

of barium greater than generic CCME CEQG Parkland land use were detected in each interval. The variability of barium concentrations in those samples is listed in the following table.

Summary of 2004 Background Area Soil Concentrations of Barium

Parameter	n	Minimum Concentration (mg/kg)	Maximum Concentration (mg/kg)	Median Concentration (mg/kg)	Mean Concentration (mg/kg +/-SD)	90th Percentile (mg/kg)	75th Percentile (mg/kg)
Barium	12	228	2140	1185	1249 +/-518	1986	1560

n = number of samples.

SD = standard deviation

The concentrations of Barium remaining within the footprint of the North Shore area after remediation are within the range of the background concentrations. In addition, the immobile nature of the Barium encountered on site was demonstrated in the ESA leachate test results that returned Barium concentrations at levels less than the detection limit and it was therefore not identified as a contaminant of concern in the ESA.

The confirmatory samples supported by the QA/QC samples from the North Shore area provide confidence that the remediation of the North Shore complies with the SQRO's.

CONCLUSION

Based on confirmatory sampling consistent with good practice and the approved site specific sampling procedures and protocols, the remediation of the North Shore area has been completed to meet the Polaris Mine remedial targets, as documented in the approved Polaris Mine Decommissioning and Remediation Plan, March 2001,

LIMITATIONS

This report has been prepared by Gartner Lee Limited and the information in this report is intended for the use of Teck Cominco Metals Ltd. during the decommissioning and reclamation program at the Polaris Mine Site. Any use which a third party makes of this report, or any reliance on or decisions made on the basis of the information in this report is the responsibility of such third parties. Gartner Lee Limited accepts no responsibility for damages, if any, suffered by the third party, based on the use of or reliance on any information contained in this report.

The scope of Gartner Lee Limited's work was limited to that described in this report. The confirmation of environmental conditions at the site of the remedial work is based on sampling at

Table NS-26-1. North Shore Remediation Confirmation Soil Samples – Hydrocarbons

Parameter	Polaris Mine Soil Quality Remediation Objectives ^a	Location Sample ID Date Sampled ALS File Number Field Screen (ppm) ^b	North Shore							
			Shore-10042-F-D 13-Apr-04 U4484	Shore-10051-F-C 13-Apr-04 U2687	Shore-10062-F-C 13-Apr-04 U2687	Shore-10073-F-D 15-Apr-04 U4484	Shore-10075-F-D 15-Apr-04 U2688R	Shore-10079-F-D 15-Apr-04 U2688R	Shore-10080-F-C 15-Apr-04 U2688R	Shore-10081-F-C 15-Apr-04 U2688R
			35	-	-	50	60	45	-	-
Analytical Results										
Extractable Hydrocarbons		Units								
	1000	mg/kg	<200	<200	<200	<200	220	<200	<200	<200
	1000	mg/kg	<200	<200	<200	<200	<200	<200	<200	<200
	1000	mg/kg	-	-	-	-	-	<200	<200	-
HEPH ^c	1000	mg/kg	-	-	-	-	-	<200	<200	-

Bold Concentration exceeds the Soil Quality Remediation Objective (SQRO) for the Polaris Mine Site

Notes:

^a < - Less than analytical method detection limit

^b - - Analysis not conducted, or no guideline.

a) The approved Soil Quality Remediation Objectives (SQROs) for the Polaris Mine Site are based on the Yukon Territorial Contaminated Sites

Regulation for Parkland (PL) Land Use

b) Field screening results are measured based on a 'dry headspace' method using a combustible gas meter calibrated to a hexane standard

c) Light Extractable Petroleum Hydrocarbons (LEPH) and Heavy Extractable Petroleum Hydrocarbons (HEPH) are determined by subtracting

Polycyclic Aromatic Hydrocarbons (PAH) from Extractable Petroleum Hydrocarbons (EPH), therefore use of the EPH remediation objective

is conservative.

Table NS-26-1. North Shore Remediation Confirmation Soil Samples - Hydrocarbons

Parameter	Polaris Mine Soil Quality Remediation Objectives ^a	Location	North Shore								
		Sample ID Date Sampled ALS File Number Field Screen (ppm) ^b	Shore-10082-F-C 15-Apr-04 U2688R	Shore-10131-F-C 20-Apr-04 U2778r	Shore-10132-F-C 20-Apr-04 U2778R	Shore-10133-F-C 20-Apr-04 U2778R	Shore-10136-F-Q 20-Apr-04 U5597r	Shore-10286-F-C 28-Apr-04 U3083	Shore-10491-F-C 06-May-04 U3342	Shore-10794-F-D 24-May-04 U3969R	
		Units	Analytical Results								
Extractable Hydrocarbons											
	EPH C ₁₀ -C ₁₉	1000	mg/kg	<200	870	810	<200	<200	<200	<200	370
	EPH C ₁₀ -C ₃₂	1000	mg/kg	<200	<200	<200	<200	<200	<200	460	
	LEPH ^c	1000	mg/kg	-	-	-	-	-	-	-	
HEPH ^c	1000	mg/kg	-	-	-	-	-	-	-	-	

Concentration exceeds the Soil Quality Remediation Objective (SQRO) for the Polaris Mine Site.

Notes:

"<" = Less than analytical method detection limit.

"-" = Analysis not conducted, or no guideline.

a) The approved Soil Quality Remediation Objectives (SQROs) for the Polaris Mine Site are based on the Yukon Territorial Contaminated Sites

Regulation for Parkland (PL) Land Use.

b) Field screening results are measured based on a 'dry headspace' method using a combustible gas meter calibrated to a hexane standard.

c) Light Extractable Petroleum Hydrocarbons (LEPH) and Heavy Extractable Petroleum Hydrocarbons (HEPH) are determined by subtracting

Polycyclic Aromatic Hydrocarbons (PAH) from Extractable Petroleum Hydrocarbons (EPH), therefore use of the EPH remediation objective

is conservative.

Table NS-26-1. North Shore Remediation Confirmation Soil Samples - Hydrocarbons

Parameter	Polaris Mine Soil Quality Remediation Objectives ^a	Location Sample ID Date Sampled ALS File Number Field Screen (ppm) ^b	North Shore						
			Shore-10800-F-D 24-May-04 U3969R 70	Shore-10845-F-C 24-May-04 U3969R -	Shore-10846-F-C 24-May-04 U3969R -	Shore-10850-F-Q 24-May-04 duplicate of Shore 10846-F-C	Shore-10847-F-C 24-May-04 U3969R -	Shore-10848-F-Q 24-May-04 duplicate of Shore 10847-F-C	Shore-11171-F-C 04-Jun-04 U4269R -
Analytical Results									
Parameter	Site Specific	Units							
Extractable Hydrocarbons	1000	mg/kg	940	640	840	580	510	900	<200
	1000	mg/kg	370	490	510	430	410	990	<200
LEPH ^c	1000	mg/kg	-	640	-	-	-	-	-
HEPH ^c	1000	mg/kg	-	490	-	-	-	-	-

Concentration exceeds the Soil Quality Remediation Objective (SQRO) for the Polaris Mine Site

Bold

Notes:

"<" = Less than analytical method detection limit

"-" = Analysis not conducted, or no guideline.

a) The approved Soil Quality Remediation Objectives (SQROs) for the Polaris Mine Site are based on the Yukon Territorial Contaminated Sites

Regulation for Parkland (PL) Land Use

b) Field screening results are measured based on a 'dry-headspace' method using a combustible gas meter calibrated to a hexane standard.

c) Light Extractable Petroleum Hydrocarbons (LEPH) and Heavy Extractable Petroleum Hydrocarbons (HEPH) are determined by subtracting

Polycyclic Aromatic Hydrocarbons (PAH) from Extractable Petroleum Hydrocarbons (EPH), therefore use of the EPH remediation objective

is conservative.

Table NS-26-1. North Shore Remediation Confirmation Soil Samples - Hydrocarbons

Parameter	Polaris Mine Soil Quality Remediation Objectives ^a	Location Sample ID Date Sampled ALS File Number Field Screen (ppm) ^b	North Shore							
			Shore-11757-F-C 08-Jul-04 U5615R	Shore-11824-F-C 30-Jun-04 U5353R	Shore-11824-F-C 30-Jun-04 U5353R	Shore-11748-F-Q 30-Jun-04 duplicate of Shore- 11824-F-C	Shore-11825-F-C 30-Jun-04 U5353R	Shore-11909-F-C 06-Jul-04 U5597R	Shore-11938-F-C 07-Jul-04 U5615R	Shore-12144-F-D 12-Aug-04 U7283
			-	5	5	11824-F-C	5	-	-	-
			Analytical Results							
Extractable Hydrocarbons		Units								
	1000	mg/kg	220	<200	220	<200	270	<200	210	230
	1000	mg/kg	<200	340	400	350	450	290	370	410
	1000	mg/kg	220	-	-	-	-	-	-	-
LEPH ^c	1000	mg/kg	<200	-	-	-	-	-	-	-

Bold Concentration exceeds the Soil Quality Remediation Objective (SQRO) for the Polaris Mine Site.

Notes:

- ^a < " = Less than analytical method detection limit
- ^b " = Analysis not conducted, or no guideline.

a) The approved Soil Quality Remediation Objectives (SQROs) for the Polaris Mine Site are based on the Yukon Territorial Contaminated Sites Regulation for Parkland (PL) Land Use

b) Field screening results are measured based on a 'dry headspace' method using a combustible gas meter calibrated to a hexane standard

c) Light Extractable Petroleum Hydrocarbons (LEPH) and Heavy Extractable Petroleum Hydrocarbons (HEPH) are determined by subtracting Polycyclic Aromatic Hydrocarbons (PAH) from Extractable Petroleum Hydrocarbons (EPH); therefore use of the EPH remediation objective is conservative.

Table NS-26-1. North Shore Remediation Confirmation Soil Samples – Hydrocarbons

Parameter	Polaris Mine Soil Quality Remediation Objectives ^a	Location Sample ID Date Sampled ALS File Number Field Screen (ppm) ^b	North Shore					
			Shore-12156-F-C 12-Aug-04 U7283	Shore-12159-F-Q 12-Aug-04 duplicate of Shore 12156-F-C	Shore-12157-F-C 12-Aug-04 U7283	Shore-12161-F-Q 12-Aug-04 duplicate of Shore 12157-F-C	Shore-12158-F-C 12-Aug-04 U7283	Shore-12160-F-Q 12-Aug-04 duplicate of Shore 12158-F-C
Parameter	Site Specific	Units	Analytical Results					
Extractable Hydrocarbons	1000	mg/kg	<200	<200	<200	290	<200	<200
	1000	mg/kg	<200	240	<200	520	240	<200
	1000	mg/kg	<200	-	<200	-	<200	-
	1000	mg/kg	<200	-	<200	-	240	-

Concentration exceeds the Soil Quality Remediation Objective (SQRO) for the Polaris Mine Site.

Notes:

- ^a "<" = Less than analytical method detection limit
- ^b "-" = Analysis not conducted, or no guideline.

- a) The approved Soil Quality Remediation Objectives (SQROs) for the Polaris Mine Site are based on the Yukon Territorial Contaminated Sites Regulation for Parkland (PL) Land Use.
- b) Field screening results are measured based on a 'dry headspace' method using a combustible gas meter calibrated to a hexane standard.
- c) Light Extractable Petroleum Hydrocarbons (LEPH) and Heavy Extractable Petroleum Hydrocarbons (HEPH) are determined by subtracting Polycyclic Aromatic Hydrocarbons (PAH) from Extractable Petroleum Hydrocarbons (EPH), therefore use of the EPH remediation objective is conservative.

Table NS-26-2. North Shore Remediation Confirmation Soil Samples - Metals

Parameter	Site Specific CEQG (PL) ^c	Location ALS Sample ID Date Sampled ALS File Number Field Screen Pb (ppm) ^b Field Screen Zn (ppm) ^b	North Shore						
			Shore-510-F-C 28-Oct-03 T6195 -	Shore-10000-F-D 28-Oct-03 U3083 294 1867	Shore-10001-F-D 28-Oct-03 U3083 370 1869	Shore-10042-F-D 13-Apr-04 U2687 27 296	Shore-10051-F-C 13-Apr-04 U2687 -	Shore-10062-F-C 13-Apr-04 U2687 -	Shore-10073-F-D 15-Apr-04 U2688R 27 207
			Analytical Results						
pH		Units							
Total Metals									
Antimony	-	20 ^d mg/kg							
T-Sb		mg/kg							
Arsenic	-	12 mg/kg							
T-As		mg/kg							
Barium	-	500 mg/kg							
T-Ba		mg/kg							
Beryllium	-	4 ^d mg/kg							
T-Be		mg/kg							
Cadmium	-	10 mg/kg							
T-Cd		mg/kg							
Chromium	-	64 mg/kg							
T-Cr		mg/kg							
Cobalt	-	50 ^d mg/kg							
T-Co		mg/kg							
Copper	-	63 mg/kg							
T-Cu		mg/kg							
Lead	2000	mg/kg	1090	720	1250	150	<150	<150	<150
T-Pb		mg/kg							
Mercury	-	7 mg/kg							
T-Hg		mg/kg							
Molybdenum	-	10 ^d mg/kg							
T-Mo		mg/kg							
Nickel	-	50 mg/kg							
T-Ni		mg/kg							
Selenium	-	1 mg/kg							
T-Se		mg/kg							
Silver	-	20 ^d mg/kg							
T-Ag		mg/kg							
Tin	-	50 ^d mg/kg							
T-Sn		mg/kg							
Vanadium	-	130 mg/kg							
T-V		mg/kg							
Zinc	10000	mg/kg	8850	2850	1730	31.1	18.6	150	9.2
T-Zn		mg/kg							

Bold Concentration greater than or equal to the Soil Quality Remediation Objective (SQRO) for the Polaris Mine Site.

Notes:

^a "C" = Less than analytical method detection limit.

^b "R" = Analysis not conducted, or no guideline.

a) The Soil Quality Remediation Objectives (SQROs) for the Polaris Mine Site are based on Canadian Council of Ministers of the Environment (CCME) standards and guidelines. The CCME provides criteria based on land use activities and applies the most stringent criteria based on site-specific receptors and exposure pathways.

b) Field screening results are measured using a Niton Xl 700 Series portable X-Ray Fluorescence (XRF) elemental analyser.

c) Canadian Environmental Quality Guidelines (CEQG) for Parkland (PL) Land Use. The site-specific factors used for determining the soil quality guidelines were: soil ingestion, soil contact and nutrient cycling.

d) Interim Remediation Criterion. Soil Quality Guidelines based on the CCME soil protocol have not yet been developed for a given parameter.

Table NS-26-2. North Shore Remediation Confirmation Soil Samples – Metals

Parameter	Site Specific CEQG (PL) ^c	Location		North Shore					
		ALS Sample ID Date Sampled ALS File Number Field Screen Pb (ppm) ^b Field Screen Zn (ppm) ^b	Units	Shore-10076-F-D	Shore-10079-F-D	Shore-10080-F-C	Shore-10081-F-C	Shore-10116-F-D	Shore-10131-F-C
				15-Apr-04 U2688R	15-Apr-04 U2688R	15-Apr-04 U2688R	15-Apr-04 U2688R	15-Apr-04 U2778R	20-Apr-04 U2778R
pH				24 150	28 163	- -	- -	137 1302	- -
Analytical Results									
Total Metals									
Antimony	-	20 ^d	mg/kg	-	-	-	-	-	-
As	-	12	mg/kg	-	-	-	-	-	-
Barium	-	500	mg/kg	-	-	-	-	-	-
Beryllium	-	4 ^d	mg/kg	-	-	-	-	-	-
Cadmium	-	10	mg/kg	-	-	-	-	-	-
Chromium	-	64	mg/kg	-	-	-	-	-	-
Cobalt	-	50 ^d	mg/kg	-	-	-	-	-	-
Copper	-	63	mg/kg	-	-	-	-	-	-
Lead	2000	-	mg/kg	<150	<150	<150	<150	<150	<150
Mercury	-	7	mg/kg	-	-	-	-	-	-
Molybdenum	-	10 ^d	mg/kg	-	-	-	-	-	-
Nickel	-	50	mg/kg	-	-	-	-	-	-
Selenium	-	1	mg/kg	-	-	-	-	-	-
Silver	-	20 ^d	mg/kg	-	-	-	-	-	-
Tin	-	50 ^d	mg/kg	-	-	-	-	-	-
Vanadium	-	130	mg/kg	-	-	-	-	-	-
Zinc	10000	-	mg/kg	7.4	7.1	8.2	125	623	168

Bold Concentration greater than or equal to the Soil Quality Remediation Objective (SQRO) for the Polaris Mine Site.

Notes:

^a < = Less than analytical method detection limit.

^b - = Analysis not conducted, or no guideline.

- a) The Soil Quality Remediation Objectives (SQROs) for the Polaris Mine Site are based on Canadian Council of Ministers of the Environment (CCME) standards and guidelines. The CCME provides criteria based on land use activities and applies the most stringent criteria based on site-specific receptors and exposure pathways.
- b) Field screening results are measured using a Nuon Xi 700 Series portable X-Ray Fluorescence (XRF) elemental analyser.
- c) Canadian Environmental Quality Guidelines (CEQG) for Parkland (PL) Land Use. The site-specific factors used for determining the soil quality guidelines were: soil ingestion, soil contact and nutrient cycling.
- d) Interim Remediation Criterion. Soil Quality Guidelines based on the CCME soil protocol have not yet been developed for a given parameter.

Table NS-26-2. North Shore Remediation Confirmation Soil Samples - Metals

Parameter	Polaris Mine Soil Quality Remediation Objectives ^a	Site Specific CEQG (PL) ^c	Location		North Shore											
			ALS Sample ID	Date Sampled	Shore-10360-F-C	Shore-10582-F-C	Shore-10583-F-C	Shore-10584-F-C	Shore-10585-F-C	Shore-10586-F-C	Shore-10587-F-C					
			ALS File Number	Field Screen Pb (ppm) ^b	Field Screen Zn (ppm) ^b	Units	04-May-04 U3240	10-May-04 U3476r	10-May-04 U3476r	10-May-04 U3476r	10-May-04 U3476r	10-May-04 U3476r				
pH																
Total Metals																
Antimony	-	20 ^d	T-Sb		mg/kg											
Arsenic	-	12	T-As		mg/kg											
Barium	-	500	T-Ba		mg/kg											
Beryllium	-	4 ^d	T-Be		mg/kg											
Cadmium	-	10	T-Cd		mg/kg											
Chromium	-	64	T-Cr		mg/kg											
Cobalt	-	50 ^d	T-Co		mg/kg											
Copper	-	63	T-Cu		mg/kg											
Lead	2000	-	T-Pb		mg/kg	150	<100	980	100	440	850	1500	563			
Mercury	-	7	T-Hg		mg/kg											
Molybdenum	-	10 ^d	T-Mo		mg/kg											
Nickel	-	50	T-Ni		mg/kg											
Selenium	-	1	T-Se		mg/kg											
Silver	-	20 ^d	T-Ag		mg/kg											
Tin	-	50 ^d	T-Sn		mg/kg											
Vanadium	-	130	T-V		mg/kg											
Zinc	10000	-	T-Zn		mg/kg	1230	81.7	5310	75.4	850	1500	563				

Concentration greater than or equal to the Soil Quality Remediation Objective (SQRO) for the Polaris Mine Site.

Notes:

^a < = Less than analytical method detection limit.

^b * = Analysis not conducted, or no guideline.

a) The Soil Quality Remediation Objectives (SQROs) for the Polaris Mine Site are based on Canadian Council of Ministers of the Environment (CCME) standards and guidelines. The CCME provides criteria based on land use activities and applies the most stringent criteria based on site-specific receptors and exposure pathways.

b) Field screening results are measured using a Niton Xl 700 Series portable X-Ray Fluorescence (XRF) elemental analyser.

c) Canadian Environmental Quality Guidelines (CEQGs) for Parkland (PL) Land Use. The site-specific factors used for determining the soil quality guidelines were: soil ingestion, soil contact and nutrient cycling.

d) Interim Remediation Criterion. Soil Quality Guidelines based on the CCME soil protocol have not yet been developed for a given parameter

Table NS-26-2. North Shore Remediation Confirmation Soil Samples - Metals

Parameter	Site Specific Remediation Objectives ^a	CEQG (PL) ^c	Location		North Shore											
			ALS Sample ID Date Sampled	ALS File Number	Shore-10848-F-Q	Shore-1022-S-D	Shore-11171-F-C	Shore-11477-F-C	Shore-11757-F-C	Shore-11823-F-C	Shore-11824-F-C					
			Field Screen Pb (ppm) ^b	Field Screen Zn (ppm) ^b	Units	24-May-04 U3969r duplicate of Shore-10847-F-C	09-May-04 U4269r	04-Jun-04 U4269r	15-Jun-04 U4781	08-Jul-04 U5615R	30-Jun-04 U5353r	30-Jun-04 U5353r				
pH																
Total Metals																
Antimony	-	20 ^d	T-Sb													
Arsenic	-	12	T-As													
Barium	-	500	T-Ba													
Beryllium	-	4 ^d	T-Be													
Cadmium	-	10	T-Cd													
Chromium	-	64	T-Cr													
Cobalt	-	50 ^d	T-Co													
Copper	-	63	T-Cu													
Lead	2000	-	T-Pb													
Mercury	-	7	T-Hg													
Molybdenum	-	10 ^d	T-Mo													
Nickel	-	50	T-Ni													
Selenium	-	1	T-Se													
Silver	-	20 ^d	T-Ag													
Tin	-	50 ^d	T-Sn													
Vanadium	-	130	T-V													
Zinc	10000	-	T-Zn													

Bold Concentration greater than or equal to the Soil Quality Remediation Objective (SQRO) for the Polaris Mine Site.

Notes:

^a < = Less than analytical method detection limit.

^b < = Analysis not conducted, or no guideline.

a) The Soil Quality Remediation Objectives (SQROs) for the Polaris Mine Site are based on Canadian Council of Ministers of the Environment (CCME) standards and guidelines. The CCME provides criteria based on land use activities and applies the most stringent criteria based on site-specific receptors and exposure pathways.

b) Field screening results are measured using a Niton Xi 700 Series portable X-Ray Fluorescence (XRF) elemental analyser.

c) Canadian Environmental Quality Guidelines (CEQGs) for Parkland (PL) Land Use. The site-specific factors used for determining the soil quality guidelines were: soil ingestion, soil contact and nutrient cycling.

d) Interim Remediation Criterion. Soil Quality Guidelines based on the CCME soil protocol have not yet been developed for a given parameter.

Table NS-26-2. North Shore Remediation Confirmation Soil Samples - Metals

Parameter	Site Specific CEQG (PL) ^c	Location		North Shore							
		ALS Sample ID Date Sampled ALS File Number	Field Screen Pb (ppm) ^b Field Screen Zn (ppm) ^b	Shore-11748-F-Q 30-Jun-04 U5353r duplicate of Shore-11824-F-C	Shore-11825-F-C 30-Jun-04 U5353r	Shore-11852-W-C 02-Jul-04 U5597r	Shore-11853-W-C 02-Jul-04 U5597r	Shore-11909-F-C 06-Jul-04 U5597r	Shore-11938-F-C 07-Jul-04 U5615r	Shore-12140-F-D 12-Aug-04 U7283	
Units											
pH											
Total Metals											
Antimony	-	20 ^d	mg/kg	-	-	-	-	-	-	-	-
Arsenic	-	12	mg/kg	-	-	-	-	-	-	-	-
Barium	-	500	mg/kg	-	-	-	-	-	-	-	-
Beryllium	-	4 ^d	mg/kg	-	-	-	-	-	-	-	-
Cadmium	-	10	mg/kg	-	-	-	-	-	-	-	-
Chromium	-	64	mg/kg	-	-	-	-	-	-	-	-
Cobalt	-	50 ^d	mg/kg	-	-	-	-	-	-	-	-
Copper	-	63	mg/kg	-	-	-	-	-	-	-	-
Lead	2000	-	mg/kg	243	<50	<100	<100	<100	<100	140	410
Mercury	-	7	mg/kg	-	-	-	-	-	-	-	-
Molybdenum	-	10 ^d	mg/kg	-	-	-	-	-	-	-	-
Nickel	-	50	mg/kg	-	-	-	-	-	-	-	-
Selenium	-	1	mg/kg	-	-	-	-	-	-	-	-
Silver	-	20 ^d	mg/kg	-	-	-	-	-	-	-	-
Tin	-	50 ^d	mg/kg	-	-	-	-	-	-	-	-
Vanadium	-	130	mg/kg	-	-	-	-	-	-	-	-
Zinc	10000	-	mg/kg	557	106	241	228	82.3	447	-	1330

Bold Concentration greater than or equal to the Soil Quality Remediation Objective (SQRO) for the Polaris Mine Site.

Notes:

^a < " - Less than analytical method detection limit.

^b " - Analysis not conducted, or no guideline.

a) The Soil Quality Remediation Objectives (SQROs) for the Polaris Mine Site are based on Canadian Council of Ministers of the Environment (CCME) standards and guidelines. The CCME provides criteria based on land use activities and applies the most stringent criteria based on site-specific receptors and exposure pathways.

b) Field screening results are measured using a Naon Xh 700 Series portable X-ray Fluorescence (XRF) elemental analyser.

c) Canadian Environmental Quality Guidelines (CEQG) for Parkland (PL) Land Use. The site-specific factors used for determining the soil quality guidelines were: soil ingestion, soil contact and nutrient cycling.

d) Interim Remediation Criterion. Soil Quality Guidelines based on the CCME soil protocol have not yet been developed for a given parameter.

Table NS-26-2. North Shore Remediation Confirmation Soil Samples - Metals

Parameter	Polaris Mine Soil Quality Remediation Objectives ^a	Site Specific CEQG (PL) ^c	Location		North Shore					
			ALS Sample ID Date Sampled ALS File Number Field Screen Pb (ppm) ^b Field Screen Zn (ppm) ^b	Units	Shore-12144-F-D 12-Aug-04 U7283	Shore-12156-F-C 12-Aug-04 U7283	Shore-12159-F-Q 12-Aug-04 U7283 duplicate of Shore-12156-F-C	Shore-12157-F-C 12-Aug-04 U7283	Shore-12158-F-C 12-Aug-04 U7283	
pH										
Total Metals										
Antimony		20 ^d		mg/kg			8.5	9	8.82	8.68
T-Sb							<20	<20	<20	<20
Arsenic	-	12		mg/kg			<10	<10	<10	<10
T-As										
Barium	-	500		mg/kg			719	643	499	727
T-Ba										
Beryllium		4 ^d		mg/kg			<1	<1	<1	<1
T-Be							2	<1	<1	1
Cadmium		10		mg/kg			10	9	9	10
T-Cd										
Chromium		64		mg/kg			<4	<4	<4	<4
T-Cr							14	14	13	13
Cobalt		50 ^d		mg/kg			270	<100	<100	170
T-Co							0.065	0.059	0.062	0.065
Copper		63		mg/kg						
T-Cu										
Pb		2000		mg/kg			470			
T-Pb										
Lead	-	-								
T-Pb										
Mercury		7		mg/kg						
T-Hg										
Molybdenum		10 ^d		mg/kg			<8	<8	<8	<8
T-Mo							20	15	16	18
Nickel		50		mg/kg			<9	<9	<7	<10
T-Ni										
Selenium		1		mg/kg			<4	<4	<4	<4
T-Se										
Silver		20 ^d		mg/kg			<10	<10	<10	<10
T-Ag							50	51	51	57
Tin		50 ^d		mg/kg						
T-Sn										
Vanadium		130		mg/kg			1840	83.5	64.3	223
T-V										
Zinc		10000		mg/kg						
T-Zn										

Concentration greater than or equal to the Soil Quality Remediation Objective (SQRO) for the Polaris Mine Site.

Bold

Notes:

^a - Less than analytical method detection limit.

^b - Analysis not conducted, or no guideline.

a) The Soil Quality Remediation Objectives (SQROs) for the Polaris Mine Site are based on Canadian Council of Ministers of the Environment (CCME) standards and guidelines. The CCME provides criteria based on land use activities and applies the most stringent criteria based on site-specific receptors and exposure pathways.

b) Field screening results are measured using a Niton Xl 700 Series portable X-Ray Fluorescence (XRF) elemental analyser.

c) Canadian Environmental Quality Guidelines (CEQG) for Parkland (PL) Land Use. The site-specific factors used for determining the soil quality guidelines were: soil ingestion, soil contact and nutrient cycling.

d) Interim Remediation Criterion. Soil Quality Guidelines based on the CCME soil protocol have not yet been developed for a given parameter.

Table NS-26-3. North Shore Remediation Confirmation Soil Samples - Polycyclic Aromatic Hydrocarbons

Parameter	Polaris Mine Soil Quality Remediation Objectives ^a	Location ALS Sample ID Date Sampled ALS File Number Field Screen (ppm) ^b	North Shore			
			Shore-10079-F-D 15/04/2004 U2688R	Shore-10080-F-C 4/15/2004 U2688R	Shore-10800-F-D 24-May-04 U3969r	Shore-10846-F-C 5/24/2004 U3969r
			45	-	70	-
Analytical Results						
Polycyclic Aromatic Hydrocarbons		Units				
Acenaphthene	-	mg/kg	<0.04	<0.04	<0.06	<0.04
Acenaphthylene	-	mg/kg	<0.05	<0.05	<0.05	<0.05
Anthracene		mg/kg	<0.05	<0.05	<0.05	<0.05
Benzo(a)anthracene	1 ^d	mg/kg	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene	0.7	mg/kg	<0.05	<0.05	<0.05	<0.05
Benzo(b)fluoranthene	1 ^d	mg/kg	<0.05	<0.05	<0.05	<0.05
Benzo(g,h,i)perylene	-	mg/kg	<0.05	<0.05	<0.05	<0.05
Benzo(k)fluoranthene	1 ^d	mg/kg	<0.05	<0.05	<0.05	<0.05
Chrysene	-	mg/kg	<0.05	<0.05	<0.05	<0.05
Dibenz(a,h)anthracene	1 ^d	mg/kg	<0.05	<0.05	<0.05	<0.05
Fluoranthene	-	mg/kg	<0.05	<0.05	<0.05	<0.05
Fluorene	-	mg/kg	<0.05	<0.05	<0.06	<0.05
Indeno(1,2,3-c,d)pyrene	1 ^d	mg/kg	<0.05	<0.05	<0.05	<0.05
Naphthalene	0.6	mg/kg	0.106	0.332	<0.08	0.188
Phenanthrene	5 ^d	mg/kg	<0.05	<0.05	<0.05	<0.05
Pyrene	10 ^d	mg/kg	<0.05	<0.05	<0.05	<0.05

Bold

Concentration greater than or equal to the Soil Quality Remediation Objective (SQRO) for the Polaris Mine Site.

Notes:

^a "<" = Less than analytical method detection limit.

^b "-" = Analysis not conducted, or no guideline.

- a) The Soil Quality Remediation Objectives (SQROs) for the Polaris Mine Site are based on Canadian Council of Ministers of the Environment (CCME) standards and guidelines. The CCME provides criteria based on land use activities and applies the most stringent criteria based on site-specific receptors and exposure pathways.
- b) Field screening results are measured based on a 'dry headspace' method using a combustible gas meter calibrated to a hexane standard.
- c) Canadian Environmental Quality Guidelines (CEQG) for Parkland (PL) Land Use. The site-specific factors used for determining the soil quality guidelines were: soil ingestion, soil contact and nutrient cycling.
- d) Interim Remediation Criterion. Soil Quality Guidelines based on the CCME soil protocol have not yet been developed for a given parameter.

Table NS-26-3. North Shore Remediation Confirmation Soil Samples - Polycyclic Aromatic Hydrocarbons

Parameter	Polaris Mine Soil Quality Remediation Objectives ^a CEQG (PL) ^c	Location ALS Sample ID Date Sampled ALS File Number Field Screen (ppm) ^b Units	North Shore		
			Shore-12156-F-C 12-Aug-04 U7283	Shore-12157-F-C 12-Aug-04 U7283	Shore-12158-F-C 12-Aug-04 U7283
Analytical Results					
Polycyclic Aromatic Hydrocarbons					
Acenaphthene	-	mg/kg	<0.04	<0.04	<0.04
Acenaphthylene	-	mg/kg	<0.05	<0.05	<0.05
Anthracene	-	mg/kg	<0.05	<0.05	<0.05
Benzo(a)anthracene	1 ^d	mg/kg	<0.05	<0.05	<0.05
Benzo(a)pyrene	0.7	mg/kg	<0.05	<0.05	<0.05
Benzo(b)fluoranthene	1 ^d	mg/kg	<0.05	<0.05	<0.05
Benzo(g,h,i)perylene	-	mg/kg	<0.05	<0.05	<0.05
Benzo(k)fluoranthene	1 ^d	mg/kg	<0.05	<0.05	<0.05
Chrysene	-	mg/kg	<0.05	<0.05	<0.05
Dibenz(a,h)anthracene	1 ^d	mg/kg	<0.05	<0.05	<0.05
Fluoranthene	-	mg/kg	<0.05	<0.05	<0.05
Fluorene	-	mg/kg	<0.05	<0.05	<0.05
Indeno(1,2,3,-c,d)pyrene	1 ^d	mg/kg	<0.05	<0.05	<0.05
Naphthalene	0.6	mg/kg	<0.05	<0.05	<0.05
Phenanthrene	5 ^d	mg/kg	<0.05	<0.05	<0.05
Pyrene	10 ^d	mg/kg	<0.05	<0.05	<0.05

Concentration greater than or equal to the Soil Quality Remediation Objective (SQRO) for the Polaris Mine Site.

Bold

Notes:

^a - Less than analytical method detection limit.

^b - Analysis not conducted, or no guideline.

- a) The Soil Quality Remediation Objectives (SQROs) for the Polaris Mine Site are based on Canadian Council of Ministers of the Environment (CCME) standards and guidelines. The CCME provides criteria based on land use activities and applies the most stringent criteria based on site-specific receptors and exposure pathways.
- b) Field screening results are measured based on a 'dry headspace' method using a combustible gas meter calibrated to a hexane standard.
- c) Canadian Environmental Quality Guidelines (CEQGs) for Parkland (PL) Land Use. The site-specific factors used for determining the soil quality guidelines were: soil ingestion, soil contact and nutrient cycling.
- d) Interim Remediation Criterion. Soil Quality Guidelines based on the CCME soil protocol have not yet been developed for a given parameter.

Table NS-26-4. North Shore Quality Assurance and Quality Control Remediation Soil Samples - Hydrocarbons

Location				North Shore						
Parameter	Sample ID	Duplicate ID	PQL	Analytical Results						
				MDL	Units	Shore-10133-F-C Shore-10136-F-Q	Shore-10846-F-C Shore-10850-F-Q	Shore-10847-F-C Shore-10848-F-Q	Shore-11824-F-C Shore-11748-F-Q	Shore-12156-F-C Shore-12159-F-Q
Analytical Laboratory Duplicates										
Extractable Hydrocarbons										
EPH C ₁₀ -C ₁₉	Sample Result		1000							
	Duplicate Result	200	1000	<200	640	580	220	<200	<200	<200
	RpD	%		<200	840	510	<200	<200	<200	290
EPH C ₁₉ -C ₃₂	Sample Result	200	1000							
	Duplicate Result	200	1000	<200	490	430	400	<200	<200	<200
	RpD	%		<200	510	410	350	240	520	
Analytical Laboratory Replicates										
Extractable Hydrocarbons										
EPH C ₁₀ -C ₁₉	Sample Result	200	1000							
	Duplicate Result	200	1000							
	RpD	%								
EPH C ₁₉ -C ₃₂	Sample Result	200	1000							
	Duplicate Result	200	1000							
	RpD	%								

Bold

RpD Value is greater than or equal to 50% and the concentrations of both samples are greater than the PQL.

Notes

na RpD value is not applicable because one or both results are less than the PQL.

RpD Relative Percent Difference = (Difference/Average) * 100.

PQL Practical Quantitation Limit = 5 * Method Detection Limit (MDL).

MDL Method Detection Limit of analysis

Table NS-26-4. North Shore Quality Assurance and Quality Control Remediation Soil Samples - Hydrocarbons

Location				North Shore			
Sample ID		Duplicate ID		Shore-10081-F-C	Shore-10131-F-C	Shore-11938-F-C	Shore-12158-F-C
QC#		QC#		QC# 383542	QC# 383928	QC# 395282	QC# 402626
Parameter		Units	MDL	Analytical Results			
Analytical Laboratory Duplicates							
Extractable Hydrocarbons							
EPH C ₁₀ -C ₁₉		mg/kg	200				
Sample Result		mg/kg	1000				
Duplicate Result		mg/kg	200				
RpD		%					
EPH C ₁₉ -C ₃₂							
Sample Result		mg/kg	200				
Duplicate Result		mg/kg	200				
RpD		%					
Analytical Laboratory Replicates							
Extractable Hydrocarbons							
EPH C ₁₀ -C ₁₉		mg/kg	200				
Sample Result		mg/kg	1000				
Duplicate Result		mg/kg	200				
RpD		%					
EPH C ₁₉ -C ₃₂							
Sample Result		mg/kg	200				
Duplicate Result		mg/kg	200				
RpD		%					

Bold

RpD Value is greater than or equal to 50% and the concentrations of both samples are greater than the PQL.

Notes:

na RpD value is not applicable because one or both results are less than the PQL.

RpD Relative Percent Difference = (Difference/Average) * 100.

PQL Practical Quantitation Limit = 5 * Method Detection Limit (MDL).

MDL Method Detection Limit of analysis.

Table NS-26-5. North Shore Quality Assurance and Quality Control Remediation Soil Samples - Metals

Location				North Shore											
Parameter	Units	MDL	PQL	Shore-10081-F-C QC# 383542	Shore-10101-F-D	Shore-10102-F-D	Shore-10103-F-D	Shore-10104-F-D	Shore-10105-F-D	Shore-10106-F-D	Shore-10131-F-C QC# 383928	Shore-10133-F-C	Shore-10136-F-C		
On Site Field Screening Duplicates															
Lead (Pb)				-	30	10	17	22	31	25	-	-	-		
Sample Result	mg/kg	70	350	-	139	317	32	609	695	719	-	-	-		
Duplicate Result	mg/kg	70	350	-	na	na	na	na	na	na	-	-	-		
RpD	%														
Zinc (Zn)				-	136	213	118	103	178	150	-	-	-		
Sample Result	mg/kg	150	750	-	537	1455	398	1577	2329	4199	-	-	-		
Duplicate Result	mg/kg	150	750	-	na	na	na	na	na	na	-	-	-		
RpD	%														
Analytical Laboratory Duplicates															
Lead (Pb)				-	-	-	-	-	-	-	-	<150	<150		
Sample Result	mg/kg	100	500	-	-	-	-	-	-	-	-	-	-		
Duplicate Result	mg/kg	100	500	-	-	-	-	-	-	-	-	-	-		
RpD	%											na	na		
Zinc (Zn)				-	-	-	-	-	-	-	-	677	479		
Sample Result	mg/kg	3	15	-	-	-	-	-	-	-	-	-	-		
Duplicate Result	mg/kg	3	15	-	-	-	-	-	-	-	-	-	-		
RpD	%											34%	34%		
Analytical Laboratory Replicates															
Lead (Pb)				<150	-	-	-	-	-	-	<150	-	-		
Sample Result	mg/kg	100	500	<150	-	-	-	-	-	-	<150	-	-		
Duplicate Result	mg/kg	100	500	na	-	-	-	-	-	-	na	-	-		
RpD	%														
Zinc (Zn)				125	-	-	-	-	-	-	168	-	-		
Sample Result	mg/kg	3	15	97	-	-	-	-	-	-	129	-	-		
Duplicate Result	mg/kg	3	15	25%	-	-	-	-	-	-	26%	-	-		
RpD	%														

Notes:
 na RptD value is not applicable because one or both results are less than the PQL.
 RpD Relative Percent Difference = (Difference/Average) * 100.
 PQL Practical Quantitation Limit - 5 * Method Detection Limit (MDL).
 MDL Method Detection Limit of analysis.

Legend:
 Bold Value is greater than or equal to 50% and the concentrations of both samples are greater than the PQL.

Table NS-26-5. North Shore Quality Assurance and Quality Control Remediation Soil Samples - Metals

Location				North Shore									
Sample ID		MDL	PQL	Shore-10147-W-D	Shore-10585-F-C	Shore-10779-F-D	Shore-10846-F-C	Shore-10850-F-Q	Shore-10847-F-C	Shore-11220-F-C	Shore-11317-F-D	Shore-11477-F-C	Shore-11821-F-C
Duplicate ID		MDL	PQL	Shore-10148-W-Q	QC# 386677	QC# 390728	QC# 390728	QC# 390728	QC# 390728	QC# 389862	QC# 394459	QC# 391813	QC# 394458
Parameter	Units	MDL	PQL	Analytical Results									
On Site Field Screening Duplicates													
Lead (Pb)	mg/kg	70	350	267	-	-	-	-	-	-	-	-	-
	Duplicate Result	mg/kg	70	272	-	-	-	-	-	-	-	-	-
	RpD	%		na									
Zinc (Zn)	mg/kg	150	750	1508	-	-	-	-	-	-	-	-	-
	Duplicate Result	mg/kg	150	1519	-	-	-	-	-	-	-	-	-
	RpD	%		1%									
Analytical Laboratory Duplicates													
Lead (Pb)	mg/kg	100	500	-	-	680	<100	<100	<100	340	<100	-	228
	Duplicate Result	mg/kg	100	-	-	790	<100	<100	<100	340	<100	-	314
	RpD	%				15%	na	na	na	0%	na		32%
Zinc (Zn)	mg/kg	3	15	-	-	1190	153	153	159	1010	241	-	616
	Duplicate Result	mg/kg	3	-	-	1110	460	460	186	925	547	-	653
	RpD	%				7%	100%	100%	16%	9%	78%		6%
Analytical Laboratory Replicates													
Lead (Pb)	mg/kg	100	500	-	340	-	-	-	580	-	-	121	-
	Duplicate Result	mg/kg	100	-	310	-	-	-	510	-	-	91	-
	RpD	%			na				13%			na	
Zinc (Zn)	mg/kg	3	15	-	850	-	-	-	430	-	-	214	-
	Duplicate Result	mg/kg	3	-	827	-	-	-	410	-	-	209	-
	RpD	%			3%				5%			2%	

RpD Value is greater than or equal to 50% and the concentrations of both samples are greater than the PQL.

Notes:

na RpD value is not applicable because one or both results are less than the PQL.

RpD Relative Percent Difference = (Difference/Average) * 100.

PQL Practical Quantitation Limit = 5 * Method Detection Limit (MDL).

MDL Method Detection Limit of analysis.