Appendix 22a

Site Photos

– Big Lake

Site Photographs – Big Lake

Photo 1 View of Big Lake (looking northwest)

Photo 2 View of Big Lake (looking north)

Site Photographs – Big Lake

Photo 3 View of barrels in Big Lake

Photo 4 View of barrels along the shore of Big Lake

Appendix 22b

Sample Coordinates

– Big Lake

Sample Coordinates - Big Lake
Phase II/III ESA, HHERA and RAP/RMP
Former US Military Site and Residential Subdivision, Hopedale, NL
Project No. 121410103

Sample ID	Coordinates	
	Easting	Northing
SEDIMENT		
SED-69	0673992	6150413
SED-70	0674031	6150425
SED-71	0673982	6150485
SURFACE WATER		
SW-10	0673955	6150452
SW-11	0673992	6150413
SW-12	0674031	6150425
FISH		
FISH-7	-	-
FISH-8	-	-
FISH-9	-	-
FISH-10	-	-
FISH-11	-	-
BENTHIC		
BENTHIC-4	0673982	6150485

Notes:
"-" = Coordinates not recorded

Appendix 22c

Soil Vapour Concentrations

– Big Lake

Sample Tipping Results - Big Lake
Phase II/III ESA, HHERA and RAP/RMP
Former US Military Site and Residential Subdivision, Hopedale, NL
Project No. 121410103

Sample ID	Sample Depth (mbgs)	Hydrocarbon Odour	Soil Vapour Concentration (ppm)
SEDIMENT			
SED-69	-	-	-
SED-70	-	-	-
SED-71	-	-	-

Notes:
"-" = Value not recorded

Appendix 22d

Laboratory Analytical Results Summary Tables

– Big Lake

Table 22.1 Results of Laboratory Analysis of PCBs in Sediment - Big Lake
Phase II/III ESA, HHERA and RAP/RMP
Former US Military Site and Residential Subdivision, Hopedale, NL
Project No. 121410103

Sample ID	Polychlorinated Biphenyls (PCBs)
RDL	0.05
Units	mg/kg
Criteria[1]	0.0341
Criteria[2]	0.277
SEDIMENT	
SED-69	<0.05
SED-70	<0.05
SED-71	<0.05

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
Shaded = Value exceeds CCME ISQG

Table 22.2 Results of Laboratory Analysis of Available Metals in Sediment - Big Lake
Phase II/III ESA, HHERA and RAP/RMP
Former US Military Site and Residential Subdivision, Hopedale, NL
Project No. 121410103

Parameters	RDL	Units	Criteria[1]	Criteria[2]	SEDIMENT			
					SED-69	SED-69 Lab-Dup	SED-70	SED-71
Aluminum	10	mg/kg	-	-	4,600	5,800	2,600	18,000
Antimony	2	mg/kg	-	-	<2	<2	<2	<2
Arsenic	2	mg/kg	5.9	17.0	<2	<2	<2	<2
Barium	5	mg/kg	-	-	14	16	8	53
Beryllium	2	mg/kg	-	-	<2	<2	<2	<2
Bismuth	2	mg/kg	-	-	<2	<2	<2	<2
Boron	5	mg/kg	-	-	<5	<5	<5	5
Cadmium	0.3	mg/kg	0.6	3.5	<0.3	<0.4	<0.3	<0.3
Chromium	2	mg/kg	37.3	90.0	11	13	5	39
Cobalt	1	mg/kg	-	-	3	3	2	8
Copper	2	mg/kg	35.7	197	3	4	2	25
Iron	50	mg/kg	-	-	6,400	7,700	3,400	13,000
Lead	0.5	mg/kg	35.0	91.3	3.2	3.8	1.5	3.4
Lithium	2		-	-	4	6	3	9
Manganese	2	mg/kg	-	-	51	65	32	100
Mercury	0.1		0.17	0.486	<0.1	<0.1	<0.1	<0.1
Molybdenum	2	mg/kg	-	-	<2	<2	<2	<2
Nickel	2	mg/kg	-	-	8	9	4	26
Rubidium	2		-	-	3	3	<2	7
Selenium	2	mg/kg	-	-	<2	<2	<2	<2
Silver	0.5	mg/kg	-	-	<0.5	<0.5	<0.5	<0.5
Strontium	5	mg/kg	-	-	7	8	5	23
Thallium	0.1	mg/kg	-	-	<0.1	<0.1	<0.1	0.1
Tin	2		-	-	<2	<2	<2	<2
Uranium	0.1	mg/kg	-	-	0.4	0.5	0.2	2.7
Vanadium	2	mg/kg	-	-	12	14	6	33
Zinc	5	mg/kg	123	315	25	26	10	51

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
Lab-dup = laboratory duplicate sample
< # = Not detected above RDL noted
"-" = indicates value is not available or does not apply
Shaded = Value exceeds CCME ISQG

Table 22.3 Results of Laboratory Analysis of TOC and Grain Size in Sediment - Big Lake
Phase II/III ESA, HHERA and RAP/RMP
Former US Military Site and Residential Subdivision, Hopedale, NL
Project No. 121410103

Parameters	Units	SEDIMENT						
		SED-69	SED-69 Lab-Dup	RDL	SED-70	RDL	SED-71	RDL
Organic Carbon (TOC)	g/kg	25	-	0.4	5.1	0.2	110	0.5
<-4 Phi (16 mm)	%	100	100	0.1	100	0.1	100	0.1
<-3 Phi (8mm)	%	100	100	0.1	100	0.1	100	0.1
<-2 Phi (4mm)	%	100	100	0.1	100	0.1	100	0.1
<-1 Phi (2mm)	%	98	91	0.1	97	0.1	82	0.1
0 Phi (1mm)	%	96	85	0.1	92	0.1	51	0.1
<+1 Phi (0.5 mm)	%	85	73	0.1	84	0.1	40	0.1
<+2 Phi (0.25 mm)	%	53	41	0.1	59	0.1	33	0.1
<+3 Phi (0.12 mm)	%	23	17	0.1	12	0.1	25	0.1
<+4 Phi (0.062 mm)	%	6.5	5.2	0.1	2.3	0.1	17	0.1
<+5 Phi (0.031 mm)	%	3.2	3.5	0.1	1.4	0.1	15	0.1
<+6 Phi (0.016 mm)	%	1.9	2.3	0.1	0.9	0.1	11	0.1
<+7 Phi (0.0078 mm)	%	1	1.3	0.1	0.6	0.1	7.1	0.1
<+8 Phi (0.0039 mm)	%	0.8	1.2	0.1	0.5	0.1	6.3	0.1
<+9 Phi (0.0020 mm)	%	0.8	1	0.1	0.6	0.1	5.4	0.1
Gravel	%	1.8	9.1	0.1	2.5	0.1	18	0.1
Sand	%	92	86	0.1	95	0.1	66	0.1
Silt	%	5.8	4	0.1	1.8	0.1	10	0.1
Clay	%	0.8	1.2	0.1	0.5	0.1	6.3	0.1

Notes:
RDL = Reportable Detection Limit

Table 22.4 Results of Laboratory Analysis of PCBs in Surface Water - Big Lake
Phase II/III ESA, HHERA and RAP/RMP
Former US Military Site and Residential Subdivision, Hopedale, NL
Project No. 121410103

Sample ID	Polychlorinated Biphenyls (PCBs)
RDL	0.05
Units	ug/L
Criteria[1]	na
SURFACE WATER	
SW-11	<0.05

Notes:
1 = CCME Water Quality Guidelines for the protection of freshwater aquatic life (2007)
RDL = Reportable Detection Limit
< # = Not detected above RDL noted
na = No applicable guideline

Table 22.5 Results of Laboratory Analysis of Available Metals in Surface Water - Big Lake
Phase II/III ESA, HHERA and RAP/RMP
Former US Military Site and Residential Subdivision, Hopedale, NL
Project No. 121410103

Parameters	RDL	Units	Criteria[1]	SURFACE WATER		
				SW-10	SW-11	SW-12
Aluminum	5	ug/L	100[2]	123	110	92.3
Antimony	2	ug/L	-	<2.0	<2.0	<2.0
Arsenic	2	ug/L	5	<2.0	<2.0	<2.0
Barium	5	ug/L	-	<5.0	<5.0	<5.0
Beryllium	2	ug/L	-	<2.0	<2.0	<2.0
Bismuth	2	ug/L	-	<2.0	<2.0	<2.0
Boron	5	ug/L	-	<5.0	<5.0	<5.0
Cadmium	0.017	ug/L	0.0014[3]	<0.017	<0.017	<0.017
Chromium	1	ug/L	8.9	<1.0	<1.0	1.1
Cobalt	0.4	ug/L	-	<0.40	<0.40	<0.40
Copper	2	ug/L	2[4]	<2.0	<2.0	<2.0
Iron	50	ug/L	300	55	<50	<50
Lead	0.5	ug/L	1[5]	<0.50	1.19	<0.50
Manganese	2	ug/L	-	4	3.5	3.6
Molybdenum	2	ug/L	73	<2.0	<2.0	<2.0
Nickel	2	ug/L	25[6]	<2.0	<2.0	<2.0
Selenium	1	ug/L	1	<1.0	<1.0	<1.0
Silver	0.1	ug/L	0.1	<0.10	<0.10	<0.10
Strontium	5	ug/L	-	<5.0	5.2	5.3
Thallium	0.1	ug/L	0.8	<0.10	<0.10	<0.10
Tin	2	ug/L	-	<2.0	<2.0	<2.0
Titanium	2	ug/L	-	2.3	<2.0	<2.0
Uranium	0.1	ug/L	-	<0.10	<0.10	<0.10
Vanadium	2	ug/L	-	<2.0	<2.0	<2.0
Zinc	5	ug/L	30	10.7	<5.0	6.6

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(hardness)]-3.2} = 0.0014 mg/L at a water hardness of 6 mg/L as $CaCO_3$

4 = Copper guideline = 2 µg/L at water hardness of 0-120 mg/L as $CaCO_3$
= 3 µg/L at water hardness of 120-180 mg/L as $CaCO_3$
= 4 µg/L at water hardness >180 mg/L as $CaCO_3$

5 =Lead guideline = 1 µg/L at water hardness of 0-60 mg/L as $CaCO_3$
= 2 µg/L at water hardness of 60-120 mg/L as $CaCO_3$
= 4 µg/L at water hardness of 120-180 mg/L as $CaCO_3$
= 7 µg/L at water hardness >180 mg/L as $CaCO_3$

6 = Nickel guideline = 25 µg/L at water hardness of 0-60 mg/L as $CaCO_3$
= 65 µg/L at water hardness of 60-120 mg/L as $CaCO_3$
= 110 µg/L at water hardness of 120-180 mg/L as $CaCO_3$
= 150 µg/L at water hardness >180 mg/L as $CaCO_3$

RDL = Reportable Detection Limit

< # = Not detected above RDL noted

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

Shaded = Value exceeds applicable criteria

Table 22.6 Results of Laboratory Analysis of General Chemistry in Surface Water - Big Lake
Phase II/III ESA, HHERA and RAP/RMP
Former US Military Site and Residential Subdivision, Hopedale, NL
Project No. 121410103

Parameters	RDL	Units	Criteria[1]	SURFACE WATER		
				SW-10	SW-11	SW-12
Calculated Parameters						
Anion Sum	N/A	me/L	-	0.22	0.12	0.12
Bicarb. Alkalinity (as $CaCO_3$)	1	mg/L	-	5	<1	<1
Calculated TDS	1	mg/L	-	13	10	11
Carb. Alkalinity (as $CaCO_3$)	1	mg/L	-	<1	<1	<1
Cation Sum	N/A	me/L	-	0.27	0.26	0.28
Hardness (as $CaCO_3$)	1	mg/L	-	6	6	6
Ion Balance (% Difference)	N/A	%	-	10.2	36.8	40
Langelier Index (@20°C)	-	N/A	-	-3.7	NC	NC
Langelier Index (@4°C)	-	N/A	-	-3.96	NC	NC
Nitrate (as N)	0.05	mg/L	2.9	<0.05	<0.05	<0.05
Saturation pH (@20°C)	-	N/A	-	10.4	NC	NC
Saturation pH (@4°C)	-	N/A	-	10.6	NC	NC
Inorganics						
Total Alkalinity (as $CaCO_3$)	5	mg/L		5	<5	<5
Dissolved Chloride (Cl)	1	mg/L		4	4	4
Colour	30	TCU		21	24	20
Nitrate + Nitrite	0.05	mg/L	-	<0.05	<0.05	<0.05
Nitrite (N)	0.01	mg/L	0.06	<0.01	<0.01	<0.01
Nitrogen (Ammonia Nitrogen)	0.05	mg/L	-	<0.05	<0.05	<0.05
Total Organic Carbon (C)	0.5	mg/L	-	3.9	4.6	4
Orthophosphate (P)	0.01	mg/L	-	<0.01	<0.01	<0.01
pH	N/A	pH	6.5 - 9	6.69	6.72	6.74
Reactive Silica (SiO_2)	0.5	mg/L	-	0.6	0.8	0.6
Dissolved Sulphate (SO_4)	2	mg/L	-	<2	<2	<2
Turbidity	0.1	NTU	Narritive[2]	0.3	1.3	1.4
Conductivity	1	uS/cm	-	28	25	28
Metals						
Calcium	0.1	mg/L	-	1.5	1.5	1.5
Magnesium	0.1	mg/L	-	0.5	0.5	0.5
Phosphorus	0.1	mg/L	<0.004 to >0.1[3]	<0.1	<0.1	<0.1
Potassium	0.1	mg/L	-	0.3	0.2	0.4
Sodium	0.1	mg/L	-	3	3	3

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 freswater environment. Trophic status of Big Lake is unknown

RDL = Reportable Detection Limit

N/A = Not applicable

NC = Not calculated

< # = Not detected above RDL noted

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

Table 22.7 Results of Laboratory Analysis of PCBs in Fish - Big Lake
Phase II/III ESA, HHERA and RAP/RMP
Former US Military Site and Residential Subdivision, Hopedale, NL
Project No. 121410103

Sample ID	Polychlorinated Biphenyls (PCBs)
RDL	0.05
Units	mg/kg
FISH	
FISH-10	0.06
FISH-10 Lab-Dup	0.06
FISH-11	<0.05

Notes:
RDL = Reportable Detection Limit
< # = Not detected above RDL noted

Table 22.8 Results of Laboratory Analysis of Available Metals in Fish - Big Lake
Phase II/III ESA, HHERA and RAP/RMP
Former US Military Site and Residential Subdivision, Hopedale, NL
Project No. 121410103

Parameters	RDL	Units	FISH	
			FISH-10	FISH-11
Aluminum	2.5	mg/kg	<2.5	4.3
Antimony	0.5	mg/kg	<0.50	<0.50
Arsenic	0.5	mg/kg	<0.50	<0.50
Barium	1.5	mg/kg	<1.5	<1.5
Beryllium	0.5	mg/kg	<0.50	<0.50
Boron	1.5	mg/kg	<1.5	<1.5
Cadmium	0.05	mg/kg	<0.050	<0.050
Chromium	0.5	mg/kg	<0.50	<0.50
Cobalt	0.2	mg/kg	<0.20	<0.20
Copper	0.5	mg/kg	1.12	0.90
Iron	15	mg/kg	<15	<15
Lead	0.18	mg/kg	<0.18	<0.18
Lithium	0.5	mg/kg	<0.50	<0.50
Manganese	0.5	mg/kg	0.77	0.93
Molybdenum	0.5	mg/kg	<0.50	<0.50
Nickel	0.5	mg/kg	<0.50	<0.50
Selenium	0.5	mg/kg	0.56	0.61
Silver	0.12	mg/kg	<0.12	<0.12
Strontium	1.5	mg/kg	6.1	5
Thallium	0.02	mg/kg	<0.020	<0.020
Tin	0.5	mg/kg	<0.50	<0.50
Uranium	0.02	mg/kg	<0.020	<0.020
Vanadium	0.5	mg/kg	<0.50	<0.50
Zinc	1.5	mg/kg	22.4	17.7

Notes:
RDL = Reportable Detection Limit
< # = Not detected above RDL noted

Appendix 23a

Site Photos

– Clean Background Area

Site Photographs – Clean Background Area

Photo 1 View of clean background area west of town

Photo 2 View of clean background area west of town

Site Photographs – Clean Background Area

Photo 3 View of clean background area west of town

Appendix 23b

Sample Coordinates

– Clean Background Area

Table 23.10 Sample Coordinates - Clean Background Area
Phase II/III ESA, HHERA and RAP/RMP
Former US Military Site and Residential Subdivision, Hopedale, NL
Project No. 121410103

Sample ID	Coordinates	
	Easting	Northing
SURFACE SOIL		
BS249	0674952	6148708
BS250	0674882	6148789
BS251	0674853	6148841
BS252	0674813	6148897
BS253	0674820	6149003
BS254	0674870	6149011
BS255	0674916	6148999
SEDIMENT		
SED-46	0675017	6148786
SED-47	0675136	6148780
SED-48	0675189	6148751
VEGETATION		
VEG-47	0674959	6148727
VEG-48	0674853	6148783
VEG-49	0674820	6148803
VEG-50	0674854	6148840
VEG-51	0674830	6148861
VEG-52	0674806	6148914
VEG-53	0674791	6148954
BERRY		
BERRY-11	0674959	6148727
BERRY-12	0674853	6148783
BERRY-13	0674820	6148803
BERRY-14	0674854	6148840
BERRY-15	0674830	6148861
BERRY-16	0674806	6148914
BERRY-17	0674791	6148954
SMALL MAMMAL		
SM-43	0674896	6148759
SM-44	0674960	6148827

Appendix 23c

Soil Vapour Concentrations

– Clean Background Area

Sample Tipping Results - Clean Background Area
Phase II/III ESA, HHERA and RAP/RMP
Former US Military Site and Residential Subdivision, Hopedale, NL
Project No. 121410103

Sample ID	Sample Depth (mbgs)	Hydrocarbon Odour	Soil Vapour Concentration (ppm)
SURFACE SOIL			
BS249	-	No	-
BS250	-	No	-
BS251	-	No	-
BS252	-	No	-
BS253	-	No	-
BS254	-	No	0.7
BS255	-	No	0.8
SURFACE SOIL			
SED-46	-	No	-
SED-47	-	No	-
SED-48	-	No	-

Notes:
"-" = Value not recorded

Appendix 23d

Laboratory Analytical Results Summary Tables

– Clean Background Area

Table 23.1 Results of Laboratory Analysis of Available Metals in Soil - Clean Background Area
Phase II/III ESA, HHERA and RAP/RMP
Former US Military Site and Residential Subdivision, Hopedale, NL
Project No. 121410103

Parameters	RDL	Units	Criteria[1]	SURFACE SAMPLES						
				BS249	BS250	BS251	BS252	BS253	BS254	BS255
Aluminum	10	mg/kg	-	5,700	3,800	1,400	7,300	5,100	3,700	5,200
Antimony	2	mg/kg	20	<2	<2	<2	<2	<2	<2	<2
Arsenic	2	mg/kg	12	<2	<2	<2	<2	<2	<2	<2
Barium	5	mg/kg	500	17	21	67	10	15	17	19
Beryllium	2	mg/kg	4	<2	<2	<2	<2	<2	<2	<2
Bismuth	2	mg/kg	-	<2	<2	<2	<2	<2	<2	<2
Boron	5	mg/kg	-	8	15	6	<5	7	<5	<5
Cadmium	0.3	mg/kg	10	<0.3	<0.3	0.4	<0.3	0.4	0.6	<0.3
Chromium	2	mg/kg	64	13	4	3	22	7	5	18
Cobalt	1	mg/kg	50	3	<1	<1	2	1	1	2
Copper	2	mg/kg	63	33	21	6	7	11	12	85
Iron	50	mg/kg	-	7,000	4,200	1,300	4,700	5,100	2,700	2,900
Lead	0.5	mg/kg	140	13	11	20	4.4	15	25	43
Lithium	2	mg/kg	-	<2	<2	<2	4	<2	<2	<2
Manganese	2	mg/kg	-	68	12	52	38	79	5	7
Mercury	0.1	mg/kg	6.6	0.2	0.3	0.5	<0.1	0.1	0.2	0.2
Molybdenum	2	mg/kg	10	<2	<2	<2	<2	4	<2	2
Nickel	2	mg/kg	50	10	3	<2	9	4	5	28
Rubidium	2	mg/kg	-	<2	<2	<2	<2	<2	<2	<2
Selenium	2/ 5[2]	mg/kg	1	<2	<2	<2	<2	<5[2]	<2	<2
Silver	0.5	mg/kg	20	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Strontium	5	mg/kg	-	22	24	32	10	35	15	19
Thallium	0.1	mg/kg	1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Tin	2	mg/kg	50	<2	<2	<2	<2	3	<2	<2
Uranium	0.1	mg/kg	23	5.8	6.5	0.5	4.1	26	1.3	12
Vanadium	2	mg/kg	130	9	3	2	12	10	3	4
Zinc	5	mg/kg	200	18	13	24	11	21	12	19

Notes:
1 = CCME Canadian Soil Quality Guidelines for a Residential/Parkland Site (2007)
2 = Elevated RDL due to sample matrix
RDL = Reportable Detection Limit for routine analysis
< # = Not detected above RDL noted
"-" = indicates value is not available or does not apply
Shaded = Value exceeds applicable criteria

Table 23.2 Results of Laboratory Analysis of Available Metals in Sediment - Clean Background Area
Phase II/III ESA, HHERA and RAP/RMP
Former US Military Site and Residential Subdivision, Hopedale, NL
Project No. 121410103

Parameters	RDL	Units	Criteria[1]	Criteria[2]	SEDIMENT		
					SED-46	SED-47	SED-48
Aluminum	10	mg/kg	-	-	6,200	8,100	11,000
Antimony	2	mg/kg	-	-	<2	<2	<2
Arsenic	2	mg/kg	5.9	17.0	<2	<2	<2
Barium	5	mg/kg	-	-	19	24	36
Bismuth	2	mg/kg	-	-	<2	<2	<2
Beryllium	2	mg/kg	-	-	<2	<2	<2
Boron	5	mg/kg	-	-	<5	<5	<5
Cadmium	0.3	mg/kg	0.6	3.5	<0.3	<0.3	<0.3
Chromium	2	mg/kg	37.3	90.0	16	16	22
Cobalt	1	mg/kg	-	-	4	4	5
Copper	2	mg/kg	35.7	197	8	8	11
Iron	50	mg/kg	-	-	5,000	6,300	11,000
Lead	0.5	mg/kg	35.0	91.3	9.1	10	11
Lithium	2	mg/kg	-	-	5	7	8
Manganese	2	mg/kg	-	-	52	66	100
Mercury	0.1	mg/kg	0.17	0.486	<0.1	<0.1	<0.1
Molybdenum	2	mg/kg	-	-	<2	<2	<2
Nickel	2	mg/kg	-	-	12	11	15
Rubidium	2	mg/kg	-	-	2	4	7
Selenium	2	mg/kg	-	-	<2	<2	<2
Silver	0.5	mg/kg	-	-	<0.5	<0.5	<0.5
Strontium	5	mg/kg	-	-	24	32	32
Thallium	0.1	mg/kg	-	-	<0.1	<0.1	<0.1
Tin	2	mg/kg	-	-	<2	<2	<2
Uranium	0.1	mg/kg	-	-	2.5	2.2	2.3
Vanadium	2	mg/kg	-	-	11	14	23
Zinc	5	mg/kg	123	315	52	28	37

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
nd = Not detected above standard RDL
< = Not detected above RDL noted
"-" = indicates value is not available or does not apply

Table 23.3 Results of Laboratory Analysis of Available Metals in Berries - Clean Background Area
Phase II/III ESA, HHERA and RAP/RMP
Former US Military Site and Residential Subdivision, Hopedale, NL
Project No. 121410103

Parameters	RDL	Units	BERRIES						
			BERRY-11	BERRY-12	BERRY-13	BERRY-14	BERRY-15	BERRY-16	BERRY-17
Aluminum	2.5	mg/kg	2.9	<2.5	<2.5	3.9	2.8	<2.5	<2.5
Antimony	0.5	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Arsenic	0.5	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Barium	1.5	mg/kg	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5
Beryllium	0.5	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Boron	1.5	mg/kg	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5
Cadmium	0.05	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chromium	0.5	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Cobalt	0.2	mg/kg	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Copper	0.5	mg/kg	0.68	0.7	0.65	0.64	0.54	0.51	0.78
Iron	15	mg/kg	<15	<15	<15	<15	<15	<15	<15
Lead	0.18	mg/kg	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18
Lithium	0.5	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Manganese	0.5	mg/kg	4	4.68	8.16	6.44	3.72	2.33	1.6
Molybdenum	0.5	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Nickel	0.5	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Selenium	0.5	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Silver	0.12	mg/kg	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12
Strontium	1.5	mg/kg	<1.5	<1.5	<1.5	<1.5	<1.5	2.0	<1.5
Thallium	0.02	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Tin	0.5	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Uranium	0.02	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Vanadium	0.5	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Zinc	1.5	mg/kg	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5

Notes:
RDL = Reportable Detection Limit
< # = Not detected above RDL noted

Table 23.4 Results of Laboratory Analysis of Available Metals in Berries - Clean Background Area
Phase II/III ESA, HHERA and RAP/RMP
Former US Military Site and Residential Subdivision, Hopedale, NL
Project No. 121410103

Parameters	RDL	Units	VEGETATION							
			VEG-47	VEG-48	VEG-49	VEG-49 Lab-Dup	VEG-50	VEG-51	VEG-52	VEG-53
Aluminum	10	mg/kg	540	1700	360	340	120	440	630	270
Antimony	2	mg/kg	<2	<2	<2	<2	<2	<2	<2	<2
Arsenic	2	mg/kg	<2	<2	<2	<2	<2	<2	<2	<2
Barium	5	mg/kg	34	21	16	16	25	27	24	31
Beryllium	2	mg/kg	<2	<2	<2	<2	<2	<2	<2	<2
Boron	5	mg/kg	12	<5	<5	<5	11	9	6	9
Cadmium	0.3	mg/kg	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium	2	mg/kg	<2	3	<2	<2	<2	<2	<2	<2
Cobalt	1	mg/kg	<1	<1	<1	<1	<1	<1	<1	<1
Copper	2	mg/kg	10	8	6	6	9	12	17	11
Iron	50	mg/kg	330	1800	400	400	250	600	1100	440
Lead	0.5	mg/kg	4.7	3.8	2.3	2.4	1.0	2.9	3.5	1.7
Manganese	2	mg/kg	95	59	97	94	500	310	160	380
Molybdenum	2	mg/kg	<2	<2	<2	<2	2	2	<2	<2
Nickel	2	mg/kg	4	4	<2	<2	<2	<2	<2	<2
Selenium	2	mg/kg	<2	<2	<2	<2	<2	<2	<2	<2
Silver	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Strontium	5	mg/kg	19	14	14	14	14	14	15	13
Thallium	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Uranium	0.1	mg/kg	<0.1	0.2	0.1	0.1	<0.1	<0.1	0.4	<0.1
Vanadium	2	mg/kg	<2	<2	<2	<2	<2	<2	<2	<2
Zinc	5	mg/kg	18	18	22	22	41	27	31	36

Notes:
RDL = Reportable Detection Limit
Lab-dup = laboratory duplicate sample
< # = Not detected above RDL noted

Table 23.5 Results of Laboratory Analysis of Available Metals in Small Mammals - Clean Background Area
Phase II/III ESA, HHERA and RAP/RMP
Former US Military Site and Residential Subdivision, Hopedale, NL
Project No. 121410103

Parameters	RDL	Units	SMALL MAMMALS	
			SM-43	SM-44
Aluminum	2.5	mg/kg	7.1	10.8
Antimony	0.5	mg/kg	<0.50	<0.50
Arsenic	0.5	mg/kg	<0.50	<0.50
Barium	1.5	mg/kg	3.7	23.6
Beryllium	0.5	mg/kg	<0.50	<0.50
Boron	1.5	mg/kg	<1.5	<1.5
Cadmium	0.05	mg/kg	<0.050	<0.050
Chromium	0.5	mg/kg	<0.50	<0.50
Cobalt	0.2	mg/kg	<0.20	<0.20
Copper	0.5	mg/kg	2.77	3.11
Iron	15	mg/kg	70	72
Lead	0.18	mg/kg	0.49	<0.18
Lithium	0.5	mg/kg	<0.50	<0.50
Manganese	0.5	mg/kg	4.07	9.83
Molybdenum	0.5	mg/kg	<0.50	<0.50
Nickel	0.5	mg/kg	<0.50	<0.50
Selenium	0.5	mg/kg	<0.50	<0.50
Silver	0.12	mg/kg	<0.12	<0.12
Strontium	1.5	mg/kg	4.7	3.9
Thallium	0.02	mg/kg	<0.020	<0.020
Tin	0.5	mg/kg	<0.50	<0.50
Uranium	0.02	mg/kg	<0.020	<0.020
Vanadium	0.5	mg/kg	<0.50	<0.50
Zinc	1.5	mg/kg	29	30.1

Notes:
RDL = Reportable Detection Limit
< # = Not detected above RDL noted

Table 23.6 Results of Laboratory Analysis of PCBs in Small Mammals - Clean Background Area
Phase II/III ESA, HHERA and RAP/RMP
Former US Military Site and Residential Subdivision, Hopedale, NL
Project No. 121410103

Sample ID	Polychlorinated Biphenyls (PCBs)
RDL	0.05
Units	mg/kg
SMALL MAMMALS	
SM-43	<0.05
SM-44	<0.05

Notes:
RDL = Reportable Detection Limit
< # = Not detected above RDL noted

Table 23.7 Results of Laboratory Analysis of PCBs in Fish - Clean Background Area
Phase II/III ESA, HHERA and RAP/RMP
Former US Military Site and Residential Subdivision, Hopedale, NL
Project No. 121410103

Sample ID	Polychlorinated Biphenyls (PCBs)
RDL	0.05
Units	mg/kg
FISH	
FISH-6	<0.05

Notes:
RDL = Reportable Detection Limit
< # = Not detected above RDL noted

Table 23.8 Results of Laboratory Analysis of Available Metals in Fish - Clean Background Area
Phase II/III ESA, HHERA and RAP/RMP
Former US Military Site and Residential Subdivision, Hopedale, NL
Project No. 121410103

Parameters	RDL	Units	FISH
			FISH-6
Aluminum	2.5	mg/kg	19.7
Antimony	0.5	mg/kg	<0.50
Arsenic	0.5	mg/kg	<0.50
Barium	1.5	mg/kg	<1.5
Beryllium	0.5	mg/kg	<0.50
Boron	1.5	mg/kg	<1.5
Cadmium	0.05	mg/kg	<0.050
Chromium	0.5	mg/kg	<0.50
Cobalt	0.2	mg/kg	<0.20
Copper	0.5	mg/kg	0.92
Iron	15	mg/kg	53
Lead	0.18	mg/kg	<0.18
Lithium	0.5	mg/kg	<0.50
Manganese	0.5	mg/kg	9.81
Molybdenum	0.5	mg/kg	<0.50
Nickel	0.5	mg/kg	<0.50
Selenium	0.5	mg/kg	<0.50
Silver	0.12	mg/kg	<0.12
Strontium	1.5	mg/kg	8.8
Thallium	0.02	mg/kg	<0.020
Tin	0.5	mg/kg	<0.50
Uranium	0.02	mg/kg	<0.020
Vanadium	0.5	mg/kg	<0.50
Zinc	1.5	mg/kg	42.9

Notes:
RDL = Reportable Detection Limit
< # = Not detected above RDL noted