



**ABANDONMENT AND RESTORATION PLAN  
HACKETT RIVER  
EXPLORATION PROJECT**

**XSTRATA ZINC CANADA**

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## INTRODUCTION

Xstrata Zinc Canada (Xstrata) is actively exploring the Hackett River area under valid land use, mineral tenure and water permits. These include:

Permit No.	Permit Name	Expiry	Issuing Agency
Surface lease 76F16-1-4	Hackett River Camp	2017-03-17	AANDC
N2010C0015	Exploration activities	2012-10-31	AANDC
KTL304C010	Hackett River	2012-03-17	KIA
KTL304C002	Wishbone	2012-03-16	KIA
2BE-HAK0915	Hackett River Camp	2015-12-31	NWB
KTL111C009	Hackett River	2012-05-04	KIA

*Table 1: List of Licenses and Permits issued for Hackett River Project*

Under the terms and conditions of KIA Land Use permits and the NWB Water License, Xstrata is obligated to rehabilitate the areas affected by activities.

Xstrata will implement this A&R Plan and will continue to look for opportunities to minimize or eliminate negative impacts to the environment as a result of its activities, products and services at the Hackett River Project.

## Xstrata Zinc Sustainable Development Policy

As a diversified and metallurgical company, Xstrata Zinc recognizes that our operations may have impact on the communities where we operate.

We are therefore committed to sustainable development by integrating economic, environmental and social responsibility aspects in our governance. This commitment is based upon the following principles:

- Implementation and maintenance of ethical business practices; uphold fundamental human rights and respect the traditional rights of local communities.
- Prevention of environmental degradation, occupational injuries and diseases.
- Continuous improvement through the assessment, establishment, control and management of SD objectives and targets and the allocation of appropriate resources to achieve them.
- Compliance with legislation as well as adopting the requirement of other applicable standards, and exceeding them where reasonably practical.

- Open and honest engagement with relevant stakeholders to consider their opinions, suggestions, complaints and concerns regarding SD issues into account in our decision-making process, as well as managing responses in a positive way.

We address sustainability throughout our product life cycle and supply chain, and we expect our suppliers and partners to comply with Xstrata Zinc's Sustainable Development Policy and Framework.

## **Site Location and Description**

The Hackett River Project is located in the West Kitikmeot Region of Nunavut about 300 km South of Cambridge Bay, and 80 km south of Bathurst Inlet (Figure 1) at approximately 65° 55' North Latitude, 108° 30' West Longitude.

The Project lies within the Takijuk Lake Uplands eco-region, which covers the south central portion of the West Kitikmeot region. This area is made up of broad, sloping uplands, plateaus, and lowlands, along with the rugged ridges of the Bathurst Hills (WKRLUP, 2005). Much of the area is largely composed of un-vegetated rock outcrops and boulder fields. The landscape is characterized by higher elevations, which are moderated by open water during the late summer and early fall. The Project lies within the Bathurst Inlet-Burnside Watershed and the area is dotted by thousands of lakes, collected by streams or by one of the major rivers in the area (e.g., Burnside, Mara).

The Project lies within two geological provinces; the Slave Province and the Bear Province. The Slave Geological Province is underlain by granite and related gneisses, as well as by sedimentary and volcanic rocks (more than 2.5 billion years old). The Bear Geological Province contains mainly volcanic and sedimentary rocks ranging in age from about two billion years.

The mean annual temperature is approximately -10.5°C with a summer mean of 6°C and a winter mean of -26.5°C. The mean annual precipitation range is 200-300 mm (Environment Canada website). The region is characterized by long dark winters and short summers. The ground is covered in snow from October to June most years. Lakes are ice-covered from approximately October to June most years, with ice thickness reaching depths of 2.0 metres. The area is one of continuous permafrost, meaning the ground is permanently frozen throughout the year.

The Hackett River exploration project consists of a single exploration camp located on the southwest shore of Camp Lake (Figure 2) and 10 crown mineral leases (11,800 ha) and 238 crown mineral claims totaling 199,196 hectares.. The camp can support up to 90 people to directly support exploration activities involving surficial mapping, geophysical surveys, core logging, and diamond drilling. The exploration camp is located on Surface Lease 76F 16-1-4 which permits the presence of mineral exploration camp structures subject to certain terms and conditions.



Figure 1: Location of Hackett River Project



*Figure 2: Aerial View of Hackett River Camp, looking towards the northwest (July, 2011)*

## Site History

1956	Copper mineralization was discovered by Rio Tinto Exploration at Camp Lake. This showing was initially called the “A” Zone and is now more commonly known as the “Main Zone”.
1966	The precursor to Bathurst Inlet Mining Corporation acquired the property and carried out prospecting, geological mapping and geophysics. The first drilling was completed in 1969.
1969	Norsemines and Atlin-Yukon made discoveries of significant mineralization on adjacent ground. These companies and Bathurst Inlet Mining Corporation amalgamated as Bathurst Norsemines Limited.
1970 – 1975	Cominco Limited optioned the property and carried out airborne and ground geophysical surveys, geochemical sampling, geological mapping and diamond drilling. In 1970 an airborne electro-magnetic survey delineated a 30 km strike length of prospective stratigraphy. Subsequent groundwork led to the discovery of the East Cleaver Lake, Boot Lake and Finger Lake Zones.
1970 – 1979	In the 1970's, Noranda held several claim blocks, located to the north and west of the Hackett River leases. In 1977, Noranda conducted a reconnaissance mapping program over the whole northern portion of the Hackett River greenstone belt. Subsequent to this, selected areas were covered by an airborne survey flown at roughly 400m line spacing and favourable areas were staked. The following year, all of the properties were mapped and ground geophysics was conducted over specific areas. In 1979, drilling was completed on selected targets.
1970 - 1979	Additional work was conducted in the area to the south of D'Arcy Lake with the work

	<p>focused to the immediate south of D'Arcy Lake, in the north of the lake (to the southeast of Watson Lake), near Bikini Lake and near Terry Lake. In the 1970's this area was owned by Mid-North Exploration. The property was under option by Cominco which completed all work in the area at that time.</p> <p>Geophysics, mapping, sampling and drilling were completed in these areas. A total of 6 holes were drilled, one in the north of D'Arcy Lake, two to the south, five in the Bikini Lake area and one near Terry Lake.</p>
1986	Bathurst Norsemynes was consolidated and renamed Etruscan Enterprise Ltd.
1990 – 1991	<p>In the early 1990's Echo Bay was the operator in the area around D'Arcy Lake (see above work, from 1970 – 1979).</p> <p>Geophysics, mapping, sampling and drilling were completed in these areas. A total of 3 holes were drilled in the Bikini Lake area.</p>
1993-1994	Etruscan became operator of the Property, and carried out airborne and ground geophysical surveying as well as drilling. Emphasis was placed upon the Main and East Cleaver Zones.
1997 - 1998	Etruscan carried out a digital data compilation of geological, geophysical and drill data, and 300 line-kilometres of time-domain pulse electro-magnetic and gravity surveying over the area containing most of the known showings and drilling. Following Etruscan's work, the Property reverted to Teck Cominco, subject to a royalty payable to Etruscan.
2004	<p>Sabina Resources optioned the property from Teck Cominco, carried out 144 km of Max-Min geophysical surveying, and drilled 61 holes with an aggregate length of 15,179 m.</p> <p>The existing camp was established in about 1970 and the last time the camp was in active use prior to Sabina's use in 2004 was in 1998. The camp is subject to a new regulatory environment as a result of the creation of Nunavut in 1999. The previous 35+ years of exploration work resulted in an accumulation of various waste products at the camp site, minor quantities of debris at or near several drill sites and at an esker airstrip located south of camp. The bulk of the waste was located at the historic camp and at the esker airstrip. Virtually all of the historical waste and debris was cleaned up and transported to a dump in Yellowknife or, in the case of old fuel in drums, shipped to a recycling / product recovery location near Edmonton for processing. On-going reclamation efforts continue throughout the 2004 to 2006 period.</p>
2005	<p>Sabina exercises its options to earn 100% interest in the property. CMP declined to exercise its back-in rights and Sabina continue to fund the project.</p> <p>The drill program resumed in March 2005 and continued until July. In 2005, 44 holes with an aggregate length of 9,357 m were drilled on the Main, Boot Lake and East Cleaver Lake Zones. Upon completion of an additional \$5 million in exploration expenditures on the Property, Cominco Mining Partnership (CMP) declined to exercise its back-in rights and now holds a 2% NSR royalty.</p>
2006	The 2006 drill program included 52 new holes and one existing hole from the 2005 drill campaign was deepened. A total of 17,293 m of drilling were carried out during the campaign. Sabina changes name to Sabina Silver Corp.
2007	Preliminary economic assessment indicates a mine plan with average annual production of 324.7 million pounds zinc, 12.4 million ounces silver, 20.7 million pounds copper, 37.0 million pounds lead, and 17.2 thousand ounces of gold over a mine life of 13.6 years.
2007	Additional definition and exploration drilling, geotechnical drilling and testing, further metallurgical testing and optimization, and selected geophysical surveys were also completed. Work also on-site also included the initiation of baseline environmental data collection to support the preparation of an Environmental Impact Statement.

2008	<p>Additional definition and exploration drilling, geotechnical drilling and testing, and further metallurgical testing and optimization were completed. Work on-site also included limited baseline environmental data collection to support the preparation of an Environmental Impact Statement.</p> <p>A Project Description was submitted in January to the Nunavut Impact Review Board to initiate the environmental assessment and regulatory processes in Nunavut. By year end, the screening decision and scoping was completed and draft EIS Guidelines were under review.</p>
2009	<p>An additional 62 holes were drilled on the Hackett River property, with 14 more drilled on the Wishbone project (near D'Arcy Lake). The 76 holes drilled, totaled 14,570m. In late 2009, an updated Preliminary Economic Assessment ("PEA") was completed on the project, with indicated resources totalling 43.3 million tonnes grades of 4.65% zinc, 144 g/t silver, 0.42% copper, 0.64% lead and 0.30 g/t gold. An additional inferred resource totalling 14.6 million tonnes with grades of 4.46% zinc, 136 g/t silver, 0.31% copper, 0.57% lead and 0.31 g/t gold is also contained at Hackett River. Sabina Silver Corp becomes Sabina Gold and Silver Corp, to reflect diversification, after acquisition of Back River Properties.</p>
2010	<p>The main objectives of the work done in 2010 were to find higher grade copper/gold stringer mineralization, expand and improve the pit economics and identify new deposits. The 2010 work program included 78 holes, totalling 19,441m, with more than half concentrated on the Main and East Cleaver deposits. An additional 42 holes, and 8,105m was drilled on the Wishbone project.</p> <p>Beginning in 2010, Sabina Gold &amp; Silver began searching for a partner to help develop the Hackett River property.</p>
2011	<p>In June, 2011, it was announced that a deal had been reached with Xstrata Zinc Canada to take over the Hackett River property, as well as selected Wishbone claims. The deal was finalized in November, 2011, and Xstrata Zinc became the sole operator on the project.</p> <p>The 2011 program was two-fold. During the winter months, 42 drill holes, for 10,200m was drilled at Hackett River, while the summer program focused on drilling for gold targets, on Sabina's Wishbone claims. These results will be reported separately under the next Sabina revision to their AR plan. To date, 590 holes, totaling 116,216m have been drilled at Hackett River.</p>

*Table 2: Summary of Hackett River Camp History*

## Scope of Report

This A&R Plan has been written to meet requirements under NWB licences and KIA permits and applies to the Hackett River Camp and all associated mineral leases and claims. Subject to annual internal review and revision, it will remain applicable throughout the duration of the NWB license, or until a material change in the scope of the Project occurs.

The current revision of the A&R Plan has been completed as a result of the transfer of the Property to Xstrata and takes into consideration the likelihood of premature camp closure due to:



- Sudden drop in metal prices;
- Drop in resource grade to values lower than anticipated;
- Non compliance with legislative requirements;
- Natural disasters;
- Force majeure; and
- Changes in ownership/operation.

In these situations, this Plan provides the base strategy for anticipated tasks to restore the Hackett River Camp in an event where exploration activities cease either temporarily (short term) or permanently (long term). The Plan will be revised annually and updated with current information.

The A&R Plan presents a list of assets and infrastructure associated with the Hackett River Project, the anticipated tasks to close and restore the area at a “progressive”, “temporary” and “final” time scale, and an estimated liability cost for the final closure and reclamation of the area.

### **Schedule of Abandonment and Reclamation**

Xstrata intends to continue to complete progressive reclamation concurrent with exploration activities and includes cleanup of the camp, areas affected by historic exploration activities, and areas affected by Xstrata’s future exploration activities. This work is reported to KIA and NWB as part of the annual report.

For each exploration season, the closure of the Hackett River camp should take approximately 14 to 21 days to complete allowing for variable weather conditions. As exploration activities vary year to year and the end of the field season is difficult to predict months in advance, the temporary closure would likely commence as late as mid September each year and end no later than end of October.

Final abandonment of the Hackett River camp is difficult to predict when, or if, it would occur. For application purposes however, this report includes a list of activities and associated costs to close the Hackett River camp permanently. In this case, the assumption is that the land use will remain an exploration camp in compliance with the surface lease.

### *Infrastructure at Hackett River Camp*

Infrastructure at the Hackett River camp includes the following list of buildings, equipment, fuel storage, transportation corridors and drill locations for 2011.

	Qty	Item
Buildings	35	Sleeping quarters – 4 with office space, 5 are historical wooden buildings, 3 are new wooden cabins
	2	Core processing facilities (historic core storage/saw rooms/shipping area)
	1	Core logging facility, with attached office space
	1	Core storage area, in old metal building
	1	Kitchen and ablution/dry building (general camp)
	2	Ablution/dry buildings (drillers)
	2	Office buildings (camp wooden structure), geology in tent
	3	Shop buildings (contractor and Xstrata)
	2	Pacto buildings
	1	Medical/nursing station
	2	Recreation facilities, with TVs
	1	Solid waste laydown area
	2	Water intakes, 1 for camp use, 1 for core saw use
	2	Waste incinerator, 1 old small one, 1 CA 50 dual stage, forced air unit.
Equipment	1	Swamp buggy (Nodwell). New unit coming to site in 2012 for Major
	2	Cat skid steers, 1 277 and 1 277B multi terrain units. New unit coming in 2012
	2	Large gensets (175 kW and 60 kW). New 175 kW unit coming in 2012
	2	Small gensets (40 kW and 12 kW)
	5	Diamond drill rigs. Potential for 6 <sup>th</sup> rig for geotechnical and engineering work
	5	Boats and motors
	25	Snow machines (numbers change, but Xstrata and contractor machines), and toboggans and sleds.
	2	ATVs and trailer
Fuel Storage	2	Primary storage areas for drummed diesel and jet fuel. Includes multiple berms.
		Generator shack, Quonset hut
Transportation	1	Airstrip (natural unprepared esker)
	2	Helipads
	1	Jetty/floating dock

*Table 3: List of Infrastructure and Assets at Hackett River camp for 2012 (as of March 15, 2012)*

Note: In August 2011, a large Quonset hut was erected across the lake from the camp for storage of mobile equipment, and as a work space for equipment during the winter months. It is powered with the 12 kW generator mentioned above.

### *Progressive Reclamation*

Reclamation currently focuses on diamond drill site locations after completion of exploratory drilling. Each drill site is occupied by the drill rig approximately 2 to 14 days and a typical area affected is approximately 35 by 35 feet. The area includes the rig on a platform, sumps/collection tank, water supply and any geotextile fences constructed down slope from a new drill setup, if needed, to contain any spills of drill-generated sludge. Once the drill hole is completed, the diamond drill rig is dismantled to the main components using the drilling contractor procedure and secured with associated equipment and rods. The drill rig is moved by a dozer (winter drilling) or helicopter either to the next location or to designated storage areas on the property until the next drilling season. Diamond drill site restoration commences as soon as practical after completion of the hole, however, site clean-up of litter, debris and drill fluids commences immediately. Any waste is taken back to camp and disposed in a manner appropriate to the waste; any unused material, fuel and supplies are removed from the location and taken for use at the next drill site, or taken back to camp for storage or disposal.

Drill casing is pulled out of all holes drilled on ice, and the holes are cemented and plugged. Drill casing that were left at holes where significant mineralization was encountered were cut to ground level and capped. The cut portions are disposed of in an approved facility in Yellowknife or recycled as scrap metal. The collar locations of all drill holes are surveyed and recorded in exploration reports.

Drill core and core boxes are moved to the designated storage areas and properly secured.

All drill sites are inspected for spills and contamination and any noted are managed according to Hackett River Spill Contingency Plan. In the event that the site is snow covered when drilled, the site is visited the following season to ensure successful reclamation has occurred. All historical sites are checked each year from the air, and also on foot, if anything is visible from the helicopter.

### *Temporary Closure*

Temporary closure of the camp is intended for short-periods of time (typically seasonal) to ensure that the site remains in place in a safe and secure manner so that it is available to support future exploration activities.

In the event of a temporary camp closure due to winter or a change in the exploration schedule then the following activities are completed:

### **Buildings, Contents and Equipment**

All tents and buildings are secured by doors being screwed or wired shut and plywood installed to prevent them from opening. All stove pipes and tarps are inspected and secured against possible wind damage. All equipment, household furniture, kitchen equipment, recreational equipment and other mobile heavy equipment are winterized

and secured on-site. Any equipment not capable of withstanding the winter conditions are removed and stored in Yellowknife, Thunder Bay or Montreal. All perishable food is removed from camp, and distributed, while dry goods are stored in airtight sealed containers within a freezer in order to minimize its appeal to wildlife.

Water pumps, filtering systems, water lines and any other equipment associated with the water supply system is drained and winterized.

The wastewater system is drained with no greywater remaining in the discharge pipe. Solid waste is incinerated on-site.

Solid waste including metal scraps, drill rods, and non-burnable household or kitchen waste are stored in an appropriate marshalling area for backhaul to Yellowknife. The material is arranged in such a way that it can easily be removed from the property and disposal is appropriate to the material being removed, at an approved facility, metal recycler, or an approved designated landfill. Ash from the incinerator, and scrap metal from the drills and camp are stored in empty 205-L drums for backhaul and disposal.

The fuel supply for the incinerator is shut off using a series of valves. The fuel remains in a double-walled tank adjacent to the incinerator throughout the winter. The area is inspected for any petroleum spills or contamination and if any noted, response is outlined in the Hackett River Spill Contingency Plan; oil sorbent pads are immediately applied to absorb the spill of hydrocarbon to minimize the volume of soil impacted and any remaining contaminated soil is removed and stored in barrels for transportation to permitted disposal sites.

The generators are winterized, and the area inspected for petroleum spills or contamination; if any noted, the response is outlined in the Hackett River Spill Contingency Plan. Remaining waste fuel, oil and grease is stored in approved secondary containment storage containers and labeled for that usage and secured on-site for future use, or disposed in approved facility. The generators are winterized and the sheds secured for the winter. Electrical wire, plugs and sockets remain in their installed locations. All electrical cords, temporarily connected to a building or machinery, are unplugged, rolled and stored in a workshop. The batteries for the generator (and larger mobile equipment) are sent to Yellowknife for the winter for charging, and to allow for a full charge upon camp opening.

The 205L fuel barrels that supply each individual structure's heating system are secured on stands, and oil sorbent padding is wrapped around the bung, hose and fittings. Each fuel line is routed through a 5 gallon pail, and the low point on the fuel line is wrapped with oil sorbent pads to catch any leaks from the fittings at the bung. Stoves are all cleaned out, fuel conditioner applied and fuel barrels topped up and secured for the following years camp opening. Bungs on fuel drums are tightened to prevent water from entering the fuel drums, and valves on the fuel lines are moved to the closed position. Empty propane containers are transported to Yellowknife for refilling or recycling.

## **Fuel and Chemicals**

An on-site fuel cache is important during camp start-up after a temporary closure, however, consumable drill supplies and fuel will be drawn down through consumption to the lowest practical safe level. Barrels of diesel and jet fuel are stored in self-supporting, arctic grade, secondary containment berms and the location clearly marked to facilitate any snow clearing during camp re-opening. Empty drums are stored in a berm for winter transportation, from the ice strip, back to Yellowknife for recycling.

A total of 7 large (15" x 40') berms, and 10 smaller secondary containment berms are in use at Hackett River, as outlined below. Four small arctic grade secondary containment mini-berms are in use under fuel tanks where regular refuelling activities occurs, one is in use at the generator shed to contain the drums used to store the waste oil collected from the camp generators. Two mid-sized, arctic grade berms (10' x 20') are located near the incinerator, one for secondary containment of the water-contaminated fuel drums used to fuel the incinerator, and the second was used at the gasoline fuel transfer station. The large, arctic grade, secondary containment fuel berms are used to store drummed fuel, and are rotated and inspected as they are emptied, and then used for storage of empty fuel drums. Rain Drain water filters supplied by Raymac (the berm vendor) are installed on all the berms. No smoking signs and a fire extinguisher were posted near each fuel berm. A spare (empty) transfer drum was placed near each fuel berm to allow for the quick transfer of fuel from a leaking drum to an intact drum in the event of a leak. Spill kits were placed near each of the fuel berms and at various locations throughout camp to minimize spill response time in the event of a leak.

Snow that has accumulated in the berms is allowed to melt, and then run through Rain drains attached to each berm. There is a dedicated small gas-powered pump to move water from low points in each berm to the area where the rain drain is. Any contaminated snow from outside the large berms is put in a 45 gallon drum, and allowed to melt, and then separated to catch the fuel for use in the incinerator.

Chemicals stored on-site include biodegradable drill additives, oil, grease, drill salt and household cleaners. All drill additives are stored in buildings and salt is stored in designated areas of the camp in impermeable bags and on pallets. The salt storage area is inspected for spills or contamination and if any noted the response is outlined in the Hackett River Spill Contingency Plan. Empty bags are disposed with combustible garbage.

Spill response kits are relocated and secured in buildings, except for kits designated for the remaining petroleum areas over the temporary closure period.

## **Transportation**

All transport areas are inspected for spills or contamination and any areas found are remediated following the Hackett River Spill Contingency Plan.

The dock is pulled from the lake at the end of the season so the ice does not damage it.

The two helipads, at the north end of camp remain in place, while the fuel stored in the re-fuelling berms adjacent to the pads is removed and placed back in the larger fuel berms.

The esker strip, located 8 Km to the south of camp is cleaned up, and as it is a natural, esker.

### **Exploration Drill Sites**

The diamond drill rigs are dismantled to the main components using the drilling contractor procedures and secured with associated equipment and rods. The drill rigs are moved by helicopter to designated storage areas on the property until the next drilling season. All drill sites are inspected for spills and contamination. Any waste is taken back to camp and disposed in a manner appropriate to the waste. Diamond drill site restoration commences as soon as practical after completion of the hole, however, site clean-up of litter, debris and drill fluids commences immediately. Drill core and core boxes are moved to the designated core storage area and properly secured.

### **General Camp Area and Documentation**

A general inspection of the camp area is carried out to ensure the closure is complete and the site is being left safe and secure. An inventory is also completed before leaving the site to outline all buildings, equipment, fuel and supplies left on-site. This includes photographing the completed closure measures to assist with start up the following winter, when snow conditions are unknown prior to arrival in camp.

### ***Final Abandonment and Restoration Plan***

Final abandonment of the Hackett River camp is difficult to predict when, or if, it would occur. This section includes a list of possible activities to close the Hackett River camp permanently. For this purpose, the strategy is based on the assumption that the exit from the Project is anticipated and controlled with more than one season available to complete. The current surface lease allows for some of the camp infrastructure to remain on-site and leave the site as an exploration camp. It is anticipated that any final closure of the camp led by Xstrata would be completed with approval of the appropriate regulatory parties.

### **Buildings, Contents and Equipment**

All re-useable tents and tarpaulins (including the Quonset hut) will be dismantled and where possible be recycled for use at another exploration site. Wooden frames and structures would remain in place. Rented tents and equipment will be packed and transported back to the appropriate owner; including all drilling related equipment, which will be flown back to the contractor's base in Yellowknife.

All re-useable office, household, kitchen and recreational equipment will be packed and transported for other use at other exploration camps. Depending on the level of liability acceptable to Xstrata, some equipment may be donated to local communities and

schools. Equipment not reusable will be packed and transported off-site for disposal in approved facility, appropriate to the type of material.

Water pumps, filtering systems, water lines and any other equipment associated with the water supply system will be disassembled, lines drained, packed and transported off-site either for use at other exploration camps, or disposal in approved facility.

The Pactos will be dismantled, packed and transported off-site either for use at another exploration project or disposal in approved facility. The greywater system would be drained and the discharge pipe removed. All supply and waste lines associated with showers, sinks and washing machines will be drained and packed up for removal.

Solid waste is incinerated on-site. Ash from the incinerator is stored in empty 205-L drums for backhaul and disposal. Solid waste including scrap metal, drill rods, household items is stored in an appropriate marshalling area for backhaul to Yellowknife. The material is arranged in such a way that it can easily be removed from the property and disposal is appropriate to the material being removed, at an approved facility, metal recycler, or an approved designated landfill.

The fuel supply for the incinerator is shut off using a series of valves. The fuel remains in a double-walled tank adjacent to the incinerator throughout the winter. The area is inspected for any petroleum spills or contamination and if any noted, response is outlined in the Hackett River Spill Contingency Plan; oil sorbent pads are immediately applied to absorb the spill of hydrocarbon to minimize the volume of soil impacted and any remaining contaminated soil is removed and stored in barrels for transportation to permitted disposal sites.

The generators are winterized, and the area inspected for petroleum spills or contamination; if any noted, the response is outlined in the Hackett River Spill Contingency Plan. Remaining waste fuel, oil and grease is stored in approved secondary containment storage containers and labeled for that usage and secured on-site for future use, or disposed in approved facility. The generators are winterized and the sheds secured for the winter. Electrical wire, plugs and sockets remain in their installed locations. All electrical cords, temporarily connected to a building or machinery, are unplugged, rolled and stored in a workshop. The batteries for the generator (and larger mobile equipment) are sent to Yellowknife for the winter for charging, and to allow for a full charge upon camp opening.

For final removal of the incinerator and generators, they would be broken down and removed, using large heavy lift aircraft.

The 205L fuel barrels that supply each individual structure's heating system are secured on stands, and oil sorbent padding is wrapped around the bung, hose and fittings. Each fuel line is routed through a 5 gallon pail, and the low point on the fuel line is wrapped with oil sorbent pads to catch any leaks from the fittings at the bung. Stoves are all cleaned out, fuel conditioner applied and fuel barrels topped up and secured for the following years camp opening. Bungs on fuel drums are tightened to prevent water from entering the fuel drums, and valves on the fuel lines are moved to the closed position. Empty propane containers are transported to Yellowknife for refilling or

recycling. Final camp closure would see the stoves returned with the tents, hoses returned or disposed of, and the barrels returned for recycling.

## **Fuel and Chemicals**

The fuel storage area closure will consist of initially sorting the drums with empties stored separately from the full drums. An inventory of remaining fuel will be made, drums inspected, and WHMIS label attached to the drum. Remaining waste fuel drums will also have WHMIS labels attached and these will be packed and transported off-site for disposal in approved facility; some drums will remain on-site for use for waste containment and subsequent transportation off-site.

Unused jet fuel will be relocated to other exploration camps or returned to Yellowknife. The area around the drum storage area will be inspected and any spills noted will be remediated.

All remaining drill additives and salt will be inventoried, packed and transported off-site for sale to other projects, or to an approved disposal facility. Empty containers and pallets will be incinerated, recycled if possible, or disposed of in an approved facility.

Unused household cleaners will be transported off-site either for use in other camps or disposal in approved facility. Empty containers will either be recycled or disposed with regular garbage.

## **Transportation**

The airstrip located south of Hackett River Camp on the esker would be cleared of any debris and fuel drums that would be relocated to the camp for inclusion in the site management. The area would be inspected for any spills and if any noted the area would be cleaned up.

The helipads located in camp would be cleared of any debris and fuel drums and the area inspected for contamination. If contamination is noted, the site will be cleaned up.

The dock in Camp Lake would be removed.

## **Exploration Drill Sites**

The diamond drill rigs are dismantled to the main components using the drilling contractor's procedure and secured with associated equipment and rods. The drill rigs are moved by helicopter to designated storage areas on the property before transporting off-site. All drill sites are inspected for spills and contamination. Any waste is taken back to camp and disposed in a manner appropriate to the waste. Diamond drill site restoration commences as soon as practical after completion of the hole, however, site clean-up of litter, debris and drill fluids commences immediately. Drill core and core boxes are moved to the designated core storage area and properly secured.



## **General Camp Area and Documentation**

A detailed closure report would be prepared by Xstrata that catalogues the project reclamation activities. It will identify all reclamation efforts undertaken and will be supported with information to the contractors used, methodology, and costs. Digital photos will also be used as support information and will be appended to the report. This report will be generated for distribution to specific governing agencies.

Once reclamation activities are completed, a final inspection will be conducted that will include representatives from the local communities, regional and territorial Inuit Associations, Institutes of Public Government, Territorial Government and Federal Government.

## ***Abandonment and Restoration Cost Estimate***

The cost estimate for the A&R Plan for Hackett River is currently under review by Xstrata Zinc Canada, to ensure the strategy meets Xstrata's standards for Sustainable Development. Currently there is a \$70,000 security deposit with the KIA for exploration activities on IOL. The cost estimate is based on the following assumptions:

- these activities are the base strategy for anticipated tasks in the event that exploration activities cease in a controlled scenario
- leaving the site will be a "controlled" exit by Xstrata, with more than one season available to complete, although every effort will be made to minimize the time to complete
- camp and infrastructure would remain on-site as identified in terms and conditions of crown surface lease. Infrastructure outside the surface lease boundary would be removed.
- demobilization of subcontractor equipment and supplies to be completed under contractual agreement and is not part of reclamation costs.
- Post closure monitoring and inspection will occur for 2 years after final reclamation activities completed.

### *Review of Abandonment and Restoration Plan*

The activities and costing of reclamation activities will be reviewed internally on an annual basis relative to the long-term exploration strategy for the Project.

1st Edition:	March 5, 2005
2nd Revision:	July 31, 2005
3rd Revision:	March 20, 2006
4 <sup>th</sup> Revision:	June 30, 2006
5 <sup>th</sup> Revision:	November 6, 2006
6 <sup>th</sup> Revision:	July 31, 2009
7 <sup>th</sup> Revision	May 25, 2011