APPENDIX B

Photographs

Photo 1: Roberts Bay mine site viewed from the east (Earth Tech, 2006)

Photo 2: Looking west across the Roberts Bay mine site (Earth Tech, 2006)

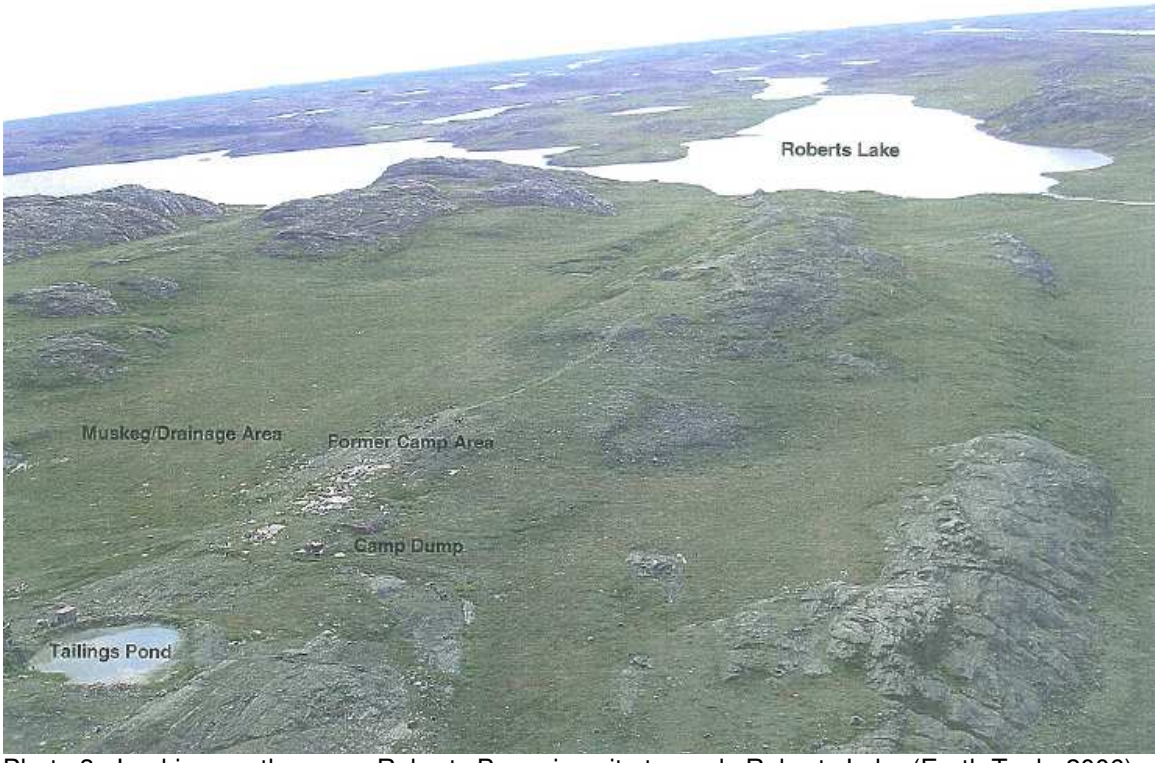

Photo 3: Looking south across Roberts Bay mine site towards Roberts Lake (Earth Tech, 2006)

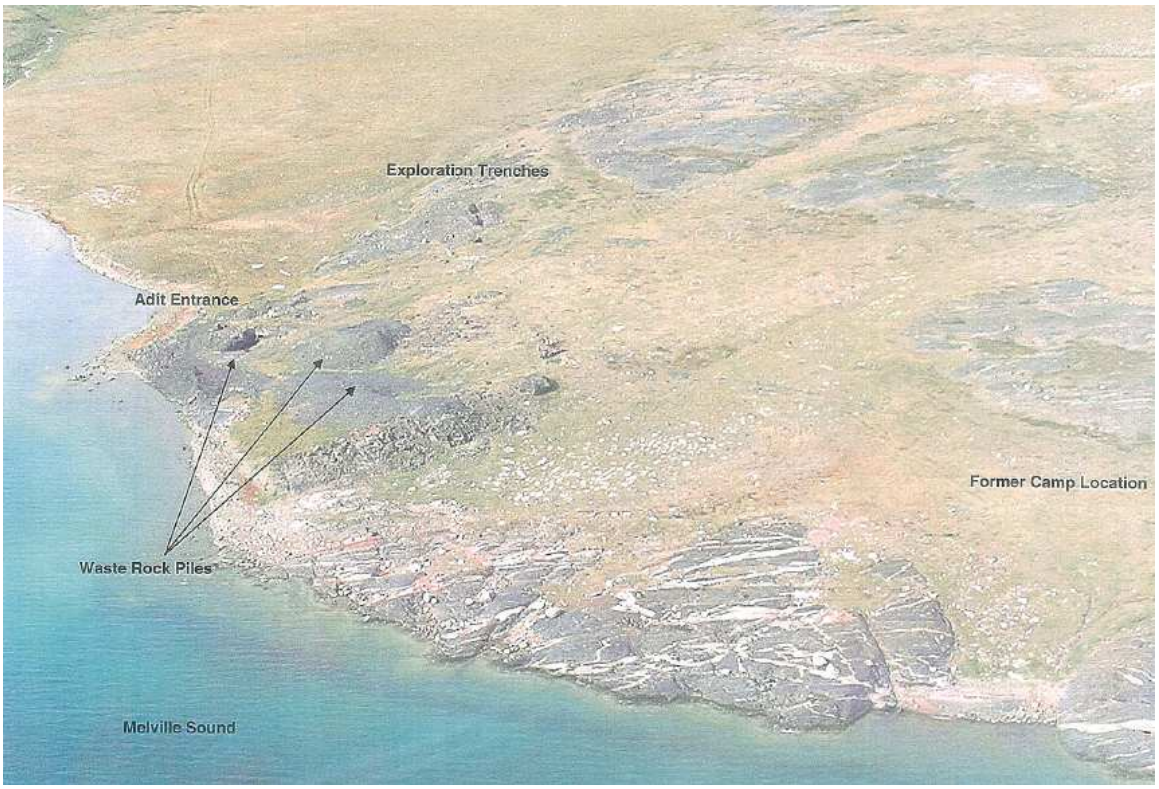

Photo 4: Ida bay mine site, viewed from the east (Earth Tech, 2006)

Photo 5: Aerial view of the Roberts Bay mine site from the south with Roberts Lake in the forefront. (AMEC 2006a)

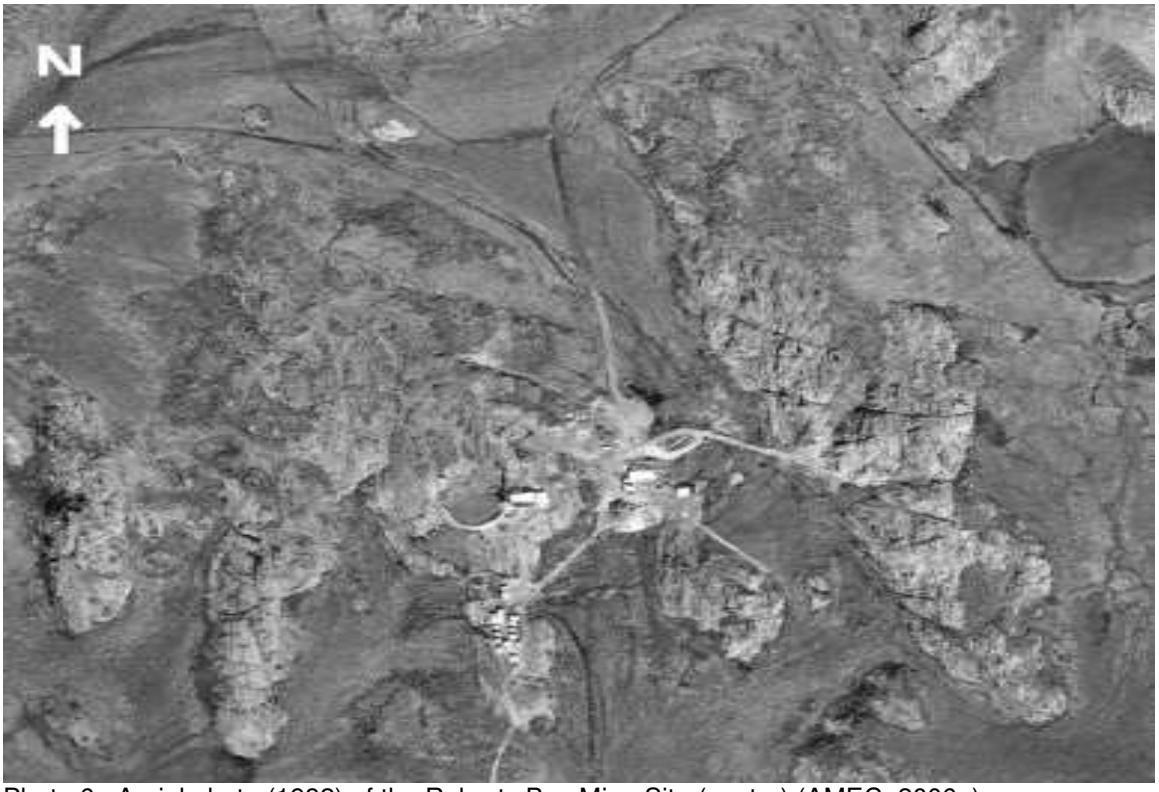

Photo 6: Aerial photo (1982) of the Roberts Bay Mine Site (centre) (AMEC, 2006a).

APPENDIX C

Minutes from Community Meetings

Roberts Bay and Ida Bay Abandoned Sites Remediation Project
Community Meetings in Cambridge Bay (August 30 & 31, 2006)

Meetings:

1. Community meeting at Luke Novoligak Community Hall, Cambridge Bay
2. Meeting with the Ekaluktutiak Hunters and Trappers Organization (HTO), Cambridge Bay
3. Meeting with Teachers and grades 11 and 12 Students of Kiilinik High School, Cambridge Bay

Presentation of the Remediation Action Plan (RAP)
Luke Novoligak Community Hall, Cambridge Bay (August 30, 2006)

Coordinated by:

- **Dele Morakinyo, Indian and Northern Affairs Canada (INAC)**
- **Jared Buchko, Public Works and Government Services Canada (PWGSC)**

Number of community members in attendance: 14:

Questions (Q) and Answers (A):

Q: Mining operations ceased on the two sites since 1975, why have INAC not done the clean up of the sites before now?

A: After cessation of mining operations in 1975, Roberts Mining Company carried out further explorations at the sites during the 1980's and 1990's. The land leases were only transferred to INAC in 1997. Following the transfer, INAC commenced the processes for the clean-up of the sites.

Q: How much will the remediation of the sites cost?

A: We will not know the cost of the remediation until after the completion of the final RAP. The final RAP will suggest the works to be done and the scopes. The outcomes of this community meeting will be used to produce the final RAP.

Q: How will you ensure that the contractor hires local workers? Southern contractors who promise to hire local hands do not live up to their promise.

A: INAC procurement procedure has incentives for contractors that employ local employees. We have bonus for a contractor that exceeds guaranteed Inuit employment levels and penalty for the contractor that employs below the guaranteed Inuit employment level.

Q: Are there cancer causing chemicals at the sites e.g. Asbestos?

A: There is limited amount of Asbestos Containing Materials (ACMs) at the site. The ACMs will be packaged into appropriate boxes and shipped to a suitable disposal facility in Alberta. Other hazardous materials will be treated similarly

Q (a suggestion): INAC should consult with other groups: HTO, Elders and the grade 11 and 12 students of Kiilinik High School, Cambridge Bay.

A: All groups mentioned are represented at this meeting. However, INAC is willing to make further consultations as required. Mr. Attima Hadlari, the President of the HTO scheduled a meeting with HTO Executives for 10:30 AM on August 31. Hellen with News North, offered to arrange a meeting with the teachers and the grades 11 and 12 students of Kiilinik High School, Cambridge Bay for August 31 (11:00 AM). Meeting with the Elders could be held during a future visit

Q: Why will you leave the wastes in place? Why not haul it to Cambridge Bay or to a landfill facility in the south?

A: Metals and Petroleum contaminated soils, and hazardous wastes will be shipped south to appropriate disposal facility in Alberta. Non-hazardous wastes are currently being planned to be landfilled and capped properly on-site. The final RAP will conclude on these approaches.

Q: Will there be useable items on site? Can the communities of Beechimo and Bathurst be allowed to pick these items prior to the commencement of remediation on the sites?

A: There may still be some reusable items. INAC will look into contacting the close-by communities to pick reusable non-hazardous materials before remediation.

Meeting with the Ekaluktutiak Hunters and Trappers Organization (HTO), Cambridge Bay (August 31, 2006)

Coordinated By:

- **Dele Morakinyo, INAC**
- **Jared Buchko, PWGSC**

Number of HTO members: 4:

Q: Will there be any benefits to the communities

A: Yes. The site clean-up will be beneficial to the communities in several ways: People's health; Safety (during hunting and other expeditions on the field) and clean environment

Q: What about employment of local people during remediation?

A: The contractor will employ local employees during the site remediation. We have bonus for a contractor that exceeds guaranteed Inuit employment levels and penalty for the contractor that employs below the guaranteed Inuit employment level.

Q: What kind of jobs will be available?

A: Workers, labourers, equipment operators etc. Also guards and bear monitors. The exact number and types will not be known until after contract award.

Q: When is the project going to start and when will it end?

A: We will mobilize to Hope Bay landing site during the summer of 2007 and we will demobilize from the landing site during the summer of 2009. Most construction activities at the sites will take place during winter 2008 and summer 2008.

Q: How do you hope to get Bear Monitors?
A: The contractor may contact HTO to request for Bear Monitors during clean-up activities.

Q: The knowledge of the Elders will be very vital to the success of the clean-up; Is INAC planning to meet with the Elders before the project starts?

A: INAC/PWGSC will try to arrange a meeting with the Elders during our next visit.

Q: Are there other sites that INAC is cleaning up in the North?

A: Yes. INAC is working on other sites across the North. Our handbook "the big picture" summarising the sites and the activities on the sites will be mailed out to the Manager, HTO

Q: The Industry destroyed the sites why did they not clean in up? Is this going to be the trend for future industrial operations in the region?

A: The situation is now different. Now the polluters pay for clean-up. Environmental impacts of operations and the plan to mitigate or remedy the impacts are determined prior to operations.

Meeting with Teachers and grades 11 and 12 Students
of Kiilinik High School, Cambridge Bay

Coordinated By:

- **Dele Morakinyo, INAC**
- **Jared Buchko, PWGSC**

Number of Students and Teachers: 22

Q: What does INAC do? Why is INAC relevant to the Northern Communities?

A: INAC is concerned with Indian Affairs and Northern Development. Contaminated Sites Clean-up is one of the very many programs INAC undertakes to better the lives of Indians and Northerners.

Q: Why is INAC carrying out the clean up of the sites?

A: To ensure the good health and safety of the people of the surrounding communities and ensure clean environment.

Q: What is the project schedule?

A: We will mobilize to Hope Bay landing site during the summer of 2007 and we will demobilize from the landing site during the summer of 2009. Most construction activities at the sites will take place during winter 2008 and summer 2008.

Q: What employment opportunities are there, particularly for the grade 12 students?

A: Workers, labourers, equipment operators etc. Also guards and bear monitors. The contractor decides on the workforce required and the exact number and types will not be known until after contract award.

Q: What advice will you give to the students on how to become Environmental (Clean-up) professionals?

A: Work hard, be determined and pay attention to your science subjects.

APPENDIX D

Inventory of Abandoned Waste Material, Chemicals and Remaining Infrastructure

The 1996 Vista Engineering survey/inspection yielded the following information as to the conditions at the Roberts Bay Mine Site. In terms of camp-building infrastructure, all buildings were/are wood-framed, wood floored, and had/have partial plywood walls. Insulation is scattered in and amongst the buildings, there is scrap wood, tarp remnants, furniture, and 15 - 205L fuel drums scattered about. Buildings observed include:

- 10 tent frames
- Outhouse:
    - Wood frame
    - Porcelain toilet
    - Below is a 205L drum, ¾ full of sewage
- Shed:
    - Plywood roof
    - Wired for electricity
    - 4 rolls of fiberglass insulation attached to tarpaper
    - 6 large burlap bag bundles
- Kitchen:
    - Collapsing
    - Linoleum covered floor
- Washroom:
    - Linoleum covered floor
    - Hot water heater (x2)
    - 3 sinks
    - Water tank
    - Propane stove
    - Electric Fridge
- Dining Room:
    - Only floor remains
- Bunkhouse (x3):
    - Poor condition
- Bunkhouse:
    - Only floor remains
- Bunkhouse:
    - Collapsed
    - 3 Oil furnaces adjacent
- Bunkhouse:
    - Nearly collapsed
    - Scattered insulation
    - Metal cot

Other infrastructure buildings are:

- Mill:
    - Stable, steel framed
    - Ball-mill on skids
    - 7 floatation cells
    - Collapsed electrical panels
    - Dry-type transformer

    - Metal storage cabinet, empty
    - 6 – 205L drums with processing chemicals inside
    - 2 – 105L drums, ½ full of xanthanate
    - 1 – full, 105L xanthanate drum
    - 1 – drum, 1/10 full of "Pine Oil"
    - 1 – drum, ¾ full of "Dowfroth 1012 Floatation Frother"
    - 1 – 205L drum with release valve, xanthanate solution
- Assay lab:
    - Steel framed, sound
    - Partial plywood walls
    - Kiln
    - 2 – shaker tables
    - Crucibles
    - Ore samples
    - Burlap sacks
    - 6 – bags, "High Calcium Sno-White Process Agent"
    - 20L cardboard drum of lime
    - 2 – 3L glass jar of HCl Vermiculite in a plastic garbage bag
    - 3L broken glass jar of Nitric acid, stored in vermiculite in a plastic bag
    - 3L jar of Nitric acid, ½ full
    - 20L pail of lead shavings
    - 20L pail of carbonate
- Adit Vestibule:
    - Steel-frame
    - Tarp-covered (partially intact as of 1997)
    - Vestibule covers entrance to the flooded adit
- Shop:
    - Stable, steel framed
    - 2 – charged fire-extinguishers
    - 6 – lead-acid batteries
    - 2 – 20L drums containing stained vermiculite
    - 10L leaking pail of tar
    - 20L barrel containing "Essolube" lubricating oil
    - 6 – broken bags of high-calcium processing agent
    - ~500m of detonation cord
    - Misc. scrap metal and hardware
- Vent Shack:
    - Wood-framed, stable but beginning to deteriorate
    - Covers vent
- Pump House:
    - Wood framed
    - Partially submerged in a small pond
    - 100m rubber hose and 40m electrical wire stretching towards the mine site
- Hoppers:
    - #1 – Fine Ore Hopper:
        - Steel framed

        - Plywood walls
        - Concrete foundation
        - Empties onto conveyor belt that leads to the mill
    - #2 – Coarse Ore Hopper:
        - Steel framed
        - Plywood walls
        - Surrounded by a waste rock pile, which has been graded to form a ramp to dump ore.
        - Cone crusher is adjacent
    - #3:
        - Steel framed
        - In rubbish pile

Other debris and hazards include:

- Artifacts, Metal Debris, and Solid Waste:
    - Empty 205L drums
    - Metal Pipes
    - Rubber Hose
    - Wood
    - Insulation
    - Disseminated metal debris
    - 10 empty pressurized tanks, with holes in the sides
    - 10 – 205L drums with spent iron balls inside
    - 1 defined disposal site:
        - 10 tractor tires
        - 100m of electrical wire
        - 100m of 5cm rubber hose
        - Rubber fuel bladder
        - Scrap metal
- Shaft:
    - Rock-filled
    - Stability and depth unknown
- Waste Rock:
    - Unlikely to produce acid because neutralizing potential exceeds acid producing potential
- Exploratory Trenches:
    - 5
    - Harmless
- Tailings:
    - Lined with polyethylene
    - Surrounded by a 1m high aggregate berm
    - 1m deep near outlet pipe
    - Exceeds CCME Remediation Criteria for Soil with respect to:
        - Arsenic
        - Barium

        - Nickel
        - Thallium
- Petroleum Products:
    - 190 – 250L drums, empty (100 at the disposal site, rest scattered)
    - 20L full barrel of “Essolube” (in shop)
    - 2 empty fuel bladders, surrounded by a plastic lined aggregate berm
- Miscellaneous:
    - 2 Xanthanate drums:
        - Open
        - High in salts:
            - Potassium
            - Sulfate
            - Chloride
            - Carbonate
        - Alkaline
        - Conductive

APPENDIX E

Standardized Effects Assessment Codes

Mitigation Success

High Probability	Low or Not mitigable
Medium	Unknown

Magnitude of Effect (after all mitigation measures have been applied)

Low:	*specific group or habitat; localized effect; <1 generation effected, within natural variability.*
Medium:	*portion of population or habitat; 1 or 2 generations effected; rapid and unpredictable change; temporarily outside range of natural variability.*
High:	*effecting whole stock, population or habitat; outside the range of natural variation.*

Geographic Extent

< 1 km^2	101 – 1,000 km^2
1 – 10 km^2	1,001 – 10,000 km^2
11 – 100 km^2	>10,000 km^2

Duration

< 1 month

1 - 12 months

>1 year

Frequency

< 10 events/year

> 10 events/year

continuous

Reversibility

Reversible

Irreversible

Residual Effects Rating

Significant:	adverse environmental effect
Non-significant:	non-significant adverse effect
Positive	positive environmental effect

Probability of Occurrence (professional judgment on significant adverse effects)

Low	High
Medium	Unknown

Level of Confidence (professional judgment on significant adverse effects)

Low
Medium
High

APPENDIX F

Environmental Effects Assessment Summary Matrix Table for the Proposed Remediation of the Roberts Bay and Ida Bay Mine Sites

VEC	Project Phase	Potential Effects	Positive or Negative Effect	Mitigation Success	Significance Criteria for Adverse Effects				Residual Effects Rating	Adverse Residual Effects	
					Effect Magnitude	Geographic Extent	Duration and Frequency	Reversibility		Probability of Occurrence	Level of Confidence
Air Quality and Noise	Mobilization	Dust/exhaust emissions and noise from traffic and construction equipment.	Negative	High	Low	< 10 km^2	> 1 year >10 events/year	Reversible	Not Significant	n/a	High
	Remediation	Dust/exhaust emissions and noise from traffic and construction equipment.	Negative	High	Low	< 10 km^2	> 1 year >10 events/year	Reversible	Not Significant	n/a	High
		Removal of the contaminated soil from the environment will reduce the risk of effects on air quality	Positive	-	-	-	-	-	Positive	n/a	High
	Demobilization	Dust/exhaust emissions and noise from traffic and construction equipment.	Negative	High	Low	< 10 km^2	< 1 month <10 events/year	Reversible	Not Significant	n/a	High
Soil Quality	Mobilization	Disturbance of sensitive soils in tundra enviornment	Negative	High	Low	< 10 km^2	> 1 year >10 events/year	Reversible	Not Significant	n/a	High
		Construction/routine operations of small tent camp at Roberts Bay mine site	Negative	High	Low	< 10 km^2	> 1 year >10 events/year	Reversible	Not Significant	n/a	High
		Accidents – fuel/chemical spills or leaks from ATVs or equipment being moved may contaminate soils	Negative	High	Low to High	< 10 km^2	> 1 year unknown	Reversible	Not Significant	n/a	High
	Remediation	Disturbance of sensitive soils in tundra enviornment	Negative	High	Low	< 10 km^2	> 1 year >10 events/year	Reversible	Not Significant	n/a	High
		Removal of existing contaminated soils and hazardous wastes and placing in tailinigs pond or packaging and mobilizing off-site	Positive	-	-	-	-	-	Positive	n/a	High
		Accidents – fuel/chemical spills or leaks from ATVs or equipment may contaminate soil	Negative	High	Low to High	< 10 km^2	> 1 year unknown	Reversible	Not Significant	n/a	High
		Accidents - spills of hazardous materials being removed from site may contaminate soils	Negative	High	Low to High	< 10 km^2	> 1 year unknown	Reversible	Not Significant	n/a	High
	Demobilization	Disturbance of sensitive soils in tundra enviornment	Negative	High	Low	< 10 km^2	< 1 month <10 events/year	Reversible	Not Significant	n/a	High
		Accidents – fuel/chemical spills or leaks from ATVs or equipment being moved may contaminate soils	Negative	High	Low to High	< 10 km^2	< 1 month unknown	Reversible	Not Significant	n/a	High
		Accidents - spills of hazardous materials being removed from site may contaminate soils	Negative	High	Low to High	< 10 km^2	< 1 month unknown	Reversible	Not Significant	n/a	High
Terrain, Geology, Hydrogeology and Vegetation	Mobilization	Disurbance of sensitive terrain features or vegetation during mobilization	Negative	High	Low	< 10 km^2	> 1 year >10 events/year	Reversible	Not Significant	n/a	High
		Construction/routine operations of small tent camp at Roberts Bay mine site	Negative	High	Low	< 10 km^2	> 1 year >10 events/year	Reversible	Not Significant	n/a	High
		Accidents – fuel/chemical spills or leaks from ATVs or equipment being moved	Negative	High	Low to High	< 10 km^2	> 1 year unknown	Reversible	Not Significant	n/a	High
	Remediation	Disurbance of sensitive terrain features and vegetation during remediation activities by equipment	Negative	High	Low	< 10 km^2	> 1 year >10 events/year	Reversible	Not Significant	n/a	High
		Removal of abondoned site infrastructure may disturb existing terrain/vegetation conditions	Negative	High	Low	< 10 km^2	> 1 year >10 events/year	Reversible	Not Significant	n/a	High
		Removal of existing contaminated soils will alter terrain and may degrade permafrost layer	Negative	High	Low	< 10 km^2	> 1 year >10 events/year	Reversible	Not Significant	n/a	High
		Removal of the contaminated soil and hazardous materials from the environment will reduce the risk of contamination of active layer water	Positive	-	-	-	-	-	Positive	n/a	High
		Regrading of site will improve drainage	Positive	-	-	-	-	-	Positive	n/a	High
		Accidents – fuel/chemical spills or leaks from ATVs or equipment	Negative	High	Low to High	< 10 km^2	> 1 year unknown	Reversible	Not Significant	n/a	High
	Demobilization	Disurbance of sensitive terrain features or vegetation during demobilization	Negative	High	Low	< 10 km^2	< 1 month <10 events/year	Reversible	Not Significant	n/a	High
		Accidents – fuel/chemical spills or leaks from ATVs or equipment being moved	Negative	High	Low to High	< 10 km^2	< 1 month unknown	Reversible	Not Significant	n/a	High
		Accidents - spills of hazardous materials being removed from site	Negative	High	Low to High	< 10 km^2	< 1 monthr unknown	Reversible	Not Significant	n/a	High

VEC	Project Phase	Potential Effects	Positive or Negative Effect	Mitigation Success	Significance Criteria for Adverse Effects				Residual Effects Rating	Adverse Residual Effects	
					Effect Magnitude	Geographic Extent	Duration and Frequency	Reversibility		Probability of Occurrence	Level of Confidence
Wildlife and Wildlife Habitat	Mobilization	Disruption of migratory bird habitat during the mobilization of equpment to the site	Negative	High	Low	< 10 km^2	> 1 year >10 events/year	Reversible	Not Significant	n/a	High
		Disruption to habitat - general noise from routine camp operations	Negative	High	Low	< 10 km^2	> 1 year >10 events/year	Reversible	Not Significant	n/a	High
		Disruption to habitat - attraction of wildlife to food wastes related to camp	Negative	High	Low	< 10 km^2	> 1 year >10 events/year	Reversible	Not Significant	n/a	High
		Wildlife mortalities by traffic	Negative	High	Low to High	< 10 km^2	> 1 year >10 events/year	Reversible	Not Significant	n/a	High
		Accidents – fuel/chemical spills or leaks from ATVs or equipment may contaminate habitat	Negative	High	Low to High	< 10 km^2	> 1 year unknown	Reversible	Not Significant	n/a	High
	Remediation	Disruption of wildlife and migratory bird habitat during remediation activities	Negative	High	Low	< 10 km^2	> 1 year >10 events/year	Reversible	Not Significant	n/a	High
		Wildlife mortalities during remediation activities by heavy equipment	Negative	High	Low	< 10 km^2	> 1 year >10 events/year	Reversible	Not Significant	n/a	High
		Accidents – fuel/chemical spills or leaks from ATVs or equipment may contaminate habitat	Negative	High	Low to High	< 10 km^2	> 1 year unknown	Reversible	Not Significant	n/a	High
	Demobilization	Disruption of migratory bird habitat during the mobilization of equpment to the site	Negative	High	Low	< 10 km^2	< 1 month <10 events/year	Reversible	Not Significant	n/a	High
		Wildlife mortalities by traffic	Negative	High	Low to High	< 10 km^2	< 1 month <10 events/year	Reversible	Not Significant	n/a	High
		Accidents – fuel/chemical spills or leaks from ATVs or equipment may contaminate habitat	Negative	High	Low to High	< 10 km^2	< 1 month unknown	Reversible	Not Significant	n/a	High
		Accidents - spills of hazardous materials being removed from site may contaminate habitat	Negative	High	Low to High	< 10 km^2	< 1 month unknown	Reversible	Not Significant	n/a	High
Hydrology and Water Quality	Mobilization	Sediment in runoff from moving traffic/equipment through watercourses	Negative	High	Low	< 10 km^2	> 1 year >10 events/year	Reversible	Not Significant	n/a	High
		Accidents – fuel/chemical spills or leaks from ATVs or equipment being moved may contaminate receiving waters	Negative	High	Low to High	< 10 km^2	> 1 year unknown	Reversible	Not Significant	n/a	High
	Remediation	Increased erosion and sediment in runoff from removing vegetation and disturbing soils near receiving waters	Negative	High	Low	< 10 km^2	> 1 year >10 events/year	Reversible	Not Significant	n/a	High
		Release of contaminated materials (soils/hazoardous wastes) into aquatic enviornment during remediation activities	Negative	High	Low to High	< 10 km^2	> 1 year >10 events/year	Reversible	Not Significant	n/a	High
		Concrete-affected wastewater.	Negative	High	Low	< 10 km^2	> 1 year >10 events/year	Reversible	Not Significant	n/a	High
		Regrading of site will improve drainage	Positive	-	-	-	-	-	Positive	n/a	High
		Accidents – fuel/chemical spills or leaks from ATVs or equipment may contaminate receiving waters	Negative	High	Low to High	< 10 km^2	> 1 year unknown	Reversible	Not Significant	n/a	High
	Demobilization	Sediment in runoff from moving traffic/equipment through watercourses	Negative	High	Low	< 10 km^2	< 1 month <10 events/year	Reversible	Not Significant	n/a	High
		Accidents - spills of hazardous materials being removed from site	Negative	High	Low to High	< 10 km^2	< 1 month unknown	Reversible	Not Significant	n/a	High
		Accidents – fuel/chemical spills or leaks from ATVs or equipment	Negative	High	Low to High	< 10 km^2	< 1 month unknown	Reversible	Not Significant	n/a	High

VEC	Project Phase	Potential Effects	Positive or Negative Effect	Mitigation Success	Significance Criteria for Adverse Effects				Residual Effects Rating	Adverse Residual Effects	
					Effect Magnitude	Geographic Extent	Duration and Frequency	Reversibility		Probability of Occurrence	Level of Confidence
Aquatic Resources	Mobilization	Sediment in runoff from moving traffic/equipment through watercourses	Negative	High	Low	< 10 km^2	> 1 year >10 events/year	Reversible	Not Significant	n/a	High
		Accidents – fuel/chemical spills or leaks from ATVs or equipment being moved may contaminate receiving waters	Negative	High	Low to High	< 10 km^2	> 1 year unknown	Reversible	Not Significant	n/a	High
	Remediation	Increased erosion and sediment in runoff from removing vegetation and disturbing soils near receiving waters	Negative	High	Low	< 10 km^2	> 1 year >10 events/year	Reversible	Not Significant	n/a	High
		Release of contaminated materials (soils/hazoardous wastes) into aquatic enviornment during remediation activities and mobilization off-site	Negative	High	Low to High	< 10 km^2	> 1 year >10 events/year	Reversible	Not Significant	n/a	High
		Concrete-affected wastewater	Negative	High	Low	< 10 km^2	> 1 year <10 events/year	Reversible	Not Significant	n/a	High
		Removal of contaminated soil and other hazardous materials from areas close to water bodies reduces the risk of exposure to aquatic receptors	Positive	-	-	-	-	-	Positive	n/a	High
		Accidents – fuel/chemical spills or leaks from ATVs or equipment may contaminate receiving waters	Negative	High	Low to High	< 10 km^2	> 1 year unknown	Reversible	Not Significant	n/a	High
	Demobilization	Sediment in runoff from moving traffic/equipment through watercourses	Negative	High	Low	< 10 km^2	< 1 month <10 events/year	Reversible	Not Significant	n/a	High
		Accidents - spills of hazardous materials being removed from site	Negative	High	Low to High	< 10 km^2	< 1 month unknown	Reversible	Not Significant	n/a	High
		Accidents – fuel/chemical spills or leaks from ATVs or equipment	Negative	High	Low to High	< 10 km^2	< 1 month unknown	Reversible	Not Significant	n/a	High
Health and Safety	Mobilization	Vehicle accidents during mobilization	Negative	High	Low to High	< 10 km^2	> 1 year >10 events/year	Reversible	Not Significant	n/a	High
		Injuries associated with working in a northern climate	Negative	High	Low to High	< 10 km^2	> 1 year >10 events/year	Reversible	Not Significant	n/a	High
		Exposure to contaminates idenfied on-site.	Negative	High	Low to High	< 10 km^2	> 1 year >10 events/year	Reversible	Not Significant	n/a	High
	Remediation	Vehicle/equipment accidents during remediation	Negative	High	Low to High	< 10 km^2	> 1 year >10 events/year	Reversible	Not Significant	n/a	High
		Injuries associated with working in a northern climate	Negative	High	Low to High	< 10 km^2	> 1 year >10 events/year	Reversible	Not Significant	n/a	High
		Exposure to contaminates idenfied on-site.	Negative	High	Low to High	< 10 km^2	> 1 year >10 events/year	Reversible	Not Significant	n/a	High
	Demobilization	Vehicle accidents during demobilization	Negative	High	Low to High	< 10 km^2	< 1 month <10 events/year	Reversible	Not Significant	n/a	High
Archaeology and Heritage Resources	Mobilization	Disturbance or destruction of previously identified archaeological sites	Negative	High	Low to High	< 10 km^2	> 1 year >10 events/year	Irreversible	Not Significant	n/a	High
		Disturbance or destruction of new/unanticipated archaeological sites	Negative	High	Low to High	< 10 km^2	> 1 year >10 events/year	Irreversible	Not Significant	n/a	High
		Discovery and documentation of unanticipated archaeological sites	Positive	-	-	-	-	-	Positive	n/a	High
	Remediation	Disturbance or destruction of previously identified archaeological sites	Negative	High	Low to High	< 10 km^2	> 1 year >10 events/year	Irreversible	Not Significant	n/a	High
		Disturbance or destruction of new/unanticipated archaeological sites	Negative	High	Low to High	< 10 km^2	> 1 year >10 events/year	Irreversible	Not Significant	n/a	High
		Discovery and documentation of unanticipated archaeological sites	Positive	-	-	-	-	-	Positive	n/a	High
	Demobilization	Disturbance or destruction of previously identified archaeological sites	Negative	High	Low to High	< 10 km^2	< 1 month <10 events/year	Irreversible	Not Significant	n/a	High

VEC	Project Phase	Potential Effects	Positive or Negative Effect	Mitigation Success	Significance Criteria for Adverse Effects				Residual Effects Rating	Adverse Residual Effects	
					Effect Magnitude	Geographic Extent	Duration and Frequency	Reversibility		Probability of Occurrence	Level of Confidence
		Disturbance or destruction of new/unanticipated archaeological sites	Negative	High	Low to High	< 10 km^2	< 1 month <10 events/year	Irreversible	Not Significant	n/a	High
		Discovery and documentation of unanticipated archaeological sites	Positive	-	-	-	-	-	Positive	n/a	High
Land Use	Mobilization	Disruption to seasonal hunting in the area due to the operation of ATV between the mine sites and the presence of project workers	Negative	High	Low	< 10 km^2	> 1 year >10 events/year	Reversible	Not Significant	n/a	High
		Accidents – fuel/chemical spills or leaks from ATVs or equipment being moved	Negative	High	Low	< 10 km^2	> 1 year >10 events/year	Reversible	Not Significant	n/a	High
	Remediation	Disruption to seasonal hunting in the area due to the operation of ATV between the mine sites and the presence of project workers	Negative	High	Low	< 10 km^2	> 1 year >10 events/year	Reversible	Not Significant	n/a	High
		Accidents – fuel/chemical spills or leaks from ATVs, equipment or hazardous wastes.	Negative	High	Low to High	< 10 km^2	> 1 year unknown	Reversible	Not Significant	n/a	High
	Demobilization	Disruption to seasonal hunting in the area due to the operation of ATV between the mine sites and the presence of project workers	Negative	High	Low	< 10 km^2	< 1 month <10 events/year	Reversible	Not Significant	n/a	High
		Accidents – fuel/chemical spills or leaks from ATVs or equipment being moved	Negative	High	Low	< 10 km^2	< 1 month unknown	Reversible	Not Significant	n/a	High
Aesthetics	Mobilization	Construction of temporary camp	Negative	High	Low	< 10 km^2	> 1 year >10 events/year	Reversible	Not Significant	n/a	High
		Presence of ATVs and equipment	Negative	High	Low	< 10 km^2	> 1 year >10 events/year	Reversible	Not Significant	n/a	High
	Remediation	Presence of ATVs and equipment	Negative	High	Low	< 10 km^2	> 1 year >10 events/year	Reversible	Not Significant	n/a	High
		Removal of historic anthropogenic features and recontouring of remediated areas to blend into the natural landscape.	Positive	-	-	-	-	-	Positive	n/a	High
	Demobilization	Presence of ATVs and equipment	Negative	High	Low	< 10 km^2	< 1 month <10 events/year	Reversible	Not Significant	n/a	High
Socio-economic Conditions	Mobilization	Utilzation of local companies for mobilization of equipment to/from site	Positive	-	-	-	-	-	Positive	n/a	High
	Remediation	Utilzation of local companies for remediation activities	Positive						Positive		
	Demobilization	Utilzation of local companies for demobilization of equipment from site	Positive	-	-	-	-	-	Positive	n/a	High

"-" effects assessment not performed for positive effects
n/a - no residual effects therefore not applicable