

Appendix 12a

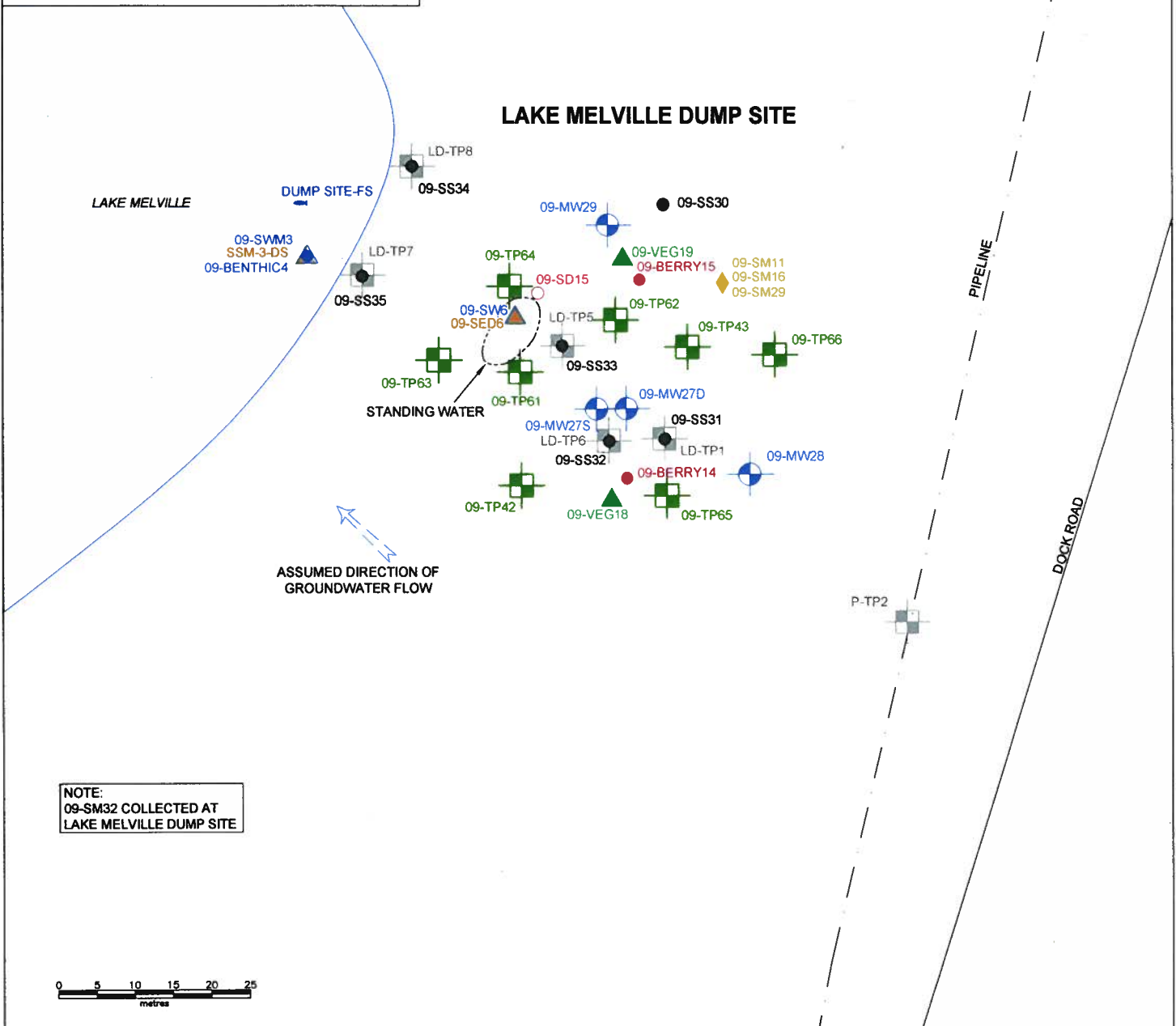
Site Drawings

– Lake Melville Dump Site

LEGEND

- BERRY SAMPLE (STANTEC 2009)
- SURFACE SOIL SAMPLE (STANTEC 2009)
- SURFACE DEBRIS LOCATION (STANTEC 2009)
- ◆ SMALL MAMMALS (STANTEC 2009)
- FISH LOCATION (STANTEC 2009)
- △ SURFACE WATER SAMPLE (STANTEC 2009)
- ▲ SEDIMENT SAMPLE (STANTEC 2009)
- ▲ VEGETATION SAMPLE (STANTEC 2009)
- TEST PIT (STANTEC 2009)
- MONITOR WELL (STANTEC 2009)
- TEST PIT (AGRA 1999)
- BENTHIC INVERTEBRATE SAMPLE (STANTEC 2009)

LAKE MELVILLE DUMP SITE



NOTE:
09-SM32 COLLECTED AT
LAKE MELVILLE DUMP SITE



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

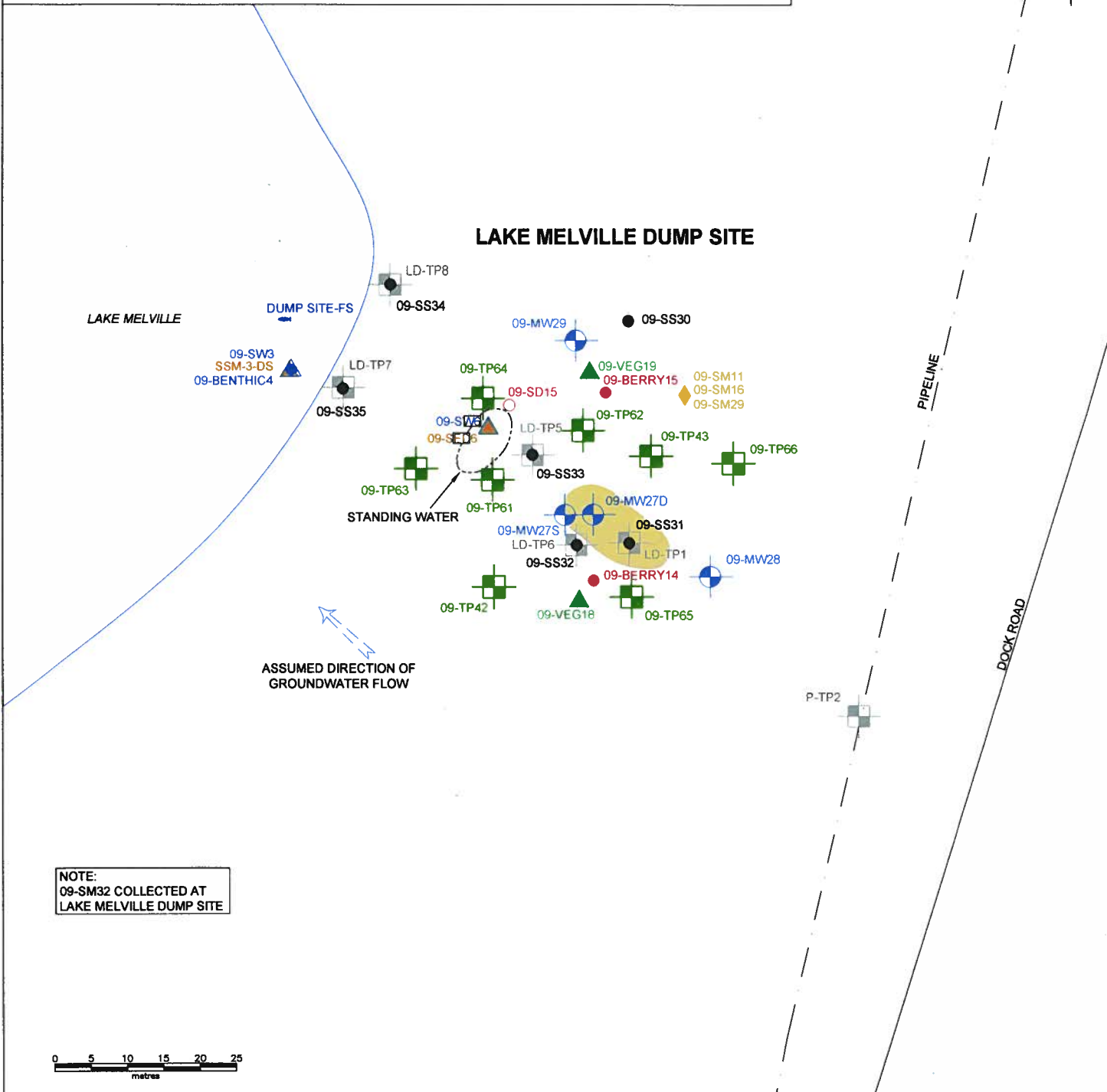
<p>CLIENT: NEWFOUNDLAND AND LABRADOR DEPARTMENT OF ENVIRONMENT AND CONSERVATION</p> <p>PROJECT TITLE: PHASE III ESA, HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENTS, REMEDIAL ACTION PLAN FOR THE FORMER U.S. MILITARY FACILITY OF NORTHWEST POINT, NL</p> <p>DRAWING TITLE: SITE PLAN - LAKE MELVILLE DUMP SITE</p>	<p>SCALE: 1:800</p> <p>DRAWN BY: N.M.</p> <p>EDITED BY: R.L.</p> <p>DRAWING No: 121410105-EE-12A</p> <p>CAD FILE: 1044857-EE-07.DWG</p>	<p>DATE: JUNE 17, 2010</p> <p>CHECKED BY: A.R.</p> <p>REV. No: 0</p>	
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LEGEND

- BERRY SAMPLE LOCATION (STANTEC 2009)
- SURFACE SOIL SAMPLE (STANTEC 2009)
- SURFACE DEBRIS LOCATION (STANTEC 2009)
- ◆ SMALL MAMMALS (STANTEC 2009)
- FISH LOCATION (STANTEC 2009)
- △ SURFACE WATER SAMPLE (STANTEC 2009)
- ▲ SEDIMENT SAMPLE (STANTEC 2009)
- ▲ VEGETATION SAMPLE LOCATION (STANTEC 2009)
- BENTHIC INVERTEBRATE SAMPLE (STANTEC 2009)
- ⊕ TEST PIT (STANTEC 2009)
- ⊖ TEST PIT (AGRA 1999)
- ⊕ MONITOR WELL (STANTEC 2009)
- APPROXIMATE EXTENT OF TPH IMPACTS IN SOIL EXCEEDING GENERIC GUIDELINES



LAKE MELVILLE DUMP SITE



NOTE:
09-SM32 COLLECTED AT
LAKE MELVILLE DUMP SITE

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

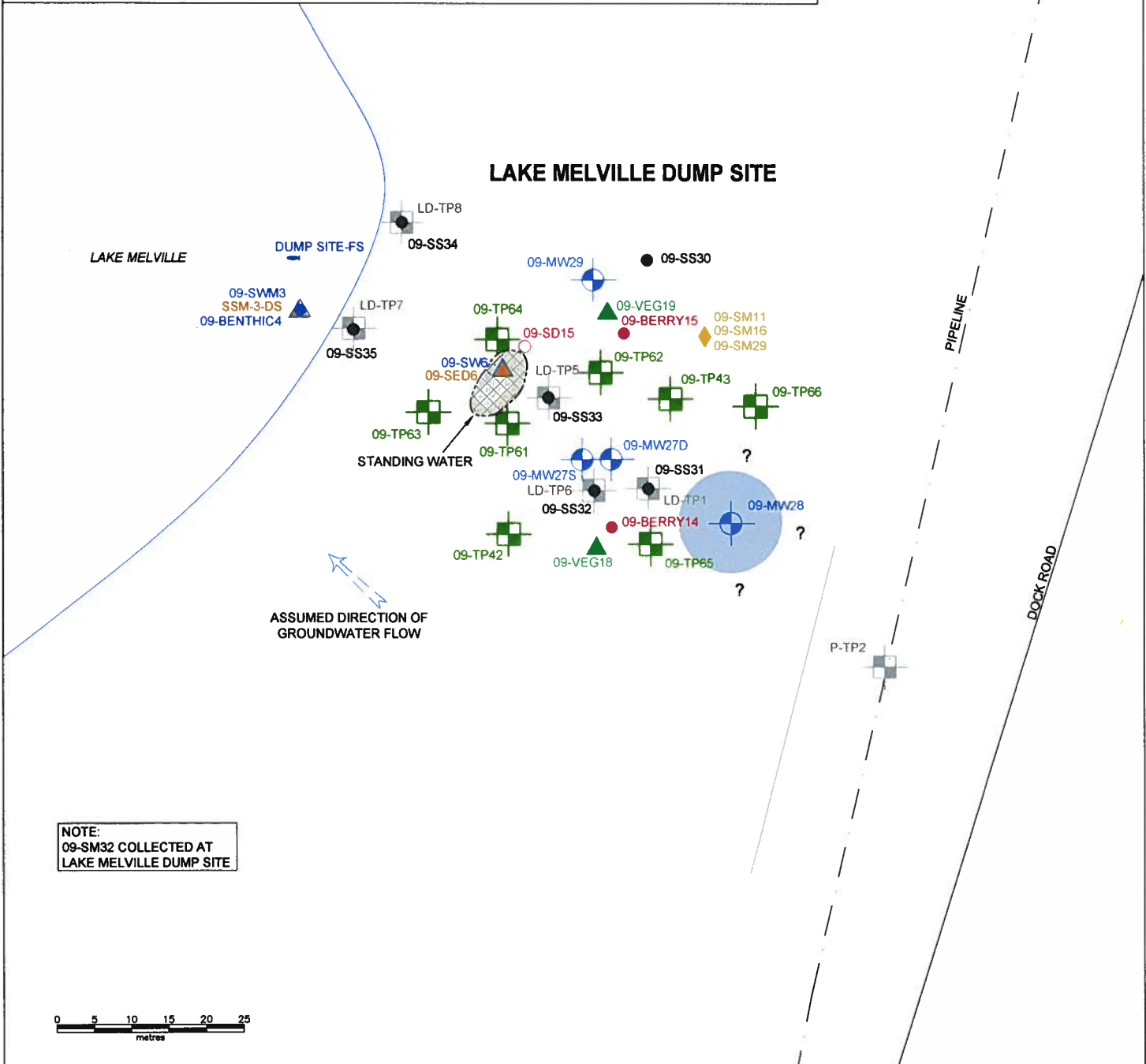
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<p>PROJECT TITLE: PHASE III ESA, HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENTS, REMEDIAL ACTION PLAN FOR THE FORMER U.S. MILITARY FACILITY OF NORTHWEST POINT, NL</p>	<p>DRAWN BY: N.M.</p>	<p>CHECKED BY: A.R.</p>	
<p>DRAWING TITLE: APPROXIMATE EXTENT OF TPH IMPACTS EXCEEDING GENERIC GUIDELINES - LAKE MELVILLE DUMP SITE</p>	<p>EDITED BY: R.L.</p>	<p>REV. No.: 0</p>	
<p>DRAWING No.: 121410105-EE-12B</p>	<p>CAD FILE: 1044857-EE-10.DWG</p>		

LEGEND

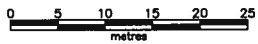
- BERRY SAMPLE (STANTEC 2009)
- SURFACE SOIL SAMPLE (STANTEC 2009)
- SURFACE DEBRIS LOCATION (STANTEC 2009)
- ◆ SMALL MAMMALS (STANTEC 2009)
- FISH LOCATION (STANTEC 2009)
- △ SURFACE WATER SAMPLE (STANTEC 2009)
- ▲ SEDIMENT SAMPLE (STANTEC 2009)
- ▲ VEGETATION SAMPLE (STANTEC 2009)
- ⊞ TEST PIT (STANTEC 2009)
- ⊞ TEST PIT (AGRA 1999)
- ⊙ MONITOR WELL (STANTEC 2009)
- BENTHIC INVERTEBRATE SAMPLE (STANTEC 2009)
- APPROXIMATE EXTENT OF METALS IMPACTS IN SURFACE WATER EXCEEDING GENERIC GUIDELINES
- APPROXIMATE EXTENT OF METALS IMPACTS IN GROUNDWATER EXCEEDING GENERIC GUIDELINES
- ▨ APPROXIMATE EXTENT OF METALS IMPACTS IN SEDIMENT EXCEEDING GENERIC GUIDELINES




LAKE MELVILLE DUMP SITE



NOTE:
09-SM32 COLLECTED AT
LAKE MELVILLE DUMP SITE



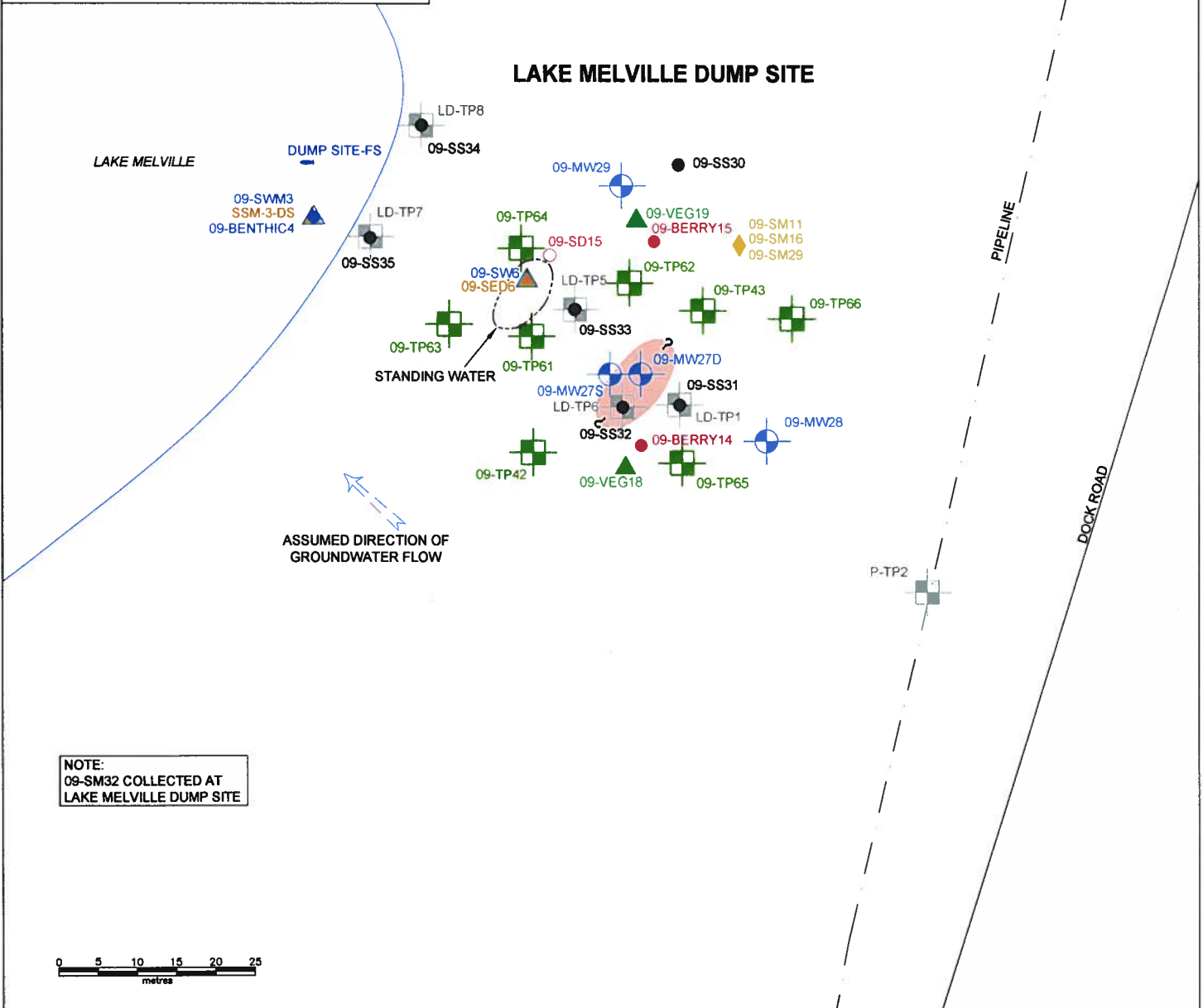
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CLIENT: NEWFOUNDLAND AND LABRADOR DEPARTMENT OF ENVIRONMENT AND CONSERVATION		SCALE: 1:800	DATE: JUNE 21, 2010	 Stantec
PROJECT TITLE: PHASE III ESA, HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENTS, REMEDIAL ACTION PLAN FOR THE FORMER U.S. MILITARY FACILITY OF NORTHWEST POINT, NL		DRAWN BY: N.M.	CHECKED BY: <i>A.R.</i>	
DRAWING TITLE: APPROXIMATE EXTENT OF METALS IMPACTS EXCEEDING GENERIC GUIDELINES - LAKE MELVILLE DUMP SITE		EDITED BY: R.L.	REV. No.: 0	
		DRAWING No.: 121410105-EE-12C	CAD FILE: 1044857-EE-11.DWG	

LEGEND


- BERRY SAMPLE (STANTEC 2009)
- SURFACE SOIL SAMPLE (STANTEC 2009)
- SURFACE DEBRIS LOCATION (STANTEC 2009)
- ◆ SMALL MAMMALS (STANTEC 2009)
- ▬ FISH LOCATION (STANTEC 2009)
- △ SURFACE WATER SAMPLE (STANTEC 2009)
- ▲ SEDIMENT SAMPLE (STANTEC 2009)
- ▲ VEGETATION SAMPLE (STANTEC 2009)
- TEST PIT (STANTEC 2009)
- TEST PIT (AGRA 1999)
- BENTHIC INVERTEBRATE SAMPLE (STANTEC 2009)
- APPROXIMATE EXTENT OF PAHs IMPACTS IN SOIL EXCEEDING GENERIC GUIDELINES

LAKE MELVILLE DUMP SITE



NOTE:
09-SM32 COLLECTED AT
LAKE MELVILLE DUMP SITE

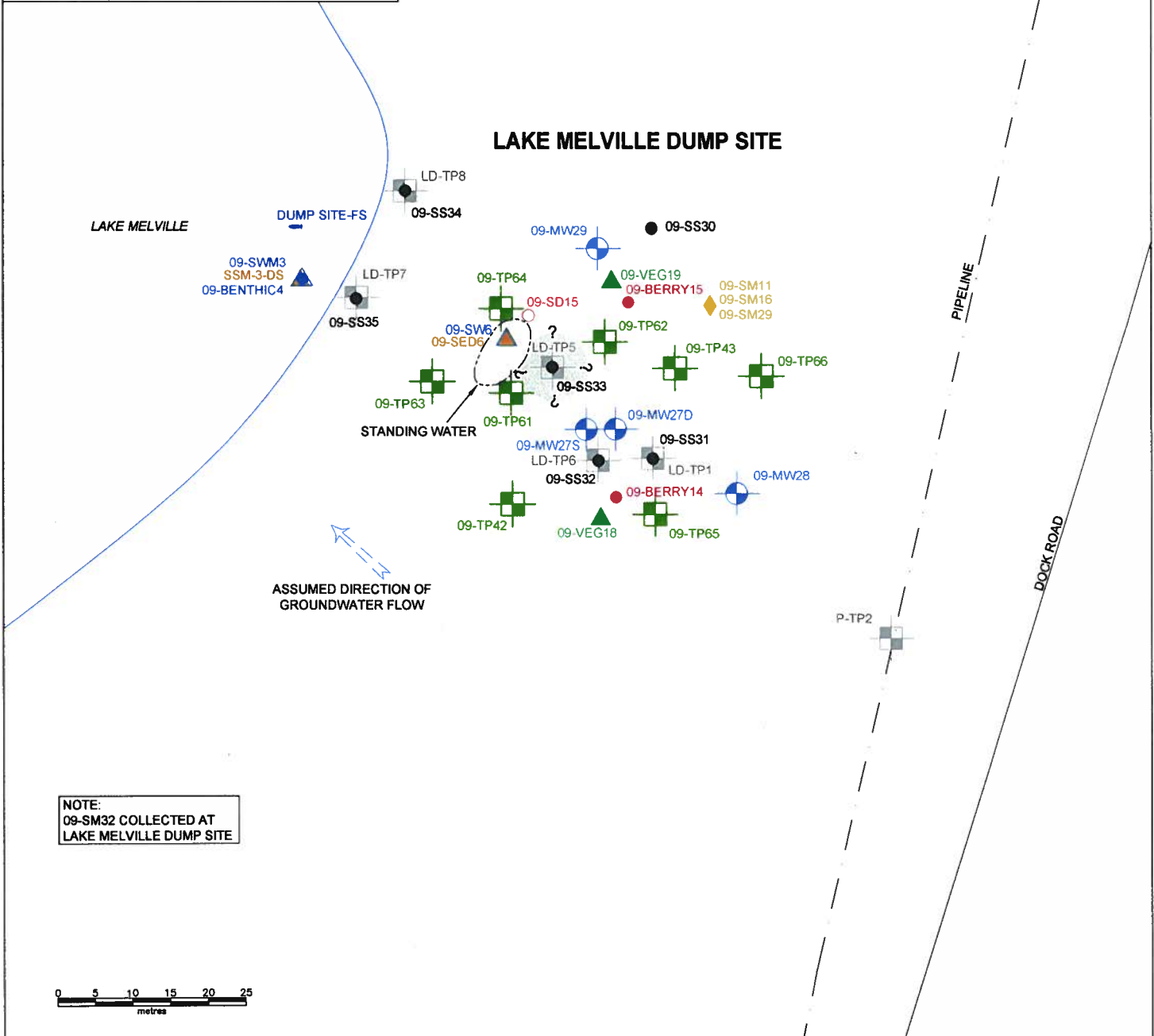
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CLIENT: NEWFOUNDLAND AND LABRADOR DEPARTMENT OF ENVIRONMENT AND CONSERVATION		SCALE: 1:800	DATE: JUNE 21, 2010
PROJECT TITLE: PHASE III ESA, HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENTS, REMEDIAL ACTION PLAN FOR THE FORMER U.S. MILITARY FACILITY OF NORTHWEST POINT, NL		DRAWN BY: N.M.	CHECKED BY: A.R.
DRAWING TITLE: APPROXIMATE EXTENT OF PAHs IMPACTS EXCEEDING GENERIC GUIDELINES - LAKE MELVILLE DUMP SITE		EDITED BY: R.L.	REV. No. 0
		DRAWING No: 121410105-EE-12D	 Stantec
		CAD FILE: 1044857-EE-12.DWG	

LEGEND

- BERRY SAMPLE LOCATION (STANTEC 2009)
- SURFACE SOIL SAMPLE (STANTEC 2009)
- SURFACE DEBRIS LOCATION (STANTEC 2009)
- ◆ SMALL MAMMALS (STANTEC 2009)
- FISH LOCATION (STANTEC 2009)
- △ SURFACE WATER SAMPLE (STANTEC 2009)
- ▲ SEDIMENT SAMPLE (STANTEC 2009)
- ▲ VEGETATION SAMPLE LOCATION (STANTEC 2009)
- TEST PIT (STANTEC 2009)
- ⊕ MONITOR WELL (STANTEC 2009)
- APPROXIMATE EXTENT OF PCBs IMPACTS IN SOIL EXCEEDING GENERIC GUIDELINES

LAKE MELVILLE DUMP SITE



NOTE:
09-SM32 COLLECTED AT
LAKE MELVILLE DUMP SITE

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: PHASE III ESA, HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENTS, REMEDIAL ACTION PLAN FOR THE FORMER U.S. MILITARY FACILITY OF NORTHWEST POINT, NL	
DRAWING TITLE: APPROXIMATE EXTENT OF PCBs IMPACTS EXCEEDING GENERIC GUIDELINES - LAKE MELVILLE DUMP SITE	

SCALE: 1:800	DATE: JUNE 21, 2010
DRAWN BY: N.M.	CHECKED BY: A.R.
EDITED BY: R.L.	REV. No. 0
DRAWING No: 121410105-EE-12E	
CAD FILE: 1044857-EE-14.DWG	



Stantec

Appendix 12b

Site Photos

– Lake Melville Dump Site

Site Photographs – Lake Melville Dump Site



Photo 1 View of area of standing water at the site (09-SW 6 and 09-SED6)



Photo 2 View of sheen on surface water in the area of standing water at the site

Site Photographs – Lake Melville Dump Site



Photo 3 View of the site



Photo 4 View of the site

Site Photographs – Lake Melville Dump Site



Photo 5 View of the site



Photo 6 View of drums and metal debris encountered in 09-TP62

Site Photographs – Lake Melville Dump Site



Photo 7 View of 09-MW29 and metal surface debris (09-SD15)



Photo 8 View of surface debris at the site (09-SD15)

Site Photographs – Lake Melville Dump Site



Photo 9 View of surface debris at the site (09-SD15)

Appendix 12c

Sample Coordinates

– Lake Melville Dump Site

Sample Coordinates - Lake Melville Dump Site
Phase III ESA, HHERA and RAP
Former U.S Military Facility, Northwest Point, NL
Stantec Consulting Ltd. Project No. 121410105

Sample ID	Coordinates (NAD27)	
	Easting	Northing
TEST PITS		
09-TP42	694635	5932007
09-TP43	694649	5932024
09-TP61	694639	5932018
09-TP62	694642	5932027
09-TP63	694624	5932023
09-TP64	694633	5932033
09-TP65	694654	5932006
09-TP66	694655	5932017
MONITOR WELLS		
09-MW27S	694645	5932017
09-MW27D	694645	5932017
09-MW28	694665	5932009
09-MW29	694649	5932031
SURFACE SOIL		
09-SS30	694653	5932044
09-SS31	694667	5931998
09-SS32	694653	5932004
09-SS33	694647	5932020
09-SS34	694620	5932047
09-SS35	694615	5932035
SURFACE WATER / SEDIMENT / BENTHIC		
09-SWM3, SSM-3-DS, 09-BENTHIC4	694615	5932034
VEGETATION		
09-VEG18	694647	5932005
09-VEG19	694648	5932037
BERRIES		
09-BERRY14	694649	5932008
09-BERRY15	694650	5932034
SMALL MAMMALS		
09-SM11	694661	5932034
09-SM16	694661	5932034
09-SM29	694661	5932034
RABBITS		
09-SM32	Not recorded	
FISH		
DUMP SITE-FS	694673	5932045

Appendix 12d

Test Pit Records and Monitor Well Records



– Lake Melville Dump Site



TEST PIT RECORD

CLIENT NL Department of Environment and Conservation
 PROJECT Phase III ESA, HHRA & ERA, Former US Military Facility
 LOCATION Northwest Point, NL
 DATES (mm-dd-yy): DUG 8-7-09 WATER LEVEL 2.2m 8-7-09

TEST PIT No. 09-TP42
 PROJECT No. 121410105
 DATUM _____




DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				PID READINGS (ppm)	CHEMICAL ANALYSIS (ppm)				
					TYPE	NUMBER	HYDROCARBON ODOUR	OTHER TESTS		TPH	BENZENE	TOLUENE	ETHYLBENZENE	XYLENES
0		Compact, brown, SAND (SP)			BS	1	0		1.2	-	-	-	-	-
1														
2		Stiff, grey, marine CLAY (CL); trace sand and gravel		▽	BS	2	0		4.9	nd	nd	nd	nd	nd
3														
4		End of Test Pit Groundwater seepage observed at 2.2 m depth. Bedrock not encountered.												
5														



TEST PIT RECORD

CLIENT NL Department of Environment and Conservation
 PROJECT Phase III ESA, HHRA & ERA, Former US Military Facility
 LOCATION Northwest Point, NL
 DATES (mm-dd-yy): DUG 8-7-09 WATER LEVEL 3.2m 8-7-09

TEST PIT No. 09-TP43
 PROJECT No. 121410105
 DATUM _____

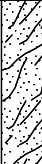

DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				PID READINGS (ppm)	CHEMICAL ANALYSIS (ppm)				
					TYPE	NUMBER	HYDROCARBON ODOUR	OTHER TESTS		TPH	BENZENE	TOLUENE	ETHYLBENZENE	XYLENES
0		Brown, SAND (SP)												
		Brown and grey, SAND with silt (SP-SM); some debris (cable, metal, cans, bottles, etc)												
1														
2					BS	1	0	2.1	-	-	-	-	-	-
		Dense, brown, SILT (ML); some clay												
3					BS	2	0	2.7	nd	nd	nd	nd	nd	nd
4		End of Test Pit Groundwater seepage observed at 3.2 m depth. Bedrock not encountered.												
5														



TEST PIT RECORD

CLIENT NL Department of Environment and Conservation
 PROJECT Phase III ESA, HHRA & ERA, Former US Military Facility
 LOCATION Northwest Point, NL
 DATES (mm-dd-yy): DUG 8-8-09 WATER LEVEL 1.3m 8-8-09

TEST PIT No. 09-TP61
 PROJECT No. 121410105
 DATUM _____

DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				PID READINGS (ppm)	CHEMICAL ANALYSIS (ppm)				
					TYPE	NUMBER	HYDROCARBON ODOUR	OTHER TESTS		TPH	BENZENE	TOLUENE	ETHYLBENZENE	XYLENES
0		Loose to compact, brown, SAND (SP); some roots and rootlets			BS	1	0		0.0	-	-	-	-	-
1		Stiff, grey, marine CLAY (CL); some silt and shells			BS	2	0		0.0	-	-	-	-	-
2		End of Test Pit												
3		Very slow groundwater seepage observed at 1.3 m depth.												
4		Bedrock not encountered.												
5														



TEST PIT RECORD

CLIENT NL Department of Environment and Conservation
 PROJECT Phase III ESA, HHRA & ERA, Former US Military Facility
 LOCATION Northwest Point, NL
 DATES (mm-dd-yy): DUG 8-8-09 WATER LEVEL 1.8m 8-8-09

TEST PIT No. 09-TP62
 PROJECT No. 121410105
 DATUM _____


DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				PID READINGS (ppm)	CHEMICAL ANALYSIS (ppm)				
					TYPE	NUMBER	HYDROCARBON ODOUR	OTHER TESTS		TPH	BENZENE	TOLUENE	ETHYLBENZENE	XYLENES
0		Loose, brown, SAND (SP); some debris (drums, metal, cans, bottles, plastic, wood, etc)			BS	1	0	0.4	-	-	-	-	-	
1		Stiff, grey, marine CLAY (CL); some silt		▽	BS	2	0	0.6	-	-	-	-	-	
2		End of Test Pit												
3		Slow groundwater seepage observed at 1.8 m depth.												
4		Bedrock not encountered.												
5														



TEST PIT RECORD

CLIENT NL Department of Environment and Conservation
 PROJECT Phase III ESA, HHRA & ERA, Former US Military Facility
 LOCATION Northwest Point, NL
 DATES (mm-dd-yy): DUG 8-8-09 WATER LEVEL 0.6m 8-8-09

TEST PIT No. 09-TP63
 PROJECT No. 121410105
 DATUM _____

DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				PID READINGS (ppm)	CHEMICAL ANALYSIS (ppm)				
					TYPE	NUMBER	HYDROCARBON	ODOUR		OTHER TESTS	TPH	BENZENE	TOLUENE	ETHYLBENZENE
0		Loose, brown, SAND (SP); some roots and rootlets			BS	1	0		0.0	-	-	-	-	-
				▽	BS	2	0		0.2	-	-	-	-	-
1		End of Test Pit Slow groundwater seepage observed at 0.6 m depth. Bedrock not encountered.												
2														
3														
4														
5														



TEST PIT RECORD

CLIENT NL Department of Environment and Conservation
 PROJECT Phase III ESA, HHRA & ERA, Former US Military Facility
 LOCATION Northwest Point, NL
 DATES (mm-dd-yy): DUG 8-8-09 WATER LEVEL 0.6m 8-8-09

TEST PIT No. 09-TP64
 PROJECT No. 121410105
 DATUM _____

DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				PID READINGS (ppm)	CHEMICAL ANALYSIS (ppm)				
					TYPE	NUMBER	HYDROCARBON ODOUR	OTHER TESTS		TPH	BENZENE	TOLUENE	ETHYLBENZENE	XYLENES
0		Compact, brown, SAND (SP)			BS	1	0		0.0	-	-	-	-	-
				▽	BS	2	0		0.0	nd	nd	nd	nd	nd
1		End of Test Pit Slow groundwater seepage observed at 0.6 m depth. Bedrock not encountered.												
2														
3														
4														
5														



TEST PIT RECORD

CLIENT NL Department of Environment and Conservation
 PROJECT Phase III ESA, HHRA & ERA, Former US Military Facility
 LOCATION Northwest Point, NL
 DATES (mm-dd-yy): DUG 8-8-09 WATER LEVEL 1.8m 8-8-09

TEST PIT No. 09-TP65
 PROJECT No. 121410105
 DATUM _____

DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				PID READINGS (ppm)	CHEMICAL ANALYSIS (ppm)				
					TYPE	NUMBER	HYDROCARBON ODOUR	OTHER TESTS		TPH	BENZENE	TOLUENE	ETHYLBENZENE	XYLENES
0		Loose, brown, SAND with gravel (SP); some debris (asphalt, shingles, glass, cans, metal, etc)			BS	1	0		0.2	-	-	-	-	-
		Compact, brown, SAND with gravel (SP)												
1		Compact, grey, marine CLAY (CL); some silt												
2				▽	BS	2	0		0.0	nd	nd	nd	nd	nd
		End of Test Pit												
3		Very slow groundwater seepage observed at 1.8 m depth. Bedrock not encountered.												
4														
5														



TEST PIT RECORD

CLIENT NL Department of Environment and Conservation
 PROJECT Phase III ESA, HHRA & ERA, Former US Military Facility
 LOCATION Northwest Point, NL
 DATES (mm-dd-yy): DUG 8-8-09 WATER LEVEL 2.1m 8-8-09

TEST PIT No. 09-TP66
 PROJECT No. 121410105
 DATUM _____

DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				PID READINGS (ppm)	CHEMICAL ANALYSIS (ppm)				
					TYPE	NUMBER	HYDROCARBON ODOUR	OTHER TESTS		TPH	BENZENE	TOLUENE	ETHYLBENZENE	XYLENES
0		Compact, brown, SAND (SP)												
		Brown, SAND with gravel (SP); some debris (asphalt, shingles, metal, plastic, wood, insulation, etc)		BS	1	0		0.3	-	-	-	-	-	-
1		Compact, brown, SAND with gravel (SP)												
2		Dense, grey, SILT (ML); trace to some clay		2.1	BS	2	0		0.2	nd	nd	nd	nd	nd
		End of Test Pit												
3		Very slow groundwater seepage observed at 2.1 m depth. Bedrock not encountered.												
4														
5														



MONITOR WELL RECORD

BOREHOLE No. 09-MW27S

PAGE 1 of 1

PROJECT No. 121410105

DRILLING METHOD Auger

SIZE 100mm HS

DATUM _____

CLIENT NL Department of Environment and Conservation

PROJECT Phase III ESA, HHRA & ERA, Former US Military Facility

LOCATION Northwest Point, NL

DATES (mm-dd-yy): BORING 8-9-09 WATER LEVEL 1.83m 8-9-09

DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				HYDROCARBON ODOUR	APPARENT MOISTURE CONTENT	PID (ppm)	TPH (ppm)	WELL CONSTRUCTION DETAILS
					TYPE	NUMBER	RECOVERY	N-VALUE OR RQD %					
0		Dark brown, SAND (SP); some cobbles and organics				mm							0.61 m STICK UP CAST IRON WELL HEAD
1		Light brown, SAND (SP)											BENTONITE
2		Dark grey to light brown, CLAY (CL)											50 mm DIAMETER No. 10 SLOT PVC SCREEN IN No. 2 SILICA SAND PACK
3		Dark brown, SAND (SP)											
3		Grey, CLAY (CL)							S				
4		End of Borehole											END CAP
5													
6													
7													
8													
9													
10													



MONITOR WELL RECORD

BOREHOLE No. 09-MW27D

PAGE 1 of 1

PROJECT No. 121410105

DRILLING METHOD Auger

SIZE 100mm HS

DATUM _____

CLIENT NL Department of Environment and Conservation

PROJECT Phase III ESA, HHRA & ERA, Former US Military Facility

LOCATION Northwest Point, NL

DATES (mm-dd-yy): BORING 8-9-09 to 8-10-09 WATER LEVEL 1.83m 8-9-09

DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				HYDROCARBON ODOUR	APPARENT MOISTURE CONTENT	PID (ppm)	TPH (ppm)	WELL CONSTRUCTION DETAILS
					TYPE	NUMBER	RECOVERY	N-VALUE OR RQD %					
0		Dark brown, SAND (SP); some cobbles and organics					mm						0.61 m STICK UP CAST IRON WELL HEAD
1		Light brown, SAND (SP)											BACKFILL
2		Dark grey to light brown, CLAY (CL)								1500			
3		Dark brown, SAND (SP)											
3		Grey, CLAY (CL)											
4													
5													
5												BENTONITE	
6													
7													50 mm DIAMETER No. 10 SLOT PVC SCREEN IN No. 2 SILICA SAND PACK
8		End of Borehole											END CAP
9													
10													



MONITOR WELL RECORD

BOREHOLE No. 09-MW28
 PAGE 1 of 1
 PROJECT No. 121410105
 DRILLING METHOD Auger
 SIZE 100mm HS
 DATUM _____

CLIENT NL Department of Environment and Conservation
 PROJECT Phase III ESA, HHRA & ERA, Former US Military Facility
 LOCATION Northwest Point, NL
 DATES (mm-dd-yy): BORING 8-10-09 WATER LEVEL 2.13m 8-10-09

DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				HYDROCARBON ODOUR	APPARENT MOISTURE CONTENT	PID (ppm)	TPH (ppm)	WELL CONSTRUCTION DETAILS
					TYPE	NUMBER	RECOVERY	N-VALUE OR RQD %					
0							mm						0.61 m STICK UP CAST IRON WELL HEAD
0		Brown, SAND (SP); some cobbles			SS	1	510	1	0		0.0	-	<p>BENTONITE</p> <p>50 mm DIAMETER No. 10 SLOT PVC SCREEN IN No. 2 SILICA SAND PACK</p> <p>END CAP</p>
1		SAND (SP)			SS	2	510	4	0		0.0	-	
1		Brown, CLAY (CL)			SS	3	405	10	0		0.0	-	
2		Brown, CLAY with sand (CL)		▼	SS	4	455	4	0	M	0.0	-	
2					SS	5	430	10	0	M	0.0	-	
3		Grey, CLAY (CL)			SS	6	405	0	0	M	0.0	nd	
4		Light brown, silty SAND (SM)			SS	7	355	12	0		0.0	-	
6		End of Borehole											
7													
8													
9													
10													



MONITOR WELL RECORD

BOREHOLE No. 09-MW29
 PAGE 1 of 1
 PROJECT No. 121410105
 DRILLING METHOD Auger
 SIZE 100mm HS
 DATUM _____

CLIENT NL Department of Environment and Conservation
 PROJECT Phase III ESA, HHRA & ERA, Former US Military Facility
 LOCATION Northwest Point, NL
 DATES (mm-dd-yy): BORING 8-10-09 WATER LEVEL 1.52m 8-10-09

DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				HYDROCARBON ODOUR	APPARENT MOISTURE CONTENT	PID (ppm)	TPH (ppm)	WELL CONSTRUCTION DETAILS
					TYPE	NUMBER	RECOVERY	N-VALUE OR RQD %					
0							mm						0.61 m STICK UP CAST IRON WELL HEAD
		Brown, SAND (SP) with cobbles and organics			SS	1	355	1	0	D	0.0	-	 BENTONITE 50 mm DIAMETER No. 10 SLOT PVC SCREEN IN No. 2 SILICA SAND PACK END CAP
		Brown, SAND (SP); some cobbles			SS	2	-	4	0		0.0	-	
		Brown to grey, SAND (SP)		▼	SS	3	405	3	0		0.0	65	
		Grey, silty SAND (SM)			SS	4	510	5	0		0.0	-	
		Grey, silty SAND (SM)			SS	5	455	3	0		0.0	-	
		Grey, CLAY (CL)			SS	6	405	0	0		0.0	-	
		End of Borehole											
5													
6													
7													
8													
9													
10													

Appendix 12e

Laboratory Analytical Results Summary Tables

– Lake Melville Dump Site

Table 12.1 Results of Laboratory Analysis of TPH/BTEX in Soil - Lake Melville Dump Site
Phase III ESA, HHERA and RAP
Former U.S Military Facility, Northwest Point, NL
Stantec Consulting Ltd. Project No. 121410105

Sample Location	Sample Depth (m)	Benzene	Toluene	Ethyl-benzene	Xylenes	TPH Purgeable (<C ₁₀)	TPH Extractable (C ₁₀ -C ₃₂)	C ₆ -C ₁₀ (Gas Range)	C ₁₀ -C ₂₁ (Fuel Range)	C ₂₁ -C ₃₂ (Lube Range)	Modified TPH - Tier I ²	Resemblance
Units		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	-
Tier I RBSLs¹		0.16	14	58	17	-	-	-	-	-	140	-
1999 Sampling (AGRA)												
LD-TP1	1.5	<0.002	<0.002	<0.002	<0.002	<0.02	29,500	-	-	-	29,500	MO
LD-TP5	1.5	<0.002	<0.002	<0.002	<0.002	<0.02	<0.2	-	-	-	<0.22	-
LD-TP6	0.5	<0.002	<0.002	<0.002	<0.002	<0.02	63	-	-	-	63	TL
LD-TP8	0.3	<0.002	<0.002	<0.002	<0.002	<0.02	<0.2	-	-	-	<0.22	-
MDL	-	0.002	0.002	0.002	0.002	0.02	0.2	-	-	-	0.2	-
2009 Sampling (Stantec)												
09-TP42-BS2	2.0 - 2.5	<0.03	<0.03	<0.03	<0.05	-	-	<3	<15	<15	<20	-
09-TP43-BS2	3.0 - 3.5	<0.03	<0.03	<0.03	<0.05	-	-	<3	<15	<15	<20	-
09-TP64-BS2	0.4 - 0.8	<0.03	<0.03	<0.03	<0.05	-	-	<3	<15	<15	<20	-
09-TP65-BS2	1.6 - 2.0	<0.03	<0.03	<0.03	<0.05	-	-	<3	<15	<15	<20	-
09-TP66-BS2	1.9 - 2.4	<0.03	<0.03	<0.03	<0.05	-	-	<3	<15	<15	<20	-
09-MW27D-SS3	1.2 - 1.8	<0.03	<0.03	<0.03	<0.05	-	-	<3	530	960	1,500	F/L
09-MW28-SS6	3.0 - 3.7	<0.03	<0.03	<0.03	<0.05	-	-	<3	<15	<15	<20	-
09-MW29-SS3	1.2 - 1.8	<0.03	<0.03	<0.03	<0.05	-	-	<3	24	41	65	F/L
RDL	-	0.03	0.03	0.03	0.05	-	-	3	15	15	20	-

Notes:

1 = Partnership in RBCA (Risk-Based Corrective Action) Implementation (PIRI) Tier I Risk Based Screening Levels (RBSLs) for a residential site with non-potable groundwater and coarse grained soil, fuel oil impacts (September, 2003)

2 = Modified TPH - Tier I does not include BTEX

MDL = Method Detection Limit; RDL = Reportable Detection Limit for routine analysis

< # = Not detected above MDL/RDL noted

"-" = Indicates value is not available or does not apply

TL = Hydrocarbons too low to characterize; MO = Motor oil; F/L = Fuel/lube oil range

Shaded = Value exceeds generic guideline for a residential site, non-potable groundwater, coarse grained soil and fuel oil impacts

**Table 12.2 Results of Laboratory Analysis of Metals in Soil - Lake Melville Dump Site
Phase III ESA, HHERA and RAP
Former U.S Military Facility, Northwest Point, NL
Stantec Consulting Ltd. Project No. 121410105**

Parameters	Units	Criteria ¹	1999 Sampling (AGRA)						2009 Sampling (Stantec)					
			LD-TP1	LD-TP5	LD-TP6	LD-TP7	LD-TP8	MDL	09-TP63-BS1	09-TP66-BS1	09-MW27D-SS3	09-MW28-SS6	09-MW29-SS3	RDL
			1.5	1.5	0.5	0.8	0.3	-	0.0 - 0.3	0.3 - 0.7	1.2 - 1.8	3.0 - 3.7	1.2 - 1.8	-
Aluminum	mg/kg	-	9,400	16,600	4,340	26,900	21,600	5	2,100	2,900	8,000	10,000	3,300	10
Antimony	mg/kg	20	-	-	-	-	-	-	<2	<2	<2	<2	<2	2
Arsenic	mg/kg	12	-	-	-	-	-	-	<2	<2	<2	<2	<2	2
Barium	mg/kg	500	250	214	106	128	112	1	15	15	75	110	29	5
Beryllium	mg/kg	4	0.3	<0.1	<0.1	0.6	0.6	0.1	<2	<2	<2	<2	<2	2
Bismuth	mg/kg	-	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<2	<2	<2	<2	<2	2
Boron	mg/kg	-	-	-	-	-	-	-	<5	8	<5	<5	<5	5
Cadmium	mg/kg	10	4	4.3	2.2	<0.5	<0.5	0.5	<0.3	<0.3	nd	nd	nd	0.3
Chromium	mg/kg	64	16	13	30	46	44	1	6	5	24	24	10	2
Cobalt	mg/kg	50	6.7	5.9	9.8	<5	<5	5	2	2	6	8	3	1
Copper	mg/kg	63	302	259	27	36	28	1	3	5	18	20	12	2
Iron	mg/kg	-	39,600	37,900	21,500	36,700	32,300	1	4,000	4,200	13,000	16,000	7,700	50
Lead	mg/kg	140	29	28	6	<5	<5	5	2.7	2.2	5.7	5.0	6.8	0.5
Lithium	mg/kg	-	-	-	-	-	-	-	3	3	8	11	4	2
Manganese	mg/kg	-	223	347	124	443	397	5	58	67	180	290	100	2
Mercury	mg/kg	6.6	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	0.1
Molybdenum	mg/kg	10	7	<5	<5	<5	<5	5	<2	2	<2	<2	<2	2
Nickel	mg/kg	50	14	10	16	29	28	5	3	7	13	16	7	2
Rubidium	mg/kg	-	-	-	-	-	-	-	3	2	19	27	6	2
Selenium	mg/kg	1	-	-	-	-	-	-	<2	<2	<2	<2	<2	2
Silver	mg/kg	20	<5	<5	<5	<5	<5	5	<0.5	<0.5	<0.5	<0.5	<0.5	0.5
Strontium	mg/kg	-	-	-	-	-	-	-	<5	7	16	25	8	5
Thallium	mg/kg	1	-	-	-	-	-	-	<0.1	<0.1	<0.1	0.1	<0.1	0.1
Tin	mg/kg	-	-	-	-	-	-	-	<2	<2	<2	<2	6	2
Uranium	mg/kg	23	-	-	-	-	-	-	0.1	0.2	0.6	0.7	0.2	0.1
Vanadium	mg/kg	130	31	25	47	61	56	5	10	10	32	33	14	2
Zinc	mg/kg	200	163	152	52	76	84	1	13	59	42	45	30	5

Notes:

1 = CCME Canadian Soil Quality Guidelines for Protection of Environmental and Human Health at a Residential/Parkland site (2007)

MDL = Method Detection Limit; RDL = Reportable Detection Limit for routine analysis

< # = Not detected above MDL/RDL noted

"-" = No applicable guideline

**Table 12.2 Results of Laboratory Analysis of Metals in Soil - Lake Melville Dump Site
Phase III ESA, HHERA and RAP
Former U.S Military Facility, Northwest Point, NL
Stantec Consulting Ltd. Project No. 121410105**

Parameters	Units	Criteria ¹	2009 Sampling (Stantec)						RDL
			09-SS30	09-SS31	09-SS32	09-SS33	09-SS34	09-SS35	
Sample Depth (m)			0.0 - 0.15	0.0 - 0.15	0.0 - 0.15	0.0 - 0.15	0.0 - 0.15	0.0 - 0.15	-
Aluminum	mg/kg	-	1,400	1,800	1,600	1,700	1,700	1,800	10
Antimony	mg/kg	20	<2	<2	<2	<2	<2	<2	2
Arsenic	mg/kg	12	<2	<2	<2	<2	<2	<2	2
Barium	mg/kg	500	22	17	12	21	27	13	5
Beryllium	mg/kg	4	<2	<2	<2	<2	<2	<2	2
Bismuth	mg/kg	-	<2	<2	<2	<2	<2	<2	2
Boron	mg/kg	-	<5	<5	<5	<5	<5	<5	5
Cadmium	mg/kg	10	<0.3	<0.3	<0.3	0.4	<0.3	<0.3	0.3
Chromium	mg/kg	64	3	5	6	7	5	6	2
Cobalt	mg/kg	50	<1	<1	1	2	2	2	1
Copper	mg/kg	63	4	6	2	20	3	4	2
Iron	mg/kg	-	2,500	3,800	4,900	10,000	4,500	4,900	50
Lead	mg/kg	140	8.5	3.0	3.8	19	1.7	2.4	0.5
Lithium	mg/kg	-	<2	<2	<2	2	3	3	2
Manganese	mg/kg	-	260	19	48	90	53	55	2
Mercury	mg/kg	6.6	<0.1	<0.1	0.1	<0.2(1)	<0.1	<0.1	0.1
Molybdenum	mg/kg	10	<2	<2	<2	<2	<2	<2	2
Nickel	mg/kg	50	<2	<2	3	5	4	4	2
Rubidium	mg/kg	-	2	<2	3	2	3	3	2
Selenium	mg/kg	1	<1	<1	<1	<1	<1	<1	1
Silver	mg/kg	20	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.5
Strontium	mg/kg	-	9	10	<5	7	5	9	5
Thallium	mg/kg	1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1
Tin	mg/kg	-	<2	<2	<2	20	<2	<2	2
Uranium	mg/kg	23	<0.1	0.1	0.2	0.1	0.2	0.2	0.1
Vanadium	mg/kg	130	5	9	12	10	8	10	2
Zinc	mg/kg	200	17	17	26	50	12	13	5

Notes:

1 = CCME Canadian Soil Quality Guidelines for Protection of Environmental and Human Health at a Residential/Parkland site (2007)

MDL = Method Detection Limit; RDL = Reportable Detection Limit for routine analysis

< # = Not detected above MDL/RDL noted

"-" = No applicable guideline

**Table 12.3 Results of Laboratory Analysis of PAHs in Soil - Lake Melville Dump Site
Phase III ESA, HHERA and RAP
Former U.S Military Facility, Northwest Point, NL
Stantec Consulting Ltd. Project No. 121410105**

Parameters	Units	Criteria ^{1,3}	Criteria ^{2,3}	1999 Sampling (AGRA)				2009 Sampling (Stantec)	
				LD-TP1	LD-TP7	LD-TP8	MDL	09-MW27D-SS1	RDL
Sample Depth (m)				1.5	0.8	0.3	-	0.0 - 0.6	-
Non-carcinogenic PAHs									
1-Methylnaphthalene	mg/kg	-	-	-	-	-	-	5.9	0.01
2-Methylnaphthalene	mg/kg	-	-	-	-	-	-	10	0.01
Acenaphthene	mg/kg	-	-	25.8	<0.002	<0.002	0.002	42	0.1
Acenaphthylene	mg/kg	-	-	0.4	<0.001	<0.001	0.001	0.22	0.01
Anthracene	mg/kg	2.5	-	28.1	<0.001	<0.001	0.001	57	0.1
Fluoranthene	mg/kg	50	-	<0.001	<0.001	<0.001	0.001	230	0.1
Fluorene	mg/kg	-	-	13.7	<0.001	<0.001	0.001	31	0.1
Naphthalene	mg/kg	-	-	19.2	<0.002	<0.002	0.001	36	0.1
Perylene	mg/kg	-	-	33.4	<0.005	<0.005	0.005	23	0.01
Phenanthrene	mg/kg	-	-	45.9	<0.001	<0.001	0.001	210	0.1
Pyrene	mg/kg	-	-	58.4	<0.003	<0.003	0.003	180	0.1
Carcinogenic PAHs									
Benzo(a)anthracene	mg/kg	-	-	28.2	<0.001	<0.001	0.001	90	0.1
Benzo(a)pyrene	mg/kg	20	-	8.1	<0.003	<0.003	0.003	81	0.01
Benzo(b)fluoranthene	mg/kg	-	-	8.1	<0.004	<0.004	0.004	71	0.1
Benzo(g,h,i)perylene	mg/kg	-	-	21.6	<0.002	<0.002	0.002	38	0.1
Benzo(k)fluoranthene	mg/kg	-	-	44.5	<0.004	<0.004	0.004	71	0.1
Chrysene	mg/kg	-	-	27.9	<0.001	<0.001	0.001	94	0.1
Indeno(1,2,3-c,d) pyrene	mg/kg	-	-	71.9	<0.003	<0.003	0.003	44	0.1
Dibenz(a,h)anthracene	mg/kg	-	-	13.2	<0.004	<0.004	0.004	11	0.01
Benzo(a)pyrene TPE ⁴		-	5.3	37.1	0.004	0.004	-	120.9	-

Notes:

- 1 = CCME Canadian Soil Quality Guidelines for the Protection of Environmental Health at a Residential/Parkland Site (2008)
- 2 = CCME Canadian Soil Quality Guidelines for Protection of Human Health for a Residential Site (Direct Soil Contact) (2008)
- 3 = As per CCME recommendations, soil samples are compared against the SQG for the protection of human health and environmental health separately
- 4 = Carcinogenic PAHs Assessed as Benzo(a)pyrene Total Potency Equivalent (TPE)
- (1) - Elevated RDL(s) due to sample dilution
- RDL = Reportable Detection Limit for routine analysis
- MDL = Method Detection Limit
- < # = Not detected above MDL/RDL noted
- "-" = No applicable guideline or does not apply
- Shaded = Value exceeds applicable criteria

**Table 12.3 Results of Laboratory Analysis of PAHs in Soil - Lake Melville Dump Site
Phase III ESA, HHERA and RAP
Former U.S Military Facility, Northwest Point, NL
Stantec Consulting Ltd. Project No. 121410105**

Parameters	Units	Criteria ^{1,3}	Criteria ^{2,3}	2009 Sampling (Stantec)								
				09-SS30	09-SS31	RDL	09-SS32	RDL	09-SS33	09-SS34	09-SS35	RDL
				Sample Depth (m)								
				0.0 - 0.15	0.0 - 0.15	-	0.0 - 0.15	-	0.0 - 0.15	0.0 - 0.15	0.0 - 0.15	-
Non-carcinogenic PAHs												
1-Methylnaphthalene	mg/kg	-	-	<0.005	0.019	0.005	0.39	0.005	0.027	<0.005	<0.005	0.005
2-Methylnaphthalene	mg/kg	-	-	<0.005	0.019	0.005	0.51	0.005	0.036	<0.005	<0.005	0.005
Acenaphthene	mg/kg	-	-	<0.005	0.21	0.005	2.9	0.005	0.26	<0.005	<0.005	0.005
Acenaphthylene	mg/kg	-	-	<0.005	<0.005	0.005	0.13	0.005	0.012	<0.005	<0.005	0.005
Anthracene	mg/kg	2.5	-	<0.005	0.38	0.005	9.4(1)	0.05	0.44	<0.005	0.010	0.005
Fluoranthene	mg/kg	50	-	0.02	1.8	0.005	36(1)	0.05	2.6	0.011	0.12	0.03
Fluorene	mg/kg	-	-	<0.005	0.16	0.005	3.3	0.005	0.18	<0.005	<0.005	0.005
Naphthalene	mg/kg	-	-	<0.005	0.030	0.005	0.87	0.005	0.12	<0.005	<0.005	0.005
Perylene	mg/kg	-	-	<0.005	0.080	0.005	2.4	0.005	0.26	<0.005	<0.005	0.005
Phenanthrene	mg/kg	-	-	0.01	1.3	0.005	31(1)	0.05	1.5	<0.005	0.025	0.03
Pyrene	mg/kg	-	-	0.015	1.4	0.005	27(1)	0.05	2.1	0.009	0.11	0.03
Carcinogenic PAHs												
Benzo(a)anthracene	mg/kg	-	-	0.008	0.73	0.005	14(1)	0.05	1.1	0.011	0.033	0.005
Benzo(a)pyrene	mg/kg	20	-	0.007	0.42	0.005	12(1)	0.05	0.91	0.008	0.033	0.005
Benzo(b)fluoranthene	mg/kg	-	-	0.009	0.39	0.005	11(1)	0.05	0.76	0.013	0.084	0.005
Benzo(g,h,i)perylene	mg/kg	-	-	<0.005	0.12	0.005	4.9	0.005	0.49	<0.005	0.034	0.005
Benzo(k)fluoranthene	mg/kg	-	-	0.009	0.39	0.005	11(1)	0.05	0.76	0.013	0.084	0.005
Chrysene	mg/kg	-	-	0.016	0.74	0.005	13(1)	0.05	1.2	0.019	0.15	0.005
Indeno(1,2,3-c,d) pyrene	mg/kg	-	-	<0.005	0.20	0.005	6.9(1)	0.05	0.57	0.006	0.036	0.005
Dibenz(a,h)anthracene	mg/kg	-	-	<0.005	0.042	0.005	1.3	0.005	0.11	<0.005	0.007	0.005
Benzo(a)pyrene TPE ⁴		-	5.3	0.013	0.642	-	17.8	-	1.36	0.015	0.066	-

Notes:

- 1 = CCME Canadian Soil Quality Guidelines for the Protection of Environmental Health at a Residential/Parkland Site (2008)
- 2 = CCME Canadian Soil Quality Guidelines for Protection of Human Health for a Residential Site (Direct Soil Contact) (2008)
- 3 = As per CCME recommendations, soil samples are compared against the SQG for the protection of human health and environmental health separately
- 4 = Carcinogenic PAHs Assessed as Benzo(a)pyrene Total Potency Equivalent (TPE)
- (1) - Elevated RDL(s) due to sample dilution
- RDL = Reportable Detection Limit for routine analysis
- MDL = Method Detection Limit
- < # = Not detected above MDL/RDL noted
- "-" = No applicable guideline or does not apply
- Shaded = Value exceeds applicable criteria

Table 12.4 Results of Laboratory Analysis of PCBs in Soil - Lake Melville Dump Site
Phase III ESA, HHERA and RAP
Former U.S Military Facility, Northwest Point, NL
Stantec Consulting Ltd. Project No. 121410105

Sample Location	Sample Depth (m)	Polychlorinated Biphenyls (PCBs)
	Units	ug/g
	Criteria¹	1.3
1999 Sampling (AGRA)		
LD-TP1	1.5	<0.005
MDL	-	0.005
2009 Sampling (Stantec)		
09-SS30	0.0 - 0.15	<0.05
09-SS33	0.0 - 0.15	3.1
RDL	-	0.05

Notes:

- 1 = CCME Canadian Soil Quality Guidelines for a Residential/Parkland site (2007)
- MDL = Method Detection Limit; RDL = Reportable Detection Limit for routine analysis
- < # = Not detected above MDL/RDL noted
- Shaded = Value exceeds applicable criteria

**Table 12.5 Results of Laboratory Analysis of TPH/BTEX in Groundwater - Lake Melville Dump Site
Phase III ESA, HHERA and RAP
Former U.S Military Facility, Northwest Point, NL
Stantec Consulting Ltd. Project No. 121410105**

Sample Location	Benzene	Toluene	Ethylbenzene	Xylenes	C ₆ -C ₁₀ (Gas Range)	C ₁₀ -C ₂₁ (Fuel Range)	C ₂₁ -C ₃₂ (Lube Range)	Modified TPH - Tier I ²	Resemblance
RDL	0.001	0.001	0.001	0.002	0.01	0.05	0.1	0.1	-
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	-
Tier I RBSLs¹	1	20	20	20	-	-	-	12/20/20	-
2009 Sampling (Stantec)									
09-MW27S	<0.001	<0.001	<0.001	<0.002	<0.01	0.14	0.1	0.2	NRF/L
09-MW27D	<0.001	<0.001	<0.001	<0.002	<0.01	0.07	<0.1	<0.1	NRF
09-MW28	<0.001	<0.001	<0.001	<0.002	<0.01	<0.05	<0.1	<0.1	-
09-MW29	<0.001	<0.001	<0.001	<0.002	<0.01	0.05	<0.1	<0.1	NRF

Notes:

1 = Partnership in RBCA (Risk-Based Corrective Action) Implementation (PIRI) Tier I Risk Based Screening Levels (RBSLs) for a residential site with non-potable groundwater and coarse grained soil, fuel oil impacts (September, 2003)

2 = Modified TPH - Tier I does not include BTEX

RDL = Reportable Detection Limit for routine analysis

< # = Not detected above RDL noted

"-" = indicates value is not available or does not apply

NRF/L=No resemblance to petroleum products in fueloil/lube oil range; NRF=No resemblance to petroleum products in fuel oil range

Shaded = Value exceeds applicable criteria

**Table 12.6 Results of Laboratory Analysis of Dissolved Metals in Groundwater - Lake Melville Dump Site
Phase III ESA, HHERA and RAP
Former U.S Military Facility, Northwest Point, NL
Stantec Consulting Ltd. Project No. 121410105**

Parameters	Units	Criteria ¹	2009 Sampling (Stantec)					
			09-MW27S	09-MW28	09-MW29	RDL	09-MW27D	RDL
Aluminum	ug/L	-	598	77.9	43.4	5.0	908	50
Antimony	ug/L	20,000	<2.0	<2.0	<2.0	2.0	<20	20
Arsenic	ug/L	1,900	<2.0	<2.0	7.3	2.0	<20	20
Barium	ug/L	29,000	15.7	6.2	9.4	5.0	<50	50
Beryllium	ug/L	67	<2.0	<2.0	<2.0	2.0	<20	20
Bismuth	ug/L	-	<2.0	<2.0	<2.0	2.0	<20	20
Boron	ug/L	45,000	491	<5.0	323	5.0	950	50
Cadmium	ug/L	2.7	0.560	0.111	0.047	0.017	<0.17	0.17
Chromium	ug/L	810	<1.0	<1.0	1.1	1.0	<10	10
Cobalt	ug/L	66	1.81	<0.40	0.55	0.40	<4.0	4.0
Copper	ug/L	87	17.9	15.1	<2.0	2.0	<20	20
Iron	ug/L	-	1,110	<50	124	50	895	500
Lead	ug/L	25	1.43	<0.50	<0.50	0.50	<5.0	5.0
Manganese	ug/L	-	378	31.5	277	2.0	124	20
Mercury	ug/L	0.29	0.23	1.1	0.17	0.02	0.12	0.02
Molybdenum	ug/L	9,200	3.7	<2.0	12.0	2.0	32	20
Nickel	ug/L	490	4.2	5.5	<2.0	2.0	<20	20
Selenium	ug/L	63	<1.0	<1.0	<1.0	1.0	<10	10
Silver	ug/L	1.5	<0.10	<0.10	<0.10	0.10	<1.0	1.0
Strontium	ug/L	-	66.1	48.7	162	5.0	62	50
Thallium	ug/L	510	<0.10	<0.10	<0.10	0.10	<1.0	1.0
Tin	ug/L	-	<2.0	<2.0	<2.0	2.0	<20	20
Titanium	ug/L	-	15.1	2.1	<2.0	2.0	61	20
Uranium	ug/L	420	0.12	<0.10	0.68	0.10	3.8	1.0
Vanadium	ug/L	250	<2.0	<2.0	2.2	2.0	20	20
Zinc	ug/L	1,100	76.7	7.1	5.9	5.0	<50	50

Notes:

1 = Ontario Ministry of the Environment (MOE) Soil, Groundwater and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act.

July 27, 2009. Table 3: full depth generic site condition standards in a non-potable groundwater condition, coarse-grained soil

< # = Not detected above RDL noted

"-" = No applicable guideline

**Table 12.7 Results of Laboratory Analysis of General Chemistry in Groundwater - Lake Melville Dump Site
Phase III ESA, HHERA and RAP
Former U.S Military Facility, Northwest Point, NL
Stantec Consulting Ltd. Project No. 121410105**

Parameter	Units	Criteria ¹	2009 Sampling (Stantec)							
			09- MW27S	RDL	09- MW27D	RDL	09- MW28	RDL	09- MW29	RDL
Metals										
Dissolved Calcium	mg/L	-	12	0.1	4.9	0.1	5.0	0.1	30	0.1
Dissolved Magnesium	mg/L	-	6.1	0.1	3.4	0.1	3.4	0.1	13	0.1
Dissolved Phosphorus	mg/L	<0.004 to >0.1 ³	<0.1	0.1	9.2	0.1	<0.1	0.1	0.2	0.1
Dissolved Potassium	mg/L	-	5.3	0.1	9.5	0.1	2.5	0.1	13	0.1
Dissolved Sodium	mg/L	-	16	0.1	190	0.1	3.8	0.1	77	0.1
Calculated Parameters										
Anion Sum	me/L	-	1.41	N/A	8.07	N/A	0.690	N/A	4.81	N/A
Bicarb. Alkalinity (calc. as CaCO ₃)	mg/L	-	64	1	368	1	31	1	204	1
Calculated TDS	mg/L	-	107	1	507	1	64	1	313	1
Carb. Alkalinity (calc. as CaCO ₃)	mg/L	-	<1	1	4	1	<1	1	<1	1
Cation Sum	me/L	-	1.96	N/A	9.08	N/A	0.750	N/A	6.31	N/A
Hardness (CaCO ₃)	mg/L	-	55	1	26	1	26	1	130	1
Ion Balance (% Difference)	%	-	16.3	N/A	5.89	N/A	4.17	N/A	13.5	N/A
Langelier Index (@ 20C)	N/A	-	-1.80	-	-0.152	-	-2.62	-	-0.171	-
Langelier Index (@ 4C)	N/A	-	-2.05	-	-0.400	-	-2.87	-	-0.420	-
Nitrate (N)	mg/L	2.9	0.26	0.05	<0.05	0.05	0.18	0.05	0.37	0.05
Saturation pH (@20C)	N/A	-	8.47	-	8.21	-	9.13	-	7.63	-
Saturation pH (@4C)	N/A	-	8.72	-	8.46	-	9.38	-	7.88	-
Inorganics										
Total Alkalinity (Total as CaCO ₃)	mg/L	-	64	5	370	30	31	5	200	30
Dissolved Chloride (Cl)	mg/L	-	4	1	23	1	2	1	4	1
Colour	TCU	-	320	50	940	200	14	5	70	30
Nitrate + Nitrite	mg/L	-	0.26	0.05	<0.05	0.05	0.18	0.05	0.38	0.05
Nitrite (N)	mg/L	0.06	<0.01	0.01	<0.01	0.01	<0.01	0.01	0.01	0.01
Nitrogen (Ammonia Nitrogen)	mg/L	-	0.13	0.05	0.62	0.05	<0.05	0.05	0.85	0.05
Total Organic Compound	mg/L	-	<50(1)	50	<50(1)	50	<50(1)	50	9	5
Orthophosphate (P)	mg/L	-	0.02	0.01	9.8	0.3	0.01	0.01	0.01	0.01
pH	pH	6.5 - 9	6.67	N/A	8.06	N/A	6.51	N/A	7.46	N/A
Reactive Silica (SO ₂)	mg/L	-	23	0.5	22	0.5	28	1	23	0.5
Dissolved Sulphate (SO ₄)	mg/L	-	<2	2	<2	2	<2	2	27	2
Turbidity	NTU	Narrative ²	250	1	940	10	>1000	10	46	10
Conductivity	uS/cm	-	140	1	740	1	72	1	430	1

Notes:

1 = CCME Water Quality Guidelines for the protection of freshwater aquatic life (2007)

2 = Maximum increase of 8 NTUs from background levels when background levels are between 8 and 80 NTUs

3 = Phosphorous guideline is dependant on trophic status of the freshwater environment

RDL = Reportable Detection Limit

< # = Not detected above RDL noted

"-" = indicates value is not available or does not apply

(1) Detection limit increased due to sample matrix

Shaded = Value exceeds applicable criteria

Table 12.8 Results of Laboratory Analysis of TPH/BTEX in Surface Water - Lake Melville Dump Site
Phase III ESA, HHERA and RAP
Former U.S Military Facility, Northwest Point, NL
Stantec Consulting Ltd. Project No. 121410105

Sample Location	Benzene	Toluene	Ethylbenzene	Xylenes	C ₆ -C ₁₀ (Gas Range)	C ₁₁ -C ₂₀ (Fuel Range)	C ₂₁ -C ₃₂ (Lube Range)	Modified TPH - Tier I ²	Resemblance
RDL	0.001	0.001	0.001	0.002	0.01	0.05	0.1	0.1	-
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	-
Criteria¹	0.37	0.002	0.09	-	-	-	-	-	-
2009 Sampling (Stantec)									
09-SW6	<0.001	<0.001	<0.001	<0.002	<0.01	0.05	<0.1	0.05	NRF
09-SWM3	<0.001	<0.001	<0.001	<0.002	<0.01	<0.05	<0.1	<0.1	-

Notes:

1 = CCME Water Quality Guidelines for the protection of freshwater aquatic life (2007)

2 = Modified TPH - Tier I does not include BTEX

"-" = Value is not available or does not apply

RDL = Reportable Detection Limit for routine analysis

< # = Not detected above RDL noted

NRF = No resemblance to petroleum products in the fuel oil range

**Table 12.9 Results of Lab Analysis of Dissolved Metals in Surface Water - Lake Melville Dump Site
Phase III ESA, HHERA and RAP/RMP
Former U.S Military Facility, Northwest Point, NL
Stantec Consulting Limited Project No. 121410105**

Parameters	RDL	Units	Criteria ¹	2009 Sampling (Stantec)	
				09-SW6	09-SWM3
Aluminum	500	ug/L	5-100 ²	398	<500
Antimony	200	ug/L	-	<2.0	<200
Arsenic	200	ug/L	5	<2.0	<200
Barium	500	ug/L	-	36.8	<500
Beryllium	200	ug/L	-	<2.0	<200
Bismuth	200	ug/L	-	<2.0	<200
Boron	500	ug/L	-	492	1750
Cadmium	1.7	ug/L	0.017 ³	0.071	<1.7
Chromium	100	ug/L	8.9	10.2	<100
Cobalt	40	ug/L	-	0.94	<40
Copper	200	ug/L	2 to 4 ⁴	4.8	<200
Iron	5000	ug/L	300	3,090	<5000
Lead	50	ug/L	1-7 ⁵	2.97	<50
Magnesium	-	ug/L	-	-	-
Manganese	200	ug/L	-	97.7	<200
Mercury	0.013	ug/L	0.026	0.022	0.013
Molybdenum	200	ug/L	73	6.7	<200
Nickel	200	ug/L	25-150 ⁶	2.6	<200
Phosphorous	-	ug/L	<0.004 to >0.1 ⁷	-	-
Potassium	-	ug/L	-	-	-
Selenium	100	ug/L	1	<1.0	<100
Silver	10	ug/L	0.1	<0.10	<10
Strontium	500	ug/L	-	51.7	3050
Thallium	10	ug/L	0.8	<0.10	<10
Tin	200	ug/L	-	<2.0	<200
Titanium	200	ug/L	-	5.7	<200
Uranium	10	ug/L	-	<0.10	<10
Vanadium	200	ug/L	-	<2.0	<200
Zinc	500	ug/L	30	26.7	<500
General Chemistry					
pH	1	-	6.5 - 9	6.6	7.16
Hardness (CaCO ₃)	-	mg/L	-	27	2,400

Notes:

- 1 = CCME Water Quality Guidelines for the protection of freshwater aquatic life (2007)
- 2 = Aluminum guideline = 5 µg/L at pH<6.5
= 100 µg/L at pH>=6.5
- 3 = Cadmium guideline = $10^{\{0.86[\log(\text{hardness})]-3.2\}}$
= 0.026 mg/L at a water hardness of 75 mg/L as CaCO₃
- 4 = Copper guideline = 2 µg/L at water hardness of 0-120 mg/L as CaCO₃
= 3 µg/L at water hardness of 120-180 mg/L as CaCO₃
= 4 µg/L at water hardness >180 mg/L as CaCO₃
- 5 = Lead guideline = 1 µg/L at water hardness of 0-60 mg/L as CaCO₃
= 2 µg/L at water hardness of 60-120 mg/L as CaCO₃
= 4 µg/L at water hardness of 120-180 mg/L as CaCO₃
= 7 µg/L at water hardness >180 mg/L as CaCO₃

- 6 = Nickel guideline = 25 µg/L at water hardness of 0-60 mg/L as CaCO₃
= 65 µg/L at water hardness of 60-120 mg/L as CaCO₃
= 110 µg/L at water hardness of 120-180 mg/L as CaCO₃
= 150 µg/L at water hardness >180 mg/L as CaCO₃
- 7 = Phosphorous guideline is dependant on trophic status of the freshwater environment
- "-" = Not analysed or no applicable guideline
- < # = Not detected above RDL noted
- Shaded = Value exceeds CCME freshwater aquatic life guideline

**Table 12.10 Results of Laboratory Analysis of General Chemistry in Surface Water - Lake Melville Dump Site
Phase III ESA, HHERA and RAP
Former U.S Military Facility, Northwest Point, NL
Stantec Consulting Ltd. Project No. 121410105**

Parameter	RDL	Units	Criteria ¹	2009 Sampling (Stantec)	
				09-SW6	09-SWM3
Metals					
Dissolved Calcium	1	mg/L	-	6.9	160
Dissolved Magnesium	1	mg/L	-	2.4	500
Dissolved Phosphorus	1	mg/L	<0.004 to >0.1 ²	<0.1	<1
Dissolved Potassium	1	mg/L	-	2.2	170
Dissolved Sodium	1	mg/L	-	6.2	4,600
Dissolved Sulphur	5	mg/L	-	-	380
Calculated Parameters					
Anion Sum	N/A	me/L	-	0.590	252
Bicarb. Alkalinity (calc. as CaCO ₃)	1	mg/L	-	20	56
Calculated TDS	1	mg/L	-	56	14,700
Carb. Alkalinity (calc. as CaCO ₃)	1	mg/L	-	<1	<1
Cation Sum	N/A	me/L	-	0.980	254
Hardness (CaCO ₃)	1	mg/L	-	27	2,400
Ion Balance (% Difference)	N/A	%	-	24.8	0.310
Langelier Index (@ 20C)	-	N/A	-	-2.55	-0.784
Langelier Index (@ 4C)	-	N/A	-	-2.8	-1.02
Nitrate (N)	0.05	ug/L	3	<0.05	0.06
Saturation pH (@20C)	-	N/A	-	9.18	7.94
Saturation pH (@4C)	-	N/A	-	9.43	8.18
Inorganics					
Total Alkalinity (Total as CaCO ₃)	5	mg/L	-	20	56
Dissolved Chloride (Cl)	100	mg/L	-	7	8,100
Colour	5	TCU	Narrative	290	21
Nitrate + Nitrite	0.05	mg/L	-	<0.05	0.06
Nitrite (N)	0.01	ug/L	0.06	<0.01	<0.01
Nitrogen (Ammonia Nitrogen)	0.05	mg/L	-	<0.05	<0.05
Total Organic Compound	5	mg/L	-	27 (3)	9
Orthophosphate (P)	0.01	mg/L	-	<0.01	<0.01
pH	N/A	pH	6.5 - 9	6.63	7.16
Reactive Silica (SO ₂)	0.5	mg/L	-	16	1.3
Dissolved Sulphate (SO ₄)	40	mg/L	-	<2	1100
Turbidity	0.1	NTU	Narrative ³	7	0.2
Conductivity	1	uS/cm	-	76	23,000

Notes:

1 = CCME Water Quality Guidelines for the protection of freshwater aquatic life (2007)

2 = Phosphorous guideline is dependant on trophic status of the freshwater environment

3 = Maximum increase of 8 NTUs from background levels when background levels are between 8 and 80 NTUs

RDL = Reportable Detection Limit

"-" = indicates value is not available or does not apply

< # = Not detected above RDL noted

Table 12.11 Results of Laboratory Analysis of TPH/BTEX in Sediment - Lake Melville Dump Site
Phase III ESA, HHERA and RAP
Former U.S Military Facility, Northwest Point, NL
Stantec Consulting Ltd. Project No. 121410105

Sample Location	Benzene	Toluene	Ethylbenzene	Xylenes	C ₆ -C ₁₀ (Gas Range)	C ₁₀ -C ₂₁ (Fuel Range)	C ₂₁ -C ₃₂ (Lube Range)	Modified TPH - Tier I ²	Resemblance
RDL	0.03	0.03	0.03	0.05	3	15	15	20	-
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	-
Criteria¹	-	-	-	-	-	-	-	1,500	-
2009 Sampling (Stantec)									
09-SED6	<0.03	<0.03	<0.03	<0.05	<3	62	630	690	LO
SSM-3-DS	<0.03	<0.03	<0.03	<0.05	<3	<15	<15	<20	-

Notes:

1 = Ontario Ministry of Environment Guideline for sediments to be used as lake fill material (1993). There are no federal or provincial guidelines for TPH or BTEX in marine sediment.

2 = Modified TPH - Tier I does not include BTEX

RDL = Reportable Detection Limit for routine analysis

< # = Not detected above RDL noted

"-" = Indicates value is not available or does not apply

LO = Lube oil

**Table 12.12 Results of Laboratory Analysis of Metals in Sediment - Lake Melville Dump Site
Phase III ESA, HHERA and RAP
Former U.S Military Facility, Northwest Point, NL
Stantec Consulting Ltd. Project No. 121410105**

Parameters	RDL	Units	Criteria ¹	Criteria ²	2009 Sampling (Stantec)	
					09-SED-6	SSM-3 DS
Aluminum	10	mg/kg	-	-	4,900	1,900
Antimony	2	mg/kg	-	-	<2	<2
Arsenic	2	mg/kg	5.9	17	<2	<2
Barium	5	mg/kg	-	-	38	13
Beryllium	2	mg/kg	-	-	<2	<2
Bismuth	2	mg/kg	-	-	<2	<2
Boron	5	mg/kg	-	-	<5	<5
Cadmium	0.3	mg/kg	0.6	3.5	<0.3	<0.3
Chromium	2	mg/kg	37.3	90	12	3
Cobalt	1	mg/kg	-	-	4	1
Copper	2	mg/kg	35.7	197	14	4
Iron	50	mg/kg	-	-	14,000	3,300
Lead	0.5	mg/kg	35	91.3	430	1.1
Lithium	2	mg/kg	-	-	5	4
Manganese	2	mg/kg	-	-	99	45
Mercury	0.1	mg/kg	-	-	<0.1	<0.1
Molybdenum	2	mg/kg	-	-	2	<2
Nickel	2	mg/kg	-	-	9	3
Rubidium	2	mg/kg	-	-	8	3
Selenium	2	mg/kg	-	-	<1	<2
Silver	0.5	mg/kg	-	-	<0.5	<0.5
Strontium	5	mg/kg	-	-	11	5
Thallium	0.1	mg/kg	-	-	<0.1	<0.1
Tin	2	mg/kg	-	-	33	<2
Uranium	0.1	mg/kg	-	-	0.3	0.1
Vanadium	2	mg/kg	-	-	13	7
Zinc	5	mg/kg	123	315	55	10

Notes:

1 = CCME Interim Sediment Quality Guidelines (ISQGs) for freshwater sediment (2002)

2 = CCME Probable Effects Levels (PELs) for freshwater sediment (2002)

RDL = Reportable Detection Limit for routine analysis

< # = Not detected above RDL noted

"-" = No applicable guideline

Shaded = Value exceeds CCME ISQG

Bold = Value exceeds CCME PEL

**Table 12.13 Results of Laboratory Analysis of PCBs in Vegetation - Lake Melville Dump Site
Phase III ESA, HHERA and RAP
Former U.S Military Facility, Northwest Point, NL
Stantec Consulting Ltd. Project No. 121410105**

Sample Location	Polychlorinated Biphenyls (PCBs)
RDL	0.05
Units	ug/L
Criteria	na
2009 Sampling (Stantec)	
09-VEG-18	<0.3
09-VEG-19	<0.3

Notes:

RDL = Reportable Detection Limit

na = No applicable guideline

< # = Not detected above RDL noted

**Table 12.14 Results of Laboratory Analysis of PCBs in Berries - Lake Melville Dump Site
Phase III ESA, HHERA and RAP
Former U.S Military Facility, Northwest Point, NL
Stantec Consulting Ltd. Project No. 121410105**

Sample Location	Polychlorinated Biphenyls (PCBs)
RDL	0.05
Units	ug/g
Criteria	na
2009 Sampling (Stantec)	
09-BERRY 14	<0.05
09-BERRY 15	<0.05

Notes:

RDL = Reportable Detection Limit

na = No applicable guideline

< # = Not detected above RDL noted

Table 12.15 Results of Laboratory Analysis of PCBs/Crude Fat in Small Mammals and Rabbits - Lake Melville Dump Site
Phase III ESA, HHERA and RAP
Former U.S Military Facility, Northwest Point, NL
Stantec Consulting Ltd. Project No. 121410105

Sample Location	Polychlorinated Biphenyls (PCBs)	Crude Fat
RDL	0.05 / 0.07	0.5
Units	ug/g	%
Criteria	na	na
2009 Sampling (Stantec) - Small Mammals		
09-SM11	<0.07	-
09-SM16	<0.07	-
09-SM29	<0.05	3.3
2009 Sampling (Stantec) - Rabbits		
09-SM32	<0.05	1.7

Notes:

RDL = Reportable Detection Limit

< # = Not detected above RDL noted

"-" = Not analyzed

**Table 12.16 Results of Laboratory Analysis of Metals in Rabbits - Lake Melville Dump Site
Phase III ESA, HHERA and RAP
Former U.S Military Facility, Northwest Point, NL
Stantec Consulting Ltd. Project No. 121410105**

Parameters	Units	Criteria	2009 Sampling (Stantec) - Rabbits	
			09-SM32	RDL
Aluminum	mg/kg	na	-	-
Antimony	mg/kg	na	-	-
Arsenic	mg/kg	na	-	-
Barium	mg/kg	na	-	-
Beryllium	mg/kg	na	-	-
Boron	mg/kg	na	-	-
Cadmium	mg/kg	na	-	-
Chromium	mg/kg	na	-	-
Cobalt	mg/kg	na	-	-
Copper	mg/kg	na	-	-
Iron	mg/kg	na	-	-
Lead	mg/kg	na	-	-
Lithium	mg/kg	na	-	-
Manganese	mg/kg	na	-	-
Mercury	mg/kg	na	<0.1	0.10
Molybdenum	mg/kg	na	-	-
Nickel	mg/kg	na	-	-
Selenium	mg/kg	na	-	-
Silver	mg/kg	na	-	-
Strontium	mg/kg	na	-	-
Thallium	mg/kg	na	-	-
Tin	mg/kg	na	-	-
Uranium	mg/kg	na	-	-
Vanadium	mg/kg	na	-	-
Zinc	mg/kg	na	-	-

Notes:

RDL = Reportable Detection Limit for routine analysis

na = No applicable guideline

< # = Not detected above RDL noted

"-" = Not analyzed

**Table 12.17 Results of Laboratory Analysis of PCBs/Crude Fat in Fish Samples - Lake Melville Dump Site
Phase III ESA, HHERA and RAP
Former U.S Military Facility, Northwest Point, NL
Stantec Consulting Ltd. Project No. 121410105**

Sample Location	Polychlorinated Biphenyls (PCBs)	Crude Fat
RDL	0.05	-
Units	ug/g	%
Criteria	na	na
2009 Sampling (Stantec)		
DUMP SITE - FS01	<0.05	5.7
DUMP SITE - FS03	<0.05	6.8
DUMP SITE - FS05	<0.05	5.5
DUMP SITE - FS09	<0.05	8.9

Notes:

RDL = Reportable Detection Limit

na = No applicable guideline

< # = Not detected above RDL noted

"-" = Not analyzed

**Table 12.18 Results of Laboratory Analysis of Available Metals in Fish - Lake Melville Dump Site
Phase III ESA, HHERA and RAP
Former U.S Military Facility, Northwest Point, NL
Stantec Consulting Ltd. Project No. 121410105**

Parameters	RDL	Units	2009 Sampling (Stantec)			
			DUMP SITE - FS01	DUMP SITE - FS03	DUMP SITE - FS05	DUMP SITE - FS09
Aluminum	2.5	mg/kg	15.0	<2.5	4.7	13
Antimony	0.5	mg/kg	<0.50	<0.50	<0.50	<0.50
Arsenic	0.5	mg/kg	2.88	1.46	1.69	1.54
Barium	1.5	mg/kg	<1.5	<1.5	<1.5	<1.5
Beryllium	0.5	mg/kg	<0.50	<0.50	<0.50	<0.50
Boron	1.5	mg/kg	<1.5	<1.5	<1.5	<1.5
Cadmium	0.05	mg/kg	<0.050	<0.050	<0.050	<0.050
Chromium	0.5	mg/kg	<0.50	<0.50	<0.50	<0.50
Cobalt	0.2	mg/kg	<0.20	<0.20	<0.20	<0.20
Copper	0.5	mg/kg	1.57	1.17	0.96	1.47
Iron	15	mg/kg	28	<15	<15	39
Lead	0.18	mg/kg	<0.18	<0.18	<0.18	<0.18
Lithium	0.5	mg/kg	<0.50	<0.50	<0.50	<0.50
Manganese	0.5	mg/kg	1.26	1.39	1.13	9.39
Molybdenum	0.5	mg/kg	<0.50	<0.50	<0.50	<0.50
Nickel	0.5	mg/kg	<0.50	<0.50	<0.50	<0.50
Selenium	0.5	mg/kg	<0.50	<0.50	<0.50	<0.50
Silver	0.12	mg/kg	<0.12	<0.12	<0.12	<0.12
Strontium	1.5	mg/kg	10.8	15.1	22.6	63.9
Thallium	0.02	mg/kg	<0.020	<0.020	<0.020	<0.020
Tin	0.5	mg/kg	<0.50	<0.50	<0.50	<0.50
Uranium	0.02	mg/kg	<0.020	<0.020	<0.020	<0.020
Vanadium	0.5	mg/kg	<0.50	<0.50	<0.50	<0.50
Zinc	1.5	mg/kg	12.8	23.8	15.4	48.2

Notes:

RDL = Reportable Detection Limit

< # = Not detected above RDL noted

Appendix 12f

Results of Hydraulic Response (Bail-Down) Test

– Lake Melville Dump Site

Stantec Consulting Ltd.

607 Torbay Road

St. John's, NL, A1A 4Y6

Stantec Tel: (709) 576-1458

Slug Test Data Report

Project: Northwest Point

Number: 121410105

Client: NLDEC

Page 1

Test Well: 09-MW27D**Slug Test: 09-MW27D**

Depth to Static WL: 4.59 [m]

Test Well: 09-MW27D

Casing radius: 0.025 [m]

Location:

Boring radius: 0.05 [m]

Recorded by: Stantec

Screen length: 1.52 [m]

Date: 8/27/2009

Aquifer Thickness: 3.68 [m]

	Time [s]	Depth to WL [m]	Drawdown [m]
1	5	7.98	3.39
2	10	7.90	3.31
3	20	7.82	3.23
4	30	7.75	3.16
5	40	7.73	3.14
6	50	7.01	2.42
7	60	6.98	2.39
8	90	6.95	2.36
9	120	6.92	2.33
10	300	6.88	2.29
11	600	6.84	2.25
12	900	6.81	2.22
13	1200	6.78	2.19
14	1500	6.75	2.16
15	1800	6.73	2.14
16	2400	6.69	2.10
17	3000	6.66	2.07
18	3600	6.62	2.03

Stantec Consulting Ltd.

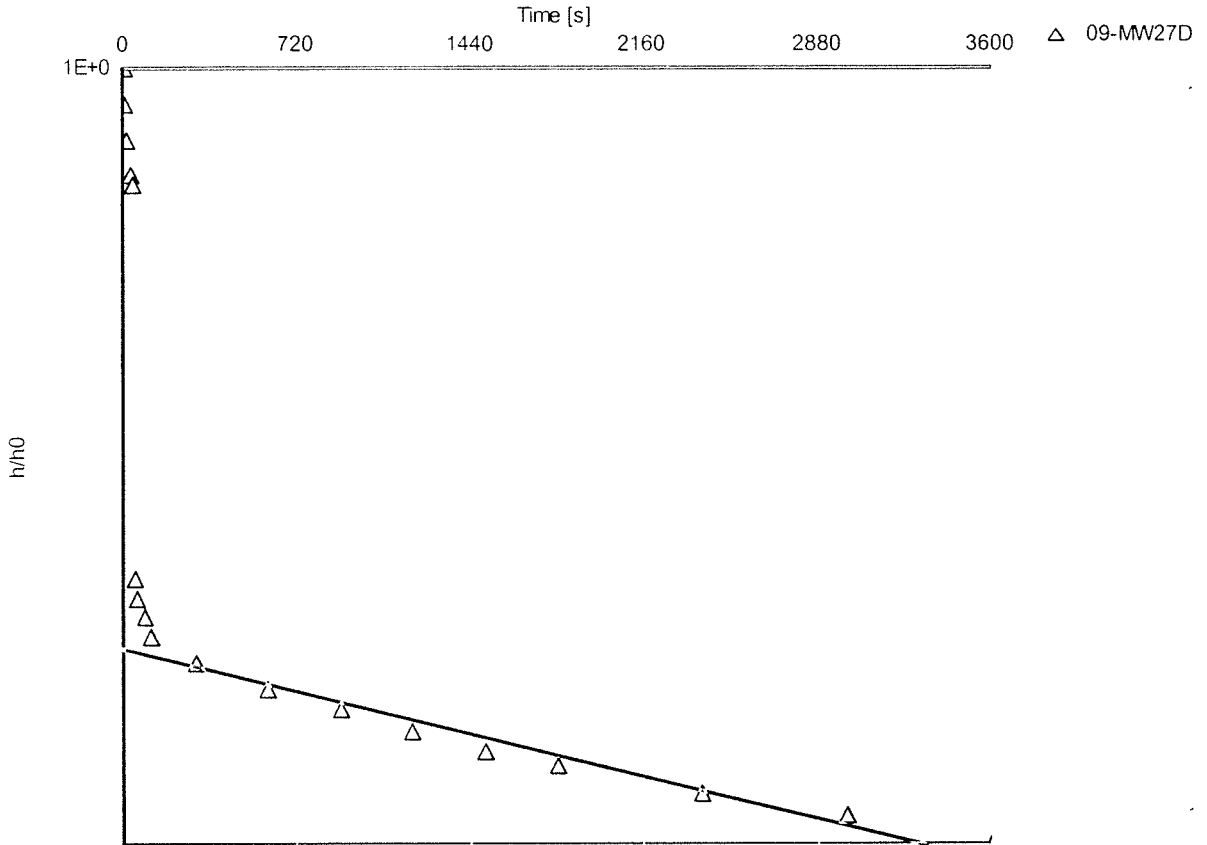
607 Torbay Road
St. John's, NL, A1A 4Y6
Tel: (709) 576-1458

Slug Test Analysis Report

Project: Northwest Point
Number: 121410105
Client: NLDEC

stantec

09-MW27D [Bouwer & Rice]



Slug Test: 09-MW27D

Analysis Method: Bouwer & Rice

Analysis Results:

Conductivity: 2.52E-8 [m/s]

Test parameters: Test Well: 09-MW27D
Casing radius: 0.025 [m]
Screen length: 1.52 [m]
Boring radius: 0.05 [m]

r(eff): 0.033 [m]

Aquifer Thickness: 3.68 [m]

Gravel Pack Porosity (%): 25

Comments:

Evaluated by: AR

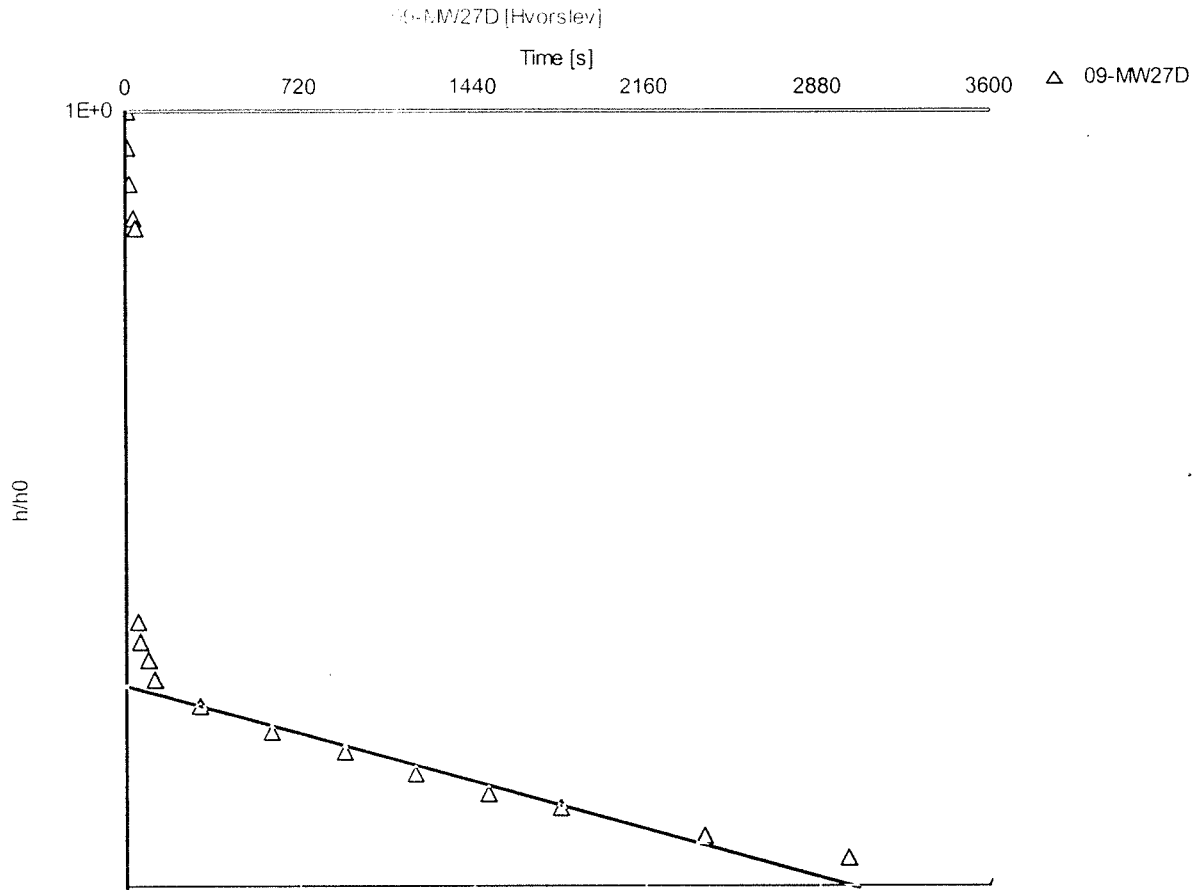
Evaluation Date: 6/9/2010

Stantec Consulting Ltd.

607 Torbay Road
St. John's, NL, A1A 4Y6
Tel: (709) 576-1458

Slug Test Analysis Report

Project: Northwest Point
Number: 121410105
Client: NLDEC



Slug Test: 09-MW27D

Analysis Method: Hvorslev

Analysis Results:

Conductivity: 3.09E-8 [m/s]

Test parameters: Test Well: 09-MW27D
Casing radius: 0.025 [m]
Screen length: 1.52 [m]
Boring radius: 0.05 [m]

Aquifer Thickness: 3.68 [m]

Comments:

Evaluated by: AR

Evaluation Date: 6/9/2010