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OFFICE DES EAUX DU NUNAVUT

## EXPLORATION/ REMOTE CAMP SUPPLEMENTARY QUESTIONNAIRE

**Applicant:** Sabina Silver Corporation **Licence No:** \_\_\_\_\_  
(For NWB Use Only)

### ADMINISTRATIVE INFORMATION

1. Environment Manager: Elizabeth Sherlock Tel: 604-998-4175 Fax: 604-998-1051  
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2. Project Manager: Peter Manojlovic Tel: 604-998-4183 Fax: 604-998-1051  
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3. Does the applicant hold the necessary property rights?

Yes, Sabina Silver Corporation acquired a 100% interest in the Hackett River Property from Teck Cominco Limited and 100% interest in the Wishbone claims from Dundee Precious Metals

4. Is the applicant an 'operator' for another company (i.e., the holder of the property rights)? If so, please provide letter of authorization.

N/A

5. Duration of the Project

☐ One year or less      Start and completion dates: \_\_\_\_\_  
☒ Multi Year:

If Multi-Year indicate proposed schedule of on site activities

Start: January 1, 2010      Completion: December 31, 2015

### CAMP CLASSIFICATION

6. Type of Camp

☐ Mobile (self-propelled)  
☐ Temporary  
☒ Seasonally Occupied: March 1 – Oct 31  
☒ Permanent

✕ Other: temporary diamond drill locations

7. What is the design, maximum and expected average population of the camp?

The camp is currently designed to accommodate 30 people with a maximum capacity of 40 people. With the addition of the Wishbone claims the exploration area increases and to support this additional work, the camp will be expanded to accommodate an average of 50 personnel with occasional visitors and guests bringing the total up to the maximum of 75.

8. Provide history of the site if it has been used in the past.

The year that the present site was chosen for a camp is not known with certainty but it is thought to be 1970 or 1971 based on personal conversations with Barbara Caelles, a Cominco project geologist on the Hackett Project from 1975 – 77. Cominco optioned the property in 1970 from Bathurst Norsemynes and has had a continuing interest in the property since then. A field map showing the name “Camp Lake” dated April 1972 suggests that a camp was present near Camp Lake in 1971.

Between 1970 and 1975 Cominco carried out systematic exploration involving airborne and ground geophysics, geochemistry, mapping and drilling. In 1976 the property was surveyed and was brought to lease in 1977. Surface lease 76F 16-1-4 was established in 1977 to allow the construction of a permanent metal clad building to house and protect drill core.

In 1980 and 1981 detailed drilling continued on the "A" zone. Bathurst Norsemynes was consolidated in 1986 and the company became Etruscan Enterprises Ltd.

In 1988 a precious metal evaluation by Cominco of wallrocks at the East Cleaver Lake (hangingwall and footwall) and Main Zone (hangingwall) deposits outlined significant Au and Ag zones.

In 1993 and 1994 Etruscan Enterprises Ltd conducted geophysical and drilling exploration programs.

During the month of September 1997 Etruscan Resources extensively up-graded camp facilities to accommodate geophysical crews arriving in October and diamond drilling crews in April of 1998.

Sabina Resources Ltd. reopened and renovated the camp in June 2004 and worked until the end of November. Sabina drill tested several regional geophysical targets but most of the work focused on infill drilling and step out drilling on the three main deposits, Main, East Cleaver and Boot.

Sabina Resources returned to the camp in March 2005 and continued drilling until mid-July. Sabina fulfilled the terms of its option agreement with Teck Cominco to earn a 100% interest. In late 2005 Sabina Resources changed its name to Sabina Silver Corporation to reflect the high profile of the Hackett River project to Sabina. Drilling in 2005 focused mainly on step-out drilling on the existing deposits but also tested several regional targets.

Sabina Silver Corporation returned again in April, 2006 and drilled through to the early part of September, 2006. Sabina personnel remained in camp until the end of September, 2006 performing survey and camp renovation work.

In 2007, Sabina Silver Corporation completed a preliminary economic assessment that indicated 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. Additional definition and exploration drilling, geotechnical drilling and testing, further metallurgical testing and optimization, and selected geophysical surveys were also completed, from mid March to Early November. Work on-site also included the initiation of baseline environmental data collection to support the preparation of an Environmental Impact Statement.

In 2008, Sabina Silver completed additional exploration drilling, environmental, geotechnical drilling and testing, and further metallurgical testing and optimization. Work on-site also included limited baseline environmental data collection to support the preparation of an Environmental Impact Statement. 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.

In early 2009, Sabina announced the agreement between it and Dundee Precious Metals to acquire their interest in the Back River properties, including the Goose Lake, George Lake and Wishbone properties. Sabina Silver Corporation focused the 2009 exploration program on re-evaluation of the properties and revisiting the development schedule for the Hackett River Project. Exploration activities focused on drilling, geophysical targets identified in previous magnetic and electromagnetic surveys and geological mapping.

## **CAMP LOCATION**

9. Please describe proposed camp location in relation to biogeographical and geomorphological features, and water bodies.

The Hackett River area is underlain by generally NW – SE trending Archean metasediments and metavolcanics of the Yellowknife Group. The metavolcanics and metasediments are bounded by granite and similar felsic intrusives of Archean age. The supracrustal belt is up to 20 km wide and at least 40 km long. Metasediments consist of quartzite, greywacke, quartz-biotite schist, marble, calcareous quartzite and paragneiss derived from the metasediments. Intercalated within the metasediments are mafic to intermediate volcanic rocks as well as felsic volcanic rocks consisting of ash, tuff, rhyolite and chert. Numerous long, sulfide gossans are present throughout the belt. Most are caused by weak sulfide mineralization consisting of pyrite and pyrrhotite. Locally, mineral deposits containing pyrite, pyrrhotite, sphalerite with minor chalcopyrite, galena and tetrahedrite are present.

The climate, soils and vegetation of the camp area are arctic in character. Plant cover is characteristic of the Arctic Tundra community. Shrubs are found sparsely distributed on the mesic sites near the rivers and lakes. On the interfluves are found low-growing perennials; grasses and sedges and some flowering species. The eskers support very little actual plant cover.

The camp is located on the western shore of Camp Lake which is close to the headwaters of Camp Creek, a small tributary that drains east to the Hackett River. Hackett River is part of the Burnside River basin which drains into Bathurst Inlet. An E-W trending esker system forms the southern edge of Camp Lake and is located approximately 150 m south of the existing camp. The camp is located on a gravel or sandy terrace adjacent to Camp Lake. The **photo below (taken in July, 2008, looking S)** shows the existing camp facilities. The camp structures are located near the transition from exposed bedrock to the terrace gravels to the south.



10. How was the location of the camp selected? Was the site previously used? Was assistance from the Regional Inuit Association Land Manager sought? Include maps and/or aerial photographs.

How the location of the camp was selected is not known. Since the “A” Zone deposit lies on the northern margin of Camp Lake, and Camp Lake is large enough to land a small airplane, it is thought that the camp location was selected on the basis of closest proximity to the work site and mineral occurrences. The site has a history of intermittent exploration camp use since 1970. Assistance from the Kitikmeot Inuit Association Land Manager was not sought since the camp site was established prior to the establishment of Nunavut.



11. Is the camp or any aspect of the project located on:

☒ Crown Lands Permit Number (s)/Expiry Date:

Camp is on Surface Lease \_76F 16-1-4 and Land Use Permit N2004C0005 (expires April 7, 2010)

☐ Commissioners Lands

Permit Number (s)/Expiry Date: \_\_\_\_\_N/A\_\_\_\_\_

☒ Inuit Owned Lands Permit Number (s)/Expiry Date:

License No. KTL304C010 expires May 1, 2010 and Licence No. KTL309C002 expires March 16, 2011

12. Closest Communities (direction and distance in km):

The closest community is Bathurst Inlet (Qinguan) located approximately 104 km to the NNE of the project. Umingmaktok (Bay Chimo) is located 200 km NNE of camp, and Cambridge Bay is located approximately 385 km to the NE of the project.

13. Has the proponent notified and consulted the nearby communities and potentially interested parties about the proposed work?

Sabina representatives visited Bathurst Inlet and Bay Chimo in the summer of 2006 and discussed the exploration program at Hackett River project with some of the residents in each community. Inquires were made as to who may be interested in seasonal work at the camp. Several elders and other residents of Bathurst Inlet were flown down to the Hackett River Camp for a tour of the property and to discuss seasonal work for 2007, with Sabina.

Sabina representatives visited Cambridge Bay in 2006, as part of the Nunavut Mining Symposium, to discuss the Hackett River project with the Mayor and Council along with other community leaders. Discussions were held with several individuals from Kugluktuk regarding work at Hackett River.

Sabina representatives have flown to the local communities each year, and brought elders from Bathurst Inlet down to the project site. Visits to Bathurst Inlet, Bay Chimo and Cambridge Bay were made as the programs wound down in 2007 and 2008 to distribute unused food supplies from camp; these are also an opportunity to discuss the project.

14. Will the project have impacts on traditional water use areas used by the nearby communities? Will the project have impacts on local fish and wildlife habitats?

The project is expected to have no impact on traditional water use areas by nearby communities during the planned exploration season.

The project is expected to have no or minimal impact on local fish and wildlife habitat. Encounters with wildlife will be kept to a minimum through a policy of camp and work site cleanliness, no hunting or fishing from camp except with a valid permit from the Government of Nunavut, and no feeding of the animals. Any work program at a site will be modified, shut down or

avoided in the event of the close approach of caribou or musk-ox. Hand-held air horns will be available to warn off bears and, if necessary, pepper spray will be used for self protection rather than firearms. Camp personnel will be encouraged to report wildlife encounters and record the location of any critical wildlife habitat that may be discovered, such as dens or nesting or spawning sites so as to avoid them in the future

## PURPOSE OF THE CAMP

15. ☒ Mining (includes exploration drilling)  
☐ Tourism (hunting, fishing, wildlife observation, adventure/expedition, etc.)  
 (Omit questions # 16 to 21)  
☐ Other \_\_\_\_\_

16. Activities (check all applicable)

- ☐ Preliminary site visit
- ☒ Prospecting
- ☒ Geological mapping
- ☒ Geophysical survey
- ☒ Diamond drilling
- ☒ Reverse circulation drilling (under consideration)
- ☐ Evaluation Drilling/Bulk Sampling (also complete separate questionnaire)
- ☒ Other: Thermistor installation and data collection (depth of permafrost).

17. Type of deposit (exploration focus):

- ☒ Lead Zinc
- ☐ Diamond
- ☒ Gold
- ☐ Uranium
- ☒ Other: Silver, Copper

## DRILLING INFORMATION

- ## 18. Drilling Activities

- ✗ Land Based drilling
- ✗ Drilling on ice

19. Describe what will be done with drill cuttings?

Drill cuttings and sludge will be collected in a sump near the collar for holes drilled on land. If significant mineralization is intersected, a capped and labeled casing would be left to mark the hole and the cuttings would be recontoured to the site profile. The casing is capped to prevent entry by birds. All casings from 2007 and earlier programs have been cut off as close to ground level as possible, capped, surveyed and photographed. If no significant mineralization is intersected, casing

is pulled and the hole backfilled with the cuttings and the site recontoured. A wooden picket is used to mark the drill hole location. Beginning in 2008, all casing is removed when the hole is finished.

For holes drilled on ice, or near a body of water, but on land, the drill return would be pumped to a sump located well back from shore. If any drill return was spilled, the cuttings would be cleaned off the ice with a shovel and transported to the sump for disposal. All holes drilled from ice are sealed in bedrock below overburden with a rubber drillhole plug and stemmed with cement before the hole is abandoned. This is to prevent any possible water flow from the drill hole to the lake. It also ensures that water inflows will not a problem in the event that underground mining is considered.

20. Describe what will be done with drill water?

Most of the water pumped to the drill site is not used for drilling and spills out of the surge tank and returns to the environment as surface run-off and percolation through the soil. Return from the drill collar would be via a settling sump before the decanted water would join surface run-off and percolate through the moss and soil. In both cases the water would in time likely rejoin the same small drainage basin that it was pumped from.

21. List the brand names and constituents of the drill additives to be used? Includes MSDS sheets and provide confirmation that the additives are non-toxic and biodegradable.

*A list of the possible drill additives that may be required by Major Drilling are:*

<b><i>Brand Name</i></b>	<b><i>Constituent</i></b>
<i>PureVis</i>	<i>Liquid Polymer</i>
<i>Poly-Drill O.B.X.</i>	<i>Liquid Polymer</i>
<i>Poly-Drill 133-X</i>	<i>Liquid Anionic Polymer</i>
<i>Poly-Drill 1330-W</i>	<i>Liquid Anionic Polymer</i>
<i>Westcoast Drilling Supplies</i>	<i>Linseed Soap</i>
<i>Peladow</i>	<i>Calcium Chloride salt</i>

MSDS sheets providing toxicological information about the above listed products are enclosed with the application with the Spills Contingency Plan.

22. Will any core testing be done on site? Describe.

Drilled core will be logged and any intervals of potential economic interest will be sampled by sawing the core in half. Half of the core will remain in the core box as a geologic record and the other half will be bagged and shipped to a laboratory for analysis. Point load testing (hardness), magnetic susceptibility, and oriented core testing (orientation of sub-surface rocks in 3D space) may also be completed.

## SPILL CONTINGENCY PLANNING

23. The proponent is required to have a site specific Spill Contingency Plan prepared and submitted with the application. This Plan should be prepared in accordance with the *NWT Environmental Protection Act, Spill Contingency Planning and Reporting Regulations, July 22, 1998* and *A Guide to the Spill Contingency Planning and Reporting Regulations, June 2002*. Please include for review.

Sabina Silver Corporation's spill contingency plan is listed in Appendix A:

24. How many spill kits will be on site and where will they be located?

A total of five 20 litre Spill Response Kits and four 205 litre Spill Response Kits will be available to implement the spill contingency plan. Each of the drill sites will be equipped with a spill kit as will the camp. A spare spill kit will be kept in camp as a back-up replacement.

25. Please describe the types, quantities, and method of storage of fuel and chemicals on site, and provide MSDS sheets.

The following list of fuels are expected to be used for the project. MSDS sheets for the fuel and chemicals on site are included with the Spill Contingency Plan.

<i><b>Fuels</b></i>	<i><b>Number of containers</b></i>	<i><b>Capacity of containers</b></i>
<i>Diesel</i>	<i>2000</i>	<i>205 litre</i>
<i>Gasoline (lead free)</i>	<i>5</i>	<i>205 litre</i>
<i>Aviation Fuel (Jet B)</i>	<i>1000</i>	<i>205 litre</i>
<i>Propane</i>	<i>75</i>	<i>100 lb</i>
<i>Acetylene</i>	<i>1</i>	<i>50 lb</i>

Drums of diesel, Jet B and gasoline fuels will be stored outside in separate fuel caches enclosed within impermeable, geomembrane berms to prevent any leaks from entering the soil. Each of the containment berms is equipped with a RainDrain™ filtration system that continuously filters out the rainwater while containing any hydrocarbons. These are monitored on a regular basis to ensure proper operation. The fuel caches would be stored well back from any lake or stream. As the fuel is used the empty fuel drums will be stored near camp until they can be flown out to Yellowknife on backhaul flights. All the fuel caches would be monitored on a regular basis to check for leaks. Propane tanks would be secured in an upright position. The acetylene tank for welding purposes would also be secured in an upright position.

Lubricants expected to be used on the project would be stored in the machine/tool shed in camp or in the drill shack where they would be used. Chemical Lubricants expected to be used for the project include:



<b>Product</b>	<b>Online MSDS information reference</b>
<i>Drill Rod Heavy Grease</i>	<a href="http://www.online.petro-canada.ca/datasheets/en_CA/drodh.pdf">www.online.petro-canada.ca/datasheets/en_CA/drodh.pdf</a>
<i>Duron Multigrade Engine Oil SAE Viscosity Grades 10W-30, 15W-40</i>	<a href="http://www.online.petro-canada.ca/datasheets/en_CA/dur13.pdf">www.online.petro-canada.ca/datasheets/en_CA/dur13.pdf</a>

MSDS sheets for the above listed lubricants are enclosed with the application.

Other chemicals that would be used during the drill program would include kitchen soaps and cleaning agents, bleach, soaps and shampoo in the dry and mosquito repellant. Kitchen cleaners would be kept in the kitchen tent, bleach, soaps and shampoo would be stored in the dry(s). Mosquito repellant would be stored with office field supplies. One 50 lb cylinder of oxygen would be secured in an upright position in close proximity to the 50 lb acetylene tank as part of gas welding supplies. Six 10 lb cylinders of medical grade oxygen would be kept in the First Aid tent for emergency medical use.

## **WATER SUPPLY AND TREATMENT**

26. Describe the location of water sources.

Water for the camp would be supplied from Camp Lake. Water for the drills would be supplied from a variety of small lakes and ponds located on the Mineral Leases and Claims. Water for each drill site would most likely be from the closest body of water to the drill site so as to minimize pumping distance.

27. Estimated water use (in cubic metres/day):

- ☒ Domestic Use: 20 m<sup>3</sup> / day Water Source: Camp Lake  
☒ Drilling (up to 5 Drills): 230 m<sup>3</sup>/day\* Water Source: local to drill location  
☐ Other: \_\_\_\_\_ Water Source: \_\_\_\_\_

\*For drilling, the actual amount of water used down the hole by the 5 drills is estimated to be 30 m<sup>3</sup> per day. It is estimated that the fifth drill may only be operational for short periods of time over the next five years to complete geotechnical drilling to support advanced development planning, and may not be used at all.

28. Describe water intake for camp operations? Is the water intake equipped with a mesh screen to prevent entrapment of fish? (see *DFO 1995, Freshwater Intake End-of-Pipe Fish Screen Guideline*) Describe:

Currently, water used in the kitchen and the two dry buildings, for cleaning and washing purposes, was pumped from Camp Lake on average once a day. Water pumped from the lake was stored in six 250 gallon (1137 litre) plastic tanks located inside a water room adjacent to the kitchen (4) and the driller's dry (2) to keep the water from freezing. With the camp expansion the number of storage tanks is anticipated to increase to ten. When Camp Lake was frozen, a portable water pump was placed on the ice approximately 15m from shore and the screened intake hose was put down a hole in the ice to provide water. When there was no ice on Camp Lake, the portable Honda 5 hp

water pump was replaced by an electric system, and the screened intake hose was placed in deeper water to provide clear water. The new metered water intake system continually circulates water, and when water is required in the tanks, the flow is diverted through the meter, and into the tanks. Readings were recorded daily. This electric, on demand system, removes the threat of fuel spills into Camp Lake. The circulating water returns down a second hose to the lake, if not needed to allow for continuous circulation, and prevent freezing of the lines. This system will be maintained with the licence renewal and amendment.

29. Will drinking water quality be monitored? What parameters will be analyzed and at what frequency?

No. The camp will be supplied with bottled water, for drinking and cooking purposes. Water quality test results show that water from Camp Lake does not meet CCME Drinking Water Quality Guidelines (2003) as pH, turbidity, total coliforms, arsenic and manganese are outside the recommended guideline ranges.

30. Will drinking water be treated? How?

Drinking water supplied from bottled water will not be treated. If the bottled water supply runs out then water from Camp Lake or snow will be melted and the water boiled to ensure safety. Water used for general camp use (showers, laundry, washing dishes) is filtered through a 100 micron filter, which is changed monthly. In August, 2008, the water treatment and filtration system was upgraded, with a UV filter to provide better water to the kitchen taps.

31. Will water be stored on site?

Water would be stored at each drill and at the camp. At each drill a plastic, horse trough-type surge tank (approximately 500 litre capacity) would be used. In camp water would be stored in 10 (anticipated for new camp) plastic tanks (of approximately 500 litre capacity) for domestic use and a plastic, horse trough-type tank (approximately 500 litre capacity) would be used to hold water for occasional use with the rock saw. The total amount of water stored at any one time would be approximately 3.0 m<sup>3</sup>.

## **WASTE TREATMENT AND DISPOSAL**

32. Describe the characteristics, quantities, treatment and disposal methods for:

**✕ Camp Sewage (blackwater)**

Blackwater would be contained in plastic Pacto toilet bags and would be incinerated. With camp expansion, it is estimated that up to ten Pacto toilet bags (~10 kg) would be produced each day. Ashes and any unburned residue would be placed in metal drums and flown out to Yellowknife for disposal at the Yellowknife dump.

### ✕ Camp Greywater

Greywater from the camp kitchen and the two dries was collected by drainage pipes and gathered in a 500-gallon (1893 litre) open tub and then pumped by a trash pump to a greywater disposal pit located further back (about 110m) from Camp Lake with an automatic, float-controlled pump. It is estimated that with the camp expansion up to approximately 15 to 20 m<sup>3</sup> per day of grey-water would be generated by the camp.

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### ✕ Solid Waste

The disposal method for burnable solid waste such as paper, cardboard, plastic, wood, burlap cloth, fuel or oil-soaked absorbent material, semi-solid waste from Pacto toilets and food preparation waste would be by burning in a dual stage, forced air incinerator. A new incinerator was installed on site in the spring of 2008. It is estimated that on average up to approximately 20 garbage bags (121 litre capacity) of such burnable waste would be generated each day. Any remaining ashes and unburned residue would be collected in cleaned 205l drums, sealed for transport, and flown out for disposal at a suitable, approved hazardous waste management facility.

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### ✕ Bulky Items/Scrap Metal

All large metal waste items such as used drill steel, broken or worn out mechanical parts and 205 litre (45 gallon) drums used for fuel transport would be flown back to Yellowknife for recycling or for disposal in an approved waste disposal site. Any bulky waste items would be cut up and burned in the incinerator or would be flown out for disposal at the Yellowknife landfill site (approx 1 Twin Otter load a week).

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### ✕ Waste Oil/Hazardous Waste

Any waste motor oil, transmission fluid and other petroleum fluids would be transferred to plastic tubs or other sealable containers and either flown back to Yellowknife for recycling or disposal at an approved facility, or incinerated (waste diesel only) in camp. The new incinerator was equipped with a waste oil burner. It is estimated that in total, approximately 150 litres of such waste petroleum fluids would be generated in the course of the exploration program.

No hazardous materials other than the fuels are expected to be stored or used on the property.

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### ✕ Empty Barrels/Fuel Drums

As mentioned in the “Bulky Items/Scrap Metal” section, empty fuel drums would be returned to camp, and flown to Yellowknife on backhaul flights. The barrels are emptied, and any remaining fuel is collected and used as primary burn fuel at the incinerator. Care would be taken to ensure that the bungs are replaced and snugly tightened so as to prevent any fuel leakage. The empty drums are stored in a large secondary containment, arctic grade berm.

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✕ Other:

Drilling will result in the distribution of drill mud cuttings near the drill hole collar and in the sump. All drill hole additives are biodegradable. Where drilling occurs near, or on lakes, the drill return water containing drill cuttings will be pumped well back from the shore of the lake to a natural depression, or sump, the location of which is surveyed and recorded. Because drill cuttings are mechanically pulverized rock, they are geologically similar to the locally present glacial till. It is expected that drill cuttings will, in time, be colonized by plants and lichen. The occasional use of Calcium Chloride “salt” at the drill site is expected to have minimal impact as any brine will be effectively diluted by water pumped to the drill site at a rate of approximately 12 gallons per minute. Salt is needed to prevent permafrost from freezing the hole closed when drilling is halted for a significant length of time. Permafrost is not present under deeper lakes that don’t freeze to the bottom. If drilling is successful in intersecting sulfide mineralization the resulting drill cuttings will have high acid rock drainage potential. This is a naturally occurring state within the soils developed above existing zones of sulfide mineralization on the property. The relatively small quantities of sulfide-rich drill cuttings left at the surface are expected to be admixed with other rock type drill cuttings hence slowing the rate of reaction and providing possible buffering capacity. The quantity of drill cuttings at each drill site depends on the length of the hole and is estimated to be up to 1.0 m<sup>3</sup> for the deepest holes. At each drill site (except those drilled from ice) plans are to backfill the drill hole with any accumulated drill cuttings taking care not to disrupt the surrounding topsoil / organic layer.

The rock saw is expected to produce up to approximately 1 to 2 m<sup>3</sup> of sludge cleaned from the bottom of the settling container in the course of the season. The sludge will consist mostly of sulfides. The sludge will be cleaned from the settling container on an as needed basis, placed in emptied and cleaned 205l fuel drums, allowed to dry out, and eventually flown out to the Yellowknife for disposal at a hazardous waste materials handling facility.

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33. Please describe incineration system if used on site. What types of wastes will be incinerated?

A forced air – dual stage, diesel fueled incinerator system is used on site. Burnable solid waste such as paper, cardboard, plastic, wood, burlap cloth, fuel or oil soaked absorbent material, semi-solid waste from Pacto toilets and food preparation waste would be disposed of by burning in the incinerator.

34. Where and how will non-combustible waste be disposed of? If in a municipality in Nunavut, has authorization been granted?

Any remaining ashes and unburned residue from the incinerator are flown out for disposal or recycling at the Yellowknife landfill site. Drums of mixed hydrocarbons and water have also been trucked to a waste recycling and treatment site near Edmonton Alberta. Aluminum pop cans, and non-dairy, food grade plastic containers are collected and shipped to Yellowknife for recycling. Remaining non-combustible waste is bagged and shipped to the municipal landfill in Yellowknife.

35. Describe location (relative to water bodies and camp facilities) dimensions and volume, and freeboard for all sumps (if applicable).

Sumps for use at the various drill sites or at the camp will be located at least 31 m back from any body of water and in a location chosen to enhance infiltration and filtering of the drill return water or camp grey water. In camp the sump is located to the west of the camp buildings, on the uphill side of camp and just north of the office tent, so as to maximize the distance between the sump and Camp Lake. Sumps would be chosen or constructed to have dimensions of approximately 0.38 x 2 x 2 m and would have approximately 1.5 m<sup>3</sup> capacity. The amount of freeboard would be monitored during use and if the sump was filling up a larger sump would be constructed to contain the excess or the excess is shoveled into a megabag and moved to a more suitable location with the helicopter.

Geo-textile cloth fences are constructed on the downhill side of all new drill setups, as well as below the camp sump and dry(s) and the core cutting facility.

36. Will leachate monitoring be done? What parameters will be sampled and analyzed, and at what frequency?

No leachate is expected to be developed at the site.

## **OPERATION AND MAINTENANCE**

37. Have the water supply and waste treatment and disposal methods been used and proven in cold climate? What known O&M problems may occur? What contingency plans are in place?

Yes. The water supply system for the drills has been tested on prior work sites in Nunavut. If a coil stove water heater fails and the water lines freeze the frozen hose can be gathered up and thawed out in the drill shack. In camp, potable water is flown to the camp. If the supply of bottled water runs out due to unexpected weather conditions snow can be melted and the water boiled to provide a safe drinkable water supply. Water pumped from Camp Lake to the camp for domestic use (showers, laundry, washing dishes, etc.) is via an insulation-wrapped water hose to prevent freezing during use. A second similar pump will also be available in camp as a back-up. Water pumped from the lake is temporarily stored in tanks enclosed in a heated water storage room to prevent freezing. All water supply pipes in camp are equipped with heat trace and insulation or are located entirely within heated tents to prevent freezing.

A second generator is located in camp as a back-up power supply in the event that the main generator fails. Pacto-type toilets will avoid the need for a water-based sewage system. In the event that the incinerator fails, burnable waste, including the Pacto bags, can be burned in the old forced air incinerator with any unburned residue flown out to Yellowknife for disposal or all the waste can be flown out to Yellowknife until the incinerator is repaired. Any needed repairs or maintenance can be quickly accessed using the satellite telephone (VOIP) system, or internet in camp, supplemented by a battery powered hand-held satellite telephone system to call for parts or assistance.

## **ABANDONMENT AND RESTORATION**

38. Provide a detailed description of progressive and final abandonment and restoration activities at the site.



A detailed description of the Hackett River project Abandonment and Restoration plan is described in Appendix B.

## BASELINE DATA

39. Has or will any baseline information be collected as part of this project? Provide bibliography.

- ☒ Physical Environment (Landscape and Terrain, Air, Water, etc.)
- ☒ Biological Environment (Vegetation, Wildlife, Birds, Fish and Other Aquatic Organisms, etc.)
- ☐ Socio-Economic Environment (Archaeology, Land and Resources Use,
- ☐ Demographics, Social and Culture Patterns, etc.)
- ☐ Other: \_\_\_\_\_

The following baseline studies have been collected for this project.

Department of Indian and Northern Affairs, Water Management Section, Bathurst Norsemynes (Hackett River), Potential Mine Water Quality Survey Network, Report Series, 1974 By: D. Sutherland, J. McLaren

Northwest Territories Water Board, Department of Indian and Northern Development, Bathurst Norsemynes Hackett River, Potential Mine Water Quality Survey Network, Report Series, 1975 By D.J. Sutherland

Geochemical Dispersion over Massive Sulphides within the Zone of Continuous Permafrost, Bathurst Norsemynes, District of Mackenzie, N.W.T. by J. K. Millar, The University of British Columbia, December, 1978.

Prepared by Gartner Lee for Sabina Silver Resources:

- Baseline Water Quality Monitoring Program at Hackett River Project, December 6, 2004
- 2005 Baseline Water Quality Monitoring Program – Hackett River Project, October, 2005
- 2006 Baseline Preliminary Options of the Road Route Options from Hackett River Camp to the BIPAR Road, November, 2006.
- 2006 Baseline Water Quality Monitoring Program at Hackett River Project, November, 2006.

Prepared by Rescan Environmental Services Inc. for Sabina Silver Corporation:

- 2007 Hydrology Baseline Report, Hackett River Project, January 2008
- 2007 Aquatic Baseline Report, Hackett River Project, April 2008
- 2007 Fish Habitat and Fish Community Baseline Report, Hackett River Project, June 2008
- 2007 Wildlife Baseline Report, Hackett River Project, March 2008
- 2007 Meteorology and Permafrost Baseline Report, Hackett River Project, March 2008
- Hackett River Project - Predicted Minesite-Drainage, Chemistry and Acid Rock Drainage - Phase 1, March 2008
- 2007 Archaeology Baseline Report, Hackett River Project, April 2008
- 2007 Soil Baseline Report, Hackett River Project, June 2008

- 2007 Ecosystem Mapping and Vegetation Baseline Report, Hackett River Project, September 2008
- 2008 Hydrology Baseline Report, Hackett River Project, October 2008
- 2008 Freshwater Water Quality Baseline Report, Hackett River Project, January 2009
- 2008 Wildlife Baseline Report, Hackett River Project, November 2008
- 2008 Meteorology and Permafrost Baseline Report, Hackett River Project, December 2008
- Preliminary Wind Resource Analysis for the Hackett River Project, August 2008
- Historical and Traditional Knowledge in the Hackett River Study Area, January 2009

## REGULATORY INFORMATION

40. At a minimum, you should ensure you have a copy of and consult the documents below for compliance with existing regulatory requirements:

- ✓ ARTICLE 13 – *NCLA -Nunavut Land Claims Agreement*
- ✓ NWNSRTA – *The Nunavut Waters and Nunavut Surface Rights Tribunal Act, 2002*
- ✓ *Northwest Territories Waters Regulations, 1993*
- ✓ NWB - Water Licensing in Nunavut - Interim Procedures and Information Guide for Applicants
- ✓ NWB - Interim Rules of Practice and Procedure for Public Hearings
- ✓ RWED – *Environmental Protection Act, R-068-93- Spill Contingency Planning and Reporting Regulations, 1993*
- ✓ RWED A Guide to the Spill Contingency Planning and Reporting Regulations, 2002
- ✓ NWTWB - Guidelines for Contingency Planning
- ✓ *Canadian Environmental Protection Act, 1999 (CEPA)*
- ✓ *Fisheries Act, RS 1985 - s.34, 35, 36 and 37*
- ✓ DFO - Freshwater Intake End of Pipe Fish Screen Guideline
- ✓ NWTWB - Guidelines for the Discharge of Treated Municipal Wastewater in the NWT
- ✓ Canadian Council for Ministers of the Environment (CCME); Canadian Drinking Water Quality Guidelines, 1987
- ✓ Public Health Act - Camp Sanitation Regulations
- ✓ Public Health Act - Water Supply Regulations
- ✓ *Territorial Lands Act and Territorial Land Use Regulations; Updated 2000*