pile. High visibility caution tape was placed around the metal stockpile for winter storage.
- The Year 2 remedial excavations were backfilled using a total of approximately 935 tonnes of clean backfill. An additional 44 tonnes of clean backfill was also added to the Year 1 remedial area (ODP – Area 1) in 2012. Backfill material was obtained from a local rock pit (owned by Max Kinden of Nain) created along the road to the landfill in Hopedale in 2011 and stockpiled at Pit No. 1.

Recommendations

Based on the results of confirmatory soil sampling conducted as part of environmental site remediation, no further soil remediation for PCBs is necessary at the Stream or Wharf sites at this time. Based on the results of the current and previous site investigations, Stantec makes the following recommendations for the Year 3 remediation program:

1. Complete the removal of PCB-impacted soil exceeding the SSTL of 9 mg/kg and remove buried debris in area that was not completed in Year 2, as follows:
 - a. **Old Dump Pond site:** Area north and west of the limits of the Year 2 remedial excavation, as shown on Drawing No. 121411777-300-EE-03 in Appendix A (not delineated), to a depth of 1.0 mbgs.
2. Remove PCB-impacted soil at the **BMEWS**, as per the proposal provided to NLDEC on May 27, 2011.
3. Collect confirmatory soil samples from the final limits of the excavations and submit for analysis of Total PCBs (rush turnaround time);
4. Once confirming results have been received, monitor the backfilling of the excavations with clean fill material (to be sourced from the Inuit Community of Hopedale) or site grading, as necessary.
5. Load PCB-impacted metal into soil bags for transportation to the soil treatment facility during Year 3.
6. Ensure that the PCB-impacted soil currently stockpiled in the laydown area (from Year 1 and Year 2), PCB-impacted soil removed during the Year 3 remedial program and PCB-

impacted metal is transported offsite to an approved soil treatment/disposal facility during Year 3.

7. Ensure that un-impacted metal is transported offsite to a metal recycling facility during Year 3.
8. Prepare daily field reports while onsite and submit to the NLDEC project manager via email daily.
9. Prepare a written report detailing the remediation work completed in Year 3 (2013-2014).

The statements made in the Executive Summary are subject to the same limitations included in the Closure Section 5.0 and are to be read in conjunction with the remainder of this report.



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1.0 INTRODUCTION

Aivek-Stantec Limited Partnership (Stantec) was retained by the Newfoundland and Labrador Department of Environment and Conservation (NLDEC) to supervise environmental site remediation and conduct confirmatory sampling during Years 1 to 3 of the Implementation of the Remedial Action Plan (RAP) at the Former U.S. Military Site and Residential Subdivision in Hopedale, Newfoundland and Labrador (NL) (see Drawing No. 121411777-300-EE-01 in Appendix A). The remediation program was carried out in response to a Phase II/III Environmental Site Assessment (ESA), Human Health and Ecological Risk Assessments (HHERA) and Remedial Action Plan/Risk Management Plan (RAP/RMP) conducted at the Former U.S. Military Site and Residential Subdivision by Stantec in 2010 (refer to Stantec Report No. 121410103, dated May 17, 2010) and additional delineation conducted in 2010-2011 (refer to Stantec Report No. 121411170, dated February 28, 2011).

The following report describes the work completed during Year 2 of the Implementation of the RAP field program and was prepared specifically and solely for the above project. It presents all of the factual findings and laboratory results of the work completed at the site from July to November 2013.

1.1 Site Description and History

1.1.1 Location and Access

The Inuit Community of Hopedale is located on the Labrador coast, 148 air miles to the north of Goose Bay, in Labrador and has no outside road access. Coastal boat service is available to the community from mid-summer to late fall.

The Former U.S. Military Site is located north of the community of Hopedale. The Former U.S. Military Site consists of three main hilltop sites (i.e., BMEWS, Main Base and Mid-Canada Line) as well as several other associated sites. Local access to all the sites is via a gravel road network that is in varying conditions of repair.

1.1.2 Historical Development and Land Use

Construction of a military base and radar site in Hopedale, NL commenced in 1952 and was completed in 1957. The Hopedale military base and radar site was a station on the United States Air Force (USAF) Pinetree Line and was also the most easterly site on the Mid-Canada Line of antennae stations which had extended across the country. The military base and radar site was one of a series of sites that functioned as a Ballistic Missile Early Warning System (BMEWS) where enemy aircraft penetrating the northeastern approaches to the continent were identified and information was communicated to the United States. It has been reported that during peak operations, the site housed 300 personnel.

The military base and radar site in Hopedale were operated from 1957 until 1969 by the United States government. The base was closed down in 1969 and the radome and radar antennae were removed. Portions of the remaining site were operated by Canadian Marconi as a telecommunications site until 1972 and by ITT as a telecommunications site until 1975. The complex was finally closed in 1975. Most of the remaining aboveground structures were demolished and buried in several undocumented locations throughout the site in the mid-1980s. At that time, limited clean-up efforts were carried out and included the removal and disposal of PCB containing transformers. With the exception of infrastructure at the Mid-Canada Line site, only the foundations and floor slabs of buildings and the foundations and bases of antennae currently remain on the Former U.S. Military Site. Two antennae and associated operations buildings are currently being operated by Bell Aliant at the Mid-Canada Line and BMEWS sites.

During Year 2 of the Implementation of the RAP, remediation was conducted at three sites on Former U.S. Military Site, including the Old Dump Pond site, the Residential Subdivision and the Wharf site. A fourth site (the Pit No. 1/Helipad site) was used for the temporary storage of bags of impacted soil.

The Old Dump Pond site comprises a pond and land located east of the pond. The site is located downgradient of Reservoir Lake (the community's main water supply source) on the west side of the military base road, as shown on Drawing No. 121411777-300-EE-02 in Appendix A. The shore of the pond is heavily vegetated with some bedrock outcroppings. During demolition of the military base, the pond was reportedly used for the disposal of various metal wastes and debris. Based on the findings of a previous geophysical survey these wastes were primarily deposited at the end of the access road and in the pond, primarily along the shoreline at the end of the access road. Steel debris (pipes, cables, beams, vehicle parts, etc.), glass bottles and rusted drums have previously been encountered in test pits and a remedial excavation in this area. The Old Dump Pond site is bordered to the southeast by a relatively new area of residential development constructed on an elevated gravel pad, to the southwest by the waters of Old Dump Pond and by undeveloped land to the north. The site is accessible via a narrow gravel access road to the northeast.

The stream in the Residential Subdivision originates in a small pond and boggy area (the Small Pond Bog), and flows through the east side of the subdivision in a north to south direction where it meets the Old Dump Pond outlet and eventually empties into Hopedale Harbour, located approximately 200 m south of the Residential Subdivision, as shown on Drawing No. 121411777-300-EE-02 in Appendix A. The stream bank is heavily vegetated with some areas of rocks and cobbles. The remediated portion of the stream is located between two rows of houses. This area is referred to herein as the "Stream site". Previous geophysical surveys and subsurface investigations have identified a former landfill (steel drums and other military base debris) area along the easternmost road in the Residential Subdivision, immediately east of the Stream site. Two approximately 500,000 US gallon above ground bulk fuel tanks (one gasoline and one diesel) were previously located in the Residential Subdivision during operation of the military base. Site drawings show these tanks situated between the two westernmost roads.

The Wharf site is located south of the Former U.S. Military Site, at the beginning of the main access road and on the west side of Hopedale Harbour, as shown on Drawing No. 121411777-300-EE-03 in Appendix A. During operation of the Former U.S. Military Site, fuel was transferred from boats to the aboveground pipeline at this location. The wharf and land located immediately west of the wharf were likely used as laydown areas during vessel loading/unloading. The wharf is locally referred to as the “American dock” and is currently used by CAI Nunatsiavut Marine for freight/passenger vessel docking. Various structures, including the community garage, the Woodward's Oil Ltd. bulk fuel storage and distribution facility and the Newfoundland and Labrador Hydro diesel generating plant are located immediately west of the Wharf site. The shoreline at the Wharf site is lined with frequent bedrock outcrops and large boulders.

The Pit No. 1/Helipad site is located off of the main access road, as shown on Drawing No. 121411777-300-EE-02 in Appendix A and was used as a laydown area during the current project. The site is a heavily worked area consisting of gravel and boulders with low vegetation along the perimeter. This area has been identified as a possible former waste site/drum storage area.

Photos taken of the site during Year 2 of the Implementation of the RAP are presented in Appendix B.

1.1.3 Topography, Drainage and Soils

The natural environment in Hopedale is typical of Labrador Coastal Barrens. Bedrock is granite and gneiss, and is largely exposed. Where present, soil cover on the hills is relatively thin (generally < 0.5 m), with accumulations of rock, gravel, sand and organic matter in low lying areas. Deeply incised U-shaped valleys occur in conjunction with steep-sided, rounded mountains and fjords that extend well inland. Large bogs can be found in the low-lying areas.

The Former U.S. Military Site is dominated by three (3) installations on hilltops elevated between 100 m and 150 m above sea level, including (from west to east): the BMEWS site, the Main Base and the Mid-Canada Line antennae site. Much of the area around the sites is exposed bedrock, with limited soil cover. Drainage from the BMEWS site is in all directions (i.e., to the north, east, south and west), including to the south towards Reservoir Lake (approximately 300 m to the south). Drainage from the Main Base and Mid-Canada Line sites is in all directions, including to the south and southwest towards the Small Pond Bog, which empties into the stream that flows through the Residential Subdivision and empties into Hopedale Harbour.

Based on the results of the current and previous subsurface investigations, the depth to bedrock at the Old Dump Pond site ranges from surface level (i.e., exposed bedrock) to approximately 2.8 m below ground surface (mbgs). Terrain in the vicinity of the Old Dump Pond site slopes to the southwest towards the pond. Surface drainage (apparent local groundwater flow direction) near the Old Dump Pond site is expected to be towards the pond which discharges to the southeast into Hopedale Harbour via a small stream.

Based on the results of the current and previous subsurface investigations, the depth to bedrock in the residential subdivision ranges from surface level (i.e., exposed bedrock) to approximately 1.5 mbgs. Terrain in the Residential Subdivision site slopes slightly to the south towards Hopedale Harbour. The banks of the stream in the Residential Subdivision are steeply sloped on both sides. Surface drainage (apparent local groundwater flow direction) in the Residential Subdivision is expected to be towards the stream and drainage ditches which discharge to the south into Hopedale Harbour.

The road at the Wharf site consists of compacted fill lined with minor vegetation. Terrain east of the road slopes steeply towards the shoreline, which consists of frequent bedrock outcrops, large boulders, and up to approximately 0.5 m of soil cover (organic matter and sand). Surface drainage (apparent local groundwater flow direction) at the Wharf site is expected to be to the east towards Hopedale Harbour.

Terrain at the Pit No. 1 site is relatively flat and slopes steeply to the east along the east boundary. Surface drainage (apparent groundwater flow direction) at the Pit No. 1 site is expected to be to the east towards Pit No. 3.

1.2 Previous Environmental Investigations

Several environmental assessment reports have been produced (mainly since 1996) relating to potential and actual contamination at and in the vicinity of the Former U.S. Military Site and Residential Subdivision in Hopedale, Labrador. In 2009 and 2010, Stantec conducted a Phase II/III ESA, HHERA and RAP/RMP at the Former U.S. Military Site and Residential Subdivision on behalf of the NLDEC (refer to Stantec Report No. 121410103, dated May 17, 2010). Stantec also supervised limited-remediation of PCB-impacted tar in three (3) areas of the former military and radar site at that time and the removal of total of three (3) tandem dump truck loads of debris from the stream in the Residential Subdivision (surficial and partially buried debris) and from test pits excavated in the residential subdivision (buried debris).

Based on a review of site conditions and land uses conducted as part of the HHERA, residents of Hopedale would be expected to spend the majority of their time in the community of Hopedale. This “Residential Area” was defined as including the Subdivision, the Wharf, Old Dump Pond, the Pipeline, and Small Pond Bog. Residents of Hopedale would be expected to visit the “Former Radar Site” occasionally for recreational purposes (e.g., berry picking, hunting, walking). For the purposes of the human health risk assessment, the Residential Area and the Former Radar Site were assessed separately based on the expected human exposure time (i.e., human receptors would be expected to spend less time on the Former Radar Site than in the Residential Area) and activities (e.g., hunting is expected to be limited to the Former Radar Site). The results of the HHERA indicated the potential for adverse risks to human and/or ecological receptors from exposure to total petroleum hydrocarbons (TPH), PCBs and/or metals impacts at the Former Radar Site and the Residential Area; therefore, precautionary actions, remedial activities and risk management strategies were recommended for the control of hazards identified at the overall site. Priorities were assigned to different areas requiring remediation, with the highest priority assigned to PCB-impacted areas near residential areas

and the PCB-impacted area located up-gradient of the community water supply source (the BMEWS site). The site-specific target levels (SSTLs) generated for the site are provided in Table 1.1.

Table 1.1 Summary of SSTLs to be applied to the Former Radar Site and Residential Area

Chemical	SSTL (mg/kg)	Source	Areas Requiring Remediation
Residential Area			
PCBs	9	HHRA	Old Dump Pond Wharf Area/Pipeline
Antimony	30	HHRA	Old Dump Pond
Former Radar Site			
PCBs	22	HHRA	BMEWS Old Base1 Main Base
TPH	1,700	ERA	BMEWS Main Base Pit No. 3 POL Compound
Metals	Lead: 75 Antimony: 5 Chromium: 20 Cadmium: 1.3	ERA	BMEWS Main Base Mid-Canada Line POL Compound

It was recommended that SSTLs be used as remediation criteria at the site. Based on the remedial options evaluation, the preferred options for soil remediation at the Former U.S. Military Site and Residential Subdivision in Hopedale were as follows:

- **PCB-Impacted Soil:** Stockpile soil and transport to a licensed soil treatment facility.
- **TPH-Impacted Soil:** Pre-treat soil in temporary on-site biopile, then place soil in the local landfill.
- **Metals-Impacted Soil:** Prior to selecting a remedial option, perform bioaccessibility testing on metals impacted soil requiring remediation and re-evaluate the SSTLs for metals within the HHERA.

In 2010-2011, Stantec conducted additional soil and sediment delineation, soil vapour monitoring, and a preliminary marine sampling program at the site to address data gaps and/or actions recommended in the 2010 Phase II/III ESA and HHERA report, and recommendations provided through consultation with the Nunatsiavut Government (NG) (refer to Stantec Report No. 121411170, dated February 28, 2011). Volume estimates were refined for areas requiring soil remediation. Elevated concentrations of PCBs were detected in sediment and fish samples collected from Hopedale Harbour and from selected sediment samples collected from freshwater ponds and streams near the Former U.S. Military Base; therefore, a comprehensive marine study was recommended.

In 2011, the Government of Newfoundland and Labrador committed funds to support ongoing remediation efforts in Hopedale and the completion of a Marine Study over the following three

(3) years. During each year, site remediation and investigative work was to be conducted in accordance with NLDEC budget allowances. A Stakeholder Scientific Advisory Working Group (referred to as the “Stakeholder Committee”) consisting of representatives from the Inuit Community Government of Hopedale (ICGH), NG, Labrador Grenfell Health, the Department of Labrador and Aboriginal Affairs, NLDEC and technical advisors was established in 2011 to advise on go-forward work plans at the site. The data collected to date was discussed by a Stakeholder Committee in May, 2011, and a mutually-agreeable plan for Years 1 to 3 of the site remediation and investigative work was determined. The following scope of work has been proposed for Years 1 to 3 of the Implementation of the RAP:

Year 1 (2011-2012)

- Conduct hot-spot removal of PCB-impacted sediment in the stream running through the Residential Subdivision (estimated 15 m³).
- Conduct remediation of PCB-impacted soil in the vicinity of Old Dump Pond (estimated 350 m³).

Year 2 (2012-2013)

- Complete the remediation of PCB-impacted soil in areas that were not finished in Year 1, if necessary.
- Conduct the remediation of PCB-impacted soil at the Wharf Area/Pipeline site (estimated 350 m³).

Year 3 (2013-2014)

- Complete the remediation of PCB-impacted soil in area(s) that were not finished in Year 2, if necessary.
- Start the remediation of PCB-impacted soil at the BMEWS site (estimated 850 m³ total).

The work scope was meant to be revised each year and was meant to be flexible based on the results of marine studies and risk modeling (reported under separate covers) and recommendations provided by the Stakeholder Committee.

In 2011 (Year 1 of the Implementation of the RAP), approximately 283 tonnes of PCB-impacted soil was removed from one of two areas requiring remediation at the Old Dump Pond site (as reported in Stantec report No. 121411777.200, dated April 30, 2012). The soil was loaded into 1 tonne capacity enviro-bags that were stored at the Pit No. 1 laydown area. Based on the results of confirmatory soil sampling, no further soil remediation for PCBs was deemed necessary in that area (the area surrounding former monitor well MW61 and test pit ODP-TP2, referred to as “ODP – Area 1”). Due to time constraints caused by freight service delays, the stream and the second Old Dump Pond area with PCB concentrations in exceedance of the applicable SSTL were not remediated in Year 1.

Also, due to the increased risk associated with transportation of the contaminated soil by sea barge in the late fall/early winter, the material was temporarily stored at the laydown area (contained in bags, on a liner) for transportation to an approved PCB treatment/disposal facility in Year 2. Large pieces of buried metal debris encountered in the remedial excavation were manually segregated from the soil and were placed in a temporary scrap metal stockpile at the Old Dump Pond site. The analytical results of (3) PCB swab samples collected from pieces of metal within the stockpile indicated that PCBs were not detected above the laboratory reportable detection limit (RDL) of 5 µg/ 100 cm².

Following the Year 1 remediation program, Stantec made the following recommendations for the Year 2 remediation program:

1. Complete the removal of PCB-impacted soil and sediment exceeding the SSTL of 9 mg/kg and remove buried debris in areas that were not finished in Year 1, as follows:
 - a. **Old Dump Pond site:** Area surrounding monitor wells MW32 and MW33, as shown on Drawing No. 121411777-300-EE-03 in Appendix A (not fully delineated to the east and west), to a depth of 1.0 below ground surface (mbgs). It is recommended that a 2 m soil berm be left in place between the remedial area and the pond to reduce surface water infiltration.
 - b. **Stream:** Area between samples 11-Stream-SED2 and 11-Stream-SED7 to a depth of 0.5 m, area between samples 11-Stream-SED7 and 11-Stream-SED9 to a depth of 1.0 m and area between samples 11-Stream-SED9 and 11-Stream-SED1 to a depth of 0.5 m, as shown on Drawing No. 121411777-300-EE-04 in Appendix A. Collect surface water samples for PCBs and TSS downstream of the remedial area during remedial activities to monitor compliance with Canadian Council of Ministers of the Environment (CCME) criteria.
2. Remove PCB-impacted soil at the **Wharf Area/Pipeline site**, as per the proposal provided to NLDEC on May 27, 2011.
3. Collect confirmatory soil samples from the final limits of the excavations and submit for analysis of Total PCBs (rush turnaround time);
4. Once confirming results have been received, monitor the backfilling of the excavations with clean fill material (to be sourced from the Inuit Community of Hopedale) or site grading, as necessary.
5. Further evaluation is required prior to determining disposal options for metal debris removed from the remedial excavations.
6. Ensure that PCB-impacted soil removed during the Year 1 and Year 2 remedial programs is transported offsite to an approved soil treatment/disposal facility.
7. Prepare daily field reports while onsite and submit to the NLDEC project manager via email daily.

8. Prepare a written report detailing the remediation work completed in Year 2 (2012-2013) and provide recommendations for the Year 3 remediation program.

The Stakeholder Committee agreed with the above recommendations for Year 2 in a May 2012 meeting.

1.3 Scope of Work

The scope of work for Year 2 of the Implementation of the Remedial Action Plan, as described in Stantec's proposal submitted to NLDEC on May 27, 2011, and as agreed upon by the Stakeholder Committee in May 2012, was as follows:

- Complete the remediation of PCB-impacted soil in areas that were not finished in Year 1, if necessary.
- Conduct the remediation of PCB-impacted soil at the pipeline site (estimated 350 m³).

RJG Construction Ltd. (RJG) of St. John's, NL has been retained by the NLDEC for remedial work at the Former U.S. Military Site and Residential Subdivision in Years 1 to 3 of the Implementation of the RAP. RJG is responsible for site preparation, the excavation of impacted soil, sediment and debris from specified areas, and the proper disposal of impacted materials (including shipment). RJG is also responsible for providing all necessary heavy equipment, including excavators, loaders, laborers, and dump trucks and for providing a scale system in Hopedale to record soil weights.

1.4 Regulatory Framework

NLDEC *Policy Directive PPD05-01* allows a site owner to use either of two approaches when remediating chemical impacts on a site. Remediation of chemical impacts in various site media (e.g., soil, sediment, groundwater, surface water) can be completed using a criteria-based approach or a risk-based approach. Under the criteria-based remedial approach, the defined site impacts are remediated to levels below existing regulatory guidelines for the appropriate media. Under the risk-based remedial approach, the defined site impacts are remediated to levels below site-specific target levels (SSTLs) that are developed for the site during a site-specific human health risk assessment (HHRA) and ecological risk assessment (ERA) (if necessary).

For simple sites and sites with limited impacts, a criteria-based approach to remediation is often applied to guide the extent of removal of impacted media from the site. For more complex sites and sites with extensive impacts from multiple chemicals of concern (COCs), a human health and/or ecological risk assessment is often completed, based on the actual site conditions and the actual human and ecological usage of the site, to derive SSTLs to determine remedial options or a risk management strategy for the site. Experience at other former military Pinetree sites in Newfoundland and Labrador indicates that a risk-based remedial approach is the most appropriate for a complex site such as the one in Hopedale.

As part of the HHERA (Stantec, 2010), SSTLs were calculated for certain metals, petroleum hydrocarbons and PCBs. Where necessary, SSTLs were derived in accordance with the methods presented in *A Protocol for the Derivation of Environmental and Human Health Soil Quality Guidelines* (Canadian Council of Ministers of the Environment (CCME), 2006). The specific methods employed to develop the SSTLs are consistent with CCME and Health Canada protocols as referenced above, and with standard human health risk assessment methodologies. The derivation of SSTLs for petroleum hydrocarbons (TPH, BTEX) was made with the aid of Groundwater Services, Inc. (GSI) RBCA Toolkit for Atlantic Canada, Version 2.1. The spreadsheet model is based on the exposure and mass transport equations presented in the appendix of the ASTM PS-104 *Standard Provisional Guide for Risk-Based Corrective Action* (ASTM 2002). Table 1.1 in Section 1.2 summarizes the SSTLs to be applied at the Former Radar Site and Residential Area based on the results of the HHERA (Stantec, 2010).

Concentrations of total suspended solids (TSS) in surface water have been compared to the criteria based Canadian Council of Ministers of the Environment (CCME) *Canadian Water Quality Guidelines (CWQG) for the Protection of Aquatic Life* (CCME Guidelines; 1999 and subsequent updates) and its associated documents. The CCME CWQG states that for clear flow (i.e., stream water), there should not be more than a 25 mg/L increase in suspended solids and an 8 NTU increase in turbidity from background levels for any short-term exposure (24-hr. period); while for long term exposure, there should not be more than a 5 mg/L increase in suspended solids and a 2 NTU increase in turbidity from background levels. There are currently no provincial or federal guidelines for PCBs in surface water.

2.0 DESCRIPTION OF SITE WORK

Year 2 site remediation activities at the Former U.S. Military Site consisting of site preparation, the excavation and removal of PCB-impacted soil and buried debris, confirmatory soil sampling, site reinstatement and the shipment of PCB-impacted soil to an approved soil treatment facility were carried out between July and November 2012. Stantec personnel were onsite during site remediation between July 4 and July 15, July 18 and 22, August 10 and September 6, September 17 and October 6, October 18 and 23 and November 1 and 14, 2012.

Remedial activities were undertaken by RJG of St. John's, NL under separate contract to NLDEC and were supervised by Stantec personnel, who maintained a record of activities while on-site and collected confirmatory soil samples. Stantec personnel documented subsurface observations during remediation, including the dimensions, locations and depths of the remedial excavations and the depths and locations of confirmatory soil samples.

2.1 Site Preparation

The following site preparations were undertaken prior to the commencement of the Year 2 remedial activities:

- Site clearing and grubbing was conducted at the wharf site in the area requiring remediation. All trees and shrubs (i.e., alders) were removed and temporarily stockpiled along the edge of the area requiring soil removal. Two (2) representative samples were collected from the vegetation (HARBOUR PLANT-1 and HARBOUR PLANT-2). Analytical results indicated that the maximum concentration of PCBs in vegetation samples was 0.47 mg/kg; therefore, the grubblings were tucked into the alders remaining immediately northwest of the remedial area and were left to decompose.
- Silt fences were installed in the stream, downstream of the area to be remediated.
- The areas requiring remediation were marked out in the field using survey stakes and spray paint, based on the results of previous investigations.

Site clearing and grubbing were previously conducted at the Old Dump Pond site and the Stream site during Year 1 of the Implementation of the RAP. A metal chute was also constructed at the Old Dump Pond site to facilitate the loading of soil into bags.

2.2 Excavation of PCB-Impacted Soil and Confirmatory Sampling

Soil was excavated from areas where PCB concentrations were previously identified in exceedance of the SSTL using a tack-mounted Case 210X excavator or manually using shovels. Soil was loaded into 1 tonne capacity soil enviro-bags. The bags are UN certified and have a 3 year lifespan. The bags were tied shut and transported to a laydown area at Pit No. 1 of the Former U.S. Military Site (see Drawing No. 121411777-300-EE-02 in Appendix A) for temporary storage until being shipped out of Hopedale. The bags were moved using a Yanmar tractor, a Case 210X excavator, rock trucks and a boom truck. The bags were stacked up to four (4) bags high on a 40 mil polyethylene liner in the laydown area which is surrounded by a natural sand berm.

Confirmatory soil sampling was conducted along the limits of the excavations (i.e., the sidewalls and base of the excavations) as soil removal progressed to verify the concentrations of PCBs in soil remaining on the site. Following the receipt of analytical results, additional soil removal was carried out in areas where concentrations of PCBs in confirmatory soil samples exceeded the SSTL of 9 mg/kg. The samples were collected by bulk sample methods. The samples were visually examined in the field for any evidence of impacts and were placed in clean glass jars with Teflon liners. Samples were placed on ice in sample coolers which were shipped to Maxxam Analytics Inc. in Bedford, NS for analysis of PCBs or to Stantec's office in St. John's, NL to be archived. The number of soil bags filled during Year 2 site remediation is summarized in Table 2.1.

Table 2.1 Summary of Soil Bags Filled – Year 2

Date	Number of Bags Filled		
	Old Dump Pond	Stream	Wharf/Pipeline
7-Jul-12	-	80	-
8-Jul-12	-		-
9-Jul-12	-		-
12-Jul-12	74	-	-
13-Jul-12		-	-
14-Jul-12		-	-
15-Jul-12		-	-
16-Jul-12		-	-
17-Jul-12		-	66
18-Jul-12		-	
19-Jul-12	-		
20-Jul-12	-		
21-Jul-12	-		
CONTRACTOR BREAK			
9-Aug-12	-	82	-
10-Aug-12	-		-
11-Aug-12	-		-
12-Aug-12	-		-
13-Aug-12	-		-
14-Aug-12	-		-
15-Aug-12	-	-	161
16-Aug-12	-	-	
17-Aug-12	-	-	
18-Aug-12	-	-	
19-Aug-12	-	-	
20-Aug-12	-	-	
21-Aug-12	-	-	
22-Aug-12	-	-	
23-Aug-12	-	11	
24-Aug-12	-		
25-Aug-12	-		
26-Aug-12	-	-	
27-Aug-12	-	-	
28-Aug-12	212	-	
29-Aug-12		-	-
30-Aug-12		-	-
31-Aug-12		-	-
1-Sep-12		-	-
2-Sep-12		-	-
3-Sep-12		-	-
4-Sep-12	-	-	
5-Sep-12	-	-	-
6-Sep-12	-	-	-



Date	Number of Bags Filled				
	Old Dump Pond	Stream	Wharf/Pipeline		
CONTRACTOR BREAK					
18-Sep-12	-	45	17		
19-Sep-12	-				
20-Sep-12	-				
21-Sep-12	-				
22-Sep-12	-				
23-Sep-12	-				
24-Sep-12	-				
25-Sep-12	-				
26-Sep-12	165			-	-
27-Sep-12				-	-
28-Sep-12		-	-		
26-Sep-12		-	-		
30-Sep-12		-	-		
1-Oct-12		-	-		
20-Oct-12	-	-	1		
TOTAL:	451 bags	218 bags	245 bags		

Based on the above information, a total of 914 bags of soil were filled during the Year 2 implementation of the RAP. Photos taken during remedial excavation, including photos of the laydown area are provided in Appendix B. Remedial activities undertaken at each site are described in detail below.

Old Dump Pond

Soil removal began on July 14, 2012 in the vicinity of monitor wells MW31, MW32 and MW33 (referred to as “Old Dump Pond Area 2”) and progressed until July 17, 2012. Dry surficial soil was removed from the area and placed in soil bags that were transported to the laydown area. Saturated subsurface soil was excavated to a depth of 1 m from the northwest portion of the excavation and was stockpiled in the southeast portion of the excavation to drain (see Photo 3 in Appendix B). On July 19, 2012 Stantec collected eight (8) confirmatory soil samples from the sidewalls of the northwest portion of the excavation (12-ODP-BS1 to 12-ODP-BS8) and two (2) confirmatory soil samples from the base of the excavation (12-ODP-BS9 and 12-ODP-BS10). The locations of all confirmatory soil samples and the limits of the remedial excavation at the Old Dump Pond site are shown on Drawing No. 121411777-300-EE-03 in Appendix A. Results of the initial round of confirmatory soil sampling indicated that additional soil removal was required in the vicinity of soil samples 12-ODP-BS1, 12-ODP-BS3, 12-ODP-BS5, 12-ODP-BS7 and 12-ODP-BS8; however, no additional soil could be removed southwest of 12-ODP-BS7 and 12-ODP-BS8 due to the proximity to the pond and surface water infiltration. This area should be assessed in conjunction with the development of a remedial action/risk management plan for the pond sediments.

Between August 28 and September 4, 2012 the stockpiled soil and additional soil located along the northeastern limit of the remedial excavation (i.e., north of samples 12-ODP-BS1 to

12-ODP-BS3) was placed in soil bags that were transported to the laydown area. Following soil removal, two (2) confirmatory soil samples from the base of the southeast portion of the excavation at 0.5 m depth (12-ODP-BS18 and 12-ODP-BS10) and three (3) confirmatory soil samples from the northeast sidewall of the excavation (12-ODP-BS21 to 12-ODP-BS23). Soil samples 12-ODP-BS24 and 12-ODP-BS25 were collected from test pits excavated north of the remedial excavation to provide additional delineation data. Results of confirmatory soil sampling indicated that additional soil removal was required beyond samples 12-ODP-BS18 (base sample), 12-ODP-19 (base sample) and northeast of samples 12-ODP-BS21 to 12-ODP-BS23.

Between September 26 and October 1, 2012 additional soil was removed to the northeast and northwest of the previous limits of the remedial excavation. Soil was placed in soil bags that were transported to the laydown area. On October 1, 2012, soil removal was halted as it was believed that the number/weight of bags filled to date may exceed the barge limit. A total of 451 bags of PCB-impacted soil were removed from the Old Dump Pond site during Year 2, as summarized in Table 2.1. Nine (9) soil samples were collected from the sidewalls of the final limits of the remedial excavation (12-ODP-BS26 to 12-ODP-BS34). Results of confirmatory soil sampling indicated that additional soil removal was required beyond samples 12-ODP-BS27 and 12-ODP-BS29 to 12-ODP-BS34. This area will be remediated in conjunction with Year 3 remedial activities to be conducted at the Former U.S. Military Site in Hopedale in 2013. The final limits of the remedial excavation are shown on Drawing No. 121411777-EE-03 in Appendix A. The base of the remedial excavation was terminated at the surface of a layer of brown to grey clay encountered at depths ranging from 1.0 to 1.1 mbgs. Bedrock was not encountered in the remedial excavation.

A substantial amount of buried metal debris was encountered in the remedial excavation at the Old Dump Pond Site. Metal debris consisted of empty 45 gallon drums, poles, girders, rebar, vehicle parts and other small pieces of metal. Broken glass and amber glass bottles were also encountered in the remedial excavation. Smaller pieces of debris were placed in the bags with soil. Large pieces of metal were manually segregated from the soil as it poured down the chute into the bags. Residual soil was shaken/scraped from the metal and placed in soil bags. The metal was then stacked into piles and tied together with straps to facilitate movement. Larger pieces of metal were cut up using a metal grinder prior to being stacked. The piles of metal were placed in a temporary scrap metal stockpile northeast of the remedial excavation at the Old Dump Pond site, next to the Year 1 metal stockpile. Buried metal debris encountered at the Stream site was stockpiled along with Old Dump Pond metal. On July 11, 2012, Stantec collected seven (7) swab samples from selected pieces of Year 1 metal debris (12-SWAB1 to 12-SWAB7) and on September 10, 2012, Stantec collected fifteen (15) swab samples from selected pieces of Year 2 metal debris (12-SWAB8 to 12-SWAB22) to verify PCB concentrations on metal. Results of swab sampling indicated that PCBs were detected on metal from six (6) areas of the stockpile (12-SWAB10, 12-SWAB13, 12-SWAB16, 12-SWAB17, 12-SWAB18 and 12-SWAB20). Following the receipt of sample results, additional soil was brushed from the metal debris in the Year 2 metal stockpile and the six (6) pieces of metal with previously detected concentrations of PCBs were resampled (12-SWAB10B, 12-SWAB13B, 12-

SWAB16B, 12-SWAB17B, 12-SWAB18B and 12-SWAB20B). Each sample was swabbed over a 10 cm by 10 cm area (i.e., 100 cm²) using swabs prepared by Maxxam Analytics Inc. for PCB content. All swab samples were frozen and shipped to Maxxam Analytics Inc. in Bedford, NS for analysis of the mass of PCBs present in each sample. A discussion of the swab sample results can be found in Section 3.3 of this report.

Stream

The initial round of soil/sediment removal at the stream began on July 7, 2012 and progressed until July 9, 2012. Soil/sediment was removed to a depth of 0.5 m between former samples 11-Stream-SED5 and 11-Stream-SED7, to a depth of 1.0 m between former samples 11-Stream-SED7 and 11-Stream-SED9 and to bedrock (encountered at a depth of approximately 0.5 m) between former samples 11-Stream-SED9 and 11-Stream-SED1. The width of the excavation ranged from 2.0 m to 2.8 m. Soil/sediment was loaded into rock trucks using an excavator and was transported to the Old Dump Pond site, where it was loaded into bags that were later transported to the laydown area. In 2011, a trench was excavated at the base of the stream to enhance drainage in preparation of remedial activities. At that time, sediment was stockpiled along the eastern bank of the stream. This sediment was also excavated and transported to the Old Dump Pond site where it was loaded into bags that were later transported to the laydown area.

Following soil/sediment removal from the Stream site, Stantec collected 44 confirmatory soil samples from the sidewalls of the excavation (12-Stream-BS1 to 12-Stream-BS44). Samples were collected from stations spaced 5 m apart. At each station, samples were collected from the left bank and the right bank at approximately 0.5 m vertical intervals, as indicated in Table 2.2. A total of 29 of these soil samples were submitted for PCB analysis. Three (3) surficial soil samples were also collected from the area east of the remedial excavation where impacted soil was stockpiled in 2011 (12-Stream-SS1 to 12-Stream-SS3). The locations of confirmatory samples and the limits of the remedial excavation at the Stream site are shown on Drawing No. 121411777-300-EE-04 in Appendix A. Results of confirmatory soil sampling indicated that additional soil removal was required beyond samples 12-Stream-SED1 and 12-Stream-SED2 (STN A – left bank), 12-Stream-SED42 and 12-Stream-SED44 (STN I – right and left banks).

Between August 9 and 14, 2012, additional soil was removed from the upper and lower portions of the stream, where impacted soil remained. Soil removal was conducted manually using shovels due to restricted access. The upper portion of the stream was terminated on bedrock at depths ranging from 0.35 to 1.3 m. The lower portion of the stream was excavated to depths ranging from approximately 0.5 mbgs to 1.0 mbgs. Following soil removal, 11 confirmatory soil samples were collected from the sidewalls of the lower portion of the stream (12-Stream-SED45 to 11-Stream-SED55) and 14 confirmatory soil samples were collected from the sidewalls of the upper portion of the stream (12-Stream-SED56 to 12-Stream-SED69). Results of confirmatory soil sampling indicated that additional soil removal was required beyond sample 12-Stream-SED45 (STN J).

Between August 23 and 25, 2012, additional soil was removed from the lower portion of the stream, where impacted soil remained. Soil removal was conducted manually using shovels due to restricted access. The area was excavated to a depth of approximately 0.5 mbgs. Following soil removal, 7 confirmatory soil samples were collected from the sidewalls of the lower portion of the stream (12-Stream-SED70 to 12-Stream-SED76). Results of confirmatory soil sampling indicated that additional soil removal was required beyond samples 12-Stream-SED70 (STN V), 12-Stream-SED73 (STN W) and 12-Stream-SED76 (STN Y).

Between September 18 and 26, 2012, additional soil was removed from the lower portion of the stream, where impacted soil remained. Soil removal was conducted manually using shovels due to restricted access. The area was excavated to depths ranging from approximately 0.5 mbgs to 1.0 mbgs and was terminated on a layer of organics and clay. During soil removal, 8 confirmatory soil samples were collected from the anticipated sidewalls of the excavation (12-Stream-SED77 to 12-Stream-SED82) and 2 confirmatory soil samples were collected from the base of the excavation (12-Stream-SED83 and 12-Stream-SED84). All soil was removed up to the boulders along the bank in that area; therefore, no confirmatory soil sampling was possible along the northeast limit of the excavation. Results of all confirmatory soil samples collected from the final limits of the remedial excavation at the stream were below the SSTL of 9 mg/kg. All bags filled manually at the stream site, and with the excavator at the Old Dump Pond site were transported to the laydown area at Pit No. 1.

A summary of the confirmatory soil samples collected from the stream is provided in Table 2.2.

Table 2.2 Summary of Confirmatory Soil Samples Collected – Stream

Station	Date Collected	Sample Depth (mbgs)	Sample ID			
			Right Bank (west bank)	Laboratory Analysis Conducted	Left Bank (east bank)	Laboratory Analysis Conducted
STN A	9-Jul-12	0.0 - 0.1	12-STREAM-SED03	PCBs	12-STREAM-SED01	PCBs
	9-Jul-12	0.5 - 0.6 (base)	12-STREAM-SED04	PCBs	12-STREAM-SED02	PCBs
STN B	9-Jul-12	0.0 - 0.1	12-STREAM-SED07	PCBs	12-STREAM-SED05	PCBs
	9-Jul-12	0.5 - 0.6 (base)	12-STREAM-SED08		12-STREAM-SED06	PCBs
STN C	9-Jul-12	0.0 - 0.1	12-STREAM-SED11	PCBs	12-STREAM-SED09	PCBs
	9-Jul-12	0.5 - 0.6 (base)	12-STREAM-SED12		12-STREAM-SED10	
STN D	9-Jul-12	0.0 - 0.1	12-STREAM-SED15	PCBs	12-STREAM-SED13	PCBs
	9-Jul-12	0.5 - 0.6 (base)	12-STREAM-SED16		12-STREAM-SED14	
STN E	9-Jul-12	0.0 - 0.1	12-STREAM-SED20	PCBs	12-STREAM-SED17	PCBs
	9-Jul-12	0.5 - 0.6	12-STREAM-SED21		12-STREAM-SED18	
	9-Jul-12	1.0 - 1.1 (base)	12-STREAM-SED22		12-STREAM-SED19	
STN F	9-Jul-12	0.0 - 0.1	12-STREAM-SED26	PCBs	12-STREAM-SED23	PCBs
	9-Jul-12	0.5 - 0.6	12-STREAM-SED27		12-STREAM-SED24	
	9-Jul-12	1.0 - 1.1 (base)	12-STREAM-SED28		12-STREAM-SED25	
STN G	9-Jul-12	0.0 - 0.1	12-STREAM-SED32	PCBs	12-STREAM-SED29	PCBs
	9-Jul-12	0.5 - 0.6	12-STREAM-SED33		12-STREAM-SED30	
	9-Jul-12	1.0 - 1.1 (base)	12-STREAM-SED34		12-STREAM-SED31	
STN H	9-Jul-12	0.0 - 0.1	12-STREAM-SED38	PCBs	12-STREAM-SED35	PCBs
	9-Jul-12	0.5 - 0.6	12-STREAM-SED39		12-STREAM-SED36	
	9-Jul-12	1.0 - 1.1 (base)	12-STREAM-SED40		12-STREAM-SED37	

Station	Date Collected	Sample Depth (mbgs)	Sample ID			
			Right Bank (west bank)	Laboratory Analysis Conducted	Left Bank (east bank)	Laboratory Analysis Conducted
STN I	9-Jul-12	0.0 - 0.1	12-STREAM-SED43	PCBs	12-STREAM-SED41	PCBs
	9-Jul-12	0.5 - 0.6 (base)	12-STREAM-SED44	PCBs	12-STREAM-SED42	PCBs
STN J	14-Aug-12	0.0 - 0.1			12-STREAM-SED45	PCBs
	14-Aug-12	0.4 - 0.5 (base)			12-STREAM-SED46	PCBs
STN K	14-Aug-12	0.0 - 0.1			12-STREAM-SED47	PCBs
	14-Aug-12	0.7 - 0.8 (base)			12-STREAM-SED48	
STN L	14-Aug-12	0.0 - 0.1			12-STREAM-SED49	PCBs
	14-Aug-12	0.5 - 0.6			12-STREAM-SED50	PCBs
	14-Aug-12	0.9 - 1.0 (base)			12-STREAM-SED51	
STN M	14-Aug-12	0.0 - 0.1			12-STREAM-SED52	PCBs
	14-Aug-12	0.6 - 0.7 (base)			12-STREAM-SED53	
STN N	14-Aug-12	0.0 - 0.1			12-STREAM-SED54	PCBs
	14-Aug-12	0.5 - 0.6 (base)			12-STREAM-SED55	
STN O	15-Aug-12	0.0 - 0.1	12-STREAM-SED56			PCBs
	15-Aug-12	1.0 - 1.1 (base)	12-STREAM-SED57			PCBs
STN P	15-Aug-12	0.0 - 0.1	12-STREAM-SED58			PCBs
	15-Aug-12	0.6 - 0.65 (base)	12-STREAM-SED59			
STN Q	15-Aug-12	0.0 - 0.1	12-STREAM-SED60			PCBs
	15-Aug-12	0.5 - 0.6 (base)	12-STREAM-SED61			
STN R	15-Aug-12	0.0 - 0.1	12-STREAM-SED62			PCBs
	15-Aug-12	0.3 - 0.35 (base)	12-STREAM-SED63			
STN S	15-Aug-12	0.0 - 0.1			12-STREAM-SED64	PCBs
	15-Aug-12	0.95 - 1.05 (base)			12-STREAM-SED65	PCBs
STN T	15-Aug-12	0.0 - 0.1			12-STREAM-SED66	PCBs
	15-Aug-12	1.2 - 1.3 (base)			12-STREAM-SED67	PCBs
STN U	15-Aug-12	0.0 - 0.1			12-STREAM-SED68	PCBs
	15-Aug-12	0.7 - 0.8 (base)			12-STREAM-SED69	PCBs
STN V	26-Aug-12	0.0 - 0.1			12-STREAM-SED70	PCBs
	26-Aug-12	0.5 - 0.6 (base)			12-STREAM-SED71	
STN W	26-Aug-12	0.0 - 0.1			12-STREAM-SED72	PCBs
	26-Aug-12	0.4 - 0.5 (base)			12-STREAM-SED73	
STN X	26-Aug-12	0.0 - 0.2 (base)			12-STREAM-SED74	
STN Y	26-Aug-12	0.0 - 0.1			12-STREAM-SED75	PCBs
	26-Aug-12	0.3 - 0.4 (base)			12-STREAM-SED76	PCBs
STN Z	21-Sep-12	0.0 - 0.1			12-STREAM-SED79	PCBs
	21-Sep-12	0.5 - 0.6			12-STREAM-SED78	PCBs
	21-Sep-12	0.9 - 1.0 (base)			12-STREAM-SED77	PCBs
STN AA	21-Sep-12	0.0 - 0.1			12-STREAM-SED82	PCBs
	21-Sep-12	0.5 - 0.6			12-STREAM-SED81	PCBs
	21-Sep-12	0.9 - 1.0 (base)			12-STREAM-SED80	PCBs
STN AB	21-Sep-12	0.4 - 0.5 (base)			12-STREAM-SED83	PCBs
STN AC	21-Sep-12	0.5 - 0.6 (base)			12-STREAM-SED84	PCBs

On July 8 and 9, 2012, surface water samples were collected from the stream, approximately 90 m downstream of the remediated area (12-SUBDIV-JUL8A, 12-SUBDIV-JUL8B, 12-SUBDIV-JUL9C) to determine concentrations of TSS and PCBs in water to ensure compliance with regulatory requirements during sediment removal. The surface water samples were collected into clean, new laboratory-supplied bottles. The bottles were placed on ice in a sample cooler and were shipped to Maxxam Analytics Inc.'s laboratory in Bedford, NS for analysis of TSS and

PCBs. The 12-SUBDIV surface water sample sampling location is shown on Drawing No. 121411777-300-EE-02 in Appendix A. A discussion of the surface water sample results can be found in Section 3.3 of this report.

Wharf

The initial round of soil removal at the Wharf site began on July 17, 2012 and progressed until July 21, 2012. Soil removal between the roadbed and shoreline was conducted manually using shovels due to restricted access. Soil was removed to bedrock, which was encountered at depths ranging from approximately 0.05 mbgs to 0.15 mbgs. The soil bags were transported to the Laydown Area in rock trucks as soil removal progressed. Following soil removal, ten (10) confirmatory soil samples were collected from the sidewalls of the remedial excavation (12-WH-BS1 to 12-WH-BS10). Soil cover was sparse in this area, therefore confirmatory soil samples were collected where soil cover was present. The locations of all confirmatory soil samples and the limits of the remedial excavation at the Wharf site are shown on Drawing No. 121411777-300-EE-05 in Appendix A. Results of the initial round of confirmatory soil sampling indicated that additional soil removal was required beyond samples 12-WH-BS2 to 12-WH-BS5, 12-WH-BS8 and 12-WH-BS10.

Between August 15 and 28 2012, additional soil was removed between the roadbed and the shoreline to the north, south (up to the boulders along the edge of the road) and west of the previous limits of the remedial excavation, where impacted soil remained. Soil in the vicinity of former sample WH-BS2 (south of the road) was also removed during this period. A strip of soil located immediately northwest of sample 12-WH-BS1 was left in place for the time being to provide excavator access off of the road for bag pick-up. Soil removal was conducted manually using shovels due to restricted access. Soil was removed to bedrock, which was encountered at depths ranging from approximately 0.05 mbgs to 0.4 mbgs between the roadbed and the shoreline, and 0.8 mbgs south of the road (where bedrock was not encountered). Prior to soil removal, 4 confirmatory soil samples were collected from the anticipated limits of the remedial excavation between the roadbed and the shoreline (12-WH-BS11 to 11-WH-BS14) and 5 confirmatory soil samples were collected from the anticipated limits of the remedial excavation south of the road (12-WH-BS15 to 12-WH-BS19). During soil removal, 5 additional soil samples were collected beyond the limits of the remedial excavation to provide additional delineation data (12-WH-BS20, 12-WH-BS21, 12-WH-BS25 to 12-WH-BS27, HARBOUR-30 and HARBOUR-31) and 3 confirmatory soil samples were collected from the limits of the remedial excavation south of the road, including 1 base sample (12-WH-BS22) and 2 sidewall samples (12-WH-BS23 and 12-WH-BS24). Results of confirmatory soil sampling indicated that additional soil removal was required beyond samples 12-WH-BS11 and 12-WH-BS14 (this soil was removed up to the shoreline following receipt of analytical results on August 24, 2012), 12-WH-BS21, 12-WH-BS27 and HARBOUR-30, and south of the road, beyond samples 12-WH-BS19 (this soil was removed following receipt of analytical results on August 24, 2012), 12-WH-BS22 (the entire excavation was extended to bedrock at a maximum depth of approximately 1.1 mbgs following receipt of analytical results on August 24, 2012) and 12-WH-BS23.

Between September 18 and September 24, 2012, additional soil was removed where impacted soil remained, along the between the roadbed and the shoreline to the west and south of the previous limits of excavation and to the north of the previous limits of excavation in the area south of the road. Soil removal was conducted both manually and with the excavator. Soil was removed to bedrock near the shoreline, which was encountered at depths ranging from approximately 0.1 mbgs to 0.3 mbgs and to a depth of approximately 0.8 mbgs south of the road. Following soil removal, 2 confirmatory soil samples were collected from the limits of the excavations (12-WH-BS32 south of the road, and 12-WH-BS33 near the edge of the roadbed). Results of confirmatory soil sampling indicated that additional soil removal was required southwest of sample 12-WH-BS33.

On October 20, 2012 additional soil was removed to the southwest of sample 12-WH-BS33. Following soil removal, 1 confirmatory soil sample was collected from the southwest sidewall of the excavation (12-WH-BS34). Results of this sample and all other confirmatory soil samples collected from the final limits of the remedial excavation at the Wharf site were below the SSTL of 9 mg/kg.

2.3 Tar-Like Material

During site walkovers conducted in Year 2, two approximately 0.9 m by 0.9 m areas of black tar-like material were discovered at the site. One was located south of the road at the Wharf site (see Photo 22, Appendix B) and the other was located at the Pallet Line site on the Former U.S. Military Base (see Drawing No. 121411777-300-EE-02 in Appendix A and Photo 23, Appendix B). A sample was collected of the material at the Wharf site (WHARF-ID-1, shown on Drawing No. 121411777-300-EE-05 in Appendix A) and was submitted for analysis of PCBs and product identification. Results of the laboratory analysis indicated that the sample was a heavy oil product and contained PCBs at a concentration of 23 mg/kg; therefore, the tar-like material was removed from the two locations on September 24, 2012 using shovels and was placed with soil in an enviro-bag. Soil in both areas was removed to bedrock (less than 5 cm deep).

2.4 Backfilling and Reinstatement Activities

The remedial excavations at the Old Dump Pond site, the Stream site and the remedial excavation south of the road at the Wharf site were backfilled following soil removal using 140 mm minus sized material. Fill material was obtained from a rock pit (owned by Max Kinden of Nain) created along the road to the local landfill, as shown on Drawing No. 121411777-300-EE-02 in Appendix A. Fill material was blasted and crushed by Budgell's of St. Anthony, NL under contract to Max Kinden.

On July 13, 2012, an additional 44 tonnes (2 rock truck loads) of material was placed in the area of the ODP-Area 1 remedial excavation. On September 20, 2012, approximately 88 tonnes (4 rock truck loads) of material was placed in the remedial excavation south of the road at the Wharf site. On October 19, 2012, approximately 154 tonnes (7 rock truck loads) of material was placed along the sidewalls and base of the Stream for erosion control. Between October 22 and 23, 2012, 693 tonnes (31 rock truck loads) of material was placed in the ODP-Area 2 remedial

excavation. This material was weighed onsite using scales provided by RJG and was compacted with the excavator bucket and tracks at all sites.

Prior to the placement of backfill material at the Old Dump Pond site, a 40 mil polyethylene liner was placed along the edge of the remedial excavation to mark the limits of the remedial excavation and to prevent contaminant migration until the soil is removed during Year 3 of the Implementation of the RAP.

On October 19, 2012, surface water samples were collected from the stream, approximately 90 m downstream of the remediated area prior to (12-SUBDIV-OCT19A) and during (12-SUBDIV- OCT19B, 12-SUBDIV- OCT19C) backfilling of the stream to determine concentrations of TSS and PCBs in water to ensure compliance with regulatory requirements. The surface water samples were collected into clean, new laboratory-supplied bottles. The bottles were placed on ice in a sample cooler and were shipped to Maxxam Analytics Inc.'s laboratory in Bedford, NS for analysis of TSS and PCBs. The 12-SUBDIV surface water sample sampling location is shown on Drawing No. 121411777-300-EE-02 in Appendix A. A discussion of the surface water sample results can be found in Section 3.3 of this report.

2.5 Soil Transportation

On November 8, 9 and 12, 2012, a total of 567 bags of PCB-impacted soil bags were loaded onto a 1,000 tonne capacity barge (the Kaligak) owned by NGC Nunatsiavut Marine Inc. at the American dock in Hopedale. Soil bags were inspected for damage (due to UV exposure and/or protruding metal). All damaged bags were double-bagged at the laydown area. The soil bags were then loaded into rock trucks, which were weighed using a scale system provided by RJG, then transported to the American dock to be loaded onto the barge. The barge was properly loaded for gross stability, as per the direction of the captain. The total load weighed in at 560.2 tonnes, as per the scale system in Hopedale. Once all soil bags were loaded onto the barge, they were covered in plastic and netting and strapped down with chains. RJG provided appropriate placards and shipment manifests in accordance with Transportation of Dangerous Goods (TDG) and International Maritime Dangerous Goods (IMDG) codes. The barge was transported to Port Saguenay in La Baie, Quebec (QC) using a tug (the Kaliutik) that was owned and operated by NGC Nunatsiavut Marine Inc. The barge and tug left Hopedale on November 14, 2012 and arrived at Port Saguenay on November 23, 2012.

At Port Saguenay, the soil bags were off-loaded at the Grande-Anse Marine Terminal by Quebec Stevedoring Company Ltd. and loaded onto B-train tractor trailers owned and operated by Groupe Gilbert Ltee. Groupe Gilbert Ltee transported the soil bags approximately 30 km to the Récupère Sol (a division of Benev Capital Inc. (BCI)) thermal treatment facility in St.-Ambroise, QC between November 23 and 27, 2012. Soil was weighed upon arrival at the facility, with a total reported weight of 599.32 tonnes. The Récupère Sol weigh slips, along with the Certificate of Destruction are provided in Appendix E. Based on information contained in the Certificate of Destruction, soil was treated by thermal oxidation in accordance with the Quebec Ministry of Sustainable Development, Environment, Wildlife and Parks "<A" Treatment Criteria (i.e., <0.05 mg/kg).

2.6 Temporary Storage of PCB-Impacted Soil

Once it was discovered that the Kaligak could not accommodate all the soil bags removed to date due to loading requirements and sea conditions at that time of year, efforts were made to source an additional barge and tug to remove the remaining 633 soil bags in Hopedale. No acceptable options were identified and RJG was obligated to store the material at a laydown area (contained in bags, on a liner) over the winter, until the material could be safely transported in 2013. The soil, as demonstrated through testing, contains PCBs at concentrations greater than 50 ppm and is in a quantity greater than 100 mg/kg; therefore, it is defined as a “PCB solid” regulated under PART 3 – STORAGE, as outlined in Clause 18 of the Federal *PCB Regulations* (Canada Environmental Protection Act, 1999). The *PCB Regulations* allow for temporary storage of PCBs during ongoing remedial activities.

All visibly damaged bags were double-bagged and the stockpile was covered in a plastic liner. Clean backfill material was poured onto the plastic to prevent movement of the plastic liner. Boulders were then placed at the entrance to the laydown area to block access from roadway. A public notice sign was also placed at the entrance to the laydown area. Photos of the temporary storage area and signage are provided in Appendix B.

2.7 Temporary Storage of Scrap Metal

Large pieces of scrap metal that were encountered in the remedial excavation at the Old Dump Pond, Stream and Wharf sites were stockpiled north of the ODP – Area 2 remedial excavation, next to the Year 1 metal stockpile. High visibility caution tape was placed around the metal stockpile to alert potential recreational vehicle users of the physical hazard when passing through the area. The portion of metal with detected concentrations of PCBs has been segregated and will be bagged and treated in the same manner as PCB-contaminated soil during Year 3 of the Implementation of the RAP. The remaining un-impacted metal will be transported to a metal recycling facility in Year 3. Photos of the metal stockpile are provided in Appendix B.

3.0 RESULTS

3.1 PCBs in Soil / Sediment

PCB analysis was conducted on 28 confirmatory soil samples collected from the Old Dump Pond site (12-ODP-BS1 to 11-ODP-BS10 and 12-ODP-BS18 to 12-ODP-BS35), 62 of the 87 samples confirmatory soil samples collected from the stream (12-STREAM-SED1 to 12-STREAM-SED84 and 12-STREAM-SS1 to 12-STREAM-SS3) and 34 confirmatory soil samples collected from the wharf site (12-WH-BS1 to 12-WH-BS34). Results of the laboratory analysis of confirmatory soil samples for PCBs at the Old Dump Pond site, the Stream site and the Wharf site are presented in Tables C.1, C.2 and C.3 in Appendix C, respectively. The corresponding analytical reports from Maxxam Analytics Inc. are presented in Appendix D.

Old Dump Pond

Concentrations of PCBs were detected in 26 of the confirmatory soil samples at concentrations ranging from 0.034 mg/kg (12-ODP-BS20) to 510 mg/kg (12-ODP-BS20). The detected concentrations of PCBs in soil samples 12-ODP-BS1 (320 mg/kg), 12-ODP-BS3 (17 mg/kg), 12-ODP-BS5 (13 mg/kg), 12-ODP-BS7 (290 mg/kg), 12-ODP-BS8 (200 mg/kg), 12-ODP-BS18 (51 mg/kg), 12-ODP-BS19 (510 mg/kg), 12-ODP-BS21 (140 mg/kg), 12-ODP-BS22 (27 mg/kg), 12-ODP-BS23 (35 mg/kg), 12-ODP-BS27 (18 mg/kg), 12-ODP-BS29 (11 mg/kg), 12-ODP-BS30 (18 mg/kg), 12-ODP-BS31 (23 mg/kg), 12-ODP-BS32 (14 mg/kg), 12-ODP-BS33 (12 mg/kg) and 12-ODP-BS34 (63 mg/kg) exceeded the SSTL of 9 mg/kg. Concentrations of PCBs detected several confirmatory soil samples collected along the final limits of the remedial excavation exceeded the calculated SSTL of 9 mg/kg (12-ODP-BS7, 12-ODP-BS8, 12-ODP-BS27, 12-ODP-BS29 to 12-ODP-BS34).

Stream

Concentrations of PCBs were detected in 35 of the confirmatory soil samples at concentrations ranging from 0.066 mg/kg (12-STREAM-SED23) to 370 mg/kg (12-STREAM-SED76). The detected concentrations of PCBs in soil samples 12-STREAM-SED1 (30 mg/kg), 12-STREAM-SED2 (97 mg/kg), 12-STREAM-SED42 (52 mg/kg), 12-STREAM-SED44 (23 mg/kg), 12-STREAM-SED45 (34 mg/kg), 12-STREAM-SED70 (24 mg/kg), 12-STREAM-SED73 (36 mg/kg) and 12-STREAM-SED76 (370 mg/kg) exceeded the SSTL of 9 mg/kg. Concentrations of PCBs all confirmatory soil samples collected along the final limits of the remedial excavation were below the calculated SSTL of 9 mg/. Concentrations of PCBs detected in sediment samples collected along the final limits of the excavation ranged from non-detect to 6.7 mg/kg (12-STREAM-SED79 – STN Z) which are below the calculated SSTL of 9 mg/kg.

Wharf

Concentrations of PCBs were detected in each of the 34 confirmatory soil samples at concentrations ranging from 0.37 mg/kg (12-WH-BS15) to 96 mg/kg (12-WH-BS21). The detected concentrations of PCBs in soil samples 12-WH-BS2 (76 mg/kg), 12-WH-BS3 (12 mg/kg), 12-WH-BS4 (15 mg/kg), 12-WH-BS5 (30 mg/kg), 12-WH-BS8 (12 mg/kg), 12-WH-BS10 (18 mg/kg), 12-WH-BS11 (61 mg/kg), 12-WH-BS14 (18 mg/kg), 12-WH-BS19 (25 mg/kg), 12-WH-BS21 (96 mg/kg), 12-WH-BS22 (11 mg/kg), 12-WH-BS23 (58 mg/kg), 12-WH-BS27 (22 mg/kg), 12-WH-BS28 (40 mg/kg), 12-WH-BS29 (19 mg/kg), 12-WH-BS30 (90 mg/kg) and 12-WH-BS33 (21 mg/kg) exceeded the SSTL of 9 mg/kg. Concentrations of PCBs detected in sediment samples collected along the final limits of the excavations ranged from 1.1 mg/kg (12-WH-BS6 to 7.5 mg/kg (12-WHARF-BS32 Lab-Dup) which are below the calculated SSTL of 9 mg/kg.

3.2 Soil Sample Exceedances

Table 3.1 summarizes the soil concentrations from the current investigation for soil remaining at remediated sites that exceeded the calculated SSTL of 9 mg/kg.

Table 3.1 Soil Sample Exceedances

Parameter	Sample No.	Sample Depth (m)	Concentration	Guideline
PCBs	12-ODP-BS7	0.0 – 1.0	290 mg/kg	9 mg/kg (SSTL)
	12-ODP-BS8	0.0 – 1.0	200 mg/kg	
	12-ODP-BS27	0.4 – 0.8	18 mg/kg	
	12-ODP-BS29	0.2 – 0.4	11 mg/kg	
	12-ODP-BS30	0.8 – 1.1	18 mg/kg	
	12-ODP-BS31	0.7 – 1.0	23 mg/kg	
	12-ODP-BS32	0.7 – 1.0	14 mg/kg	
	12-ODP-BS33	0.8 – 1.1	12 mg/kg	
	12-ODP-BS34	0.8 - 1.1	63 mg/kg	
Referenced Guideline: SSTL calculated in the HHERA (Stantec, 2010)				

The estimated area of PCB-impacted soil requiring remediation based on soil sample exceedances is shown on Drawing No. 121411777-300-EE-03 in Appendix A. Based on an estimated area of impacts of 125 m² and a depth of impacts of 1 m, there is an estimated 125 m³ of PCB-impacted soil requiring remediation that remains at the Old Dump Pond site.

3.3 PCBs on Metal

PCB analysis was conducted on 28 swab samples collected from metal debris removed from the remedial excavation at the Old Dump Pond site, including 7 swab samples collected from Year 1 metal debris (12-SWAB1 to 12-SWAB7), 15 initial swab samples collected from Year 2 metal debris (12-SWAB8 to 12-SWAB22) and 6 additional swab samples collected from Year 2 metal debris following additional cleaning (12-SWAB10B, 12-SWAB13B, 12-SWAB16B, 12-SWAB17B, 12-SWAB18B, 12-SWAB20B). Results of the laboratory analysis of swab samples for total PCB content are presented in Table C.4 in Appendix C. The corresponding analytical reports from Maxxam Analytics Inc. are presented in Appendix D.

PCBs were detected in six (6) of the initial Year 2 metal debris swab samples (12-SWAB10, 12-SWAB13, 12-SWAB16, 12-SWAB17, 12-SWAB18 and 12-SWAB20) at concentrations ranging from 5.6 mg/kg to 90 mg/kg. Following the receipt of sample results, additional soil was brushed from the metal debris and the six (6) pieces of metal with previously detected concentrations of PCBs were resampled. PCBs were detected on one (1) of the re-sampled pieces of metal (12-SWAB10B – 11 mg/kg).

3.4 PCBs in Vegetation

PCB analysis was conducted on two (2) vegetation samples collected from grubblings at the wharf site (HARBOUR PLANT-1 and HARBOUR PLANT-2) and one (1) laboratory duplicate sample (HARBOUR PLANT-1 Lab-Dup). Results of the laboratory analysis of samples for PCBs are presented in Table C.5 in Appendix C. The corresponding analytical reports from Maxxam Analytics are presented in Appendix D.

PCBs were detected in each vegetation sample, at concentrations of 0.31 mg/kg in HARBOUR PLANT-1 (0.47 mg/kg in its laboratory duplicate) and 0.37 mg/kg in HARBOUR PLANT-2.

3.5 PCBs in Water

PCB analysis was conducted on six (6) water samples collected from the stream to document water quality during excavation (12-SUBDIV-JUL8A, 12-SUBDIV-JUL8B, 12-SUBDIVISION-JUL9C) and during backfilling (12-SUBDIV-OCT19A, 12-SUBDIV-OCT19B, 12-SUBDIV-OCT19C). Results of the laboratory analysis of samples for PCBs are presented in Table C.6 in Appendix C. The corresponding analytical reports from Maxxam Analytics Inc. are presented in Appendix D.

Low levels of PCBs were detected in water samples 12-SUBDIV-JUL8A and 12-SUBDIV-JUL9C collected during soil removal at concentrations of 0.093 µg/L and 0.079 µg/L, respectively. There are not guidelines for PCBs in surface water.

3.6 TSS in Water

TSS analysis was conducted on six (6) water samples collected from the stream to document water quality during excavation (12-SUBDIV-JUL8A, 12-SUBDIV-JUL8B, 12-SUBDIVISION-JUL9C), prior to backfilling (12-SUBDIV-OCT19A) and after backfilling (12-SUBDIV-OCT19B, 12-SUBDIV-OCT19C). Results of the laboratory analysis of samples for TSS are presented in Table C.6 in Appendix C. The corresponding analytical reports from Maxxam Analytics are presented in Appendix D.

The concentrations of TSS detected in the water samples collected during soil removal on July 8 and 9, 2012 ranged from 170 mg/L to 380 mg/L. It was raining in Hopedale on these two (2) days. The CCME guidelines state that for clear flow, concentrations of TSS in surface water should not increase by more than 25 mg/L from background levels for any short-term exposure (e.g., 24-h period) or by an average of 5 mg/L from background levels for longer term exposures (e.g., inputs lasting between 24 h). No baseline sampling was conducted on July 8, 2012 to determine background levels prior to soil removal; therefore, it is not possible to determine if the CCME guidelines were exceeded. No significant changes in TSS concentrations were observed in weekly surface water samples collected further downstream as part of a PCB flux study (reported under separate cover) in 2012. TSS concentrations measured at the downstream location (approximately 250 m downstream from the remedial area) were 3.4 mg/L on July 2, 2.2 mg/L on July 11, 2.8 mg/L on July 18 and 1.4 mg/L on July 22.

The concentrations of TSS detected in the water samples collected during backfilling on October 19 were non-detect (12-SUBDIV-OCT19B) and 14 mg/L (12-SUBDIV-OCT19C). These values were below the concentration of TSS detected in water sample 12-SUBDIV-OCT19A (23 mg/L) collected prior to backfilling; therefore, the CCME guidelines were met.

3.7 PCBs in Tar-Like Material

PCB analysis was conducted on one (1) sample from a tar-like substance at the wharf site (WHARF-ID-1). Results of the laboratory analysis of samples for PCBs are presented in Table C.7 in Appendix C. The corresponding analytical reports from Maxxam Analytics are presented in Appendix D.

PCBs were detected in the sample at a concentration of 23 mg/kg. This material was removed from the site along with the PCB-impacted soil.

3.8 Product Identification on Tar-Like Material

Product identification was conducted on one (1) sample from a tar-like substance at the wharf site (WHARF-ID-1). Results of the laboratory analysis of samples for product identification are presented in Table C.7 in Appendix C. The corresponding analytical reports from Maxxam Analytics are presented in Appendix D.

The laboratory identified the sample as a heavy oil product. This material was removed from the site along with the PCB-impacted soil.

4.0 CONCLUSIONS AND RECOMMENDATIONS

4.1 Conclusions

Stantec supervised environmental site remediation and conducted confirmatory soil sampling at the Old Dump Pond site, the Stream site and the Wharf site in Hopedale, NL during Year 2 of remedial activities conducted at the Former U.S. Military Site and Residential Subdivision. Site remediation was carried out in response to recommendations provided in a RAP/RMP prepared by Stantec in 2009, an additional delineation program carried out by Stantec in 2010 and a mutually agreeable work plan developed by the Stakeholder Committee. Based on the observations and results obtained from the work completed at the site during Year 2 of the Implementation of the RAP, the following conclusions are made:

- **Old Dump Pond site:** 421 bags of soil were removed from Old Dump Pond- Area 2 (ODP – Area 2) in Year 2. Results of confirmatory soil sampling in this area indicate that additional soil removal is required in the vicinity of samples (12-ODP-BS7, 12-ODP-BS8, 12-ODP-BS27, 12-ODP-BS29 to 12-ODP-BS34), which contained concentrations of PCBs ranging from 11 mg/kg to 63 mg/kg along the northeast and northwest sidewalls of the excavation and 200 to 260 mg/kg along the southwest sidewall of the excavation. Soil removal at ODP – Area 2 was halted on October 1, 2012 due to concerns that the number/weight of bags filled to date may exceed the barge limit; therefore, remediation was not completed at ODP – Area 2 in Year 2 as planned. This area will be remediated in conjunction with Year 3 remedial activities to be conducted in 2013. It shall be noted

that additional soil removal along the southwest sidewall of the remedial excavation is not deemed possible due to the proximity to the pond. This area should be assessed during the development of a remedial action/risk management plan for the pond sediments.

Based the results of soil sampling conducted as part of the current and previous investigations, there is an estimated 125 m³ of additional PCB-impacted soil requiring remediation to the northeast and northwest of the limits of the ODP – Area 2 remedial excavation.

- Stream site: 218 bags of soil/sediment were removed were from Stream site in Year 2. Results of confirmatory soil sampling in this area indicate that concentrations of PCBs detected in soil samples collected along the final limits of the excavation ranged from non-detect to 6.7 mg/kg, which are below the calculated SSTL of 9 mg/kg. Soil/sediment remediation for PCBs in this area is deemed complete.
- Wharf site: 245 bags of soil were removed were from two areas at the Wharf site in Year 2. Results of confirmatory soil sampling in these areas indicate that concentrations of PCBs detected in soil samples collected along the final limits of the excavation ranged from 1.1 mg/kg to 7.5 mg/kg, which are below the calculated SSTL of 9 mg/kg. Soil remediation for PCBs in this area is deemed complete.
- The highest recorded concentrations of PCBs in soil/sediment removed from the site in Year 2 were 510 mg/kg at the Old Dump Pond site, 370 mg/kg at the Stream site and 96 mg/kg at the Wharf site.
- A total of 1,200 1-tonne capacity bags of PCB-impacted soil were excavated in Year 1 and Year 2 of the Implementation of the RAP. 567 of these bags (599.32 tonnes) were transported by barge/tug, and tractor trailer to the Récupère Sol (a division of Benev Capital Inc. (BCI)) thermal treatment facility in St.-Ambroise, QC. PCB-contaminated soil was treated by thermal oxidation in accordance with the Quebec Ministry of Sustainable Development, Environment, Wildlife and Parks “<A” Treatment Criteria (i.e., <0.05 mg/kg). The remaining 633 bags were stored at the laydown area over winter and will be transported out of Hopedale to a treatment facility in Year 3 of the Implementation of the RAP.
- Deterioration due to UV exposure and protruding metal was noted for some of the bags. Bags that were in poor condition were double-bagged prior to shipment.
- Bags left in the laydown area for temporary storage until Year 3 that were in poor condition were double-bagged and the stockpile was covered in a plastic liner. Clean backfill material was poured onto the plastic liner to prevent movement. Boulders were then placed at the entrance to the laydown area to block access from roadway. A public notice sign was also placed at the entrance to the laydown area.
- Large pieces of metal debris encountered in the remedial excavations were segregated from the soil and were cleaned by shaking/brushing/scraping. The metal was cut into smaller pieces, consolidated in a stockpile at the Old Dump Pond site and swab sampled for PCBs. The portion of metal with detected concentrations of PCBs was segregated

into a separate pile. High visibility caution tape was placed around the metal stockpile for winter storage.

- The Year 2 remedial excavations were backfilled using a total of approximately 935 tonnes of clean backfill. An additional 44 tonnes of clean backfill was also added to the Year 1 remedial area (ODP – Area 1) in 2012. Backfill material was obtained from a local rock pit (owned by Max Kinden of Nain) created along the road to the landfill in Hopedale in 2011 and stockpiled at Pit No. 1.

4.2 Recommendations

Based on the results of confirmatory soil sampling conducted as part of environmental site remediation, no further soil remediation for PCBs is necessary at the Stream or Wharf sites at this time. Based on the results of the current and previous site investigations, Stantec makes the following recommendations for the Year 3 remediation program:

1. Complete the removal of PCB-impacted soil exceeding the SSTL of 9 mg/kg and remove buried debris in area that was not completed in Year 2, as follows:
 - a. **Old Dump Pond site:** Area north and west of the limits of the Year 2 remedial excavation, as shown on Drawing No. 121411777-300-EE-03 in Appendix A (not delineated), to a depth of 1.0 mbgs.
2. Remove PCB-impacted soil at the **BMEWS**, as per the proposal provided to NLDEC on May 27, 2011.
3. Collect confirmatory soil samples from the final limits of the excavations and submit for analysis of Total PCBs (rush turnaround time);
4. Once confirming results have been received, monitor the backfilling of the excavations with clean fill material (to be sourced from the Inuit Community of Hopedale) or site grading, as necessary.
5. Load PCB-impacted metal into soil bags for transportation to the soil treatment facility during Year 3.
6. Ensure that the PCB-impacted soil currently stockpiled in the laydown area (from Year 1 and Year 2), PCB-impacted soil removed during the Year 3 remedial program and PCB-impacted metal is transported offsite to an approved soil treatment/disposal facility during Year 3.
7. Ensure that un-impacted metal is transported offsite to a metal recycling facility during Year 3.
8. Prepare daily field reports while onsite and submit to the NLDEC project manager via email daily.
9. Prepare a written report detailing the remediation work completed in Year 3 (2013-2014).

5.0 CLOSURE

This report has been prepared for the sole benefit of the Newfoundland and Labrador Department of Environment and Conservation. The report may not be used by any other person or entity without the express written consent of Stantec Consulting Ltd. and the Newfoundland and Labrador Department of Environment and Conservation.

Any use which a third party makes of this report, or any reliance on decisions made based on it, is the responsibility of such third parties. Stantec 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.

The information and conclusions contained in this report are based upon work undertaken by trained professional and technical staff in accordance with generally accepted engineering and scientific practices current at the time the work was performed. Any site-specific information provided by other parties and used or referenced by Stantec has been assumed by Stantec to be accurate. The conclusions are based on the site conditions encountered by Stantec at the time the work was performed at the specific testing and/or sampling locations, and can only be extrapolated to an undefined limited area around these locations. The extent of the limited area depends on the soil and groundwater conditions, as well as the history of the site reflecting natural, construction and other activities. In addition, analysis has been carried out for a limited number of chemical parameters, and it should not be inferred that other chemical species are not present. Due to the nature of the investigation and the limited data available, Stantec cannot warrant against undiscovered environmental liabilities. Conclusions presented in this report should not be construed as legal advice.

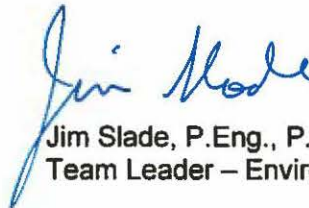
Should any conditions at the site be observed or discovered that differ from those at the sample locations, or should the land use surrounding the identified hazards change significantly, we request that we be notified immediately to reassess the conclusions provided herein. This report was prepared by Anna Roy, B.Sc.E., MIT and reviewed by Jim Slade, P.Eng., P.Geo.

Respectfully submitted,

STANTEC CONSULTING LTD.



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Team Leader – Environmental Remediation

6.0 REFERENCES


- Canadian Council of Ministers of the Environment (CCME). 2006. A Protocol for the Derivation of Environmental and Human Health Soil Quality Guidelines. CCME: Winnipeg.
- Canadian Council of the Ministers of the Environment (CCME). 1999. Canadian Environmental Quality Guidelines (CEQG). Winnipeg, MB. Available at: <http://ceqg-rcqe.ccme.ca/>
- Newfoundland Department of Environment and Conservation (NLDEC), 2005. Contaminated Sites Cleanup Criteria, Policy Directive PPD05-01. Issued February 22, 2005.
- Stantec, 2010. Phase II/III Environmental Site Assessment, Human Health and Ecological Risk Assessments and Remedial Action / Risk Management Plan for the Former U.S. Military Site and Residential Subdivision at Hopedale, Labrador. Project No. 121410103, final report dated May 17, 2010.
- Stantec, 2011. Additional Delineation and Risk Assessment Re-evaluation, Former U.S. Military Site and Residential Subdivision, Hopedale, Labrador. Project No. 121411170, final report dated February 28, 2011.
- Stantec, 2012. Implementation of Remedial Action Plan – Year 1, Former U.S. Military Site and Residential Subdivision, Hopedale, Labrador. Project No. 121411777.200, final report dated April 30, 2012.

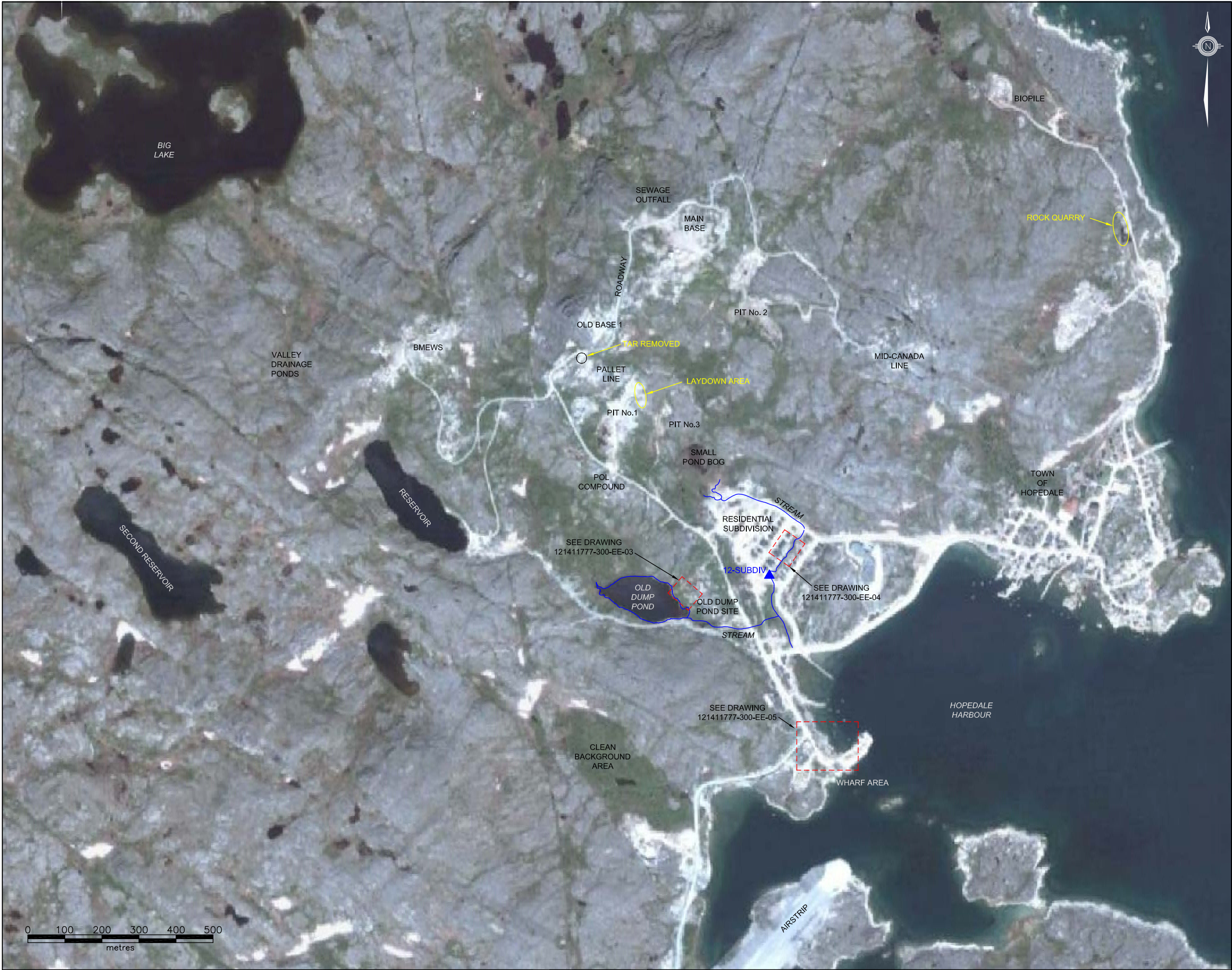
APPENDIX A

Drawings



NOTE: THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

CLIENT: NEWFOUNDLAND AND LABRADOR DEPARTMENT OF ENVIRONMENT AND CONSERVATION	SCALE: 1:50,000	DATE: MAY 13, 2013	 Stantec
PROJECT TITLE: IMPLEMENTATION OF REMEDIAL ACTION PLAN - YEAR 2, FORMER U.S. MILITARY SITE AND RESIDENTIAL SUBDIVISION, HOPEDALE, NL	DRAWN BY: N.M.	CHECKED BY: A.R.	
DRAWING TITLE: SITE LOCATION PLAN	EDITED BY: -	REV. No. 0	
DRAWING No: 121411777-300-EE-01		CAD FILE: 121411777-300-EE-01.DWG	



LEGEND

- STREAM
- ▲ SURFACE WATER SAMPLE LOCATION (STANTEC, 2011 AND 2012)

NOTE: THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

CLIENT:

**NEWFOUNDLAND AND LABRADOR
DEPARTMENT OF ENVIRONMENT
AND CONSERVATION**

PROJECT TITLE:

**IMPLEMENTATION OF REMEDIAL
ACTION PLAN - YEAR 2, FORMER
U.S. MILITARY SITE AND RESIDENTIAL
SUBDIVISION, HOPEDALE, NL**

DRAWING TITLE:

SITE PLAN

Stantec Consulting Ltd.

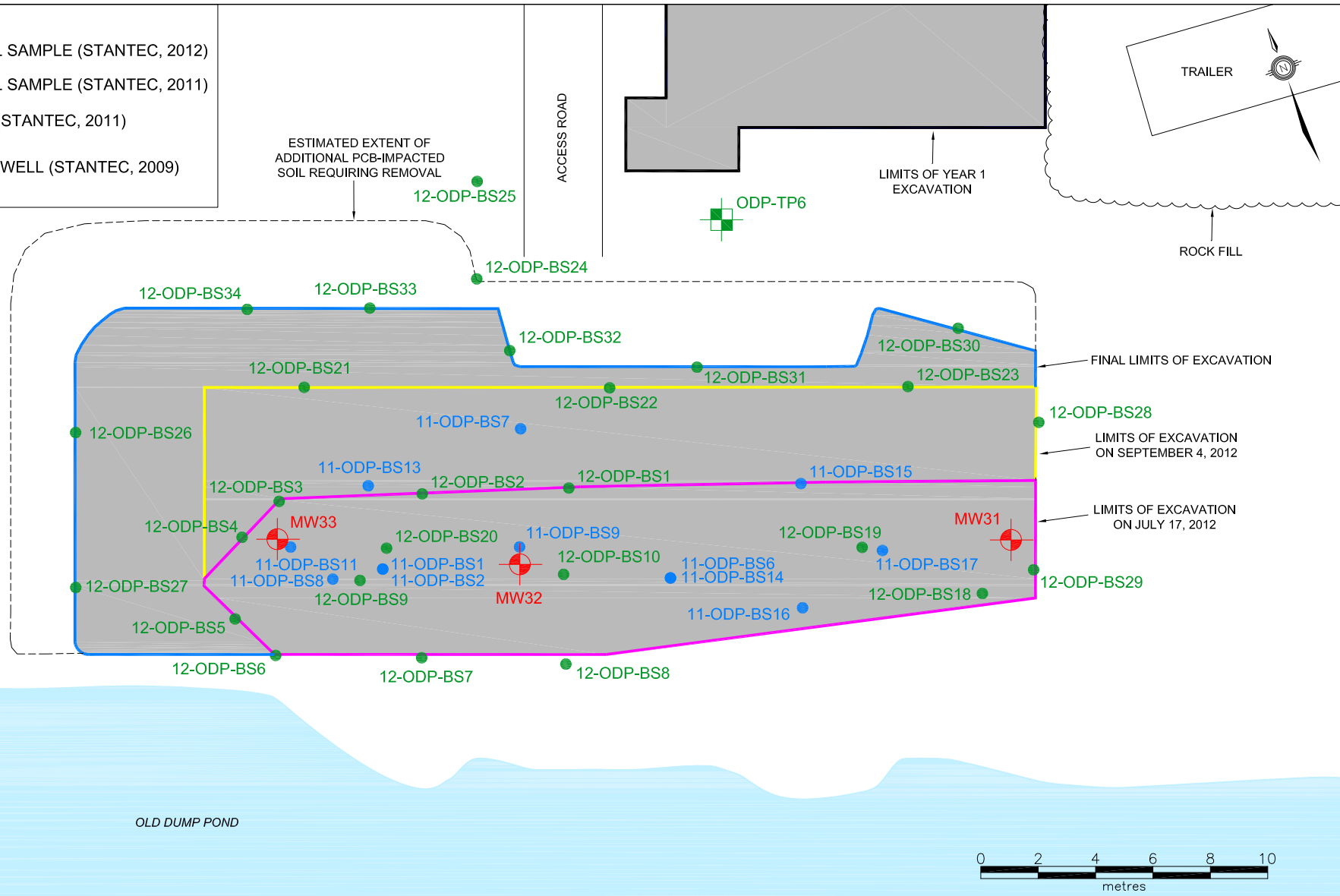


SCALE:	1:10,000	DATE:	JUNE 6, 2013
DRAWN BY:	N.M.	CHECKED BY:	A.R.
EDITED BY:	-	REV. No.	0
DRAWING No:	121411777-300-EE-02		
CAD FILE:	121411777-300-EE-02.DWG		




LEGEND

- BULK SOIL SAMPLE (STANTEC, 2012)
- BULK SOIL SAMPLE (STANTEC, 2011)
- ⊕ TEST PIT (STANTEC, 2011)
- ⊗ MONITOR WELL (STANTEC, 2009)

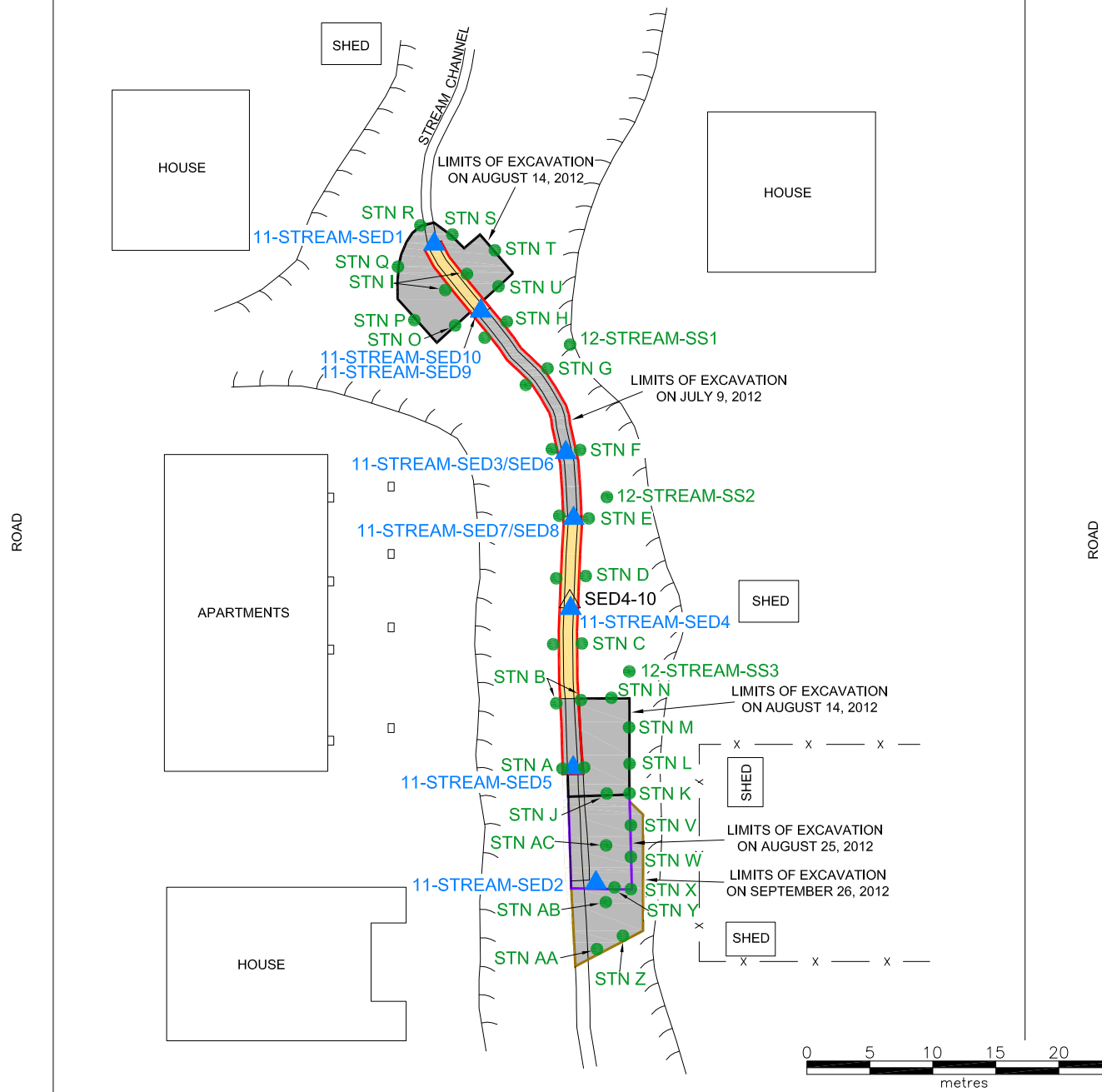


NOTE: THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

CLIENT:	NEWFOUNDLAND AND LABRADOR DEPARTMENT OF ENVIRONMENTAL AND CONSERVATION	SCALE:	1:200	DATE:	JUNE 6, 2013	 Stantec
PROJECT TITLE:	IMPLEMENTATION OF REMEDIAL ACTION PLAN - YEAR 2, FORMER U.S. MILITARY SITE AND RESIDENTIAL SUBDIVISION, HOPEDALE, NL	DRAWN BY:	R.L.	CHECKED BY:	A. R.	
DRAWING TITLE:	REMEDIATION AREA AND SAMPLE LOCATION PLAN - OLD DUMP POND	EDITED BY:	N.M.	REV. No.	0	
		DRAWING No:	121411777-300-EE-03			
		CAD FILE:	121411777-300-EE-03.DWG			

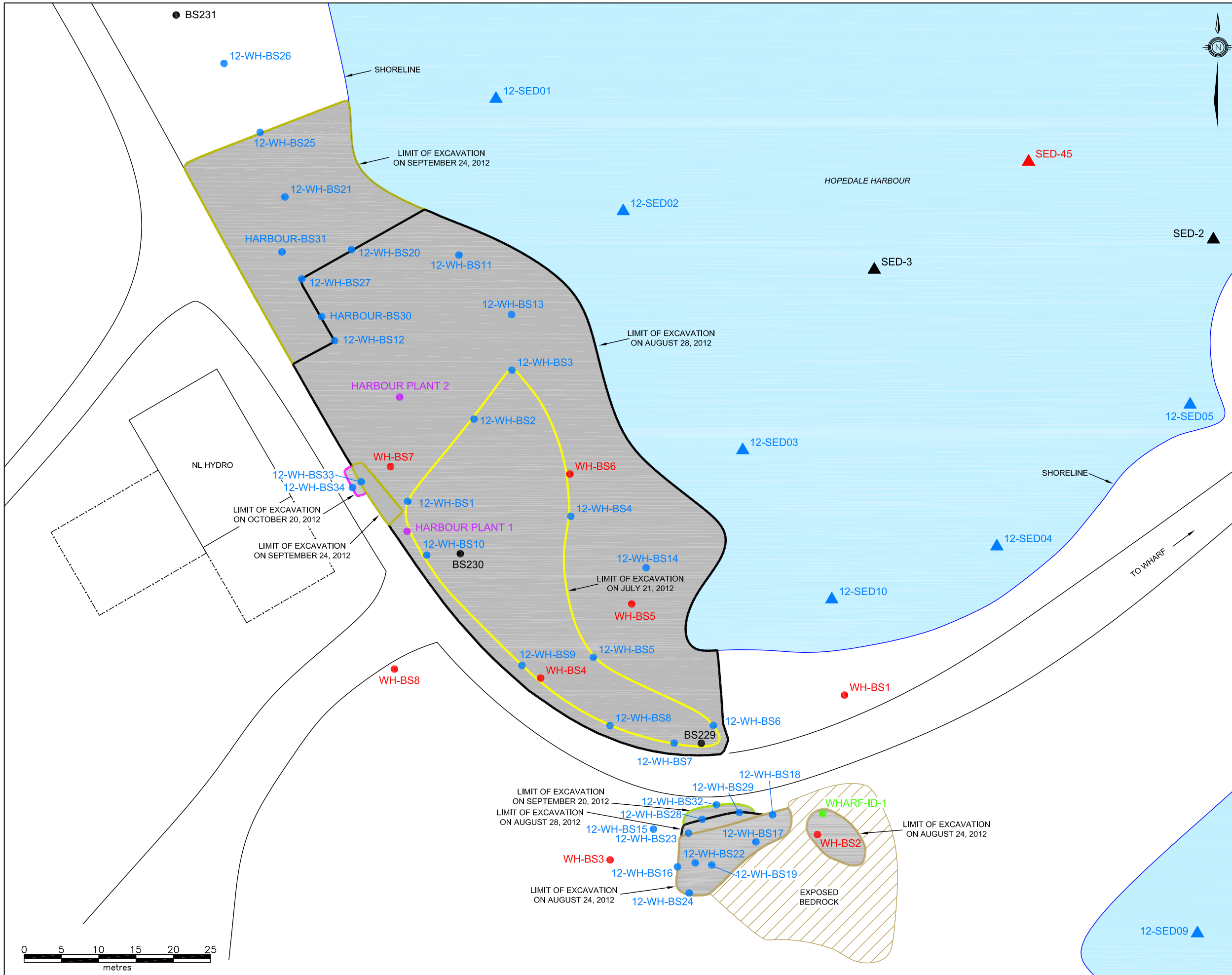
LEGEND

- BULK SAMPLE (STANTEC 2012)
- ▲ SEDIMENT SAMPLE (STANTEC 2011)
- △ SEDIMENT SAMPLE (STANTEC 2010)
- ▨ SLOPE
- - - FENCE
- APPROXIMATE EXTENT OF PCB-IMPACTED SEDIMENT REMOVED TO 0.5 m DEPTH
- APPROXIMATE EXTENT OF PCB-IMPACTED SEDIMENT REMOVED TO 1.0 m DEPTH



NOTE: THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

CLIENT: NEWFOUNDLAND AND LABRADOR DEPARTMENT OF ENVIRONMENTAL AND CONSERVATION		SCALE: 1:500	DATE: JUNE 6, 2013	
PROJECT TITLE: IMPLEMENTATION OF REMEDIAL ACTION PLAN - YEAR 2, FORMER U.S. MILITARY SITE AND RESIDENTIAL SUBDIVISION, HOPEDALE, NL		DRAWN BY: R.L.	CHECKED BY: A. R.	
DRAWING TITLE: REMEDIATION AREA AND SAMPLE LOCATION PLAN - STREAM		EDITED BY: N.M.	REV. No. 1	
		DRAWING No: 121411777-300-EE-04	CAD FILE: 121411777-300-EE-04.DWG	



- LEGEND**
- BULK SOIL SAMPLE (STANTEC 2009)
 - ▲ SEDIMENT SAMPLE (STANTEC 2009)
 - BULK SOIL SAMPLE (STANTEC 2010)
 - ▲ SEDIMENT SAMPLE (STANTEC 2010)
 - BULK SOIL SAMPLE (STANTEC 2012)
 - ▲ SEDIMENT SAMPLE (STANTEC 2012)
 - VEGETATION SAMPLE (STANTEC 2012)
 - TAR SAMPLE (STANTEC 2012)

NOTE: THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

CLIENT:
NEWFOUNDLAND AND LABRADOR DEPARTMENT OF ENVIRONMENT AND CONSERVATION

PROJECT TITLE:
IMPLEMENTATION OF REMEDIAL ACTION PLAN - YEAR 2, FORMER U.S. MILITARY SITE AND RESIDENTIAL SUBDIVISION, HOPEDALE, NL

DRAWING TITLE:
REMEDIATED AREA AND SAMPLE LOCATION PLAN - WHARF

Stantec Consulting Ltd.



SCALE:	1:500	DATE:	JUNE 6, 2013
DRAWN BY:	N.M.	CHECKED BY:	A.R.
EDITED BY:	-	REV. No.:	0
DRAWING No.:	121411777-300-EE-05		
CAD FILE:	121411777-300-EE-05.DWG		

APPENDIX B

Site Photographs

Site Photographs – Implementation of Remedial Action Plan – Year 2, Former U.S. Military Site and Residential Subdivision, Hopedale, NL



Photo 1 Soil removal at Old Dump Pond (ODP) – Area 2 on July 12, 2012.



Photo 2 Remedial excavation overlooking Old Dump Pond.

Site Photographs – Implementation of Remedial Action Plan – Year 2, Former U.S. Military Site and Residential Subdivision, Hopedale, NL



Photo 3 ODP – Area 2 on August 20, 2012.



Photo 4 Final limits of ODP – Area 2 remedial excavation.

Site Photographs – Implementation of Remedial Action Plan – Year 2, Former U.S. Military Site and Residential Subdivision, Hopedale, NL



Photo 5 Backfilling at ODP – Area 2.



Photo 6 ODP – Area 2 following backfilling.

Site Photographs – Implementation of Remedial Action Plan – Year 2, Former U.S. Military Site and Residential Subdivision, Hopedale, NL



Photo 7 Metal stockpile at Old Dump Pond site.



Photo 8 Metal stockpile at Old Dump Pond site.

Site Photographs – Implementation of Remedial Action Plan – Year 2, Former U.S. Military Site and Residential Subdivision, Hopedale, NL



Photo 9 Silt fences installed downstream of the Stream site work area.



Photo 10 Stream on July 9, 2012, looking north.

Site Photographs – Implementation of Remedial Action Plan – Year 2, Former U.S. Military Site and Residential Subdivision, Hopedale, NL



Photo 11 Upper portion of the stream on August 14, 2012 (looking south), following additional soil removal.



Photo 12 Lower portion of the stream on August 26, 2012 (looking southwest), following additional soil removal

Site Photographs – Implementation of Remedial Action Plan – Year 2, Former U.S. Military Site and Residential Subdivision, Hopedale, NL



Photo 13 Stream site reinstatement, looking southwest.



Photo 14 Stream site following backfilling, looking north.

Site Photographs – Implementation of Remedial Action Plan – Year 2, Former U.S. Military Site and Residential Subdivision, Hopedale, NL



Photo 15 Beginning of soil removal at the Wharf site on July 19, 2012.



Photo 16 Wharf site between the shoreline and roadbed on August 21, 2012.

Site Photographs – Implementation of Remedial Action Plan – Year 2, Former U.S. Military Site and Residential Subdivision, Hopedale, NL



Photo 17 Edge of remedial area along the roadbed/pipeline.



Photo 18 Area south of the road at the Wharf site prior to soil removal.

Site Photographs – Implementation of Remedial Action Plan – Year 2, Former U.S. Military Site and Residential Subdivision, Hopedale, NL



Photo 19 Area south of the road at the Wharf site during soil removal.



Photo 20 Area south of the road at the Wharf site during soil removal (terminated on bedrock).

Site Photographs – Implementation of Remedial Action Plan – Year 2, Former U.S. Military Site and Residential Subdivision, Hopedale, NL



Photo 21 Backfilling of area south of the road at the Wharf site on September 18, 2012.



Photo 22 Tar-like material discovered at the Wharf site prior to removal.

Site Photographs – Implementation of Remedial Action Plan – Year 2, Former U.S. Military Site and Residential Subdivision, Hopedale, NL



Photo 23 Tar-like material discovered at the Pallet Line site prior to removal.



Photo 24 Laydown area and stockpiled backfill material at Pit No. 1 on August 25, 2012, looking southeast.

Site Photographs – Implementation of Remedial Action Plan – Year 2, Former U.S. Military Site and Residential Subdivision, Hopedale, NL



Photo 25 Laydown Area on November 9, prior to loading barge.



Photo 26 Bags remaining at laydown area following barge loading (bags covered in plastic).

Site Photographs – Implementation of Remedial Action Plan – Year 2, Former U.S. Military Site and Residential Subdivision, Hopedale, NL



Photo 29 Bags remaining at laydown area following barge loading (bags covered in plastic).



Photo 30 Public Notice sign installed at the entrance to Pit No. 1.

Site Photographs – Implementation of Remedial Action Plan – Year 2, Former U.S. Military Site and Residential Subdivision, Hopedale, NL



Photo 31 Public Notice sign installed at the entrance to Pit No. 1.



Photo 32 Loading soil bags onto the barge on November 8, 2012.

Site Photographs – Implementation of Remedial Action Plan – Year 2, Former U.S. Military Site and Residential Subdivision, Hopedale, NL



Photo 33 Loading soil bags onto the barge on November 9, 2012.



Photo 34 Barge during loading on November 9, 2012.

Site Photographs – Implementation of Remedial Action Plan – Year 2, Former U.S. Military Site and Residential Subdivision, Hopedale, NL



Photo 35 Installation of tarp over soil bags on barge.



Photo 36 Loaded barge on November 12, 2012.

APPENDIX C

Laboratory Analytical Summary Tables

**Table C.1 Results of Laboratory Analysis of PCBs in Soil - Old Dump Pond
Implementation of Remedial Action Plan - Year 2
Former U.S. Military Base and Residential Subdivision, Hopedale, NL
Stantec Project No. 121411777.300**

Sample ID	Sample Depth (m)	Polychlorinated Biphenyls (PCBs)	Comments	
	RDL	0.05	-	
	Units	mg/kg	-	
	SSTL'	9	-	
2009 Sampling - Stantec				
MW31-SS2	1.5 - 2.1	nd	-	
MW32-SS2	0.6 - 1.2	25	Soil removed (ODP - Area 2)	
MW33-SS2	0.6 - 1.2	4	-	
MW61-SS1	0.0 - 0.5	29	Soil removed (ODP - Area 1)	
MW62-SS3	1.2 - 1.8	0.2	-	
AG2-FS2	1.5	0.54	-	
AG4-FS1	0.3	1.1	-	
2010 Sampling - Stantec				
ODP-TP1 BS1	0 - 0.15	5.6	-	
ODP-TP2 BS1	0 - 0.3	50	Soil removed (ODP-Area 1)	
ODP-TP3 BS1	0 - 0.5	nd	-	
ODP-TP4 BS1	0 - 0.1	0.23	-	
ODP-TP6 BS1	0 - 0.5	8.9	-	
2011 Sampling - Stantec				
ODP - Area 1	11-ODP-TP1	0.0 - 1.0	11	Soil removed.
	11-ODP-TP2	0.0 - 1.0	14	Soil removed.
	11-ODP-BS1	0.0 - 0.1	2.5	-
	11-ODP-BS2	0.0 - 0.5	0.8	-
	11-ODP-BS3	0.0 - 0.5	0.59	-
	11-ODP-BS4	0.0 - 0.5	4.1	-
	11-ODP-BS5	1.0	34	Soil removed.
	11-ODP-BS10	0.0 - 0.7	18	Soil removed.
ODP - Area 2	11-ODP-BS18	0.3 - 0.5	0.41	-
	11-ODP-BS6	0.0 - 0.5	64	Soil removed.
	11-ODP-BS7	0.0 - 0.5	8.9	-
	11-ODP-BS8	0.0 - 0.5	67	Soil removed.
	11-ODP-BS9	0.7	39	Soil removed.
	11-ODP-BS11	0.0 - 0.5	12	Soil removed.
	11-ODP-BS12	1.3 - 1.4	1.1	-
	11-ODP-BS13	0.0 - 0.5	4.1	-
	11-ODP-BS14	1.4 - 1.5	0.94	-
	11-ODP-BS15	0.0 - 0.5	39	Soil removed.
11-ODP-BS16	0.0 - 0.5	28	Soil removed.	
11-ODP-BS17	0.0 - 0.5	8.3	-	
2012 Sampling - Stantec				
ODP - Area 2	12-ODP-BS1	0.0 - 1.0	320	Soil removed.
	12-ODP-BS1 Lab-Dup	0.0 - 1.0	210	Soil removed.
	12-ODP-BS2	0.0 - 1.0	1.7	Soil removed due to impacts detected in surrounding samples.
	12-ODP-BS3	0.0 - 1.0	17	Soil removed.
	12-ODP-BS4	0.0 - 1.0	0.52	Soil removed due to impacts detected in surrounding samples.
	12-ODP-BS5	0.0 - 1.0	13	Soil removed.
	12-ODP-BS6	0.0 - 1.0	3.7	-

**Table C.1 Results of Laboratory Analysis of PCBs in Soil - Old Dump Pond
Implementation of Remedial Action Plan - Year 2
Former U.S. Military Base and Residential Subdivision, Hopedale, NL
Stantec Project No. 121411777.300**

Sample ID	Sample Depth (m)	Polychlorinated Biphenyls (PCBs)	Comments	
	RDL	0.05	-	
	Units	mg/kg	-	
	SSTL ¹	9	-	
ODP - Area 2	12-ODP-BS7	0.0 - 1.0	290	Soil remains onsite due to proximity to pond.
	12-ODP-BS8	0.0 - 1.0	200	Soil remains onsite due to proximity to pond.
	12-ODP-BS9	1.0 - 1.1 (base)	nd	-
	12-ODP-BS10	1.0 - 1.1 (base)	2.4	-
	12-ODP-BS18	0.5 (base)	51	Soil removed.
	12-ODP-BS19	0.5 (base)	510	Soil removed.
	12-ODP-BS20	1.0 (base)	0.034	-
	12-ODP-BS21	0 - 1.0	140	Soil removed.
	12-ODP-BS22	0 - 1.0	27	Soil removed.
	12-ODP-BS23	0 - 1.0	35	Soil removed.
	12-ODP-BS24	1.0	5.8	-
	12-ODP-BS25	1.0	4.7	-
	12-ODP-BS26	0 - 0.4	2.4	-
	12-ODP-BS27	0.4 - 0.8	18	Soil remains onsite.
	12-ODP-BS28	0 - 0.2	nd	-
	12-ODP-BS29	0.2 - 0.4	11	Soil remains onsite.
	12-ODP-BS30	0.8 - 1.1	18	Soil remains onsite.
	12-ODP-BS30 Lab-Dup	0.8 - 1.1	20	Soil remains onsite.
	12-ODP-BS31	0.7 - 1.0	23	Soil remains onsite.
12-ODP-BS32	0.7 - 1.0	14	Soil remains onsite.	
12-ODP-BS33	0.8 - 1.1	12	Soil remains onsite.	
12-ODP-BS34	0.8 - 1.1	63	Soil remains onsite.	

Notes:

1 = Site Specific Target Level (SSTL) calculated for PCBs in soil at the Residential Area of Hopedale (Stantec, 2010)

RDL = Reportable Detection Limit for routine analysis

nd = Not detected above laboratory detection limit

Lab-dup = laboratory duplicate sample

Bold/Shaded = Value exceeds SSTL calculated for PCBs at the Residential Area of Hopedale (Stantec, 2010)

**Table C.2 Results of Laboratory Analysis of PCBs in Soil/Sediment - Stream
Implementation of Remedial Action Plan - Year 2
Former US Military Base and Residential Subdivision, Hopedale, NL
Stantec Project No. 121411777.300**

Station ID	Sample ID	Sample Depth (m)	Total Organic Carbon (TOC)	Polychlorinated Biphenyls (PCBs)	Comments
		RDL	0.2	0.05	-
		Units	g/kg	mg/kg	-
		SSTL ¹	-	9	-
2009 Sampling - Stantec					
-	SED-65	0.0 - 0.3	-	nd	-
-	SED-66	0.0 - 0.3	-	nd	-
-	SED-67	0.0 - 0.3	-	0.48	-
-	SED-68	0.0 - 0.3	-	0.4	-
-	SED-73	0.0 - 0.3	-	0.14	-
-	SED-74	0.0 - 0.3	-	0.3	-
-	SED-75	0.0 - 0.3	-	0.38	-
-	SED-76	0.0 - 0.3	-	0.2	-
-	SED-77	0.0 - 0.3	-	0.46	-
2010 Sampling - Stantec					
-	SED1-10	0.0 - 0.3	9.1 (0.3)	0.16	-
-	SED2-10	0.0 - 0.3	10	0.92	-
-	SED3-10	0.0 - 0.3	5.3	0.31	-
-	SED4-10	0.0 - 0.3	94 (3)	17	Soil/sediment removed.
-	SED5-10	0.0 - 0.3	11	3.5	-
-	SED6-10	0.0 - 0.3	23 (0.4)	0.53	-
-	SED7-10	0.0 - 0.3	6.6	0.33	-
-	SED8-10	0.0 - 0.3	7.5	0.43	-
-	SED9-10	0.0 - 0.3	7.7	0.36	-
2011 Sampling - Stantec					
-	11-Stream-SED1	0.0 - 0.15	-	0.09	-
-	11-Stream-SED2	0.0 - 0.15	-	4.6	Soil/sediment removed due to impacts detected in surrounding samples.
-	11-Stream-SED3	0.5	-	22	Soil removed
-	11-Stream-SED4	0.5	-	1.6	Soil/sediment removed due to impacts detected in surrounding samples.
-	11-Stream-SED5	0.5	-	0.02	Soil/sediment removed due to impacts detected in surrounding samples.
-	11-Stream-SED5 Lab-Dup	0.5	-	0.03	
-	11-Stream-SED6	1.0	-	nd (0.010)	-
-	11-Stream-SED7	0.5	-	nd (0.010)	-
-	11-Stream-SED8	1.0	-	nd (0.010)	-
-	11-Stream-SED9	0.5	-	nd (0.010)	Soil/sediment removed due to impacts detected in surrounding samples.
-	11-Stream-SED10	1.0	-	nd (0.010)	-
-	11-Stream-SED10 Lab-Dup	1.0	-	nd (0.010)	-
2012 Sampling - Stantec					
STN A	12-STREAM-SED1	0.0 - 0.1	-	30	Soil/sediment removed.
	12-STREAM-SED1 Lab-Dup	0.0 - 0.1	-	15	Soil/sediment removed.
	12-STREAM-SED2	0.5 - 0.6	-	97	Soil/sediment removed.
	12-STREAM-SED3	0.0 - 0.1	-	1.9	-
STN B	12-STREAM-SED4	0.5 - 0.6	-	3.3	-
	12-STREAM-SED5	0.0 - 0.1	-	1.8	-
	12-STREAM-SED6	0.5 - 0.6	-	0.6	-
	12-STREAM-SED8	0.5 - 0.6	-	0.22	-

**Table C.2 Results of Laboratory Analysis of PCBs in Soil/Sediment - Stream
Implementation of Remedial Action Plan - Year 2
Former US Military Base and Residential Subdivision, Hopedale, NL
Stantec Project No. 121411777.300**

Station ID	Sample ID	Sample Depth (m)	Total Organic Carbon (TOC)	Polychlorinated Biphenyls (PCBs)	Comments
		RDL	0.2	0.05	-
		Units	g/kg	mg/kg	-
		SSTL ¹	-	9	-
STN C	12-STREAM-SED10	0.5 - 0.6	-	0.12	-
	12-STREAM-SED12	0.5 - 0.6	-	nd (0.010)	-
STN D	12-STREAM-SED14	0.5 - 0.6	-	nd (0.010)	-
	12-STREAM-SED16	0.5 - 0.6	-	nd (0.010)	-
STN E	12-STREAM-SED19	0.9 - 1.0	-	nd (0.010)	-
	12-STREAM-SED22	0.9 - 1.0	-	nd (0.010)	-
STN F	12-STREAM-SED23	0.0 - 0.1	-	0.066	-
	12-STREAM-SED25	1.0 - 1.1	-	0.19	-
	12-STREAM-SED26	0.0 - 0.1	-	0.2	-
	12-STREAM-SED28	1.0 - 1.1	-	nd (0.010)	-
STN G	12-STREAM-SED30	0.5 - 0.6	-	0.28	-
	12-STREAM-SED31	1.0 - 1.1	-	nd (0.010)	-
	12-STREAM-SED33	0.5 - 0.6	-	nd	-
	12-STREAM-SED34	1.0 - 1.1	-	5.1	-
STN H	12-STREAM-SED36	0.5 - 0.6	-	nd	-
	12-STREAM-SED37	0.9 - 1.0	-	nd (0.010)	-
	12-STREAM-SED39	0.5 - 0.6	-	0.33	-
	12-STREAM-SED40	0.9 - 1.0	-	0.27	-
STN I	12-STREAM-SED41	0.0 - 0.1	-	0.071	Soil/sediment removed due to impacts detected in sample 12-STREAM-SED42.
	12-STREAM-SED42	0.5 - 0.6	-	52	Soil/sediment removed.
	12-STREAM-SED43	0.0 - 0.1	-	0.19	Soil/sediment removed due to impacts detected in sample 12-STREAM-SED44.
	12-STREAM-SED43 Lab-Dup	0.0 - 0.1	-	0.14	
	12-STREAM-SED44	0.5 - 0.6	-	23	Soil/sediment removed.
-	12-STREAM-SS1	0.0 - 0.1	-	0.44	-
-	12-STREAM-SS2	0.0 - 0.1	-	1.5	-
-	12-STREAM-SS3	0.0 - 0.1	-	2.1	-
STN J	12-STREAM-SED45	0.0 - 0.1	-	34	Soil/sediment removed.
	12-STREAM-SED46	0.4 - 0.5	-	nd	-
STN K	12-STREAM-SED48	0.7 - 0.8	-	nd	-
	12-STREAM-SED48 Lab-Dup	0.7 - 0.8	-	nd	-
STN L	12-STREAM-SED49	0.0 - 0.1	-	nd	-
	12-STREAM-SED51	0.9 - 1.0	-	nd	-
STN M	12-STREAM-SED53	0.6 - 0.7	-	nd	-
STN N	12-STREAM-SED55	0.5 - 0.6	-	nd	-
STN O	12-STREAM-SED56	0.0 - 0.1	-	0.099	-
	12-STREAM-SED57	1.0 - 1.1	-	nd	-
STN P	12-STREAM-SED59	0.6 - 0.65	-	nd	-
STN Q	12-STREAM-SED61	0.5 - 0.6	-	nd	-
STN R	12-STREAM-SED63	0.3 - 0.35	-	nd	-
STN S	12-STREAM-SED64	0.0 - 0.1	-	0.092	-
	12-STREAM-SED65	0.95 - 1.05	-	nd	-
STN T	12-STREAM-SED66	0.0 - 0.1	-	2.2	-
	12-STREAM-SED67	1.2 - 1.3	-	nd	-
STN U	12-STREAM-SED68	0.0 - 0.1	-	0.14	-
	12-STREAM-SED69	0.7 - 0.8	-	nd	-
	12-STREAM-SED69 Lab-Dup	0.7 - 0.8	-	nd	-

**Table C.2 Results of Laboratory Analysis of PCBs in Soil/Sediment - Stream
Implementation of Remedial Action Plan - Year 2
Former US Military Base and Residential Subdivision, Hopedale, NL
Stantec Project No. 121411777.300**

Station ID	Sample ID	Sample Depth (m)	Total Organic Carbon (TOC)	Polychlorinated Biphenyls (PCBs)	Comments
		RDL	0.2	0.05	-
		Units	g/kg	mg/kg	-
		SSTL¹	-	9	-
STN V	12-STREAM-SED70	0.0 - 0.1	-	24	Soil/sediment removed.
	12-STREAM-SED70 Lab-Dup	0.0 - 0.1	-	30	Soil/sediment removed.
STN W	12-STREAM-SED73	0.4 - 0.5	-	36	Soil/sediment removed.
STN Y	12-STREAM-SED75	0.0 - 0.1	-	8.5	Soil/sediment removed due to impacts detected in sample 12-STREAM-SED76.
	12-STREAM-SED76	0.3 - 0.4	-	370	Soil/sediment removed.
	12-STREAM-SED77	0.8 - 1.0	-	nd	-
STN Z	12-STREAM-SED77 Lab-Dup	0.8 - 1.0	-	nd	-
	12-STREAM-SED78	0.6 - 0.8	-	nd	-
	12-STREAM-SED79	0 - 0.3	-	6.7	-
STN AA	12-STREAM-SED80	0.8 - 1.0	-	nd	-
	12-STREAM-SED81	0.6 - 0.8	-	nd	-
	12-STREAM-SED82	0 - 0.3	-	1.5	-
STN AB	12-STREAM-SED83	0.4 - 0.5	-	0.078	-
STN AC	12-STREAM-SED84	0.5 - 0.6	-	0.39	-

Notes:

1 = Site Specific Target Level (SSTL) calculated for PCBs in soil at the Residential Area of Hopedale (Stantec, 2010)

RDL = Reportable Detection Limit for routine analysis

nd = not detected above laboratory detection limit

Lab-dup = laboratory duplicate sample

(#) = Elevated RDLs shown in brackets. Elevated RDLs used due to reduced sample weight

Bold/Shaded = Value exceeds SSTL calculated for PCBs at the Residential Area of Hopedale (Stantec, 2010)

**Table C.3 Results of Laboratory Analysis of PCBs in Soil - Wharf
Implementation of Remedial Action Plan - Year 2
Former US Military Base and Residential Subdivision, Hopedale, NL
Stantec Project No. 121411777.300**

Sample ID	Sample Depth (m)	Polychlorinated Biphenyls (PCBs)	Comments
	RDL	0.05	-
	Units	mg/kg	-
	SSTL ¹	9	-
2009 Sampling - Stantec			
MW54-SS2	0.6 - 1.2	nd	
MW55-SS3	1.2 - 1.8	nd	-
MW56-SS3	1.2 - 1.8	nd	-
MW57-SS3	1.2 - 1.8	nd	-
MW69-SS4	1.8 - 2.4	0.2	-
BS229	0.22	13	Soil removed.
BS230	0.06	24	Soil removed.
BS231	0.10	7.9	-
2010 Sampling - Stantec			
WH-BS2-10	0.0 - 0.25	24	Soil removed.
WH-BS2-10 Lab-Dup	0.0 - 0.25	21	
WH-BS4-10	0.0 - 0.25	26	Soil removed.
WH-BS5-10	0.0 - 0.1	2.9	Soil removed due to impacts detected in surrounding samples.
WH-BS6-10	0.0 - 0.1	26	Soil removed.
WH-BS7-10	0.0 - 0.1	5.5	Soil removed due to impacts detected in surrounding samples.
2012 Sampling - Stantec			
12-WH-BS1	0.0 - 0.1	5.4	Soil removed due to impacts detected in surrounding samples.
12-WH-BS1 Lab-Dup	0.0 - 0.1	5.1	
12-WH-BS2	0.0 - 0.15	76	Soil removed.
12-WH-BS3	0.0 - 0.05	12	Soil removed.
12-WH-BS4	0.0 - 0.07	15	Soil removed.
12-WH-BS5	0.0 - 0.08	30	Soil removed.
12-WH-BS6	0.0 - 0.05	1.1	-
12-WH-BS7	0.0 - 0.1	5.4	Soil removed due to impacts detected in other samples collected near the roadbed.
12-WH-BS8	0.0 - 0.05	12	Soil removed.
12-WH-BS9	0.0 - 0.1	2.3	Soil removed due to impacts detected in other samples collected near the roadbed.
12-WH-BS10	0.0 - 0.05	18	Soil removed.
12-WH-BS11	0.0 - 0.2	61	Soil removed.
12-WH-BS11 Lab-Dup	0.0 - 0.2	62	
12-WH-BS12	0.0 - 0.1	0.65	Soil removed due to impacts detected in surrounding samples.
12-WH-BS13	0.0 - 0.15	8	Soil removed due to impacts detected in surrounding samples.
12-WH-BS14	0.0 - 0.2	18	Soil removed.
12-WH-BS15	0.0 - 0.5	0.37	-
12-WH-BS16	0.0 - 0.5	1.7	-
12-WH-BS17	0.0 - 0.4	6.7	Soil removed to bedrock.
12-WH-BS18	0.0 - 0.4	5.9	-
12-WH-BS19	0.0 - 0.4	25	Soil removed.

**Table C.3 Results of Laboratory Analysis of PCBs in Soil - Wharf
Implementation of Remedial Action Plan - Year 2
Former US Military Base and Residential Subdivision, Hopedale, NL
Stantec Project No. 121411777.300**

Sample ID	Sample Depth (m)	Polychlorinated Biphenyls (PCBs)	Comments	
		RDL	0.05	-
		Units	mg/kg	-
		SSTL ¹	9	-
12-WH-BS20	0.3 - 0.4	4.1	Soil removed due to impacts detected in surrounding samples.	
12-WH-BS21	0.1 - 0.2	96	Soil removed.	
12-WH-BS22	0.7 - 0.8 (base)	11	Soil removed.	
12-WH-BS23	0.7 - 0.8	58	Soil removed.	
12-WH-BS24	0.3 - 0.4	3.4	-	
12-WH-BS25	0.0 - 0.1	4.2	-	
12-WH-BS26	0.0 - 0.5	1.9	-	
12-WH-BS27	0.0 - 0.2	22	Soil removed.	
12-WH-BS28	0.7 - 0.8	40	Soil removed.	
12-WH-BS28 Lab-Dup	0.7 - 0.8	46		
12-WH-BS29	0.1 - 0.3	19	Soil removed.	
HARBOUR-BS30		90	Soil removed.	
HARBOUR-BS31		8.2	Soil removed due to impacts detected in surrounding samples.	
12-WH-BS32	0.2 - 0.4	6.0	-	
12-WH-BS32 Field Dup	0.2 - 0.4	4.2		
12-WHARF-BS32 Lab-Dup	0.2 - 0.4	7.5		
12-WH-BS33	0.2 - 0.3	21	Soil removed.	
12-WH-BS34	0.3 - 0.6	1.7	-	

Notes:

1 = Site Specific Target Level (SSTL) calculated for PCBs at the Residential Area of Hopedale (Stantec, 2010)

RDL = Reportable Detection Limit for routine analysis

nd = Not detected above laboratory detection limit

Lab-dup = laboratory duplicate sample

Bold/Shaded = Value exceeds SSTL calculated for PCBs at the Residential Area of Hopedale (Stantec, 2010)

**Table C.4 Results of Laboratory Analysis of PCBs on Metal
Implementation of Remedial Action Plan - Year 2
Former US Military Base and Residential Subdivision, Hopedale, NL
Stantec Project No. 121411777.300**

Sample ID		Sample Location	Polychlorinated Biphenyls (PCBs)
		RDL	5
		Units	µg
2011 Sampling - Stantec			
Year 1 Metal	11-ODP-SWAB1	Rusted barrel (unwashed)	nd
	11-ODP-SWAB2	Scrap metal (unwashed)	nd
	11-ODP-SWAB3	Scrap metal (unwashed)	nd
2012 Sampling - Stantec			
Year 1 Metal	12-SWAB1	3" steel pipe (unwashed)	nd
	12-SWAB2	1" diameter rebar (unwashed)	nd
	12-SWAB3	Steel chassis, rebar and 3" steel pipe (unwashed)	nd
	12-SWAB4	Rusted barrel (unwashed)	nd
	12-SWAB5	6" steel pipe elbow (unwashed)	nd
	12-SWAB6	5 to 6 tonne track (unwashed)	nd
	12-SWAB7	16" diameter pipe (unwashed)	nd
Year 2 Metal	12-SWAB8	Metal Box (unwashed)	nd
	12-SWAB9	45 Gallon Barrel (unwashed)	nd
	12-SWAB10	Spring (unwashed)	21
	12-SWAB11	3" Pipe (unwashed)	nd
	12-SWAB12	Large Boiler (unwashed)	nd
	12-SWAB13	Metal Railing (unwashed)	5.6
	12-SWAB14	Metal Cable (unwashed)	nd
	12-SWAB15	Metal Sheeting (unwashed)	nd
	12-SWAB16	45 Gallon Barrel (unwashed)	15
	12-SWAB17	Metal Railing (unwashed)	13
	12-SWAB18	45 Gallon Barrel (unwashed)	5.9
	12-SWAB19	Curugated Pipe (unwashed)	nd
	12-SWAB20	Large Pipe (unwashed)	90
	12-SWAB21	3" Pipe (unwashed)	nd
	12-SWAB22	Metal Cable (unwashed)	nd
	12-SWAB10B	Spring (unwashed) - additional excess soil removed	11
	12-SWAB13B	Metal Railing (unwashed) - additional excess soil	nd
	12-SWAB16B	45 Gallon Barrel (unwashed) - additional excess soil	nd
	12-SWAB17B	Metal Railing (unwashed) - additional excess soil	nd
	12-SWAB18B	45 Gallon Barrel (unwashed) - additional excess soil	nd
12-SWAB20B	Large Pipe (unwashed) - additional excess soil removed	nd	

Notes:

RDL = Reportable Detection Limit for routine analysis

nd = Not detected above laboratory detection limit

Lab-dup = laboratory duplicate sample

Bold = PCBs detected in sample

**Table C.5 Results of Laboratory Analysis of PCBs in Vegetation - Wharf
 Implementation of Remedial Action Plan - Year 2
 Former US Military Base and Residential Subdivision, Hopedale, NL
 Stantec Project No. 121411777.300**

Sample ID	Polychlorinated Biphenyls (PCBs)
RDL	0.050
Units	mg/kg
2012 Sampling - Stantec	
HARBOUR PLANT-1	0.31
HARBOUR PLANT-1 Lab-Dup	0.47
HARBOUR PLANT-2	0.37

Notes:

RDL = Reportable Detection Limit for routine analysis

Lab-dup = laboratory duplicate sample

**Table C.6 Results of Laboratory Analysis of TSS and PCBs in Water - Stream
Implementation of Remedial Action Plan - Year 2
Former U.S. Military Base and Residential Subdivision, Hopedale, NL
Stantec Project No. 121411777.300**

Sampling Date	Sample ID	Total Suspended Solids	Polychlorinated Biphenyls (PCBs)	Comments
	RDL	1 - 5	0.05	-
	Units	mg/L	µg/L	-
2011 Sampling - Stantec				
11-SUBDIV-OCT30	30-Oct-11	2	<0.05	
2012 Sampling - Stantec				
12-SUBDIV-JUL8A	8-Jul-12 10:30 AM	170	0.093	Collected during stream excavation
12-SUBDIV-JUL8B	8-Jul-12 5:45 PM	64	<0.050	Collected during stream excavation
12-SUBDIV-JUL9C	9-Jul-12 9:10 AM	380	0.079	Collected during stream excavation
12-SUBDIV-JUL9C Lab-Dup	9-Jul-12 9:10 AM	430	-	Collected during stream excavation
12-SUBDIV-OCT19A	19-Oct-12 12:00 AM	23	<0.050	Collected during backfilling
12-SUBDIV-OCT19B	19-Oct-12 12:00 AM	<2.0	<0.050	Collected during backfilling
12-SUBDIV-OCT19C	19-Oct-12 12:00 AM	14	<0.050	Collected during backfilling

Notes:

RDL = Reportable Detection Limit

< # = Not detected above RDL noted

Lab-dup = laboratory duplicate sample

**Table C.7 Results of Laboratory Analysis of PCBs and Product Identification in Tar
 Implementation of Remedial Action Plan - Year 2
 Former US Military Base and Residential Subdivision, Hopedale, NL
 Stantec Project No. 121411777.300**

Sample ID	Polychlorinated Biphenyls (PCBs)	Product Identification
RDL	0.50	-
Units	mg/kg	-
WHARF-ID-1	23	Product is a heavy oil product.

Notes:

RDL = Reportable Detection Limit

APPENDIX D

Laboratory Analytical Reports

Your P.O. #: 16400NR
Your Project #: 121411777.200
Site Location: STREAM
Your C.O.C. #: ES564012

Attention: James Slade

Stantec Consulting Ltd
607 Torbay Rd
St. John's, NL
A1A 4Y6

Report Date: 2012/07/13**CERTIFICATE OF ANALYSIS**

MAXXAM JOB #: B2A3161
Received: 2012/07/11, 09:10

Sample Matrix: Water
Samples Received: 3

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
PCBs in water by GC/ECD (1)	3	2012/07/12	2012/07/13	ATL SOP 00107	Based on EPA8082
Total Suspended Solids (1)	3	N/A	2012/07/12	ATL SOP 00007	based on EPA 160.2

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

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

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Total cover pages: 1

Page 1 of 4

Maxxam Job #: B2A3161
 Report Date: 2012/07/13

Stantec Consulting Ltd
 Client Project #: 121411777.200
 Site Location: STREAM
 Your P.O. #: 16400NR
 Sampler Initials: RMP

RESULTS OF ANALYSES OF WATER

Maxxam ID		OC0828		OC0829		OC0830	OC0830		
Sampling Date		2012/07/08		2012/07/08		2012/07/09	2012/07/09		
	Units	12 - SUBDIV - JUL 8 A	RDL	12 - SUBDIV - JUL 8 B	RDL	12 - SUBDIV - JUL 9 C	12 - SUBDIV - JUL 9 C Lab-Dup	RDL	QC Batch
Inorganics									
Total Suspended Solids	mg/L	170	5.0	64	2.0	380	430	5.0	2905869

POLYCHLORINATED BIPHENYLS BY GC-ECD (WATER)

Maxxam ID		OC0828	OC0829	OC0830		
Sampling Date		2012/07/08	2012/07/08	2012/07/09		
	Units	12 - SUBDIV - JUL 8 A	12 - SUBDIV - JUL 8 B	12 - SUBDIV - JUL 9 C	RDL	QC Batch
PCBs						
Total PCB	ug/L	0.093	<0.050	0.079	0.050	2904983
Surrogate Recovery (%)						
Decachlorobiphenyl	%	59 ⁽¹⁾	74 ⁽²⁾	55 ⁽¹⁾		2904983

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

(1) - Aroclor 1260. PCB sample contained sediment.

(2) - PCB sample contained sediment.

Maxxam Job #: B2A3161
 Report Date: 2012/07/13

Stantec Consulting Ltd
 Client Project #: 121411777.200
 Site Location: STREAM
 Your P.O. #: 16400NR
 Sampler Initials: RMP

QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits	% Recovery	QC Limits
2904983	Decachlorobiphenyl	2012/07/13	TBA	30 - 130	79	30 - 130	76	%				
2904983	Total PCB	1899/12/30	TBA	70 - 130	81	70 - 130	<0.050	ug/L	TBA	40		
2905869	Total Suspended Solids	2012/07/12					<1.0	mg/L	11.2	25	98	80 - 120

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.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.

Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.


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.

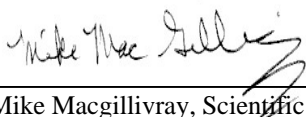
Validation Signature Page

Maxxam Job #: B2A3161

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

A handwritten signature in black ink, appearing to read "Alan Stewart", written over a horizontal line.

Alan Stewart, Scientific Specialist (Organics)

A handwritten signature in black ink, appearing to read "Mike Macgillivray", written over a horizontal line.

Mike Macgillivray, Scientific Specialist (Inorganics)

=====

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Your P.O. #: 16400NR
Your Project #: 121411777.300
Site Location: HOPEDALE STREAM
Your C.O.C. #: ES248411

Attention: Jim Slade
Stantec Consulting Ltd
607 Torbay Rd
St. John's, NL
A1A 4Y6

Report Date: 2012/07/20

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B2A6548
Received: 2012/07/17, 09:53

Sample Matrix: Soil
Samples Received: 27

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Moisture (1)	27	N/A	2012/07/17	ATL SOP 00001	MOE Handbook 1983
Low Level PCB in Soil by GC-ECD (1)	27	2012/07/18	2012/07/20	ATL SOP 00106	Based 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

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

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Total cover pages: 1

Page 1 of 6

Maxxam Job #: B2A6548
Report Date: 2012/07/20

Stantec Consulting Ltd
Client Project #: 121411777.300
Site Location: HOPEDALE STREAM
Your P.O. #: 16400NR
Sampler Initials: RP

RESULTS OF ANALYSES OF SOIL

Maxxam ID		OD9171	OD9172	OD9173	OD9174	OD9175	OD9176		
Sampling Date		2012/07/13	2012/07/13	2012/07/13	2012/07/13	2012/07/13	2012/07/13		
	Units	12-STREAM-SED1	12-STREAM-SED2	12-STREAM-SED3	12-STREAM-SED4	12-STREAM-SED6	12-STREAM-SED8	RDL	QC Batch
Inorganics									
Moisture	%	73	65	40	34	79	15	1	2910371

Maxxam ID		OD9177	OD9178	OD9179	OD9180	OD9181	OD9182		
Sampling Date		2012/07/13	2012/07/13	2012/07/13	2012/07/13	2012/07/13	2012/07/13		
	Units	12-STREAM-SED10	12-STREAM-SED12	12-STREAM-SED14	12-STREAM-SED16	12-STREAM-SED19	12-STREAM-SED22	RDL	QC Batch
Inorganics									
Moisture	%	17	19	16	20	19	16	1	2910371

Maxxam ID		OD9183	OD9184	OD9185	OD9186	OD9187	OD9188		
Sampling Date		2012/07/13	2012/07/13	2012/07/13	2012/07/13	2012/07/13	2012/07/13		
	Units	12-STREAM-SED25	12-STREAM-SED28	12-STREAM-SED31	12-STREAM-SED34	12-STREAM-SED37	12-STREAM-SED40	RDL	QC Batch
Inorganics									
Moisture	%	27	76	75	72	86	84	1	2910371

Maxxam ID		OD9189	OD9190	OD9191	OD9192	OD9193			
Sampling Date		2012/07/13	2012/07/13	2012/07/13	2012/07/13	2012/07/13			
	Units	12-STREAM-SED41	12-STREAM-SED42	12-STREAM-SED43	12-STREAM-SED44	12-STREAM-SED23	RDL	QC Batch	
Inorganics									
Moisture	%	26	52	29	44	22	1	2910371	

Maxxam ID		OD9194	OD9195	OD9196	OD9197		
Sampling Date		2012/07/13	2012/07/13	2012/07/13	2012/07/13		
	Units	12-STREAM-SED26	12-STREAM-SS1	12-STREAM-SS2	12-STREAM-SS3	RDL	QC Batch
Inorganics							
Moisture	%	36	33	36	54	1	2910371

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B2A6548
 Report Date: 2012/07/20

 Stantec Consulting Ltd
 Client Project #: 121411777.300
 Site Location: HOPEDALE STREAM
 Your P.O. #: 16400NR
 Sampler Initials: RP

PCB'S AND DDT BY GC-ECD (SOIL)

Maxxam ID		OD9171	OD9171	OD9172	OD9173	OD9174	OD9175		
Sampling Date		2012/07/13	2012/07/13	2012/07/13	2012/07/13	2012/07/13	2012/07/13		
	Units	12-STREAM-SED1	12-STREAM-SED1 Lab-Dup	12-STREAM-SED2	12-STREAM-SED3	12-STREAM-SED4	12-STREAM-SED6	RDL	QC Batch
PCBs									
Total PCB	mg/kg	30	15 ⁽¹⁾	97	1.9	3.3	0.60	0.010	2911454
Surrogate Recovery (%)									
Decachlorobiphenyl	%	78 ⁽²⁾	72	76 ⁽²⁾	75 ⁽²⁾	76 ⁽²⁾	73 ⁽²⁾		2911454

Maxxam ID		OD9176	OD9177	OD9178	OD9179	OD9180	OD9181		
Sampling Date		2012/07/13	2012/07/13	2012/07/13	2012/07/13	2012/07/13	2012/07/13		
	Units	12-STREAM-SED8	12-STREAM-SED10	12-STREAM-SED12	12-STREAM-SED14	12-STREAM-SED16	12-STREAM-SED19	RDL	QC Batch
PCBs									
Total PCB	mg/kg	0.22	0.12	<0.010	<0.010	<0.010	<0.010	0.010	2911454
Surrogate Recovery (%)									
Decachlorobiphenyl	%	72 ⁽²⁾	85 ⁽²⁾	85	93	93	93		2911454

Maxxam ID		OD9182	OD9183	OD9184	OD9185	OD9186		
Sampling Date		2012/07/13	2012/07/13	2012/07/13	2012/07/13	2012/07/13		
	Units	12-STREAM-SED22	12-STREAM-SED25	12-STREAM-SED28	12-STREAM-SED31	12-STREAM-SED34	RDL	QC Batch
PCBs								
Total PCB	mg/kg	<0.010	0.19	<0.010	<0.010	5.1	0.010	2911454
Surrogate Recovery (%)								
Decachlorobiphenyl	%	88	87 ⁽²⁾	82	83	72 ⁽²⁾		2911454

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

(1) - Duplicate: results are outside acceptance limit. Analysis was repeated with similar results.

(2) - Aroclor 1260.

Maxxam Job #: B2A6548
 Report Date: 2012/07/20

 Stantec Consulting Ltd
 Client Project #: 121411777.300
 Site Location: HOPEDALE STREAM
 Your P.O. #: 16400NR
 Sampler Initials: RP

PCB'S AND DDT BY GC-ECD (SOIL)

Maxxam ID		OD9187	OD9188	OD9189	OD9190		OD9191		
Sampling Date		2012/07/13	2012/07/13	2012/07/13	2012/07/13		2012/07/13		
	Units	12-STREAM-SED37	12-STREAM-SED40	12-STREAM-SED41	12-STREAM-SED42	QC Batch	12-STREAM-SED43	RDL	QC Batch
PCBs									
Total PCB	mg/kg	<0.010	0.27	0.071	52	2911454	0.19	0.010	2911451
Surrogate Recovery (%)									
Decachlorobiphenyl	%	76	97(1)	83(1)	80(1)	2911454	86(1)		2911451

Maxxam ID		OD9191	OD9192	OD9193	OD9194	OD9195	OD9196		
Sampling Date		2012/07/13	2012/07/13	2012/07/13	2012/07/13	2012/07/13	2012/07/13		
	Units	12-STREAM-SED43 Lab-Dup	12-STREAM-SED44	12-STREAM-SED23	12-STREAM-SED26	12-STREAM-SS1	12-STREAM-SS2	RDL	QC Batch
PCBs									
Total PCB	mg/kg	0.14	23	0.066	0.20	0.44	1.5	0.010	2911451
Surrogate Recovery (%)									
Decachlorobiphenyl	%	85(1)	72(1)	79(1)	85(1)	89(1)	92(1)		2911451

Maxxam ID		OD9197		
Sampling Date		2012/07/13		
	Units	12-STREAM-SS3	RDL	QC Batch
PCBs				
Total PCB	mg/kg	2.1	0.010	2911451
Surrogate Recovery (%)				
Decachlorobiphenyl	%	82(1)		2911451

RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch
 (1) - Aroclor 1260.

Maxxam Job #: B2A6548
 Report Date: 2012/07/20

Stantec Consulting Ltd
 Client Project #: 121411777.300
 Site Location: HOPEDALE STREAM
 Your P.O. #: 16400NR
 Sampler Initials: RP

QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
2911451	Decachlorobiphenyl	2012/07/20	83	70 - 130	92	70 - 130	96	%		
2911451	Total PCB	2012/07/20	NC	70 - 130	88	70 - 130	<0.010	mg/kg	28.8	50
2911454	Decachlorobiphenyl	2012/07/20	72	70 - 130	90	70 - 130	106	%		
2911454	Total PCB	2012/07/20	NC	70 - 130	80	70 - 130	<0.010	mg/kg	70.5 ^(1,2)	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 to which a known amount of the analyte has been added. Used to evaluate analyte recovery.

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.

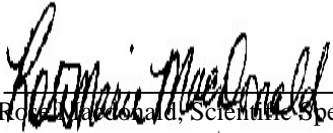
(1) - Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

(2) - Duplicate: results are outside acceptance limit. Analysis was repeated with similar results.

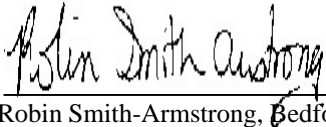
Validation Signature Page

Maxxam Job #: B2A6548

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



Robert MacDonald, Scientific Specialist (Organics)



Robin Smith-Armstrong, Bedford SemiVol Spvvr

=====
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Your P.O. #: 16400NR
 Your Project #: 121411777.200
 Site Location: FLUX STUDY
 Your C.O.C. #: ES570212

Attention: James Slade

Stantec Consulting Ltd
 607 Torbay Rd
 St. John's, NL
 A1A 4Y6

Report Date: 2012/07/24

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B2A6617

Received: 2012/07/17, 09:53

Sample Matrix: Swab
 # Samples Received: 7

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
PCBs on swabs by GC/ECD (1)	7	2012/07/19	2012/07/23	ATL SOP 00109	Based on EPA8082

Sample Matrix: Water
 # Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
PCBs in water by GC/ECD (1)	2	2012/07/18	2012/07/20	ATL SOP 00107	Based on EPA8082
Total Suspended Solids (1)	2	N/A	2012/07/19	ATL SOP 00007	based on EPA 160.2
Turbidity (1)	2	N/A	2012/07/18	ATL SOP 00011	based on EPA 180.1

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

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

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Total cover pages: 1

Maxxam Job #: B2A6617
Report Date: 2012/07/24

Stantec Consulting Ltd
Client Project #: 121411777.200
Site Location: FLUX STUDY
Your P.O. #: 16400NR
Sampler Initials: RP

POLYCHLORINATED BIPHENYLS BY GC-ECD (SWAB)

Maxxam ID		OD9553	OD9554	OD9555	OD9556	OD9557	OD9558	OD9559		
Sampling Date		2012/07/11	2012/07/11	2012/07/11	2012/07/11	2012/07/11	2012/07/11	2012/07/11		
	Units	12-SWAB1	12-SWAB2	12-SWAB3	12-SWAB4	12-SWAB5	12-SWAB6	12-SWAB7	RDL	QC Batch
PCBs										
Total PCB	ug	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	5.0	2913088
Surrogate Recovery (%)										
Decachlorobiphenyl	%	93	94	95	96	100	95	98		2913088

RESULTS OF ANALYSES OF WATER

Maxxam ID		OD9551		OD9552		
Sampling Date		2012/07/11		2012/07/11		
	Units	ODP-JUL 11	RDL	HARBOUR-JUL 11	RDL	QC Batch
Inorganics						
Total Suspended Solids	mg/L	2.0	2.0	2.2	1.0	2911710
Turbidity	NTU	1.4	0.10	1.9	0.10	2911421

POLYCHLORINATED BIPHENYLS BY GC-ECD (WATER)

Maxxam ID		OD9551	OD9552		
Sampling Date		2012/07/11	2012/07/11		
	Units	ODP-JUL 11	HARBOUR-JUL 11	RDL	QC Batch
PCBs					
Total PCB	ug/L	<0.050	<0.050	0.050	2911450
Surrogate Recovery (%)					
Decachlorobiphenyl	%	82	73		2911450

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B2A6617
 Report Date: 2012/07/24

Stantec Consulting Ltd
 Client Project #: 121411777.200
 Site Location: FLUX STUDY
 Your P.O. #: 16400NR
 Sampler Initials: RP

QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits	% Recovery	QC Limits
2911421	Turbidity	2012/07/18					<0.10	NTU	12.1	25	102	80 - 120
2911450	Decachlorobiphenyl	2012/07/20	80	30 - 130	92	30 - 130	82	%				
2911450	Total PCB	2012/07/20	108	70 - 130	106	70 - 130	<0.050	ug/L	NC	40		
2911710	Total Suspended Solids	2012/07/19					<1.0	mg/L	1.3	25	98	80 - 120
2913088	Decachlorobiphenyl	2012/07/23			94	30 - 130	93	%				
2913088	Total PCB	2012/07/23			80	30 - 130	<5.0	ug				

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.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.

Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.

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 (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

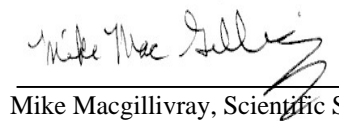
Validation Signature Page

Maxxam Job #: B2A6617

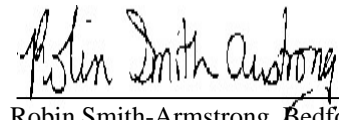
The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



Kevin Macdonald, Inorganics Supervisor



Mike Macgillivray, Scientific Specialist (Inorganics)



Robin Smith-Armstrong, Bedford SemiVol Spvr

=====

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Your P.O. #: 16400NR
Your Project #: 1214-11777.300
Site Location: HOPEDALE-WHARF
Your C.O.C. #: ES573212

Attention: James Slade

Stantec Consulting Ltd
607 Torbay Rd
St. John's, NL
A1A 4Y6

Report Date: 2012/07/31

CERTIFICATE OF ANALYSIS**MAXXAM JOB #: B2B0861****Received: 2012/07/24, 09:51**

Sample Matrix: Soil
Samples Received: 10

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Moisture (1)	10	N/A	2012/07/25	ATL SOP 00001	MOE Handbook 1983
PCBs in soil by GC/ECD (1,2)	10	2012/07/26	2012/07/31	ATL SOP 00106	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

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Total cover pages: 1

Page 1 of 4

Maxxam Job #: B2B0861
 Report Date: 2012/07/31

 Stantec Consulting Ltd
 Client Project #: 1214-11777.300
 Site Location: HOPEDALE-WHARF
 Your P.O. #: 16400NR
 Sampler Initials: AR

RESULTS OF ANALYSES OF SOIL

Maxxam ID		OG0561	OG0562	OG0563	OG0564		
Sampling Date		2012/07/21	2012/07/21	2012/07/21	2012/07/21		
	Units	12-WH-BS1	12-WH-BS2	12-WH-BS3	12-WH-BS4	RDL	QC Batch
Inorganics							
Moisture	%	41	78	59	33	1	2918621

Maxxam ID		OG0565	OG0566	OG0567	OG0568	OG0569	OG0570		
Sampling Date		2012/07/21	2012/07/21	2012/07/21	2012/07/21	2012/07/21	2012/07/21		
	Units	12-WH-BS5	12-WH-BS6	12-WH-BS7	12-WH-BS8	12-WH-BS9	12-WH-BS10	RDL	QC Batch
Inorganics									
Moisture	%	53	20	9	26	15	9	1	2918621

POLYCHLORINATED BIPHENYLS BY GC-ECD (SOIL)

Maxxam ID		OG0561	OG0561	OG0562	OG0563	OG0564		
Sampling Date		2012/07/21	2012/07/21	2012/07/21	2012/07/21	2012/07/21		
	Units	12-WH-BS1	12-WH-BS1 Lab-Dup	12-WH-BS2	12-WH-BS3	12-WH-BS4	RDL	QC Batch
PCBs								
Total PCB	ug/g	5.4	5.1	76	12	15	0.050	2920024
Surrogate Recovery (%)								
Decachlorobiphenyl	%	85(1)	93	78(1)	82(1)	91(1)		2920024

Maxxam ID		OG0565	OG0566	OG0567	OG0568	OG0569	OG0570		
Sampling Date		2012/07/21	2012/07/21	2012/07/21	2012/07/21	2012/07/21	2012/07/21		
	Units	12-WH-BS5	12-WH-BS6	12-WH-BS7	12-WH-BS8	12-WH-BS9	12-WH-BS10	RDL	QC Batch
PCBs									
Total PCB	ug/g	30	1.1	5.4	12	2.3	18	0.050	2920024
Surrogate Recovery (%)									
Decachlorobiphenyl	%	85(1)	91(1)	90(1)	89(1)	92(1)	84(1)		2920024

RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch
 (1) - Aroclor 1260.

Maxxam Job #: B2B0861
 Report Date: 2012/07/31

Stantec Consulting Ltd
 Client Project #: 1214-11777.300
 Site Location: HOPEDALE-WHARF
 Your P.O. #: 16400NR
 Sampler Initials: AR

QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
2920024	Decachlorobiphenyl	2012/07/31	91	30 - 130	91	30 - 130	95	%		
2920024	Total PCB	2012/07/31	NC	70 - 130	116	70 - 130	<0.050	ug/g	5.8	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 to which a known amount of the analyte has been added. Used to evaluate analyte recovery.

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

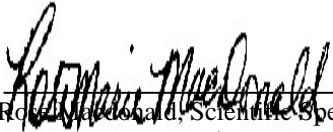
Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

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.

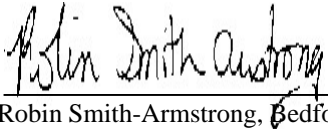
Validation Signature Page

Maxxam Job #: B2B0861

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



Robert MacDonald, Scientific Specialist (Organics)



Robin Smith-Armstrong, Bedford SemiVol Spvvr

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Your P.O. #: 16400NR
Your Project #: 1214117777.300
Site Location: HOPEDALE-STREAM
Your C.O.C. #: ES249011

Attention: Anna Roy
Stantec Consulting Ltd
607 Torbay Rd
St. John's, NL
A1A 4Y6

Report Date: 2012/07/31

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B2B0864
Received: 2012/07/24, 09:51

Sample Matrix: Soil
Samples Received: 5

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Moisture (1)	5	N/A	2012/07/24	ATL SOP 00001	MOE Handbook 1983
PCBs in soil by GC/ECD (1,2)	5	2012/07/26	2012/07/31	ATL SOP 00106	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

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Total cover pages: 1

Page 1 of 4

Maxxam Job #: B2B0864
 Report Date: 2012/07/31

Stantec Consulting Ltd
 Client Project #: 1214117777.300
 Site Location: HOPEDALE-STREAM
 Your P.O. #: 16400NR
 Sampler Initials: RP

RESULTS OF ANALYSES OF SOIL

Maxxam ID		OG0581	OG0582	OG0583	OG0584	OG0585		
Sampling Date		2012/07/13	2012/07/13	2012/07/13	2012/07/13	2012/07/13		
	Units	12-STREAM-SED5	12-STREAM-SED30	12-STREAM-SED33	12-STREAM-SED36	12-STREAM-SED39	RDL	QC Batch
Inorganics								
Moisture	%	66	57	79	81	72	1	2916105

POLYCHLORINATED BIPHENYLS BY GC-ECD (SOIL)

Maxxam ID		OG0581	OG0582	OG0583	OG0584	OG0585		
Sampling Date		2012/07/13	2012/07/13	2012/07/13	2012/07/13	2012/07/13		
	Units	12-STREAM-SED5	12-STREAM-SED30	12-STREAM-SED33	12-STREAM-SED36	12-STREAM-SED39	RDL	QC Batch
PCBs								
Total PCB	ug/g	1.8	0.28	<0.050	<0.050	0.33	0.050	2920024
Surrogate Recovery (%)								
Decachlorobiphenyl	%	76(1)	86(1)	79	89	77(1)		2920024

RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch
 (1) - Aroclor 1260.

Maxxam Job #: B2B0864
 Report Date: 2012/07/31

Stantec Consulting Ltd
 Client Project #: 1214117777.300
 Site Location: HOPEDALE-STREAM
 Your P.O. #: 16400NR
 Sampler Initials: RP

QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
2920024	Decachlorobiphenyl	2012/07/31	91	30 - 130	91	30 - 130	95	%		
2920024	Total PCB	2012/07/31	NC	70 - 130	116	70 - 130	<0.050	ug/g	5.8	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 to which a known amount of the analyte has been added. Used to evaluate analyte recovery.

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

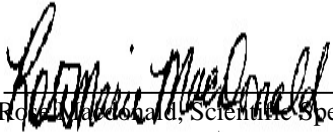
Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

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.

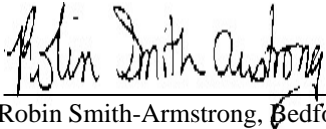
Validation Signature Page

Maxxam Job #: B2B0864

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



Robert MacDonald, Scientific Specialist (Organics)



Robin Smith-Armstrong, Bedford SemiVol Spvvr

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Your P.O. #: 16400NR
Your Project #: 121411777.300
Site Location: HOPEDALE-OLD DUMP POND
Your C.O.C. #: ES573012

Attention: Anna Roy
Stantec Consulting Ltd
607 Torbay Rd
St. John's, NL
A1A 4Y6

Report Date: 2012/07/27

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B2B0871
Received: 2012/07/24, 09:51

Sample Matrix: Soil
Samples Received: 10

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Moisture (1)	10	N/A	2012/07/24	ATL SOP 00001	MOE Handbook 1983
PCBs in soil by GC/ECD (1,2)	10	2012/07/24	2012/07/27	ATL SOP 00106	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

=====
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Total cover pages: 1

Page 1 of 4

Maxxam Job #: B2B0871
 Report Date: 2012/07/27

 Stantec Consulting Ltd
 Client Project #: 121411777.300
 Site Location: HOPEDALE-OLD DUMP POND
 Your P.O. #: 16400NR
 Sampler Initials: AR

RESULTS OF ANALYSES OF SOIL

Maxxam ID		OG0631	OG0632	OG0633	OG0634		
Sampling Date		2012/07/19	2012/07/19	2012/07/19	2012/07/19		
	Units	12-ODP-BS1	12-ODP-BS2	12-ODP-BS3	12-ODP-BS4	RDL	QC Batch
Inorganics							
Moisture	%	27	42	30	28	1	2916954

Maxxam ID		OG0635	OG0636	OG0637	OG0638	OG0639	OG0640		
Sampling Date		2012/07/19	2012/07/19	2012/07/19	2012/07/19	2012/07/19	2012/07/19		
	Units	12-ODP-BS5	12-ODP-BS6	12-ODP-BS7	12-ODP-BS8	12-ODP-BS9	12-ODP-BS10	RDL	QC Batch
Inorganics									
Moisture	%	25	55	52	36	17	15	1	2916954

POLYCHLORINATED BIPHENYLS BY GC-ECD (SOIL)

Maxxam ID		OG0631	OG0631	OG0632	OG0633	OG0634		
Sampling Date		2012/07/19	2012/07/19	2012/07/19	2012/07/19	2012/07/19		
	Units	12-ODP-BS1	12-ODP-BS1 Lab-Dup	12-ODP-BS2	12-ODP-BS3	12-ODP-BS4	RDL	QC Batch
PCBs								
Total PCB	ug/g	320	210	1.7	17	0.52	0.050	2917606
Surrogate Recovery (%)								
Decachlorobiphenyl	%	79 ⁽¹⁾	74	80 ⁽¹⁾	86 ⁽¹⁾	87 ⁽¹⁾		2917606

Maxxam ID		OG0635	OG0636	OG0637	OG0638	OG0639	OG0640		
Sampling Date		2012/07/19	2012/07/19	2012/07/19	2012/07/19	2012/07/19	2012/07/19		
	Units	12-ODP-BS5	12-ODP-BS6	12-ODP-BS7	12-ODP-BS8	12-ODP-BS9	12-ODP-BS10	RDL	QC Batch
PCBs									
Total PCB	ug/g	13	3.7	290	200	<0.050	2.4	0.050	2917606
Surrogate Recovery (%)									
Decachlorobiphenyl	%	72 ⁽¹⁾	82 ⁽²⁾	79 ⁽¹⁾	69 ⁽³⁾	66 ⁽⁴⁾	74 ⁽¹⁾		2917606

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

(1) - Aroclor 1254, 1260.

(2) - Aroclor 1260. PCB: Unidentified (possibly halogenated) compounds detected.

(3) - Aroclor 1254, 1260. PCB surrogate not within acceptance limits. Analysis was repeated with similar results.

(4) - PCB surrogate not within acceptance limits. Analysis was repeated with similar results.

Maxxam Job #: B2B0871
 Report Date: 2012/07/27

Stantec Consulting Ltd
 Client Project #: 121411777.300
 Site Location: HOPEDALE-OLD DUMP POND
 Your P.O. #: 16400NR
 Sampler Initials: AR

QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
2917606	Decachlorobiphenyl	2012/07/27	84	30 - 130	79	30 - 130	90	%		
2917606	Total PCB	2012/07/27	NC	70 - 130	100	70 - 130	<0.050	ug/g	41.8	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 to which a known amount of the analyte has been added. Used to evaluate analyte recovery.

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

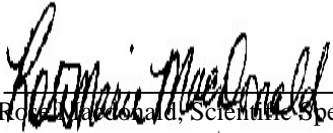
Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

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.

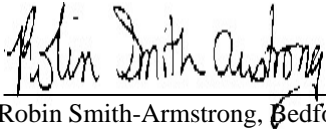
Validation Signature Page

Maxxam Job #: B2B0871

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



Robert MacDonald, Scientific Specialist (Organics)



Robin Smith-Armstrong, Bedford SemiVol Spvvr

=====

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Your P.O. #: 16400NR
Your Project #: 121411777.300
Site Location: WHARF SITE
Your C.O.C. #: ES248511

Attention: James Slade

Stantec Consulting Ltd
607 Torbay Rd
St. John's, NL
A1A 4Y6

Report Date: 2012/08/20

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B2C4347
Received: 2012/08/16, 09:44

Sample Matrix: Soil
Samples Received: 7

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Moisture (1)	7	N/A	2012/08/16	ATL SOP 00001	MOE Handbook 1983
PCBs in soil by GC/ECD (1,2)	7	2012/08/17	2012/08/20	ATL SOP 00106	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

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Total cover pages: 1

Page 1 of 4

Maxxam Job #: B2C4347
 Report Date: 2012/08/20

Stantec Consulting Ltd
 Client Project #: 121411777.300
 Site Location: WHARF SITE
 Your P.O. #: 16400NR
 Sampler Initials: RP

RESULTS OF ANALYSES OF SOIL

Maxxam ID		OM7640	OM7641	OM7642	OM7643	OM7644	OM7645	OM7646		
Sampling Date		2012/08/11	2012/08/11	2012/08/11	2012/08/11	2012/08/11	2012/08/11	2012/08/11		
	Units	12-WH-BS11	12-WH-BS12	12-WH-BS13	12-WH-BS14	12-WH-BS15	12-WH-BS18	12-WH-BS19	RDL	QC Batch
Inorganics										
Moisture	%	53	22	69	42	7	6	11	1	2940305

POLYCHLORINATED BIPHENYLS BY GC-ECD (SOIL)

Maxxam ID		OM7640	OM7640	OM7641	OM7642	OM7643	OM7644	OM7645	OM7646		
Sampling Date		2012/08/11	2012/08/11	2012/08/11	2012/08/11	2012/08/11	2012/08/11	2012/08/11	2012/08/11		
	Units	12-WH-BS11	12-WH-BS11 Lab-Dup	12-WH-BS12	12-WH-BS13	12-WH-BS14	12-WH-BS15	12-WH-BS18	12-WH-BS19	RDL	QC Batch
PCBs											
Total PCB	ug/g	61	62	0.65	8.0	18	0.37	5.9	25	0.050	2941622
Surrogate Recovery (%)											
Decachlorobiphenyl	%	83 ⁽¹⁾	82	81 ⁽¹⁾	76 ⁽¹⁾	85 ⁽¹⁾	85 ⁽¹⁾	86 ⁽¹⁾	92 ⁽¹⁾		2941622

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

(1) - Aroclor 1260.

Maxxam Job #: B2C4347
 Report Date: 2012/08/20

Stantec Consulting Ltd
 Client Project #: 121411777.300
 Site Location: WHARF SITE
 Your P.O. #: 16400NR
 Sampler Initials: RP

QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
2941622	Decachlorobiphenyl	2012/08/20	78	30 - 130	90	30 - 130	87	%		
2941622	Total PCB	2012/08/20	NC	70 - 130	124	70 - 130	<0.050	ug/g	1.1	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 to which a known amount of the analyte has been added. Used to evaluate analyte recovery.

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

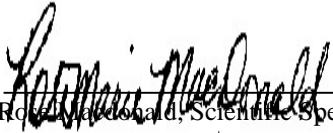
Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

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.

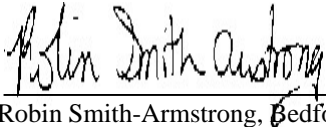
Validation Signature Page

Maxxam Job #: B2C4347

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



Robert MacDonald, Scientific Specialist (Organics)



Robin Smith-Armstrong, Bedford SemiVol Spvsvr

=====

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Your P.O. #: 16400NR
 Your Project #: 121411777.300
 Site Location: HOPEDALE STREAM
 Your C.O.C. #: ES437511

Attention: Anna Roy
 Stantec Consulting Ltd
 607 Torbay Rd
 St. John's, NL
 A1A 4Y6

Report Date: 2012/08/22

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B2C6134
Received: 2012/08/18, 10:47

Sample Matrix: Soil
 # Samples Received: 7

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Moisture (1)	7	N/A	2012/08/18	ATL SOP 00001	MOE Handbook 1983
PCBs in soil by GC/ECD (1,2)	1	2012/08/18	2012/08/22	ATL SOP 00106	Based on EPA8082
PCBs in soil by GC/ECD (1,2)	6	2012/08/20	2012/08/22	ATL SOP 00106	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

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Total cover pages: 1

Maxxam Job #: B2C6134
 Report Date: 2012/08/22

Stantec Consulting Ltd
 Client Project #: 121411777.300
 Site Location: HOPEDALE STREAM
 Your P.O. #: 16400NR
 Sampler Initials: RMP

RESULTS OF ANALYSES OF SOIL

Maxxam ID		ON6126	ON6127	ON6128		
Sampling Date		2012/08/14	2012/08/14	2012/08/14		
	Units	12-STREAM-SED45	12-STREAM-SED46	12-STREAM-SED48	RDL	QC Batch
Inorganics						
Moisture	%	69	15	16	1	2943262

Maxxam ID		ON6129	ON6130	ON6131	ON6132		
Sampling Date		2012/08/14	2012/08/14	2012/08/14	2012/08/14		
	Units	12-STREAM-SED49	12-STREAM-SED51	12-STREAM-SED53	12-STREAM-SED55	RDL	QC Batch
Inorganics							
Moisture	%	16	16	13	17	1	2943262

POLYCHLORINATED BIPHENYLS BY GC-ECD (SOIL)

Maxxam ID		ON6126	ON6127	ON6128	ON6128		
Sampling Date		2012/08/14	2012/08/14	2012/08/14	2012/08/14		
	Units	12-STREAM-SED45	12-STREAM-SED46	12-STREAM-SED48	12-STREAM-SED48 Lab-Dup	RDL	QC Batch
PCBs							
Total PCB	ug/g	34	<0.050	<0.050	<0.050	0.050	2943483
Surrogate Recovery (%)							
Decachlorobiphenyl	%	83(1)	88	85	84		2943483

Maxxam ID		ON6129	ON6130	ON6131	ON6132		
Sampling Date		2012/08/14	2012/08/14	2012/08/14	2012/08/14		
	Units	12-STREAM-SED49	12-STREAM-SED51	12-STREAM-SED53	12-STREAM-SED55	RDL	QC Batch
PCBs							
Total PCB	ug/g	<0.050	<0.050	<0.050	<0.050	0.050	2943483
Surrogate Recovery (%)							
Decachlorobiphenyl	%	87	86	94	88		2943483

RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch
 (1) - Aroclor 1260.

Maxxam Job #: B2C6134
 Report Date: 2012/08/22

Stantec Consulting Ltd
 Client Project #: 121411777.300
 Site Location: HOPEDALE STREAM
 Your P.O. #: 16400NR
 Sampler Initials: RMP

QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
2943483	Decachlorobiphenyl	2012/08/22	86	30 - 130	84	30 - 130	85	%		
2943483	Total PCB	2012/08/22	124	70 - 130	116	70 - 130	<0.050	ug/g	NC	50

N/A = Not Applicable

RPD = Relative Percent Difference

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.

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

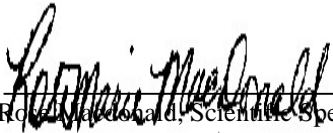
Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

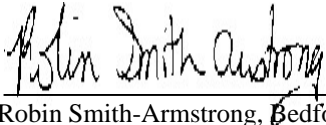
Validation Signature Page

Maxxam Job #: B2C6134

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



Robert MacDonald, Scientific Specialist (Organics)



Robin Smith-Armstrong, Bedford SemiVol Spvvr

=====

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Your P.O. #: 16400NR
 Your Project #: 121411777.300
 Site Location: WHARF
 Your C.O.C. #: ES579412

Attention: James Slade
 Stantec Consulting Ltd
 607 Torbay Rd
 St. John's, NL
 A1A 4Y6

Report Date: 2012/08/24

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B2C8890
Received: 2012/08/23, 10:14

Sample Matrix: Soil
 # Samples Received: 5

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Moisture (1)	5	N/A	2012/08/23	ATL SOP 00001	MOE Handbook 1983
PCBs in soil by GC/ECD (1,2)	5	2012/08/23	2012/08/24	ATL SOP 00106	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

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Total cover pages: 1

Maxxam Job #: B2C8890
 Report Date: 2012/08/24

Stantec Consulting Ltd
 Client Project #: 121411777.300
 Site Location: WHARF
 Your P.O. #: 16400NR
 Sampler Initials: AR

RESULTS OF ANALYSES OF SOIL

Maxxam ID		OO9488	OO9489	OO9490	OO9491	OO9492		
Sampling Date		2012/08/20	2012/08/20	2012/08/20	2012/08/20	2012/08/20		
	Units	12-WH-BS20	12-WH-BS21	12-WH-BS22	12-WH-BS23	12-WH-BS24	RDL	QC Batch
Inorganics								
Moisture	%	59	43	11	8	10	1	2948051

POLYCHLORINATED BIPHENYLS BY GC-ECD (SOIL)

Maxxam ID		OO9488	OO9489	OO9490	OO9491	OO9492		
Sampling Date		2012/08/20	2012/08/20	2012/08/20	2012/08/20	2012/08/20		
	Units	12-WH-BS20	12-WH-BS21	12-WH-BS22	12-WH-BS23	12-WH-BS24	RDL	QC Batch
PCBs								
Total PCB	ug/g	4.1	96	11	58	3.4	0.050	2948143
Surrogate Recovery (%)								
Decachlorobiphenyl	%	98(1)	97(1)	116(1)	92(1)	95(1)		2948143

RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch
 (1) - Aroclor 1260.

Maxxam Job #: B2C8890
 Report Date: 2012/08/24

Stantec Consulting Ltd
 Client Project #: 121411777.300
 Site Location: WHARF
 Your P.O. #: 16400NR
 Sampler Initials: AR

QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
2948143	Decachlorobiphenyl	2012/08/24	99	30 - 130	102	30 - 130	98	%		
2948143	Total PCB	2012/08/24	108	70 - 130	104	70 - 130	<0.050	ug/g	NC	50

N/A = Not Applicable

RPD = Relative Percent Difference

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.

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

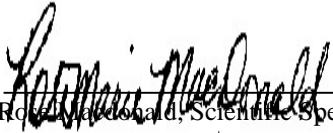
Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

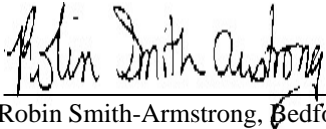
Validation Signature Page

Maxxam Job #: B2C8890

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



Robert MacDonald, Scientific Specialist (Organics)



Robin Smith-Armstrong, Bedford SemiVol Spvsr

=====

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Your P.O. #: 16300R-40
Your Project #: 121411777.300
Site Location: HOPEDALE
Your C.O.C. #: ES576412

Attention: Jim Slade
Stantec Consulting Ltd
St. John's - Standing Offer
607 Torbay Rd
St. John's, NL
A1A 4Y6

Report Date: 2012/08/24

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B2C8920
Received: 2012/08/23, 10:14

Sample Matrix: Soil
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Moisture (1)	2	N/A	2012/08/23	ATL SOP 00001	MOE Handbook 1983
PCBs in soil by GC/ECD (1,2)	2	2012/08/23	2012/08/24	ATL SOP 00106	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

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Total cover pages: 1

Maxxam Job #: B2C8920
 Report Date: 2012/08/24

Stantec Consulting Ltd
 Client Project #: 121411777.300
 Site Location: HOPEDALE
 Your P.O. #: 16300R-40
 Sampler Initials: AR

RESULTS OF ANALYSES OF SOIL

Maxxam ID		OO9628	OO9629		
Sampling Date		2012/08/11	2012/08/11		
	Units	BS16	BS17	RDL	QC Batch
Inorganics					
Moisture	%	8	13	1	2948051

POLYCHLORINATED BIPHENYLS BY GC-ECD (SOIL)

Maxxam ID		OO9628	OO9629		
Sampling Date		2012/08/11	2012/08/11		
	Units	BS16	BS17	RDL	QC Batch
PCBs					
Total PCB	ug/g	1.7	6.7	0.050	2948143
Surrogate Recovery (%)					
Decachlorobiphenyl	%	90(1)	97(1)		2948143

RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch
 (1) - Aroclor 1260.

Maxxam Job #: B2C8920
 Report Date: 2012/08/24

Stantec Consulting Ltd
 Client Project #: 121411777.300
 Site Location: HOPEDALE
 Your P.O. #: 16300R-40
 Sampler Initials: AR

QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
2948143	Decachlorobiphenyl	2012/08/24	99	30 - 130	102	30 - 130	98	%		
2948143	Total PCB	2012/08/24	108	70 - 130	104	70 - 130	ND, RDL=0.050	ug/g	NC	50

N/A = Not Applicable

RDL = Reportable Detection Limit

RPD = Relative Percent Difference

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.

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

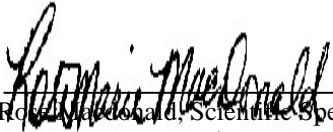
Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

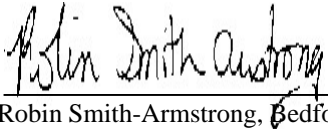
Validation Signature Page

Maxxam Job #: B2C8920

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



Robert MacDonald, Scientific Specialist (Organics)



Robin Smith-Armstrong, Bedford SemiVol Spvsr

=====

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Your P.O. #: 16400NR
 Your Project #: 121411777.200
 Site Location: HOPEDALE-UPPER STREAM
 Your C.O.C. #: ES569512

Attention: James Slade

Stantec Consulting Ltd
 607 Torbay Rd
 St. John's, NL
 A1A 4Y6

Report Date: 2012/08/28

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B2D0411
Received: 2012/08/25, 10:02

Sample Matrix: Soil
 # Samples Received: 11

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Moisture (1)	11	N/A	2012/08/25	ATL SOP 00001	MOE Handbook 1983
PCBs in soil by GC/ECD (1,2)	11	2012/08/27	2012/08/28	ATL SOP 00106	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 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: 1

Maxxam Job #: B2D0411
 Report Date: 2012/08/28

 Stantec Consulting Ltd
 Client Project #: 121411777.200
 Site Location: HOPEDALE-UPPER STREAM
 Your P.O. #: 16400NR
 Sampler Initials: RM

RESULTS OF ANALYSES OF SOIL

Maxxam ID		OP6857	OP6858	OP6859	OP6860	OP6861	OP6862		
Sampling Date		2012/08/15	2012/08/15	2012/08/15	2012/08/15	2012/08/15	2012/08/15		
	Units	12-STREAM-SED56	12-STREAM-SED57	12-STREAM-SED59	12-STREAM-SED61	12-STREAM-SED63	12-STREAM-SED64	RDL	QC Batch
Inorganics									
Moisture	%	14	65	78	74	76	24	1	2950662

Maxxam ID		OP6863	OP6864	OP6865	OP6866	OP6867		
Sampling Date		2012/08/15	2012/08/15	2012/08/15	2012/08/15	2012/08/15		
	Units	12-STREAM-SED65	12-STREAM-SED66	12-STREAM-SED67	12-STREAM-SED68	12-STREAM-SED69	RDL	QC Batch
Inorganics								
Moisture	%	77	14	79	23	78	1	2950662

POLYCHLORINATED BIPHENYLS BY GC-ECD (SOIL)

Maxxam ID		OP6857	OP6858	OP6859	OP6860	OP6861	OP6862		
Sampling Date		2012/08/15	2012/08/15	2012/08/15	2012/08/15	2012/08/15	2012/08/15		
	Units	12-STREAM-SED56	12-STREAM-SED57	12-STREAM-SED59	12-STREAM-SED61	12-STREAM-SED63	12-STREAM-SED64	RDL	QC Batch
PCBs									
Total PCB	ug/g	0.099	<0.050	<0.050	<0.050	<0.050	0.092	0.050	2951237
Surrogate Recovery (%)									
Decachlorobiphenyl	%	80(1)	87	89	73	75	82(1)		2951237

Maxxam ID		OP6863	OP6864	OP6865	OP6866	OP6867	OP6867		
Sampling Date		2012/08/15	2012/08/15	2012/08/15	2012/08/15	2012/08/15	2012/08/15		
	Units	12-STREAM-SED65	12-STREAM-SED66	12-STREAM-SED67	12-STREAM-SED68	12-STREAM-SED69	12-STREAM-SED69 Lab-Dup	RDL	QC Batch
PCBs									
Total PCB	ug/g	<0.050	2.2	<0.050	0.14	<0.050	<0.050	0.050	2951237
Surrogate Recovery (%)									
Decachlorobiphenyl	%	85	74(1)	81	72(1)	77	98		2951237

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch
 (1) - Aroclor 1260.

Maxxam Job #: B2D0411
 Report Date: 2012/08/28

Stantec Consulting Ltd
 Client Project #: 121411777.200
 Site Location: HOPEDALE-UPPER STREAM
 Your P.O. #: 16400NR
 Sampler Initials: RM

QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
2951237	Decachlorobiphenyl	2012/08/28	77	30 - 130	75	30 - 130	74	%		
2951237	Total PCB	2012/08/28	112	70 - 130	104	70 - 130	<0.050	ug/g	NC	50

N/A = Not Applicable

RPD = Relative Percent Difference

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.

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

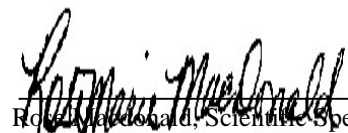
Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

Validation Signature Page

Maxxam Job #: B2D0411

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



Robert MacDonald, Scientific Specialist (Organics)



Robin Smith-Armstrong, Bedford SemiVol Spvsvr

=====

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.

Your P.O. #: 16400NR
 Your Project #: 121411777.300
 Site Location: HOPEDALE WHARF
 Your C.O.C. #: ES599112

Attention: Anna Roy
 Stantec Consulting Ltd
 607 Torbay Rd
 St. John's, NL
 A1A 4Y6

Report Date: 2012/08/31

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B2D2154
Received: 2012/08/29, 09:17

Sample Matrix: Organic Liquid
 # Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
PCBs in oil by GC/ECD	1	2012/08/30	2012/08/31	ATL SOP 00105	Based on EPA8082
Free Product ID	1	2012/08/30	2012/08/31		

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.

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

=====

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Total cover pages: 1

Maxxam Job #: B2D2154
 Report Date: 2012/08/31

Stantec Consulting Ltd
 Client Project #: 121411777.300
 Site Location: HOPEDALE WHARF
 Your P.O. #: 16400NR
 Sampler Initials: AR

RESULTS OF ANALYSES OF ORGANIC LIQUID

Maxxam ID		OQ6757		
Sampling Date		2012/08/22		
	Units	WHARF-ID-1	RDL	QC Batch
Petroleum Hydrocarbons				
Open Characterization by FID	N/A	COMMENT(1)	N/A	2955764

POLYCHLORINATED BIPHENYLS BY GC-ECD (ORGANIC LIQUID)

Maxxam ID		OQ6757		
Sampling Date		2012/08/22		
	Units	WHARF-ID-1	RDL	QC Batch
PCBs				
Total PCB	mg/kg	23	0.50	2955087
Surrogate Recovery (%)				
Decachlorobiphenyl	%	90(2)		2955087

N/A = Not Applicable

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

(1) - Product is a heavy oil product. An aliquot of sample was dissolved in solvent (Hexane) and analysed by GC-FID.

(2) - Aroclor 1260.

Maxxam Job #: B2D2154
Report Date: 2012/08/31

Stantec Consulting Ltd
Client Project #: 121411777.300
Site Location: HOPEDALE WHARF
Your P.O. #: 16400NR
Sampler Initials: AR

Package 1	14.0°C
-----------	--------

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

GENERAL COMMENTS

Maxxam Job #: B2D2154
 Report Date: 2012/08/31

Stantec Consulting Ltd
 Client Project #: 121411777.300
 Site Location: HOPEDALE WHARF
 Your P.O. #: 16400NR
 Sampler Initials: AR

QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
2955087	Decachlorobiphenyl	2012/08/31	102	30 - 130	92	30 - 130	101	%		
2955087	Total PCB	2012/08/31	112	30 - 130	108	30 - 130	<0.50	mg/kg	NC	50

N/A = Not Applicable

RPD = Relative Percent Difference

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.

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 (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

Validation Signature Page

Maxxam Job #: B2D2154

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



James Macdonald, Organics Manager



Robin Smith-Armstrong, Bedford SemiVol Spvrs

=====

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Your P.O. #: 16400NR
Your Project #: 121411777.300
Site Location: HOPEDALE-WHARF/ LOWER STREAM
Your C.O.C. #: ES602012

Attention: Anna Roy
Stantec Consulting Ltd
607 Torbay Rd
St. John's, NL
A1A 4Y6

Report Date: 2012/09/04

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B2D2935
Received: 2012/08/30, 10:08

Sample Matrix: Soil
Samples Received: 7

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Moisture (1)	7	N/A	2012/08/30	ATL SOP 00001	MOE Handbook 1983
PCBs in soil by GC/ECD (1,2)	7	2012/08/31	2012/09/04	ATL SOP 00106	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

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Total cover pages: 1

Page 1 of 4

Maxxam Job #: B2D2935
 Report Date: 2012/09/04

 Stantec Consulting Ltd
 Client Project #: 121411777.300
 Site Location: HOPEDALE-WHARF/ LOWER STREAM
 Your P.O. #: 16400NR
 Sampler Initials: AR

RESULTS OF ANALYSES OF SOIL

Maxxam ID		OR0806	OR0807	OR0808	OR0809	OR0810	OR0811		
Sampling Date		2012/08/26	2012/08/26	2012/08/26	2012/08/26	2012/08/25	2012/08/25		
	Units	12-STREAM-SED70	12-STREAM-SED73	12-STREAM-SED75	12-STREAM-SED76	12-WH-BS25	12-WH-BS26	RDL	QC Batch
Inorganics									
Moisture	%	33	75	67	66	26	32	1	2955230

Maxxam ID		OR0812		
Sampling Date		2012/08/25		
	Units	12-WH-BS27	RDL	QC Batch
Inorganics				
Moisture	%	78	1	2955230

POLYCHLORINATED BIPHENYLS BY GC-ECD (SOIL)

Maxxam ID		OR0806	OR0806	OR0807	OR0808		
Sampling Date		2012/08/26	2012/08/26	2012/08/26	2012/08/26		
	Units	12-STREAM-SED70	12-STREAM-SED70 Lab-Dup	12-STREAM-SED73	12-STREAM-SED75	RDL	QC Batch
PCBs							
Total PCB	ug/g	24	30	36	8.5	0.050	2956370
Surrogate Recovery (%)							
Decachlorobiphenyl	%	77 ⁽¹⁾	90	82 ⁽¹⁾	83 ⁽¹⁾		2956370

Maxxam ID		OR0809	OR0810		OR0811		OR0812		
Sampling Date		2012/08/26	2012/08/25		2012/08/25		2012/08/25		
	Units	12-STREAM-SED76	12-WH-BS25	RDL	12-WH-BS26	RDL	12-WH-BS27	RDL	QC Batch
PCBs									
Total PCB	ug/g	370	4.2	0.050	1.9	0.25	22	0.050	2956370
Surrogate Recovery (%)									
Decachlorobiphenyl	%	83 ⁽¹⁾	93 ⁽¹⁾		87 ⁽²⁾		88 ⁽¹⁾		2956370

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

(1) - Aroclor 1260.

(2) - Aroclor 1260. Elevated PCB RDL due to sample matrix.

Maxxam Job #: B2D2935
 Report Date: 2012/09/04

Stantec Consulting Ltd
 Client Project #: 121411777.300
 Site Location: HOPEDALE-WHARF/ LOWER STREAM
 Your P.O. #: 16400NR
 Sampler Initials: AR

QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
2956370	Decachlorobiphenyl	2012/09/04	87	30 - 130	90	30 - 130	85	%		
2956370	Total PCB	2012/09/04	NC	70 - 130	112	70 - 130	<0.050	ug/g	22.8	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 to which a known amount of the analyte has been added. Used to evaluate analyte recovery.

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

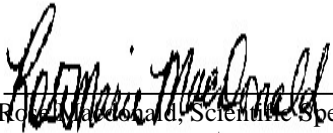
Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

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.

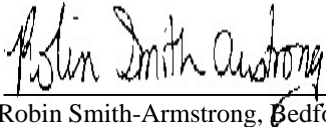
Validation Signature Page

Maxxam Job #: B2D2935

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



Robert MacDonald, Scientific Specialist (Organics)



Robin Smith-Armstrong, Bedford SemiVol Spvvr

=====
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Your P.O. #: 16400NR
Your Project #: 121411777.300
Site Location: HOPEDALE-WHARF
Your C.O.C. #: ES578912

Attention: Jim Slade
Stantec Consulting Ltd
607 Torbay Rd
St. John's, NL
A1A 4Y6

Report Date: 2012/09/05

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B2D4600
Received: 2012/09/01, 11:59

Sample Matrix: Soil
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Moisture (1)	2	N/A	2012/09/04	ATL SOP 00001	MOE Handbook 1983
PCBs in soil by GC/ECD (1,2)	2	2012/09/04	2012/09/05	ATL SOP 00106	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

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

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Total cover pages: 1

Page 1 of 4

Maxxam Job #: B2D4600
 Report Date: 2012/09/05

Stantec Consulting Ltd
 Client Project #: 121411777.300
 Site Location: HOPEDALE-WHARF
 Your P.O. #: 16400NR
 Sampler Initials: AR

RESULTS OF ANALYSES OF SOIL

Maxxam ID		OS0157	OS0158		
Sampling Date		2012/08/28	2012/08/28		
	Units	WH-BS28	WH-BS29	RDL	QC Batch
Inorganics					
Moisture	%	4	9	1	2957851

POLYCHLORINATED BIPHENYLS BY GC-ECD (SOIL)

Maxxam ID		OS0157	OS0157	OS0158		
Sampling Date		2012/08/28	2012/08/28	2012/08/28		
	Units	WH-BS28	WH-BS28 Lab-Dup	WH-BS29	RDL	QC Batch
PCBs						
Total PCB	ug/g	40	46	19	0.050	2958652
Surrogate Recovery (%)						
Decachlorobiphenyl	%	113(1)	108	85(1)		2958652

RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch
 (1) - Aroclor 1260.

Maxxam Job #: B2D4600
 Report Date: 2012/09/05

Stantec Consulting Ltd
 Client Project #: 121411777.300
 Site Location: HOPEDALE-WHARF
 Your P.O. #: 16400NR
 Sampler Initials: AR

QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
2958652	Decachlorobiphenyl	2012/09/05	103	30 - 130	95	30 - 130	93	%		
2958652	Total PCB	2012/09/05	NC	70 - 130	120	70 - 130	<0.050	ug/g	14.1	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 to which a known amount of the analyte has been added. Used to evaluate analyte recovery.

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.

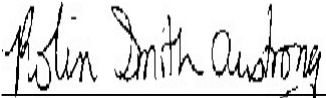
Validation Signature Page

Maxxam Job #: B2D4600

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



Alan Stewart, Scientific Specialist (Organics)



Robin Smith-Armstrong, Bedford SemiVol Spvsr

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Your P.O. #: 16400NR
Your Project #: 121411777.300
Site Location: HOPEDALE REMEDIATION
Your C.O.C. #: ES569712

Attention: Jim Slade
Stantec Consulting Ltd
607 Torbay Rd
St. John's, NL
A1A 4Y6

Report Date: 2012/09/20

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B2E1518
Received: 2012/09/13, 09:20

Sample Matrix: Soil
Samples Received: 20

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Moisture (1)	20	N/A	2012/09/18	ATL SOP 00001	MOE Handbook 1983
Low Level PCB in Soil by GC-ECD (1)	20	2012/09/18	2012/09/20	ATL SOP 00106	Based 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

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

=====
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Total cover pages: 1

Page 1 of 7

Maxxam Job #: B2E1518
 Report Date: 2012/09/20

 Stantec Consulting Ltd
 Client Project #: 121411777.300
 Site Location: HOPEDALE REMEDIATION
 Your P.O. #: 16400NR
 Sampler Initials: JS

RESULTS OF ANALYSES OF SOIL

Maxxam ID		OV4868	OV4869	OV4870	OV4871	OV4872	OV4873	OV4874	OV4875		
Sampling Date		2012/09/05	2012/09/05	2012/09/05	2012/09/05	2012/09/05	2012/09/05	2012/09/05	2012/09/05		
	Units	ODP-BS20	ODP-BS21	ODP-BS22	ODP-BS23	ODP-BS24	ODP-BS25	ODP-BS18	ODP-BS19	RDL	QC Batch
Inorganics											
Moisture	%	9	43	59	29	23	28	33	33	1	2972012

Maxxam ID		OV4876	OV4877	OV4878	OV4879	OV4880	OV4881		
Sampling Date		2012/09/05	2012/09/05	2012/09/01	2012/09/01	2012/09/01	2012/09/01		
	Units	HARBOUR-BS30	HARBOUR-BS31	SS1	SS2	SS3	SS4	RDL	QC Batch
Inorganics									
Moisture	%	35	28	38	36	57	47	1	2972012

Maxxam ID		OV4882	OV4883	OV4884	OV4885	OV4886	OV4887		
Sampling Date		2012/09/01	2012/09/01	2012/09/01	2012/09/01	2012/09/01	2012/09/01		
	Units	SS5	SS6	SS7	SS10	SS11	SS15	RDL	QC Batch
Inorganics									
Moisture	%	24	31	37	32	24	23	1	2972012

PCB'S AND DDT BY GC-ECD (SOIL)

Maxxam ID		OV4868	OV4869	OV4870	OV4871	OV4872	OV4873	OV4874	OV4875		OV4876		
Sampling Date		2012/09/05	2012/09/05	2012/09/05	2012/09/05	2012/09/05	2012/09/05	2012/09/05	2012/09/05		2012/09/05		
	Units	ODP-BS20	ODP-BS21	ODP-BS22	ODP-BS23	ODP-BS24	ODP-BS25	ODP-BS18	ODP-BS19	RDL	HARBOUR-BS30	RDL	QC Batch
PCBs													
Total PCB	mg/kg	0.034	140	27	35	5.8	4.7	51	510	0.010	90	0.030	2973251
Surrogate Recovery (%)													
Decachlorobiphenyl	%	88 ⁽¹⁾	81 ⁽²⁾	95 ⁽³⁾	85 ⁽²⁾	91 ⁽²⁾	94 ⁽²⁾	91 ⁽²⁾	103 ⁽¹⁾		73 ⁽⁴⁾		2973251

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

(1) - Aroclor 1260.

(2) - Aroclor 1254, 1260.

(3) - Aroclor 1242, 1254, 1260.

(4) - Aroclor 1260. Elevated PCB RDL due to matrix / co-extractive interference.

Maxxam Job #: B2E1518
 Report Date: 2012/09/20

Stantec Consulting Ltd
 Client Project #: 121411777.300
 Site Location: HOPEDALE REMEDIATION
 Your P.O. #: 16400NR
 Sampler Initials: JS

PCB'S AND DDT BY GC-ECD (SOIL)

Maxxam ID		OV4877		OV4878	OV4879	OV4880	OV4881	OV4882		
Sampling Date		2012/09/05		2012/09/01	2012/09/01	2012/09/01	2012/09/01	2012/09/01		
	Units	HARBOUR-BS31	RDL	SS1	SS2	SS3	SS4	SS5	RDL	QC Batch
PCBs										
Total PCB	mg/kg	8.2	0.030	0.28	0.27	0.88	0.27	0.12	0.010	2973251
Surrogate Recovery (%)										
Decachlorobiphenyl	%	94 ⁽¹⁾		91 ⁽²⁾	83 ⁽²⁾	80 ⁽²⁾	97 ⁽²⁾	102 ⁽²⁾		2973251

Maxxam ID		OV4883	OV4884	OV4885	OV4886	OV4886	OV4887			
Sampling Date		2012/09/01	2012/09/01	2012/09/01	2012/09/01	2012/09/01	2012/09/01			
	Units	SS6	SS7	SS10	SS11	SS11 Lab-Dup	SS15	RDL	QC Batch	
PCBs										
Total PCB	mg/kg	0.35	0.41	0.062	0.035	0.048	0.13	0.010	2973251	
Surrogate Recovery (%)										
Decachlorobiphenyl	%	97 ⁽²⁾	95 ⁽²⁾	91 ⁽²⁾	101 ⁽²⁾	100	98 ⁽³⁾		2973251	

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

(1) - Aroclor 1260. Elevated PCB RDL due to matrix / co-extractive interference.

(2) - Aroclor 1260.

(3) - Aroclor 1254, 1260.

Maxxam Job #: B2E1518
Report Date: 2012/09/20

Stantec Consulting Ltd
Client Project #: 121411777.300
Site Location: HOPEDALE REMEDIATION
Your P.O. #: 16400NR
Sampler Initials: JS

GENERAL COMMENTS

Marine Sediment samples (SS1-SS10, SS11, and SS15) tested past the recommended 14 day holding time for PCBs due to lab error.

Maxxam Job #: B2E1518
 Report Date: 2012/09/20

Stantec Consulting Ltd
 Client Project #: 121411777.300
 Site Location: HOPEDALE REMEDIATION
 Your P.O. #: 16400NR
 Sampler Initials: JS

QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
2973251	Decachlorobiphenyl	2012/09/20	89	70 - 130	94	70 - 130	99	%		
2973251	Total PCB	2012/09/20	92	70 - 130	96	70 - 130	<0.010	mg/kg	NC	50

N/A = Not Applicable

RPD = Relative Percent Difference

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.

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

Maxxam Job #: B2E1518
Report Date: 2012/09/20

Stantec Consulting Ltd
Client Project #: 121411777.300
Site Location: HOPEDALE REMEDIATION
Your P.O. #: 16400NR
Sampler Initials: JS

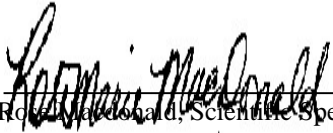
Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.


Validation Signature Page

Maxxam Job #: B2E1518

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



Robert MacDonald, Scientific Specialist (Organics)



Robin Smith-Armstrong, Bedford SemiVol Spvvr

=====

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Your P.O. #: 16400NR
Your Project #: 121411777.300
Site Location: HOPEDALE REMEDIATION
Your C.O.C. #: ES612012

Attention: Jim Slade
Stantec Consulting Ltd
607 Torbay Rd
St. John's, NL
A1A 4Y6

Report Date: 2012/09/21

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B2E1528
Received: 2012/09/14, 09:20

Sample Matrix: Soil
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Moisture (1)	2	N/A	2012/09/17	ATL SOP 00001	MOE Handbook 1983
Low Level PCB in Soil by GC-ECD (1)	2	2012/09/19	2012/09/21	ATL SOP 00106	Based 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

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

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Total cover pages: 1

Page 1 of 5

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Maxxam Job #: B2E1528
 Report Date: 2012/09/21

Stantec Consulting Ltd
 Client Project #: 121411777.300
 Site Location: HOPEDALE REMEDIATION
 Your P.O. #: 16400NR
 Sampler Initials: JS

RESULTS OF ANALYSES OF SOIL

Maxxam ID		OV4900	OV4901		
Sampling Date		2012/09/05	2012/09/05		
	Units	HARBOUR PLANT-1	HARBOUR PLANT-2	RDL	QC Batch
Inorganics					
Moisture	%	26	33	1	2972034

PCB'S AND DDT BY GC-ECD (SOIL)

Maxxam ID		OV4900	OV4900	OV4901		
Sampling Date		2012/09/05	2012/09/05	2012/09/05		
	Units	HARBOUR PLANT-1	HARBOUR PLANT-1 Lab-Dup	HARBOUR PLANT-2	RDL	QC Batch
PCBs						
Total PCB	mg/kg	0.31	0.47	0.37	0.050	2975946
Surrogate Recovery (%)						
Decachlorobiphenyl	%	73(1)	73(2)	84(1)		2975946

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

(1) - Aroclor 1260. Elevated PCB RDL due to matrix / co-extractive interference. PCB:Unidentified (possibly halogenated) compounds detected.

(2) - Elevated PCB RDL due to matrix / co-extractive interference.

Maxxam Job #: B2E1528
 Report Date: 2012/09/21

Stantec Consulting Ltd
 Client Project #: 121411777.300
 Site Location: HOPEDALE REMEDIATION
 Your P.O. #: 16400NR
 Sampler Initials: JS

QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
2975946	Decachlorobiphenyl	2012/09/21	80	70 - 130	95	70 - 130	82	%		
2975946	Total PCB	2012/09/21	NC	70 - 130	92	70 - 130	<0.010	mg/kg	40.4	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 to which a known amount of the analyte has been added. Used to evaluate analyte recovery.

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.



Maxxam Job #: B2E1528
Report Date: 2012/09/21

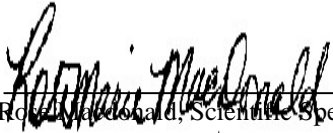
Stantec Consulting Ltd
Client Project #: 121411777.300
Site Location: HOPEDALE REMEDIATION
Your P.O. #: 16400NR
Sampler Initials: JS

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 calculation.

Validation Signature Page

Maxxam Job #: B2E1528

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



Robert MacDonald, Scientific Specialist (Organics)



Robin Smith-Armstrong, Bedford SemiVol Spvsvr

=====

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Your P.O. #: 16400NR
 Your Project #: 121411777.300
 Site Location: HOPEDALE REMEDIATION
 Your C.O.C. #: ES617612

Attention: Anna Roy
 Stantec Consulting Ltd
 607 Torbay Rd
 St. John's, NL
 A1A 4Y6

Report Date: 2012/09/28

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B2E7637
Received: 2012/09/25, 09:57

Sample Matrix: Soil
 # Samples Received: 3

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Moisture (1)	3	N/A	2012/09/25	ATL SOP 00001	MOE Handbook 1983
Low Level PCB in Soil by GC-ECD (1)	3	2012/09/26	2012/09/28	ATL SOP 00106	Based EPA8082

Sample Matrix: Swab
 # Samples Received: 15

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
PCBs on swabs by GC/ECD (1)	15	2012/09/26	2012/09/27	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

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

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Total cover pages: 1

Maxxam Job #: B2E7637
 Report Date: 2012/09/28

Stantec Consulting Ltd
 Client Project #: 121411777.300
 Site Location: HOPEDALE REMEDIATION
 Your P.O. #: 16400NR
 Sampler Initials: AR

RESULTS OF ANALYSES OF SOIL

Maxxam ID		OY5265	OY5266	OY5267		
Sampling Date		2012/09/20	2012/09/20	2012/09/20		
	Units	12-WHARF-BS32	12-WHARF-BS33	12-WHARF-BS32-FIELD DUP	RDL	QC Batch
Inorganics						
Moisture	%	8	16	8	1	2981055

PCB'S AND DDT BY GC-ECD (SOIL)

Maxxam ID		OY5265	OY5265	OY5266	OY5267		
Sampling Date		2012/09/20	2012/09/20	2012/09/20	2012/09/20		
	Units	12-WHARF-BS32	12-WHARF-BS32 Lab-Dup	12-WHARF-BS33	12-WHARF-BS32-FIELD DUP	RDL	QC Batch
PCBs							
Total PCB	mg/kg	6.0	7.5	21	4.2	0.010	2982475
Surrogate Recovery (%)							
Decachlorobiphenyl	%	87(1)	83	72(1)	72(1)		2982475

POLYCHLORINATED BIPHENYLS BY GC-ECD (SWAB)

Maxxam ID		OY5250	OY5251	OY5252	OY5253	OY5254	OY5255	OY5256	OY5257	OY5258		
Sampling Date		2012/09/20	2012/09/20	2012/09/20	2012/09/20	2012/09/20	2012/09/20	2012/09/20	2012/09/20	2012/09/20		
	Units	12-SWAB8	12-SWAB9	12-SWAB10	12-SWAB11	12-SWAB12	12-SWAB13	12-SWAB14	12-SWAB15	12-SWAB16	RDL	QC Batch
PCBs												
Total PCB	ug	<5.0	<5.0	21	<5.0	<5.0	5.6	<5.0	<5.0	15	5.0	2982114
Surrogate Recovery (%)												
Decachlorobiphenyl	%	96	95	88(2)	96	96	95(2)	90	91	95(2)		2982114

RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch
 (1) - Aroclor 1260.
 (2) - Aroclor 1254, 1260.

Maxxam Job #: B2E7637
 Report Date: 2012/09/28

Stantec Consulting Ltd
 Client Project #: 121411777.300
 Site Location: HOPEDALE REMEDIATION
 Your P.O. #: 16400NR
 Sampler Initials: AR

POLYCHLORINATED BIPHENYLS BY GC-ECD (SWAB)

Maxxam ID		OY5259	OY5260	OY5261	OY5262	OY5263	OY5264		
Sampling Date		2012/09/20	2012/09/20	2012/09/20	2012/09/20	2012/09/20	2012/09/20		
	Units	12-SWAB17	12-SWAB18	12-SWAB19	12-SWAB20	12-SWAB21	12-SWAB22	RDL	QC Batch
PCBs									
Total PCB	ug	13	5.9	<5.0	90	<5.0	<5.0	5.0	2982114
Surrogate Recovery (%)									
Decachlorobiphenyl	%	94(1)	97(1)	98	97(1)	97	95		2982114

RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch
 (1) - Aroclor 1254, 1260.

Maxxam Job #: B2E7637
 Report Date: 2012/09/28

Stantec Consulting Ltd
 Client Project #: 121411777.300
 Site Location: HOPEDALE REMEDIATION
 Your P.O. #: 16400NR
 Sampler Initials: AR

QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
2982114	Decachlorobiphenyl	2012/09/27			97	30 - 130	94	%		
2982114	Total PCB	2012/09/27			104	30 - 130	<5.0	ug		
2982475	Decachlorobiphenyl	2012/09/28	71	70 - 130	90	70 - 130	84	%		
2982475	Total PCB	2012/09/28	NC	70 - 130	100	70 - 130	<0.010	mg/kg	23.6	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 to which a known amount of the analyte has been added. Used to evaluate analyte recovery.

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.

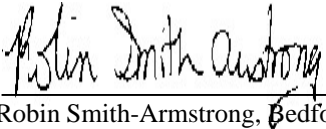
Validation Signature Page

Maxxam Job #: B2E7637

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



Alan Stewart, Scientific Specialist (Organics)



Robin Smith-Armstrong, Bedford SemiVol Spvsr

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Your P.O. #: 16300R-40
Your Project #: 121411777.300
Site Location: HOPEDALE
Your C.O.C. #: ES619012

Attention: Anna Roy
Stantec Consulting Ltd
607 Torbay Rd
St. John's, NL
A1A 4Y6

Report Date: 2012/10/02

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B2F1233
Received: 2012/09/29, 10:57

Sample Matrix: Soil
Samples Received: 4

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Moisture (1)	4	N/A	2012/10/01	ATL SOP 00001	MOE Handbook 1983
PCBs in soil by GC/ECD (1,2)	4	2012/10/01	2012/10/02	ATL SOP 00106	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

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Total cover pages: 1

Page 1 of 4

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Maxxam Job #: B2F1233
 Report Date: 2012/10/02

Stantec Consulting Ltd
 Client Project #: 121411777.300
 Site Location: HOPEDALE
 Your P.O. #: 16300R-40
 Sampler Initials: RMP

RESULTS OF ANALYSES OF SOIL

Maxxam ID		PA5222	PA5223	PA5224	PA5225		
Sampling Date		2012/09/24	2012/09/24	2012/09/24	2012/09/24		
	Units	12-ODP-BS26	12-ODP-BS27	12-ODP-BS28	12-ODP-BS29	RDL	QC Batch
Inorganics							
Moisture	%	14	32	15	30	1	2986833

POLYCHLORINATED BIPHENYLS BY GC-ECD (SOIL)

Maxxam ID		PA5222	PA5223	PA5224	PA5225		
Sampling Date		2012/09/24	2012/09/24	2012/09/24	2012/09/24		
	Units	12-ODP-BS26	12-ODP-BS27	12-ODP-BS28	12-ODP-BS29	RDL	QC Batch
PCBs							
Total PCB	ug/g	2.4	18	<0.050	11	0.050	2987163
Surrogate Recovery (%)							
Decachlorobiphenyl	%	106(1)	108(1)	104	108(1)		2987163

RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch
 (1) - Aroclor 1254, 1260.

Maxxam Job #: B2F1233
 Report Date: 2012/10/02

Stantec Consulting Ltd
 Client Project #: 121411777.300
 Site Location: HOPEDALE
 Your P.O. #: 16300R-40
 Sampler Initials: RMP

QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
2987163	Decachlorobiphenyl	2012/10/02	104	30 - 130	95	30 - 130	102	%		
2987163	Total PCB	2012/10/02	104	70 - 130	88	70 - 130	<0.050	ug/g	NC	50

N/A = Not Applicable

RPD = Relative Percent Difference

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.

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

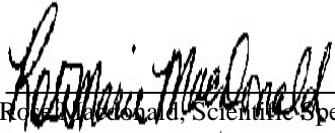
Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

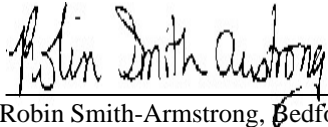
Validation Signature Page

Maxxam Job #: B2F1233

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



Robert MacDonald, Scientific Specialist (Organics)



Robin Smith-Armstrong, Bedford SemiVol Spvsr

=====

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Your P.O. #: 16400NR
Your Project #: 121411777.300
Site Location: STREAM SITE
Your C.O.C. #: ES614112

Attention: Jim Slade
Stantec Consulting Ltd
607 Torbay Rd
St. John's, NL
A1A 4Y6

Report Date: 2012/10/04

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B2F2139
Received: 2012/10/02, 10:16

Sample Matrix: Soil
Samples Received: 6

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Moisture (1)	6	N/A	2012/10/02	ATL SOP 00001	MOE Handbook 1983
PCBs in soil by GC/ECD (1,2)	6	2012/10/02	2012/10/04	ATL SOP 00106	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

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

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Total cover pages: 1

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Maxxam Job #: B2F2139
Report Date: 2012/10/04

Stantec Consulting Ltd
Client Project #: 121411777.300
Site Location: STREAM SITE
Your P.O. #: 16400NR
Sampler Initials: RP

RESULTS OF ANALYSES OF SOIL

Maxxam ID		PB0495	PB0496	PB0497	PB0498	PB0499	PB0500		
Sampling Date		2012/09/21	2012/09/21	2012/09/21	2012/09/21	2012/09/21	2012/09/21		
	Units	12-STREAM-SED77	12-STREAM-SED78	12-STREAM-SED79	12-STREAM-SED80	12-STREAM-SED81	12-STREAM-SED82	RDL	QC Batch
Inorganics									
Moisture	%	16	57	24	16	51	19	1	2988484

POLYCHLORINATED BIPHENYLS BY GC-ECD (SOIL)

Maxxam ID		PB0495	PB0495	PB0496		
Sampling Date		2012/09/21	2012/09/21	2012/09/21		
	Units	12-STREAM-SED77	12-STREAM-SED77 Lab-Dup	12-STREAM-SED78	RDL	QC Batch
PCBs						
Total PCB	ug/g	<0.050	<0.050	<0.050	0.050	2988631
Surrogate Recovery (%)						
Decachlorobiphenyl	%	90	91	91		2988631

Maxxam ID		PB0497	PB0498	PB0499	PB0500		
Sampling Date		2012/09/21	2012/09/21	2012/09/21	2012/09/21		
	Units	12-STREAM-SED79	12-STREAM-SED80	12-STREAM-SED81	12-STREAM-SED82	RDL	QC Batch
PCBs							
Total PCB	ug/g	6.7	<0.050	<0.050	1.5	0.050	2988631
Surrogate Recovery (%)							
Decachlorobiphenyl	%	95 ⁽¹⁾	93	92	94 ⁽²⁾		2988631

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) - Aroclor 1254, 1260.
(2) - Aroclor 1260.

Maxxam Job #: B2F2139
 Report Date: 2012/10/04

Stantec Consulting Ltd
 Client Project #: 121411777.300
 Site Location: STREAM SITE
 Your P.O. #: 16400NR
 Sampler Initials: RP

QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
2988631	Decachlorobiphenyl	2012/10/04	90	30 - 130	95	30 - 130	95	%		
2988631	Total PCB	2012/10/04	112	70 - 130	112	70 - 130	<0.050	ug/g	NC	50

N/A = Not Applicable

RPD = Relative Percent Difference

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.

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 (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

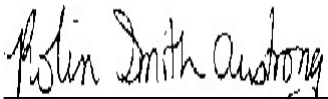
Validation Signature Page

Maxxam Job #: B2F2139

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



Alan Stewart, Scientific Specialist (Organics)



Robin Smith-Armstrong, Bedford SemiVol Spvrs

=====
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.

Your P.O. #: 16400NR
Your Project #: 121411777.300
Site Location: STREAM
Your C.O.C. #: ES616912

Attention: Jim Slade
Stantec Consulting Ltd
607 Torbay Rd
St. John's, NL
A1A 4Y6

Report Date: 2012/10/05

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B2F3980
Received: 2012/10/04, 09:33

Sample Matrix: Soil
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Moisture (1)	2	N/A	2012/10/04	ATL SOP 00001	MOE Handbook 1983
PCBs in soil by GC/ECD (1,2)	2	2012/10/04	2012/10/05	ATL SOP 00106	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

=====
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Total cover pages: 1

Maxxam Job #: B2F3980
 Report Date: 2012/10/05

Stantec Consulting Ltd
 Client Project #: 121411777.300
 Site Location: STREAM
 Your P.O. #: 16400NR
 Sampler Initials: RP

RESULTS OF ANALYSES OF SOIL

Maxxam ID		PB9128	PB9129		
Sampling Date		2012/09/28	2012/09/28		
	Units	12-STREAM-SED83	12-STREAM-SED84	RDL	QC Batch
Inorganics					
Moisture	%	16	17	1	2990537

POLYCHLORINATED BIPHENYLS BY GC-ECD (SOIL)

Maxxam ID		PB9128	PB9129		
Sampling Date		2012/09/28	2012/09/28		
	Units	12-STREAM-SED83	12-STREAM-SED84	RDL	QC Batch
PCBs					
Total PCB	ug/g	0.078	0.39	0.050	2991291
Surrogate Recovery (%)					
Decachlorobiphenyl	%	82(1)	83(1)		2991291

RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch
 (1) - Aroclor 1260.

Maxxam Job #: B2F3980
 Report Date: 2012/10/05

Stantec Consulting Ltd
 Client Project #: 121411777.300
 Site Location: STREAM
 Your P.O. #: 16400NR
 Sampler Initials: RP

QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
2991291	Decachlorobiphenyl	2012/10/05	77	30 - 130	91	30 - 130	86	%		
2991291	Total PCB	2012/10/05	80	70 - 130	112	70 - 130	<0.050	ug/g	NC	50

N/A = Not Applicable

RPD = Relative Percent Difference

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.

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

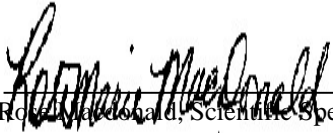
Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

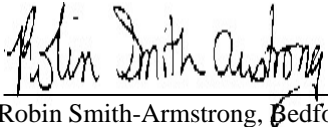
Validation Signature Page

Maxxam Job #: B2F3980

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



Robert MacDonald, Scientific Specialist (Organics)



Robin Smith-Armstrong, Bedford SemiVol Spvsr

=====

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Your P.O. #: 16400NR
Your Project #: 121411777.300
Site Location: OLD DUMP POND
Your C.O.C. #: ES581712

Attention: Jim Slade
Stantec Consulting Ltd
607 Torbay Rd
St. John's, NL
A1A 4Y6

Report Date: 2012/10/18

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B2F6650
Received: 2012/10/10, 09:34

Sample Matrix: Soil
Samples Received: 5

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Moisture (1)	5	N/A	2012/10/10	ATL SOP 00001	MOE Handbook 1983
Low Level PCB in Soil by GC-ECD (1)	4	2012/10/15	2012/10/17	ATL SOP 00106	Based EPA8082
Low Level PCB in Soil by GC-ECD (1)	1	2012/10/15	2012/10/18	ATL SOP 00106	Based 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

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

=====
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Total cover pages: 1

Page 1 of 5

This document is in electronic format, hard copy is available on request.

Maxxam Job #: B2F6650
 Report Date: 2012/10/18

Stantec Consulting Ltd
 Client Project #: 121411777.300
 Site Location: OLD DUMP POND
 Your P.O. #: 16400NR
 Sampler Initials: RMP

RESULTS OF ANALYSES OF SOIL

Maxxam ID		PD2756	PD2757	PD2758	PD2759	PD2760		
Sampling Date		2012/10/06	2012/10/06	2012/10/06	2012/10/06	2012/10/06		
	Units	12-ODP-BS30	12-ODP-BS31	12-ODP-BS32	12-ODP-BS33	12-ODP-BS34	RDL	QC Batch
Inorganics								
Moisture	%	25	32	14	23	37	1	2996298

PCB'S AND DDT BY GC-ECD (SOIL)

Maxxam ID		PD2756	PD2756	PD2757	PD2758	PD2759	PD2760		
Sampling Date		2012/10/06	2012/10/06	2012/10/06	2012/10/06	2012/10/06	2012/10/06		
	Units	12-ODP-BS30	12-ODP-BS30 Lab-Dup	12-ODP-BS31	12-ODP-BS32	12-ODP-BS33	12-ODP-BS34	RDL	QC Batch
PCBs									
Total PCB	mg/kg	18	20	23	14	12	63	0.010	3001178
Surrogate Recovery (%)									
Decachlorobiphenyl	%	85 ⁽¹⁾	84	102 ⁽¹⁾	102 ⁽²⁾	102 ⁽¹⁾	96 ⁽¹⁾		3001178

RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch
 (1) - Aroclor 1254, 1260.
 (2) - Aroclor 1242, 1260.

Maxxam Job #: B2F6650
Report Date: 2012/10/18

Stantec Consulting Ltd
Client Project #: 121411777.300
Site Location: OLD DUMP POND
Your P.O. #: 16400NR
Sampler Initials: RMP

Package 1	12.1°C
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Each temperature is the average of up to three cooler temperatures taken at receipt

GENERAL COMMENTS

Maxxam Job #: B2F6650
 Report Date: 2012/10/18

Stantec Consulting Ltd
 Client Project #: 121411777.300
 Site Location: OLD DUMP POND
 Your P.O. #: 16400NR
 Sampler Initials: RMP

QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
3001178	Decachlorobiphenyl	2012/10/17	103	70 - 130	106	70 - 130	103	%		
3001178	Total PCB	2012/10/18	NC	70 - 130	92	70 - 130	<0.010	mg/kg	8.0	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 to which a known amount of the analyte has been added. Used to evaluate analyte recovery.

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

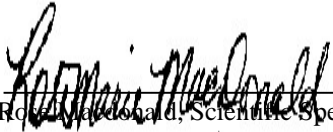
Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

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.

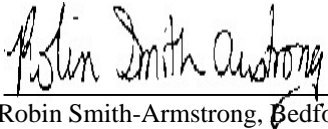
Validation Signature Page

Maxxam Job #: B2F6650

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



Robert MacDonald, Scientific Specialist (Organics)



Robin Smith-Armstrong, Bedford SemiVol Spvsvr

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Your P.O. #: 16400NR
 Your Project #: 121411777.300
 Site Location: HOPEDALE REM.
 Your C.O.C. #: ES633212

Attention: Jim Slade
 Stantec Consulting Ltd
 607 Torbay Rd
 St. John's, NL
 A1A 4Y6

Report Date: 2012/11/05

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B2G8432
Received: 2012/10/29, 08:44

Sample Matrix: Soil
 # Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Moisture (1)	1	N/A	2012/10/30	ATL SOP 00001	MOE Handbook 1983
PCBs in soil by GC/ECD (1,2)	1	2012/10/30	2012/11/01	ATL SOP 00106	Based on EPA8082

Sample Matrix: Water
 # Samples Received: 5

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
PCBs in water by GC/ECD (1)	5	2012/10/30	2012/11/05	ATL SOP 00107	Based on EPA8082
Total Suspended Solids (1)	5	N/A	2012/10/30	ATL SOP 00007	based on EPA 160.2
Turbidity (1)	2	N/A	2012/10/30	ATL SOP 00011	based on EPA 180.1

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

=====
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Total cover pages: 1

Maxxam Job #: B2G8432
 Report Date: 2012/11/05

Stantec Consulting Ltd
 Client Project #: 121411777.300
 Site Location: HOPEDALE REM.
 Your P.O. #: 16400NR
 Sampler Initials: RMP

RESULTS OF ANALYSES OF SOIL

Maxxam ID		PJ8358		
Sampling Date		2012/10/20		
	Units	12-WH-BS34	RDL	QC Batch
Inorganics				
Moisture	%	19	1	3018988

POLYCHLORINATED BIPHENYLS BY GC-ECD (SOIL)

Maxxam ID		PJ8358		
Sampling Date		2012/10/20		
	Units	12-WH-BS34	RDL	QC Batch
PCBs				
Total PCB	ug/g	1.7	0.050	3019934
Surrogate Recovery (%)				
Decachlorobiphenyl	%	74 ⁽¹⁾		3019934

RESULTS OF ANALYSES OF WATER

Maxxam ID		PJ8359		PJ8360		PJ8361		PJ8362		PJ8363	
Sampling Date		2012/10/19		2012/10/19		2012/10/19		2012/10/19		2012/10/19	
	Units	12-SUBDIV-OCT19A	RDL	12-SUBDIV-OCT19B	RDL	12-SUBDIV-OCT19C	HARBOUR-OCT 19	QC Batch	ODP-OCT 19	RDL	QC Batch
Inorganics											
Total Suspended Solids	mg/L	23	1.0	<2.0	2.0	14	10	3018934	3.4	1.0	3018934
Turbidity	NTU						7.5	3018900	1.8	0.10	3018901

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

(1) - Aroclor 1260. PCB:Unidentified (possibly halogenated) compounds detected.

Maxxam Job #: B2G8432
 Report Date: 2012/11/05

Stantec Consulting Ltd
 Client Project #: 121411777.300
 Site Location: HOPEDALE REM.
 Your P.O. #: 16400NR
 Sampler Initials: RMP

POLYCHLORINATED BIPHENYLS BY GC-ECD (WATER)

Maxxam ID		PJ8359	PJ8360	PJ8361	PJ8362	PJ8363		
Sampling Date		2012/10/19	2012/10/19	2012/10/19	2012/10/19	2012/10/19		
	Units	12-SUBDIV-OCT19A	12-SUBDIV-OCT19B	12-SUBDIV-OCT19C	HARBOUR-OCT 19	ODP-OCT 19	RDL	QC Batch
PCBs								
Total PCB	ug/L	<0.050	<0.050	<0.050	0.053	<0.050	0.050	3019027
Surrogate Recovery (%)								
Decachlorobiphenyl	%	84	68	80	88(1)	97		3019027

RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch
 (1) - Aroclor 1260.

Maxxam Job #: B2G8432
Report Date: 2012/11/05

Stantec Consulting Ltd
Client Project #: 121411777.300
Site Location: HOPEDALE REM.
Your P.O. #: 16400NR
Sampler Initials: RMP

Package 1	7.0°C
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Each temperature is the average of up to three cooler temperatures taken at receipt

GENERAL COMMENTS

Total Suspended Solids: Sample integrity may have been compromised, the samples exceeded their hold time prior to being analyzed.

Sample PJ8359-01: Total Suspended Solids: Sample integrity may have been compromised, the sample exceeded it's hold time prior to being analyzed.

Sample PJ8360-01: Total Suspended Solids: Used all of the sample provided, DL raised.

Maxxam Job #: B2G8432
 Report Date: 2012/11/05

Stantec Consulting Ltd
 Client Project #: 121411777.300
 Site Location: HOPEDALE REM.
 Your P.O. #: 16400NR
 Sampler Initials: RMP

QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits	% Recovery	QC Limits
3018900	Turbidity	2012/10/30							0.7	25	101	80 - 120
3018901	Turbidity	2012/10/30							NC	25	101	80 - 120
3018934	Total Suspended Solids	2012/10/30					<1.0	mg/L	0	25	99	80 - 120
3019027	Decachlorobiphenyl	2012/11/02	50	30 - 130	77	30 - 130	83	%				
3019027	Total PCB	2012/11/02	59 ^(1, 2)	70 - 130	85	70 - 130	<0.050	ug/L	NC	40		
3019934	Decachlorobiphenyl	2012/11/01	90	30 - 130	90	30 - 130	89	%				
3019934	Total PCB	2012/11/01	112	70 - 130	104	70 - 130	<0.050	ug/g	NC	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.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.

Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.

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 (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

(1) - Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

(2) - Matrix Spike: results are outside acceptance limit. Analysis was not repeated, sample was past recommended hold time for repeat analysis.

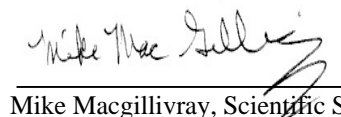
Validation Signature Page

Maxxam Job #: B2G8432

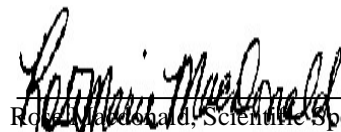
The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



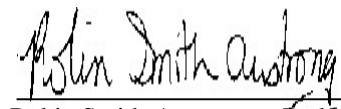
Colleen Acker



Mike Macgillivray, Scientific Specialist (Inorganics)



Rob MacDonald, Scientific Specialist (Organics)



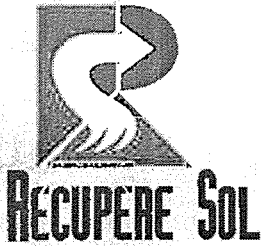
Robin Smith-Armstrong, Bedford SemiVol Spvrs

=====

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APPENDIX E

Récupère Sol Certificate of Destruction and Truck Summary



Certificate of Destruction

Saint-Ambroise December 6, 2012

Generator :

Government of NL

P.O. Box 8700

St. John NL

Advisor :

RJG Construction Ltd

162 Duckworth St.

St. John NL A1C 1G2

Contact : Christa Arnew

Contact : David Mitchell

We confirm treatment of your soils at our plant located in the industrial park of Saint-Ambroise. The soils were managed and treated in compliance with our Certificate of Authorization delivered by the Quebec Ministry of Sustainable Development, Environment and Parks :

Permit : Thermal treatment of PCB and other organochloride impacted soils, issued on October 27, 1997

Permit Ref. No. : 7610-02-01-0603816
1142129

Treatment service : Thermal

Soils impacted with : PCB

Treatment criteria : <A In reference to the standards set by the Ministry of the Sustainable Development, Environment and Parks of the Province of Quebec, Canada (<0.05 mg/kg)

Récupère Sol File No. : 120595

Destruction Certificate No. : 120595.d1

Volume of Soil Treated (kg) : 599320

Yours truly,


Éloi Côté, Eng
Process Engineer



Trucks summary

05-déc.-12

File No.	Arrival Time	Generator	Contamination	Weight ticket No.	Manifest No.	Carrier	License No.	Driver	Net weight (kg)
23-nov.-12									
120595	11:11	HopeDale	BPC	30976	8273425-2	F. Gilbert	L387458	Gérald Néron	29780
120595	13:20	HopeDale	BPC	30977	8273425-2	F. Gilbert	L488480	Richard Villeneuve	27560
120595	13:23	HopeDale	BPC	30978	8273425-2	F. Gilbert	L322587	William Dion	27720
120595	14:15	HopeDale	BPC	30979	8273425-2	F. Gilbert	L387458	Gérald Néron	26210
120595	14:35	HopeDale	BPC	30980	8273425-2	F. Gilbert	L533100	Martin LEMIEUX	27040
120595	15:04	HopeDale	BPC	30981	8273425-2	F. Gilbert	L354551	Martin Perron	26800
									165110
26-nov.-12									
120595	10:12	HopeDale	BPC	30982	8273425-2	F. Gilbert	L387458	Gérald Néron	27180
120595	10:30	HopeDale	BPC	30983	8273425-2	F. Gilbert	L354551	Martin Perron	27540
120595	13:30	HopeDale	BPC	30984	8273425-2	F. Gilbert	L387458	Gérald Néron	25900
120595	14:09	HopeDale	BPC	30985	8273425-2	F. Gilbert	L354551	Martin Perron	28010
120595	14:45	HopeDale	BPC	30986	8273425-2	F. Gilbert	L322587	William Dion	26430
									135060
27-nov.-12									
120595	07:06	HopeDale	BPC	30987	8273425-2	F. Gilbert	L322587	William Dion	25250
120595	09:46	HopeDale	BPC	30988	8273425-2	F. Gilbert	L387458	Gérald Néron	25620
120595	10:03	HopeDale	BPC	30989	8273425-2	F. Gilbert	L396641	Francois Bouchard	28880
120595	12:35	HopeDale	BPC	30990	8273425-2	F. Gilbert	L387458	Gérald Néron	26810
120595	13:21	HopeDale	BPC	30991	8273425-2	F. Gilbert	L396641	Francois Bouchard	26840
120595	14:47	HopeDale	BPC	30992	8273425-2	F. Gilbert	L322587	William Dion	30690
									164090
28-nov.-12									

File No.	Arrival Time	Generator	Contamination	Weight ticket No.	Manifest No.	Carrier	License No.	Driver	Net weight (kg)
120595	07:02	HopeDale	BPC	30993	8273425-2	F. Gilbert	L387458	Gérald Néron	29270
120595	08:25	HopeDale	BPC	30994	8273425-2	F. Gilbert	L354817	Clermont Dallaire	30150
120595	10:08	HopeDale	BPC	30995	8273425-2	F. Gilbert	L387458	Gérald Néron	27800
120595	12:55	HopeDale	BPC	30996	8273425-2	F. Gilbert	L387458	Gérald Néron	18590
120595	13:35	HopeDale	BPC	30997	8273425-2	F. Gilbert	L354551	Martin Perron	29250
									<u>135060</u>
								Total général:	599320